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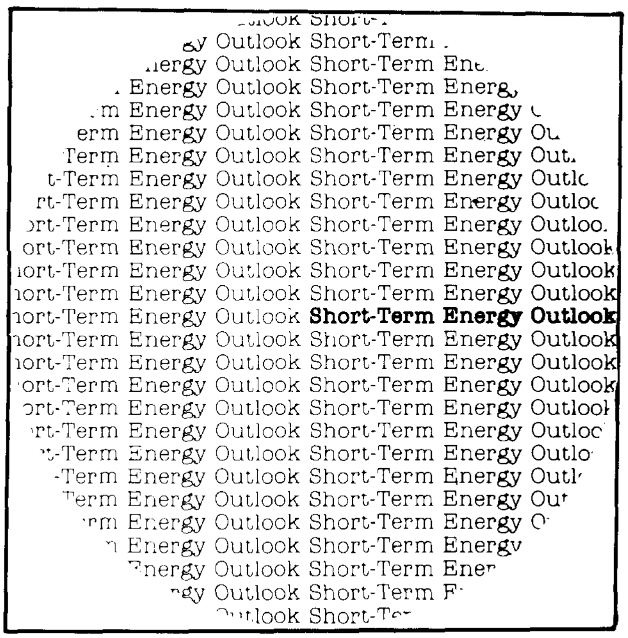
Energy Information Administration

Short-Term Energy Outlook

Quarterly Projections

April 1987



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Short-Term Energy Outlook

Quarterly Projections
April 1987

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

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Forecasts for domestic crude oil production are made by the EIA Dallas Field Office, under the supervision of John H. Wood. Forecasts of nuclear electricity generation are produced by Roger Diedrich and forecasts of hydroelectric generation are produced by Christopher Freitas, both of the EIA Office of Coal, Nuclear, Electric and Alternate Fuels. World petroleum forecasts are prepared by the International and Contingency Information Division, W. Calvin Kilgore, Director.

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 the first half of 1988.

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 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 refer primarily 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 51. 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 those 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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Highlights

According to preliminary data, the first quarter of 1987 was characterized by higher crude oil prices and a leveling off of the petroleum demand increases experienced during the second half of 1986. The projection for the remainder of 1987 is for imported crude oil prices to climb to about $18 per barrel and stabilize, assuming general adherence to the production quotas set by the Organization of Petroleum Exporting Countries (OPEC). These higher prices are likely to result in basically stable demand patterns for motor gasoline and distillate fuel oil, while consumption of residual fuel oil declines after its first annual increase in 9 years in 1986. (The base case assumptions and projections are summarized in Table 1 on page 3.)

Lower-48 Oil Production to Decline in 1987

Domestic crude oil production is likely to continue its decline in 1987, as a slight increase in Alaskan crude oil production is more than offset by a decline of 500,000 barrels per day in output in the Lower 48 States. The bulk of the year-to-year decline occurs in the first quarter. The higher oil prices forecast for the base case will not noticeably improve the situation, as they come too late to stimulate a return to normal levels of drilling and maintenance activity in the near term.

Net Oil Imports to Continue Rising in 1987

Net oil imports should continue to rise to almost 5.7 million barrels per day in 1987, the highest level in 7 years. The increase will almost exactly offset the expected decrease in domestic production, with virtually no change in demand or stocks from their levels at the end of 1986.

Motor Gasoline Prices Expected to Increase

Motor gasoline prices will rise only slightly in 1987, not as rapidly as crude oil prices. Relatively high stock levels are likely to mean lower margins for all components in the petroleum distribution chain.

Residential Natural Gas Prices Expected to Decline

A decline in residential natural gas prices is projected for 1987, with wellhead prices showing a sluggish response to higher crude oil prices, and price margins for natural gas sales to utilities held down by regulatory decisions.

Increased Electricity Generation Anticipated in 1987

Electricity generation should increase significantly from an unusually low level in 1986. Imports were higher, and losses and "unaccounted for" were lower in 1986, reducing the gap between sales and generation. Assuming higher oil prices in 1987, there should be an increase in coal-fired generation, unlike 1986.

Natural Gas and Coal Lead Total Energy Turnaround

Significant increases in industrial consumption of natural gas and utility consumption of coal in 1987 should lead to the first increase in total U.S. energy consumption in 3 years. However, the energy intensity of U.S. economic activity will continue its long-term decline, dropping below 20,000 Btu per 1982 dollar of real gross national product (GNP) in 1987.

The forecasts previously discussed are the base case projections. Additional sensitivity cases, using alternative assumptions, are shown in Table 13 on page 51. 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 increment in economic activity above the base case level, petroleum consumption and total net imports in 1987 would increase by about 130,000 barrels per day (approximately 0.8 percent and 2.4 percent, respectively).
- For each $1-per-barrel (approximately 5.6 percent) decline from the base case in the price of imported crude oil, petroleum consumption and total net imports in 1987 would increase by about 55,000 barrels per day (approximately 0.3 percent and 1.0 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 net imports for those two quarters would increase by an average of about 150,000 barrels per day (approximately 1.0 percent and 2.7 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
Assumptions							
Real Gross National Product (billion 1982 dollars)	**3,490**	**3,585**	**3,675**	*3,782*	**2.7**	**2.5**	*2.9*
Index of Industrial Production (Mfg.) (index, 1977: 100)	**123.4**	**126.4**	**129.2**	*133.1*	**2.4**	**2.2**	*3.0*
Average Cost of Imported Crude Oil (nominal dollars per barrel)	**28.88**	**26.99**	**13.98**	*17.80*	**-6.5**	**-48.2**	*27.3*
Price Projections (nominal values)[a]							
Motor Gasoline[b] (dollars per gallon)	**1.20**	**1.20**	**.93**	*.97*	**.0**	**-22.5**	*4.3*
Retail No. 2 Heating Oil (dollars per gallon)	**1.09**	**1.05**	**.84**	*.82*	**-3.7**	**-20.0**	*-2.4*
Residential Natural Gas (dollars per thousand cubic feet)	**6.12**	**6.12**	**5.82**	*5.54*	**.0**	**-4.9**	*-4.8*
Residential Electricity (cents per kilowatthour)	**7.54**	**7.79**	**7.79**	*7.77*	**3.3**	**.0**	*-.3*
Supply Projections							
Crude Oil Production[c] (million barrels per day)	**8.88**	**8.97**	**8.67**	*8.20*	**1.0**	**-3.3**	*-5.4*
Net Petroleum Imports, Including SPR (million barrels per day)	**4.72**	**4.29**	**5.29**	*5.66*	**-9.1**	**23.3**	*7.0*
Consumption Projections							
Total Market Economies Petroleum Consumption (million barrels per day)	**46.7**	**46.4**	**47.4**	*47.8*	**-.6**	**2.2**	*.8*
U.S. Total Petroleum Consumption (million barrels per day)	**15.73**	**15.73**	**16.14**	*16.13*	**.0**	**2.6**	*-.1*
Motor Gasoline	**6.69**	**6.83**	**7.02**	*7.02*	**2.1**	**2.8**	*.0*
Distillate Fuel Oil	**2.84**	**2.87**	**2.90**	*2.87*	**1.1**	**1.0**	*-1.0*
Residual Fuel Oil	**1.37**	**1.20**	**1.40**	*1.26*	**-12.4**	**16.7**	*-10.0*
Other Petroleum[d]	**4.82**	**4.83**	**4.82**	*4.98*	**.2**	**-.2**	*3.3*
Coal Consumption (million short tons)	**791**	**818**	**804**	*821*	**3.4**	**-1.7**	*2.1*
Natural Gas Consumption (trillion cubic feet)	**17.95**	**17.28**	**16.00**	*16.34*	**-3.7**	**-7.4**	*2.1*
Electricity Generation (billion kilowatthours)	**2,416.3**	**2,469.8**	**2,487.3**	*2,544.8*	**2.2**	**.7**	*2.3*
Total Energy Consumption[e] (quadrillion Btu)	**74.06**	**73.96**	**73.86**	*74.97*	**-.1**	**-.1**	*1.5*
Thousand Btu/1982 Dollar of GNP	**21.22**	**20.63**	**20.10**	*19.82*	**-2.8**	**-2.6**	*-1.4*

[a] All prices include taxes, except prices for No. 2 heating oil and residential electricity.
[b] Average for all grades and services.
[c] Includes lease condensate.
[d] Includes crude oil, pentanes plus, other hydrocarbons and alcohol, unfinished oil, and gasoline blending components.
[e] 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.

SPR: Strategic Petroleum Reserve.

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(87/01); *International Energy Annual 1985* DOE/EIA-0219(85); *Petroleum Marketing Monthly*, DOE/EIA-0380(87/01); *Petroleum Supply Monthly*, DOE/EIA-0109(87/01); *Petroleum Supply Annual 1985*, DOE/EIA-0340(85)/1; *Natural Gas Monthly*, DOE/EIA-0130(87/02); *Electric Power Monthly*, DOE/EIA-0226(87/02); and *Quarterly Coal Report*, DOE/EIA-0121(86/4Q); Organization for Economic Cooperation and Development, Monthly Oil Statistics Database through December 1986. Macroeconomic projections are based on modifications to Data Resources, Inc., Forecast CONTROL0387.

The Outlook

- *Assumptions*
- *U.S. Petroleum Outlook*
- *Outlook for Other Major Energy Sources*

Assumptions

- *International Petroleum*
- *World Oil Prices*
- *Macroeconomic Activity*
- *Energy Product Prices*

International Petroleum

Recent Developments

The world oil price moved into the range of $16 to $17 per barrel in the first 2 months of 1987. Meanwhile, OPEC's new structure of fixed official prices for its crude oils, adopted with the intention of establishing an $18-per-barrel OPEC reference price, was initiated on February 1. Initially, oil buyers resisted the new prices and refused to lift contracted crude oil volumes. As a result, OPEC crude oil production decreased sharply in February and March, and refiners increased the rate at which they drew down their stocks of petroleum. Then, as the second quarter began, oil buyers, having become convinced of OPEC's adherence to its December 1986 production and pricing agreements, began to increase their liftings of OPEC crude oil.

- The price of imported crude oil delivered to U.S. refiners increased from $14.17 per barrel in December 1986 to $16.43 per barrel in January 1987 and then increased further to an estimated $16.96 per barrel in February (Figure 2 on page 11).

- We estimate, on the basis of currently available data, that OPEC oil production (including just over 1.3 million barrels per day of natural gas liquids production and refinery gain) averaged between 17.2 million and 17.4 million barrels per day in the first quarter of 1987, a decrease of between 1.7 million and 1.9 million barrels per day from the rate for the fourth quarter of 1986 (Figure 1 on page 10 and Table 2 on page 41). As a result, OPEC crude oil production in the first quarter was close to OPEC's current production ceiling of 15.8 million barrels per day.

- OPEC adherence to the production ceiling was largely the result of the refusal of oil buyers to purchase OPEC crude oil at the new official prices and the refusal by OPEC producers to offer price discounts. In January, OPEC crude oil production averaged about 16.6 million barrels per day. Then, after the readoption of official prices, production decreased to an average of 15.7 million barrels per day in February, followed by a drop to an 18-month low of about 15.2 million barrels per day in March.

- Saudi Arabia accounted for over 0.7 million barrels per day of the 1.4 million barrel per day decrease in OPEC crude oil production between January and March, as Saudi production fell to 3.0 million barrels per day. Meanwhile, Ecuador's crude oil production, which had been averaging over 250,000 barrels per day in January and February, had to be completely shut down in early March after an earthquake destroyed a large section of the pipeline used to transport the country's crude oil from the producing fields.

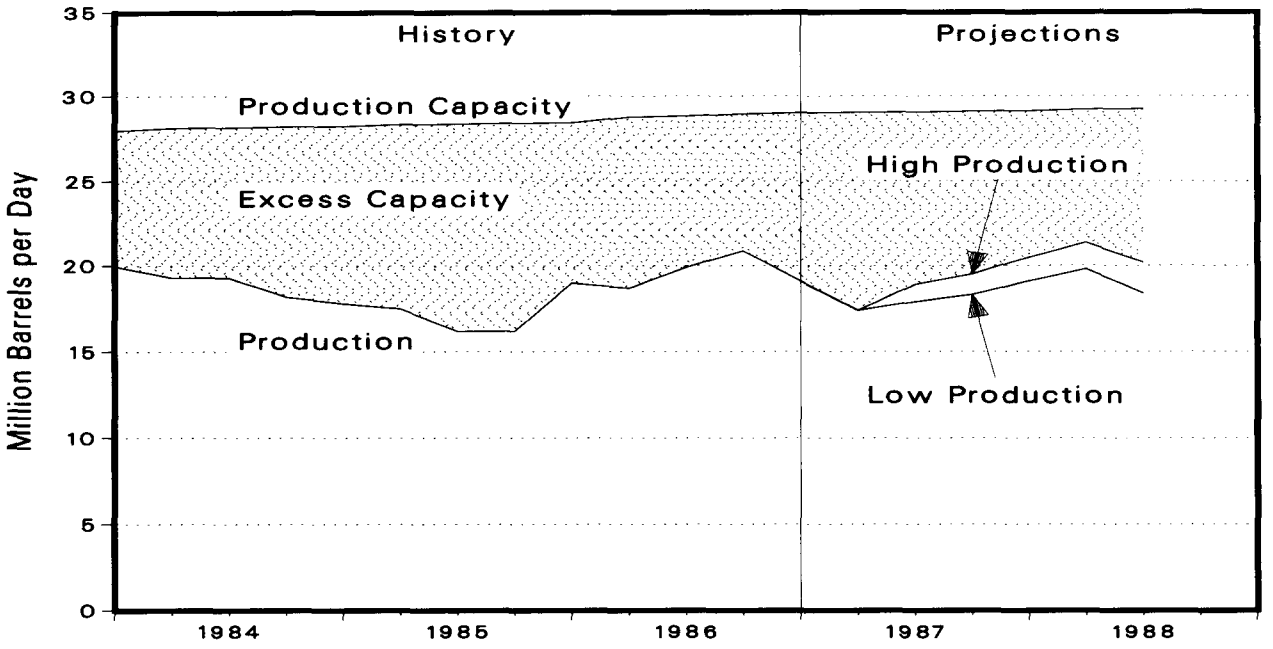
- Initial estimates indicate that petroleum stocks in the market economies were drawn down at a rate of between 2.5 million and 3.0 million barrels per day in the first quarter of 1987. This was up sharply from a rate of less than 0.5 million barrels per day in the fourth quarter of 1986 (Table 2 on page 41).

- Recent reports have indicated that sales of OPEC crude oils have begun to improve and that OPEC crude oil production might increase to an average of between 16.0 million and 17.0 million barrels per day in April, led by a sharp increase in Saudi production.

Forecast

- Economic growth is not likely to be a major stimulus to petroleum demand in 1987. The projected economic growth rate for OECD member countries in 1987 is only 2.5 percent. This growth rate is 0.1 percent higher than the rate for 1986 (Table 3 on page 41) and 0.2 percent lower than that reported in the last *Outlook,* despite an 0.3 percent increase in projected U.S. economic growth compared to the last *Outlook.* The declines in projected economic growth for foreign economies, particularly those of West Germany and Japan, more than offset this increase in U.S. economic growth. Both West Germany and Japan are now expected to experience greater weakness in their export sectors as their economies adjust to the new higher values of their currencies relative to the dollar. As a result, projected German economic growth has been reduced by 0.8 percent since the last *Outlook,* while projected Japanese growth has been reduced by 0.5 percent.

Figure 1. OPEC Oil Production and Production Capacity



Note: Includes production of crude oil, natural gas liquids, and refinery gain.
Source: Energy Information Administration, International Contingency and Information Division.

- As a result of lower projected economic growth and higher projected world oil prices, the projected demand for petroleum by the market economies averages only 47.8 million barrels per day in 1987, a decrease of 0.3 million barrels per day from the rate in the last *Outlook*. The rate for 1987 is between 0.3 million and 0.4 million barrels per day, or about 0.7 percent, higher than the rate for 1986 (Table 2 on page 41). In contrast, the rate for 1986 was almost 1.1 million barrels per day, or about 2.3 percent, higher than the rate for 1985.

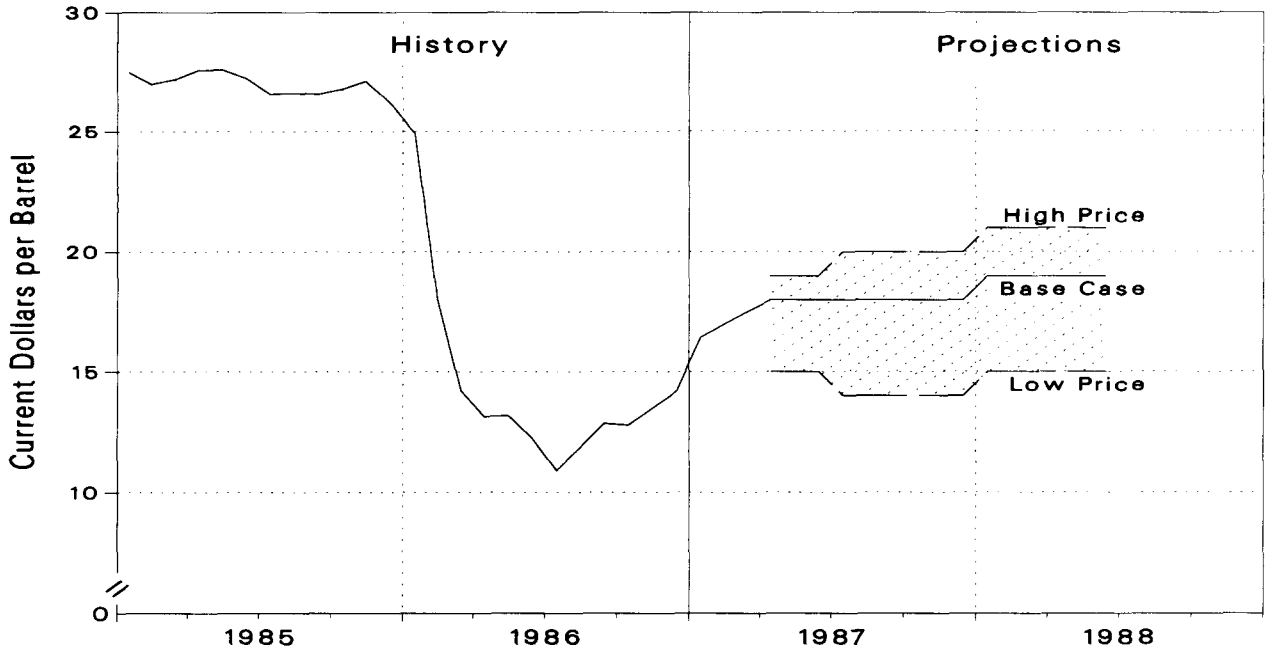
- It now looks as though oil production from the non-OPEC market economies will decline by about 150,000 barrels per day in 1987, after a similar decline in 1986 reversed 10 consecutive years of production increases. Continued declines in U.S. and United Kingdom North Sea production should more than offset production increases from such countries as Norway, Mexico, and Colombia. This non-OPEC oil supply projection is based on the assumption that the modest production restraint in support of OPEC currently being exercised by such countries as Mexico, Malaysia, and Oman will be relaxed in the second half of 1987.

- Petroleum stocks held by the market economies are projected to be drawn down at a rate of more than 0.7 million barrels per day in 1987, more than offsetting the stock buildup of about 0.6 million barrels per day in 1986. At this rate, most of the excess stocks held by the market economies at the end of 1986 will have been depleted by the end of 1987.

- If OPEC maintains its production restraints for the last three quarters of 1987, including general adherence to the provisional crude oil production quotas of 16.6 million and 18.3 million barrels per day for the third and fourth quarters, respectively, world oil prices should climb to $18 per barrel, rather than falling as some analysts predict.

- The uncertainty surrounding OPEC oil supply is depicted in Figure 1, which shows a possible range of OPEC oil production for the remainder of the forecast period, beginning with the second quarter of 1987. The magnitude of this range is determined primarily by the range of inventory behavior assumed, which, in turn, affects the demand for OPEC oil. As a result, the high and low production paths in Figure 1 are not based on the OPEC oil supply assumptions underlying the alternative world oil price scenarios considered in this *Outlook*. Figure 1 also clearly shows that significant excess oil production capacity is expected to persist in the OPEC member nations throughout the forecast period.

Figure 2. World Oil Prices



Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(87/01) (Washington, DC, 1987). • Projections: Table 4.

World Oil Prices

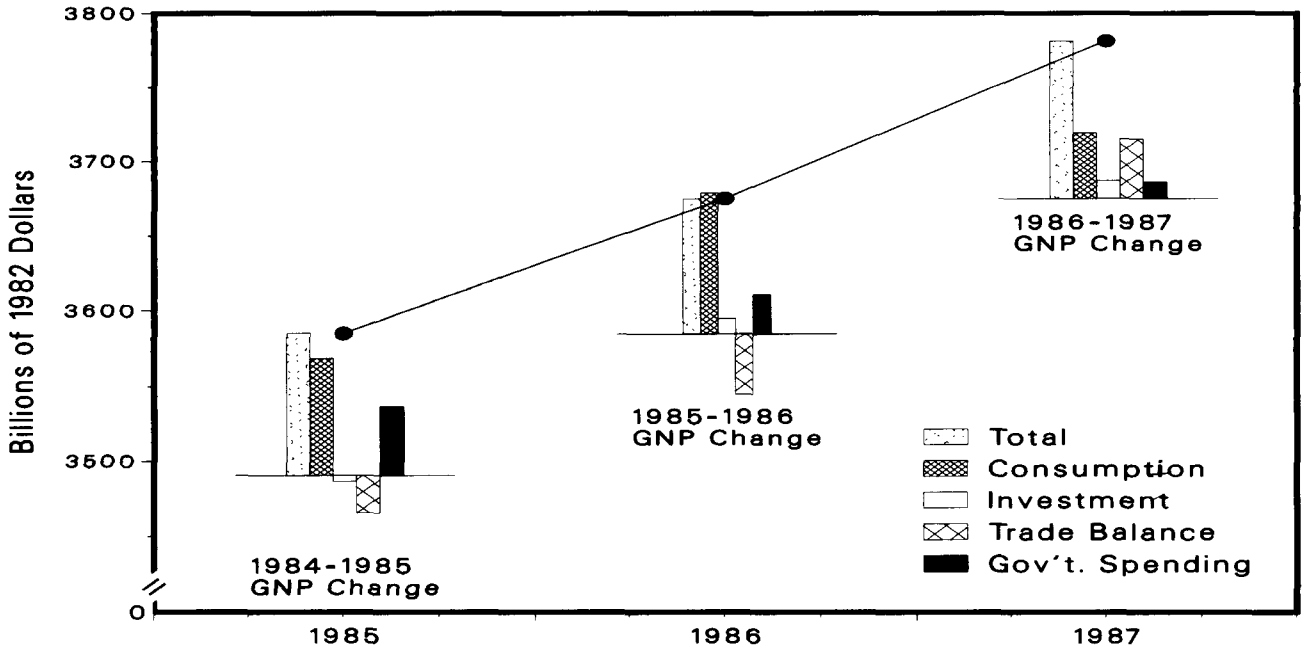
One of the most uncertain factors affecting the domestic short-term energy outlook is the world oil price, defined here as the nominal price of imported crude oil delivered to U.S. refiners. Because of this uncertainty, three different world oil price scenarios are employed (Figure 2). These scenarios are used to develop a base case projection and two alternative projections that provide a range of domestic energy projections (Table 4 on page 42). The same initial economic assumptions are used in all three cases, modified only for feedback effects resulting from the specific oil price scenarios.

- In the *base case oil price scenario,* the world oil price averages $17 per barrel in the first quarter of 1987, increases to $18 per barrel for the remainder of 1987, and increases to $19 per barrel in the first two quarters of 1988. This scenario is based on the assumption that world oil demand will increase slowly and that the OPEC member countries will continue to adhere closely to their December 1986 price and production agreements. In addition, it is assumed that OPEC will agree to increase its reference price by $1, to $19 per barrel, effective January 1, 1988.

- In the *low oil price scenario,* the world oil price decreases from $17 per barrel in the first quarter of 1987 to $15 per barrel in the second quarter and then to $14 per barrel in the second half of the year. Subsequently, in 1988, the price increases to $15 per barrel. In this scenario, it is assumed that, beginning in the second quarter of 1987, there will be a general breakdown in OPEC's production and price agreements, combined with relatively weak worldwide demand for oil, and that late in 1987, OPEC will agree to a new, but less restrictive production quota.

- In the *high oil price scenario,* the world oil price increases from $17 per barrel in the first quarter of 1987 to $19 per barrel in the second quarter and then to $20 per barrel in the second half of the year. Subsequently, in 1988, the price increases to $21 per barrel. In this scenario, it is assumed that there will be a relatively strong demand for oil and that OPEC will adhere strictly to its production quota throughout 1987. In addition, it is assumed that OPEC will agree to increase its reference price to $20 per barrel, effective July 1, and to $21 per barrel effective January 1, 1988.

Figure 3. Real GNP and Components of Change



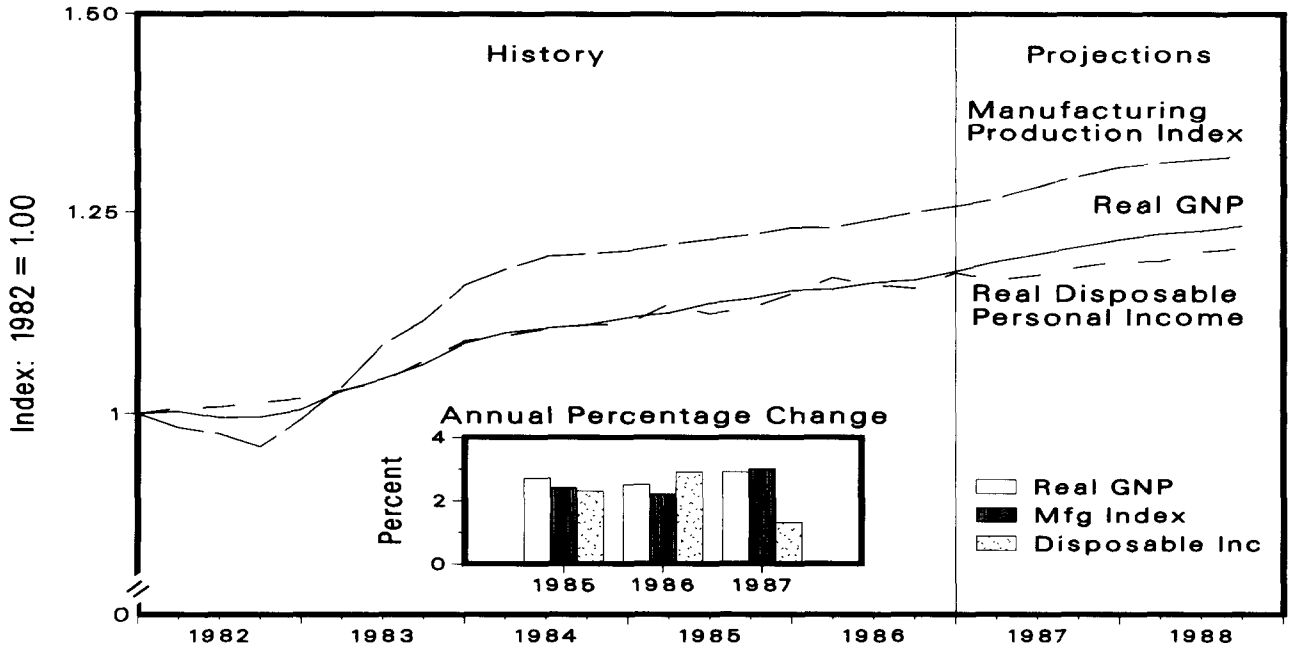
Sources: • History: Bureau of Economic Analysis, U.S. Department of Commerce, *Survey of Current Business*, March 1987; *Federal Reserve System, Statistical Release G 12.3*, • Projections: Table 4.

Macroeconomic Activity

The outlook for the U.S. economy, which underlies all three projections, includes a slight quickening of the real GNP growth rate in 1987 compared to 1986 (Table 4 on page 42). Growth should remain relatively strong through the first half of 1988. The macroeconomic assumptions used in this *Outlook* are based on the Data Resources, Inc., March 1987 macroeconomic forecast (CONTROL0387), as modified to reflect EIA's energy price assumptions.

- A somewhat higher rate of growth in the gross national product (GNP) is projected for 1987 (2.9 percent) compared to 1986 (2.5 percent). This projection is based on the assumption that improvements in the real trade balance will outweigh slower growth in domestic personal consumption (Figure 3).
- Growth in personal consumption is expected to settle down to a moderate level from 1987 through 1988 as retrenchment from the buying binge of 1986 follows a reduced growth rate for real personal income caused by higher consumer price inflation. The latter development follows from two main effects: (1) a return to rising oil prices, and (2) the price of an improved trade picture--temporary acceleration of domestic inflation due to worsened terms of trade.

Figure 4. Indices of Economic Activity

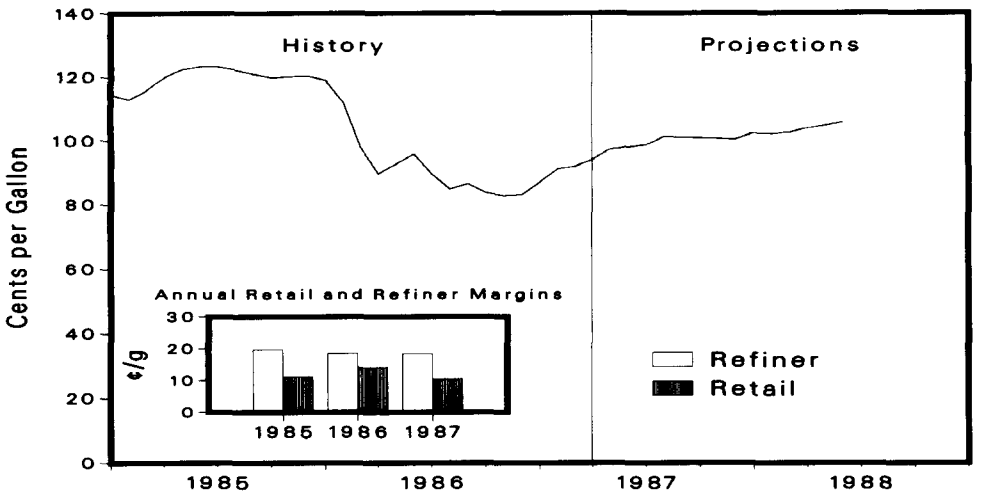


Sources: • History: Bureau of Economic Analysis, U.S. Department of Commerce, *Survey of Current Business*, March 1987; Federal Reserve System, *Statistical Release G 12.3*, • Projections: Table 4.

The expected improvement in real net exports of goods and services is the principal reason for the sustained moderate growth in real GNP projected in this *Outlook*. Real disposable income growth should be noticeably lower in 1987 and 1988 than it was in 1986, largely because the rise in consumer prices resulting from higher costs for energy and imported goods is expected to exceed the gain in consumer wages (Figure 4).

- Annual growth in disposable personal income is projected to be 1.2 percent in 1987 and 1.9 percent for the first half of 1988, compared to 2.9 percent for all of 1986.
- Growth in manufacturing output should improve, rising to a level of about 3 percent for 1987 and 1988. Trade improvements are expected to spur growth in manufactured exports and import substitution. In addition, the improved trade picture, combined with a (related) improvement in capacity utilization and ultimate fixed investment expansion, should push up capital goods production and exports.

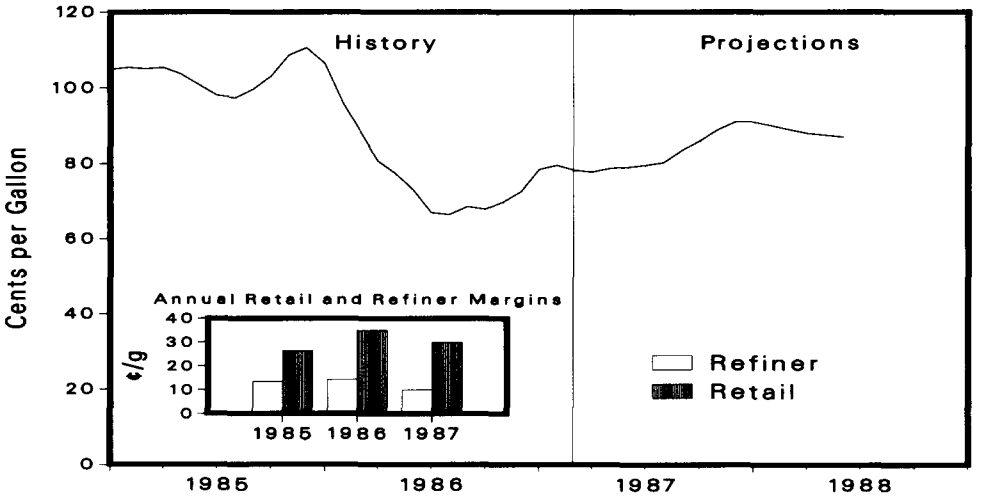
Figure 5. Motor Gasoline Prices



High Gasoline Stocks Will Keep Margins Low Through Summer

Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(87/01) (Washington, DC, 1987). • Projections: Table 5.

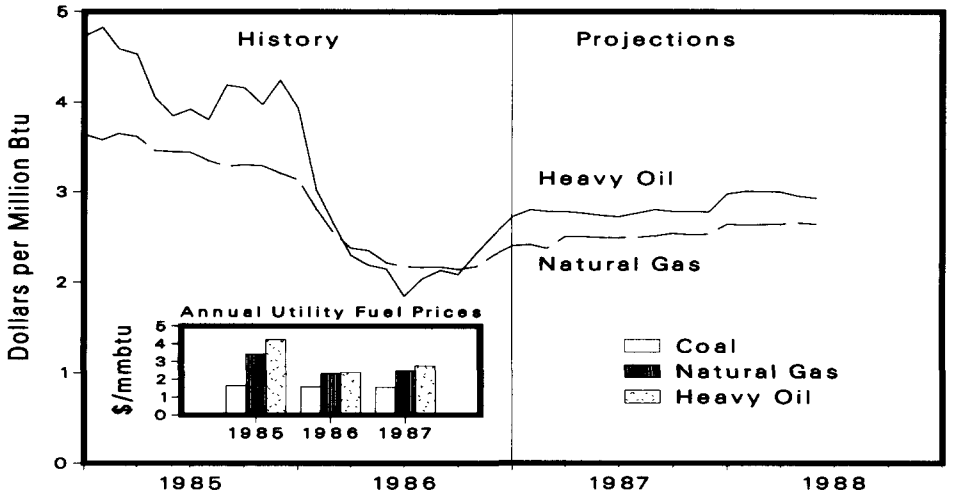
Figure 6. Distillate Prices



Winter 1987-88 Prices Will Be Lower Than Winter 1985-86

Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(87/01) (Washington, DC, 1987). • Projections: Table 5.

Figure 7. Utility Prices of Oil and Gas



Utility Natural Gas Prices Will Regain Their Advantage

Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(87/01) (Washington, DC, 1987). • Projections: Table 5.

Energy Product Prices

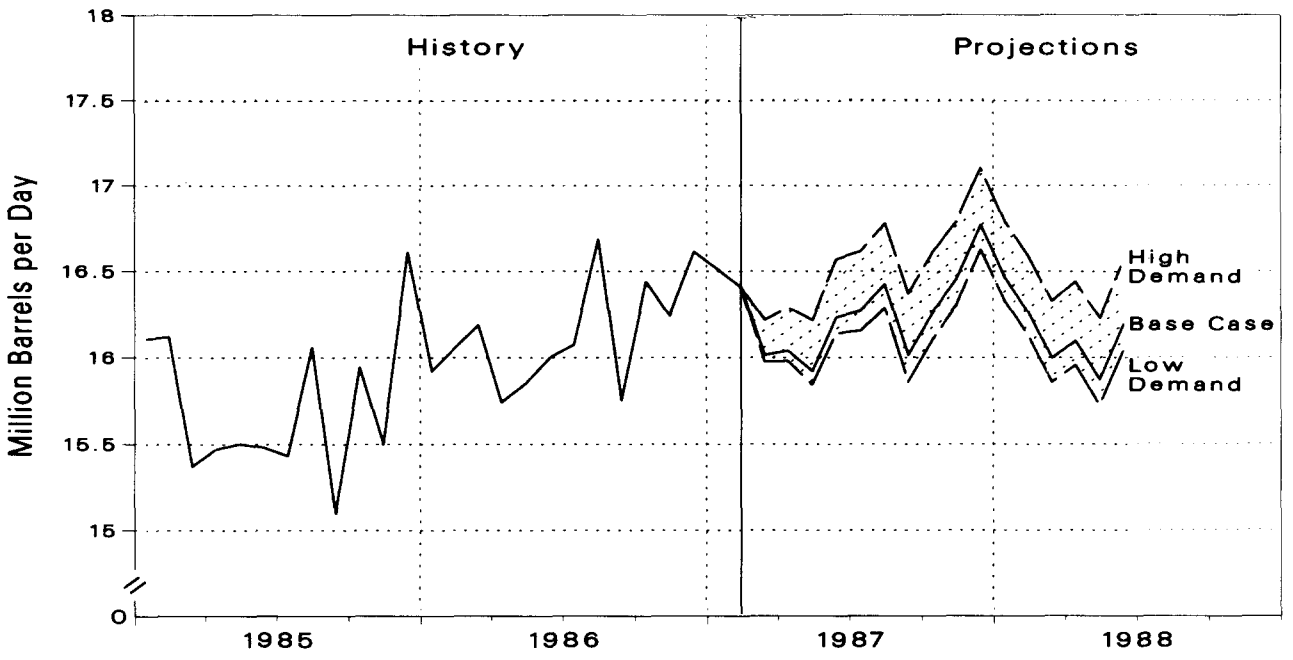
The sharp drop in the world crude oil price in 1986 lowered all petroleum product prices and caused downward price movements for other fuels (Table 5 on page 43). In 1987, as the world oil price rises, this process should reverse.

- Gasoline prices should increase by 4 cents per gallon in 1987 (Figure 5 on page 14). High stock levels in the first quarter of the year have kept margins (the difference between the price of crude oil and the pump price) low.
- Retail heating oil prices are likely to decrease by 2 cents per gallon in 1987. Record high retail margins in the first quarter of 1986 caused the annual average price for the year to exceed the anticipated 1987 average, even though the price in the last three quarters of 1987 will average 11 cents per gallon higher than the last three quarters of 1986. High seasonal demand and increased crude oil prices caused first-quarter 1987 prices to jump by 9 cents over the previous quarter. High stock levels, which have kept margins low, are expected to remain high through the summer. Winter demand patterns should lead to an increase of 8 cents per gallon in the fourth quarter (Figure 6 on page 14).
- The prices of both natural gas and heavy fuel oil to electric utilities declined sharply in 1986 with the drop in crude oil prices. At the national level, oil prices actually fell below below gas prices from April through August (Figure 7). In 1987, crude oil price increases will cause heavy oil prices to rise correspondingly, while the gas price rise should be tempered by the continued large surplus of gas.
- Natural gas prices to residential customers decreased by 5 percent in 1986 while prices in the sectors with easy fuel-switching capabilities, such as the electric utility sector, decreased by considerably more. Residential prices should decline by an additional 5 percent in 1987, as distributors can pass on the savings created by an easing in competition with fuel oil in the nonresidential sectors.
- The price of coal to electric utilities fell by 4 percent in 1986 due to excess production capacity and low spot market prices caused by low oil prices. Higher world oil prices should help drive the price upward in the second half of 1987, continuing into 1988.
- Electricity prices are falling in real terms. The key changes are a slackening in capacity additions and depreciation of the existing rate base and lower fuel costs. There are also initial indications of lower payments of corporate taxes by utilities, which will offset steady increases in fuel costs.

U.S. Petroleum Outlook

- *Petroleum Demand*
- *Motor Gasoline*
- *Distillate Fuel Oil*
- *Residual Fuel Oil*
- *Sources of Petroleum Supply*
- *Crude Oil and Natural Gas Liquids Production*
- *Petroleum Stocks*

Figure 8. Petroleum Demand



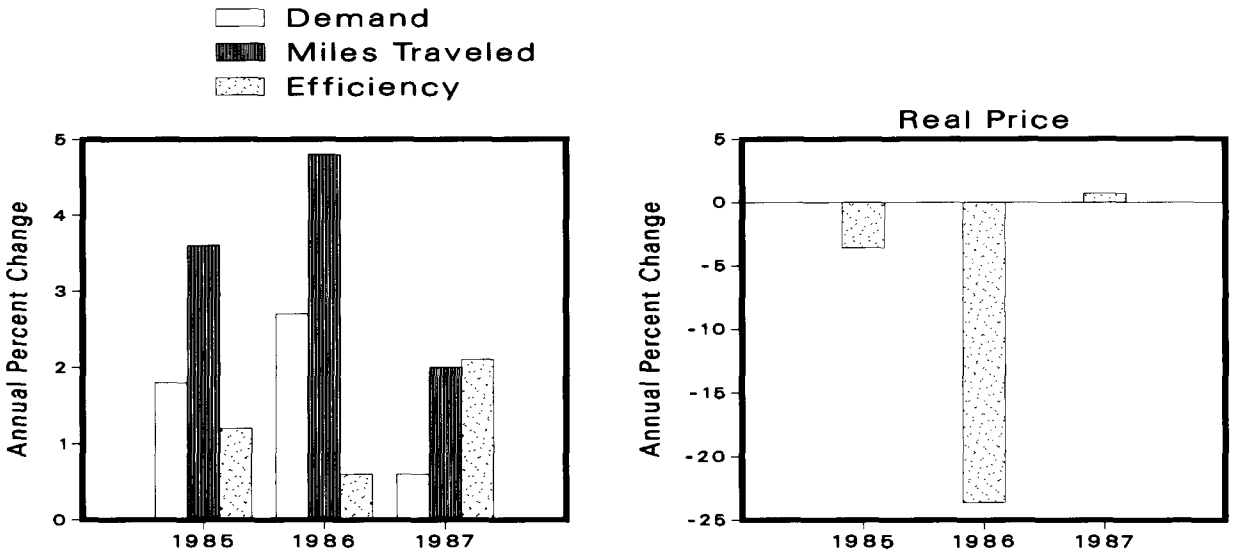
Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(87/01) (Washington, DC, 1987). • Projections: Tables 6, 7, and 8.

Petroleum Demand

Total petroleum demand should remain at its 1986 level of 16.1 million barrels per day in 1987 (Table 6 on page 44). However, increases are expected in the "other products" category, which accounts for about 22 percent of total demand (Table 12 on page 50). Helping to fuel the increase (about 150,000 barrels per day) is rising consumption of road oil and asphalt, a consequence of the new highway bill. In addition, strong jet fuel demand should continue, and demand for liquefied petroleum gases (LPG) should increase, assuming normal cold weather during the first and fourth quarters of 1987. Other highlights of the petroleum demand forecast follow:

- Motor gasoline demand is expected to remain stable, with higher prices inducing both lower travel growth and improved efficiency in 1987, compared to 1986.
- Higher prices, conservation, and continued low penetration into the new housing market should continue to reduce heating oil demand, offsetting the growth in consumption of diesel fuel.
- A major decline in demand for residual fuel oil is projected, as higher oil prices and increased coal-fired and nuclear generating capacity cause a reduction in the consumption of oil at electric utilities as compared to 1986.
- The major uncertainty in 1987 is petroleum prices, which contribute 0.2 million barrels per day to the total range of 0.3 million barrels per day from the low to the high demand case (Table 13 on page 51 and Figure 8). The projection for total petroleum demand ranges between 16.0 and 16.3 million barrels per day for 1987.

Figure 9. Percentage Change in Motor Gasoline Demand, Miles Traveled, Miles per Gallon, and Price



Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(87/01) (Washington, DC, 1987). • Projections: Table 9

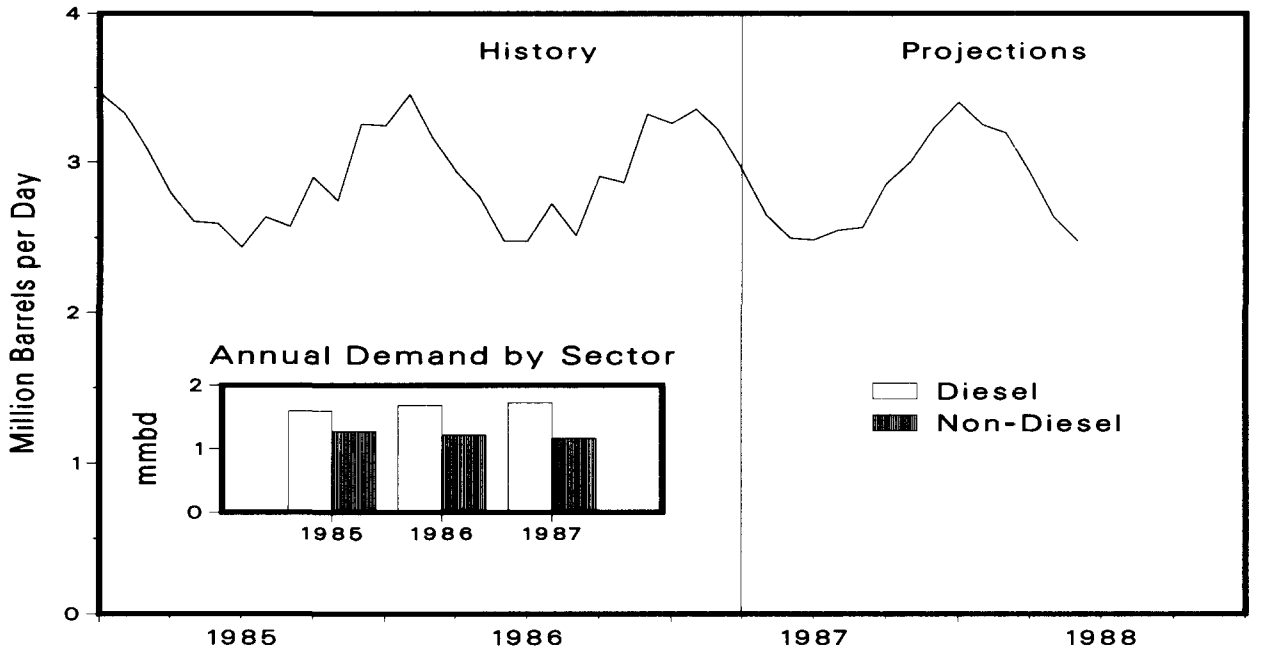
Motor Gasoline

Gasoline demand rose in 1986 as cheap gasoline boosted travel growth (Table 9 on page 47). Prices are higher in 1987, and travel growth should be lower. Furthermore, new car sales must have displaced a considerable number of older, less efficient cars. As a result, motor gasoline demand should be stable through mid-1988, as modest increases in driving activity are offset by improvements in automobile efficiency.

- An average increase of 2 percent per year is projected for vehicle miles traveled (Figure 9). Rising gasoline prices will dampen the rate of increase in driving activity relative to 1986. Last year, driving activity surged by 5 percent over the previous summer, partly in response to lower prices and also to external factors which discouraged travel abroad and encouraged domestic travel.[1]
- The influx of new cars into the market during the latter part of 1986 now appears to be showing up in higher efficiency rates for 1987. More modest car sales in 1987 should lower this rate of increase in 1988. Average fleet efficiency should improve to about 17.3 miles per gallon in 1987, up 2.1 percent from the previous year.[2]
- The increase in the speed limit from 55 to 65 miles per hour on some rural interstate highways should result in increased demand for motor gasoline; however, the outlook for this summer is for slightly lower demand and somewhat higher prices than during the summer of 1986 (see "Special Topics," page 35).

[1]Federal Highway Administration, Highway Statistics Division, *Traffic Volume Trends* (April 1987).
[2]Vehicle efficiency is calculated by dividing vehicle miles traveled by finished motor gasoline product supplied.

Figure 10. Distillate Fuel Oil Demand



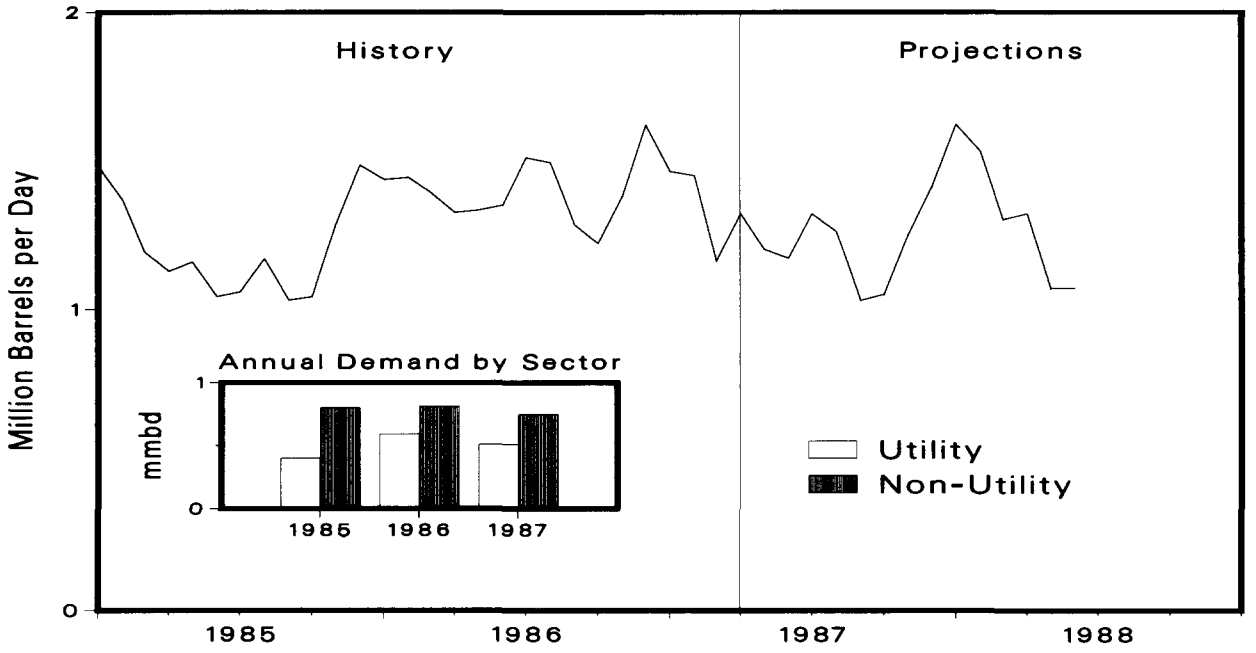
Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(87/01) (Washington, DC, 1987). • Projections: Table 10.

Distillate Fuel Oil

The projected demand for distillate fuel remains at 2.9 million barrels per day in 1987, almost precisely the level attained in 1986 (Table 10 on page 48). While increased industrial production should stimulate transportation demand, and consequently diesel consumption by heavy- and medium-weight trucks, residential and commercial consumption of heating oil will continue its steady slide of the past decade (Figure 10). Higher prices, conservation, and lack of penetration into the new housing market will tend to further reduce heating oil consumption during the forecast period. About the only counterbalancing factor for heating oil demand will be the weather, which was 6 percent warmer than normal in 1986 and is assumed to return to normal in 1987. With natural gas prices slow to react to increased crude oil prices, there should be little or no incentive for switching to oil in the industrial sector. Additional highlights of the distillate forecast include the following:

- The impact of higher crude oil costs on heating oil prices should be mixed, with heating oil prices in the second half of 1987 likely to be sharply higher. Demand response to the higher prices remains muted, however, due to higher industrial output and the assumption of a return to normal cold weather.
- The seasonal swing in total distillate demand, greatly reduced from 10 years ago, should continue to flatten over the forecast period. In 1977, demand ranged between 2.6 and 5.1 million barrels per day on a monthly basis. The projected peak monthly demand for 1987 is only 3.4 million barrels per day, reflecting the reduced seasonal demand for heating oil.

Figure 11. Residual Fuel Oil Demand

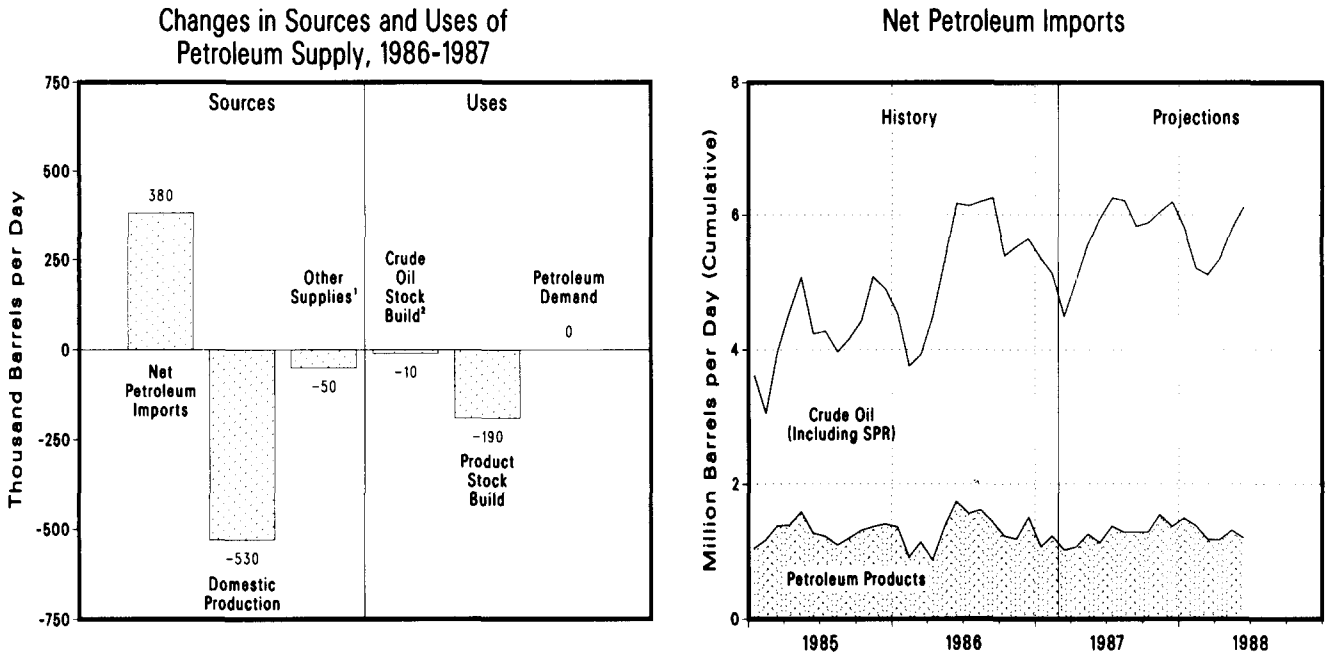


Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(87/01) (Washington, DC, 1987). • Projections: Table 11.

Residual Fuel Oil

- Demand for residual fuel oil increased by 17 percent in 1986, the first increase since 1977. Low prices, especially in the electric utility sector, accounted for most of this increase (Table 11 on page 49 and Figure 11).
- In 1987, a decrease of 10 percent in total demand for residual fuel oil is projected, due mainly to higher projected prices and lower industrial production. Increased coal-fired and nuclear electric generating capacity, together with fuel-switching back to natural gas, should cause further declines in demand in the utility sector.
- Nonutility demand, which includes the industrial, commercial, and transportation sectors, was flat in 1986. In 1987, nonutility demand should decrease by 7 percent, due to price increases. There is evidence that demand for residual fuel in the industrial sector increased in 1986 as a result of fuel switching away from natural gas. This apparently did not happen in the commercial and transportation sectors.

Figure 12. Petroleum Supply



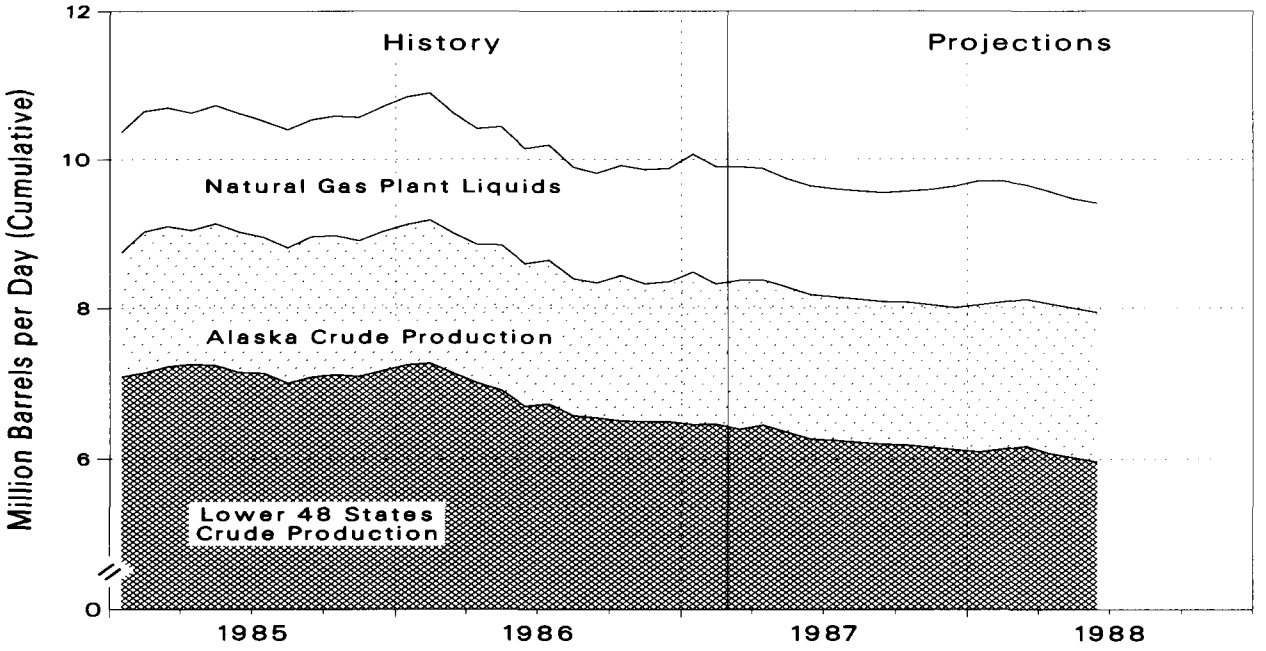
¹ Includes change in crude oil supplied as product, unaccounted for crude oil, other hydrocarbon inputs, and refinery gains.
² Includes change in Strategic Petroleum Reserve build rate.
Sources: • History: Energy Information Administration, *Petroleum Supply Annual* (1985), DOE/EIA-0340(85)/1; *Petroleum Supply Monthly*, DOE/EIA-0109, January 1986 to January 1987; and *Weekly Petroleum Status Report*, DOE/EIA-0208(87-11,15) (Washington, DC). • Projections: Table 6.

Sources of Petroleum Supply

The outlook for domestic petroleum markets, at least through early summer 1987, is a stable one. The large stock surplus from late 1986 has now been worked off; the rush by refiners to process more low-cost crude oil purchased under "net back" contracts has diminished with OPEC's apparent adherence to its December 1986 production goals; and oil producers and consumers alike are adjusting to the reality of lower oil prices.

- Production is down in the United States. The combined decline in crude oil and natural gas liquids production will be around 530,000 barrels per day for 1987, but less for 1988.
- Increased petroleum imports (Figure 12), mainly crude oil, should offset a continued decline in domestic oil production in meeting approximately the same level of demand in 1987 as in 1986.
- According to the current projection, net product imports will stay at the same level in 1987 as in 1986, as domestic refiners maintain their relative competitiveness over foreign refiners despite reduced profitability due to higher oil prices in 1987. More stringent product specifications on items such as gasoline, along with more sophisticated refinery configurations in the United States, provide the competitive edge for the U.S. refiners.
- Refinery runs in 1987 are projected to decline slightly from 1986 levels, with crude oil input to refineries at about 12.6 million barrels per day in 1987--an annual drop of 0.1 million barrels per day (Table 6 on page 44). The additional supply required to satisfy end-use demand will come from a continued, but much smaller, drawdown of product stocks (mainly motor gasoline and "other" oils).

Figure 13. Components of Domestic Petroleum Production



Note: Crude oil production includes lease condensate.
Sources: • History: Energy Information Administration, *Petroleum Supply Annual (1985)*, DOE/EIA-0340(85)/1; *Petroleum Supply Monthly*, DOE/EIA-0109, January 1986 to January 1987; and *Weekly Petroleum Status Report*, DOE/EIA-0208(87-11,15) (Washington, DC). • Projections: Table 6.

Crude Oil and Natural Gas Liquids Production

As most of the State data for 1986 have finally become available, the net decline in Lower-48 crude oil production in that year was 350,000 barrels per day, offset by a gain of 30,000 barrels per day for Alaska.

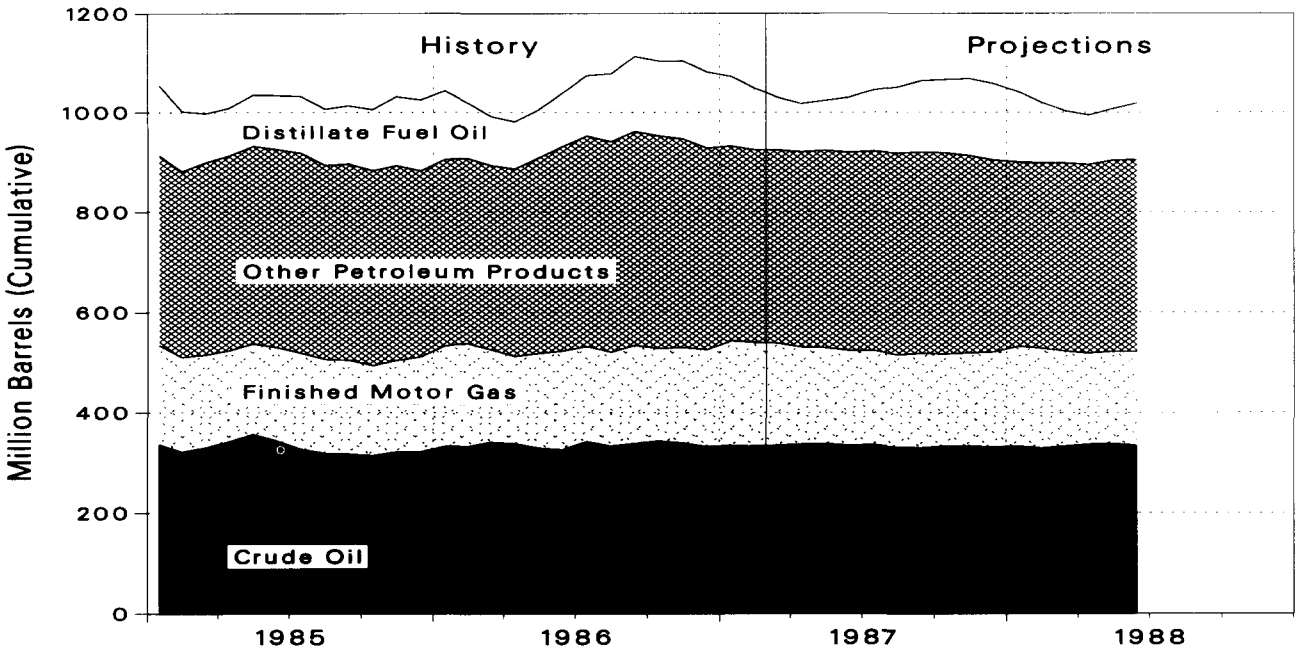
- Despite the increased price of crude oil projected in the base case, an additional drop in domestic oil production of 0.47 million barrels per day is projected for 1987, from the average 1986 level of 8.67 million barrels per day (Table 6 on page 44 and Figure 13). This decline is still attributed to a combination of normal depletion and accelerated decline resulting from the failure to perform normal well maintenance and drill new wells. The number of wells drilled, which declined sharply in 1986, should continue to be lower in 1987, thereby slowing the rate at which lost production from normally aging fields is replaced (see "Special Topics," page 37).[3]

- Domestic oil production declines in 1987 and 1988 should be somewhat smaller than that experienced in 1986, in large part as a result of development of the Lisburne reservoir near Prudhoe Bay, Alaska. Additional Alaskan production will also come from the Endicott field.

- Even with the addition of the two largest natural gas processing plants in the country (in New Mexico and Alaska), the forecast for natural gas liquids (NGL) production in 1987 is still 0.06 million barrels per day below the 1986 level of 1.57 million barrels per day. The New Mexico facility replaces an older plant, thus providing only a small net gain in total NGL supply. The new Alaskan plant is not yet operating at capacity. Ultimately, it will yield 40,000 to 50,000 barrels per day of butane and pentanes plus, which will be transported mixed with oil in the Trans-Alaskan Pipeline System; the rest of the output is expected to be reinjected to help maintain oil reservoir pressure.

[3]The prospects for domestic production are reviewed in the recent EIA study, *Future Supply Capabilities of the United States Petroleum Industry*, SR/EAFD/87-04 (Washington, DC, 1987).

Figure 14. Stocks of Crude Oil and Refined Products



Sources: • History: Energy Information Administration, *Petroleum Supply Annual* (1985), DOE/EIA-0340(85)/1; *Petroleum Supply Monthly*, DOE/EIA-0109, January 1986 to January 1987; and *Weekly Petroleum Status Report*, DOE/EIA-0208(87-11,15) (Washington, DC). • Projections: Table 6.

Petroleum Stocks

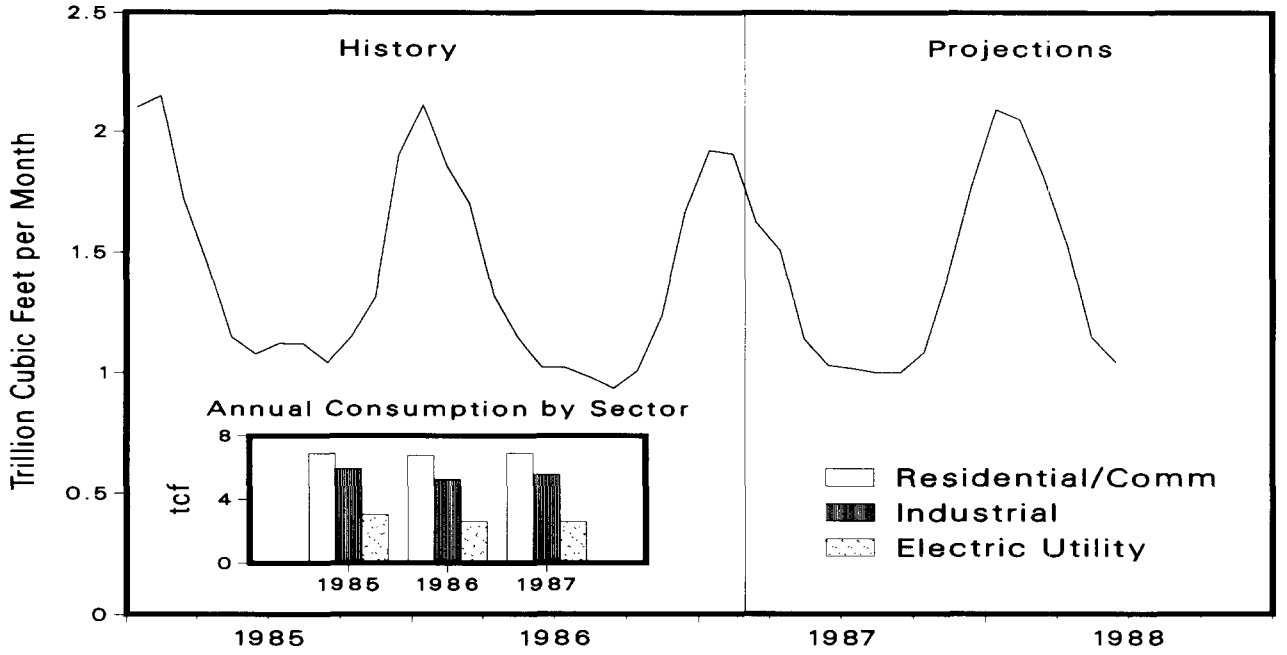
Petroleum stocks in 1987 are likely to be maintained at a lower level than in 1986, since the major stock buildup from the second half of 1986 has been largely worked off (Table 6 on page 44 and Figure 14).

- With only a small decline in refinery activity and no expectations for major oil price increases or decreases, crude oil storage should change little from current levels.
- Primary stocks of distillate fuel oil (including diesel fuel and heating oil) at the end of the 1986/1987 winter season are down to a level comparable to earlier years.
- Finished gasoline stocks at the end of March 1987 are still about 11 percent above year-earlier levels. Projected lower refining activity and little growth in gasoline demand, however, should place gasoline stocks by the end of June 1987 (that is, at the beginning of the summer driving season) very near to the year-earlier level (see "Special Topics," page 35).

Outlook for Other Major Energy Sources

- *Natural Gas*
- *Coal*
- *Electric Power*
- *Electricity Fuel Shares*

Figure 15. Natural Gas Demand



Note: Consumption excludes lease and plant fuel and pipeline compressor fuel.
Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(87/01) (Washington, DC, 1987). • Projections: Table 14.

Natural Gas

- Total demand for natural gas in 1987 is expected to be close to 16.3 trillion cubic feet, up 2 percent from 1986 but still well below the 1985 level of 17.3 trillion cubic feet (Table 14 on page 52 and Figure 15). Most of this increase will be concentrated in the industrial sector.

- Residential natural gas use should increase slightly in 1987 as compared to 1986. While sales to residential customers declined in both 1985 and 1986, an increase in the number of new homes with natural gas furnaces should bolster demand in the future. The percentage of new single-family homes equipped with natural gas furnaces rose to 47 percent in 1986, up from 44 percent in 1985.[4]

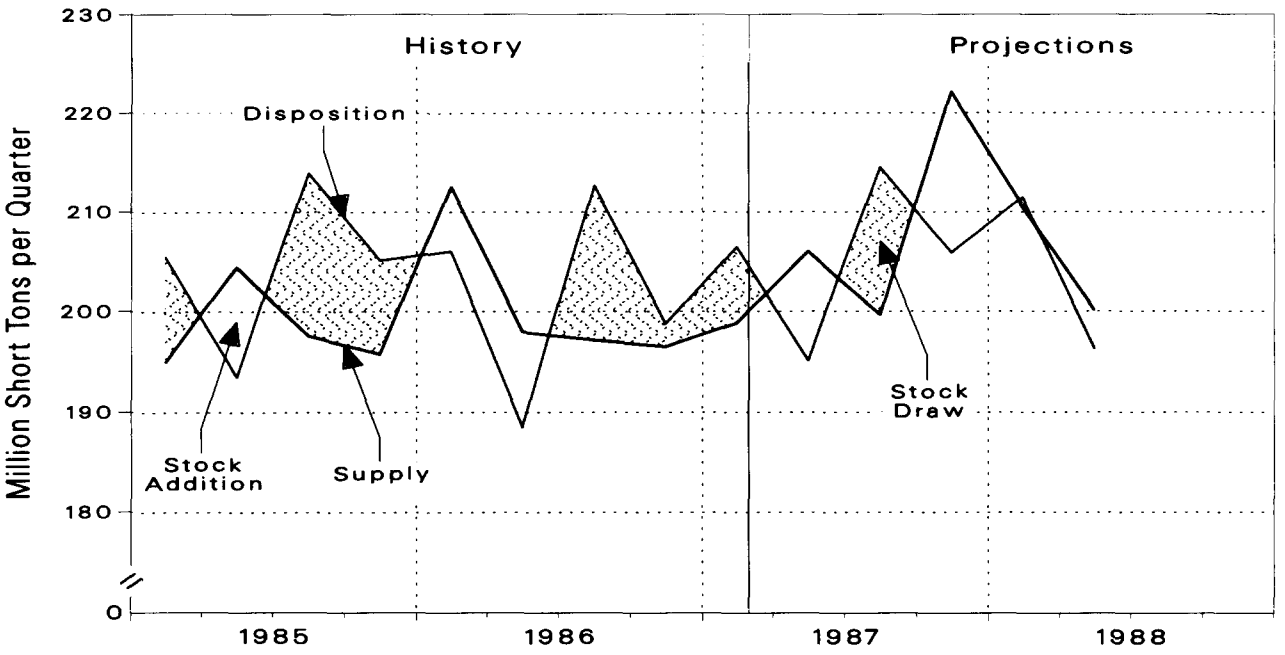
- A 3 percent increase in sales of natural gas to commercial consumers is likely between 1986 and 1987. Commercial sales are more responsive to price changes than are residential sales, and rising oil prices should encourage some switching from oil back to natural gas in the commercial sector.

- Industrial natural gas use rises to 5.6 trillion cubic feet in 1987, up from 5.2 trillion cubic feet in 1986. Gas sales to industrial users plunged in 1986, corresponding to the drop in oil prices. Rising oil prices should encourage enough switching to restore a considerable volume of industrial gas demand. Continued growth in the industrial sector will also be responsible for some of the recovery in sales (see "Special Topics," page 36).

- Natural gas use at electric utilities remains nearly constant between 1986 and 1987. The oil/natural gas share of total electric utility fuel requirements is likely to decline as new nuclear and coal-fired capacity is brought on line. In addition, there should be some switching back to natural gas at utilities.

[4]U.S. Department of Commerce, Bureau of the Census, *Characteristics of New Housing, 1986*, Construction Report C25-86-13 (Washington, DC, 1987).

Figure 16. Coal Supply and Disposition



Sources: • History: Energy Information Administration, *Quarterly Coal Report*, DOE/EIA-0121(87/1Q) (Washington, DC, 1987). • Projections: Table 15.

Coal

- Total domestic coal consumption is projected to increase by 2 percent in 1987, and by an additional 3 percent during the first half of 1988 (Table 15 on page 53). This growth follows a decline of 2 percent between 1985 and 1986.

- Electric utility coal consumption should increase by 16 million tons in 1987, corresponding to the projected 2 percent increase in total electricity generation. Coal's share of total electricity generation should remain fairly constant over the forecast period.

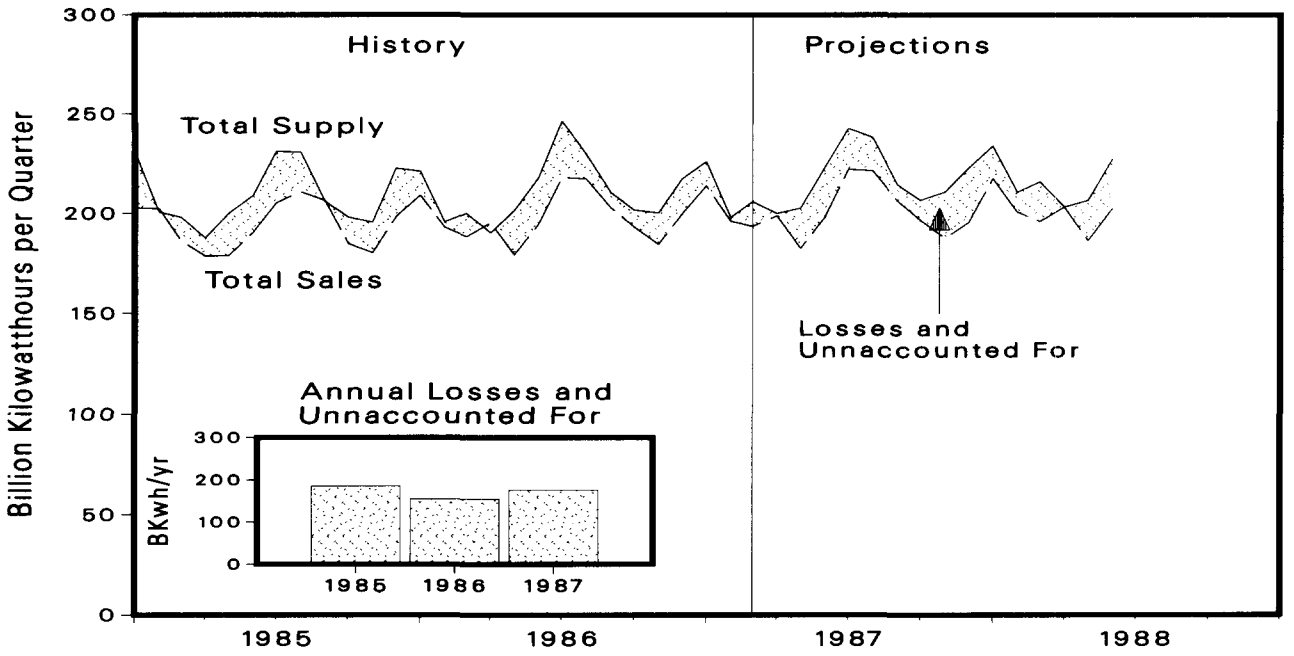
- Consumption of coking coal should decline by 2 million tons in 1987, following a decrease of 5 million tons in 1986. Coking coal use will remain close to 34 millions tons through 1988, as anticipated growth in steel output is offset by long-term trends toward less coal-intensive technologies.

- An increase of 2 percent in retail and general industry coal demand is forecast for 1987. Higher manufacturing output is primarily responsible for the increase, with industrial coal use accounting for nearly 90 percent of this category.

- Consumer stocks will be built up just prior to the end of the existing United Mine Workers of America contract in January 1988. Stock levels should peak at 182 million tons, or an estimated 78 days of supply (Figure 16). This level is considerably lower than the 208 million tons of consumer stocks reached in September 1984 in anticipation of the last contract expiration date. This forecast assumes that a strike will not occur.

- Coal exports remain level through 1987 and 1988. While competition from lower cost coal producers will continue to reduce U.S. coal exports to some areas, the ongoing decline of the dollar combined with economic growth in Europe should encourage demand for U.S. coal in other countries.

Figure 17. Electricity Supply and Disposition

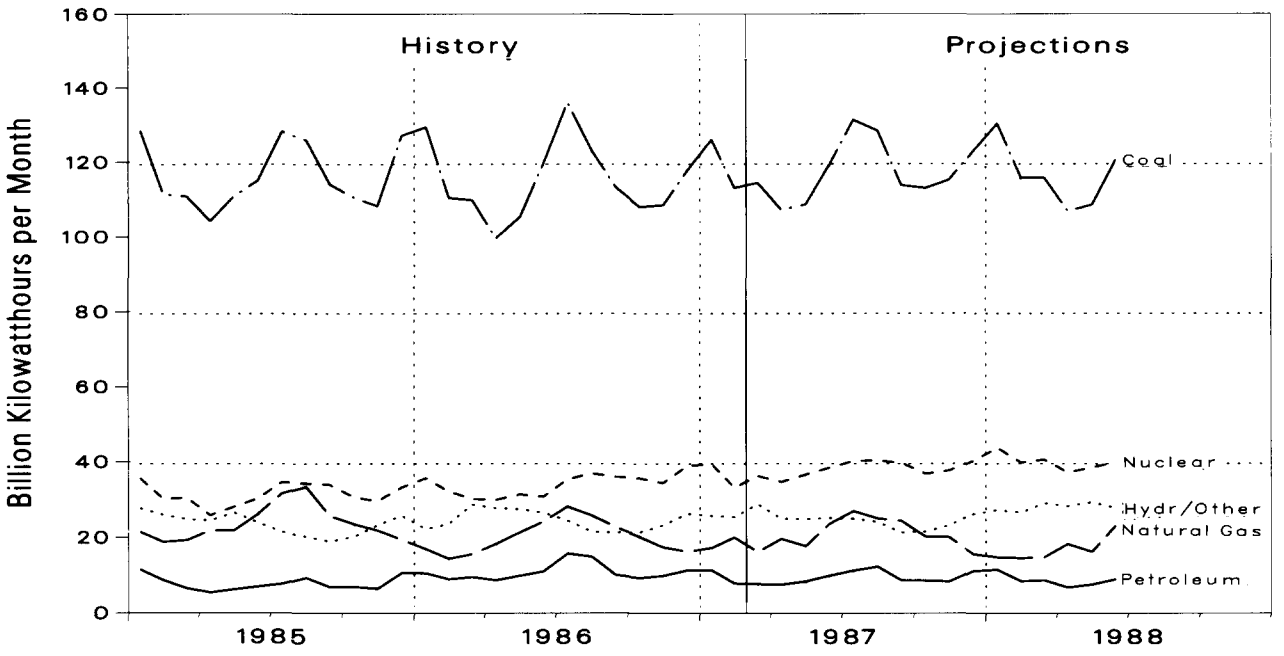


Sources: • History: Energy Information Administration, *Electric Power Monthly*, DOE/EIA-0035(87/02) and *Monthly Energy Review*, DOE/EIA-0035(87/01) (Washington, DC, 1987). • Projections: Table 16.

Electric Power

- U.S. demand for electricity, as measured by utility generation levels, is projected to grow by more than 2 percent in 1987 (Table 16 on page 54). This rate is significantly higher than the growth rate of less than 1 percent in 1986. Demand in 1987 should be stronger on the basis of a return to colder weather in the winter quarters, a greater drop in real electricity prices than in 1986, and continued growth in personal income.
- Recently, gains in residential and commercial electricity sales have outpaced losses in industrial sales. Growth in total sales (over 1 percent) will be somewhat lower than generation growth in 1987, after an increase of more than 2 percent in 1986 (Figure 17). The difference in growth rates between sales and generation reflects a change in losses and "unaccounted for."
- Electricity imports (primarily from Canada, some from Mexico) ought to reach a net level of 45 billion kilowatthours by the end of 1987, a slight increase over the 1986 level. This increase stems from the assumed full-service operation of the Phase I transmission facility between Hydro-Quebec and New England, as well as increased transmissions over existing lines.

Figure 18. Electricity Generation by Fuel Source



Sources: • History: Energy Information Administration, *Electric Power Monthly*, DOE/EIA-0035(87/02) (Washington, DC, 1987). • Projections: Table 16.

Electricity Fuel Shares

- Significant gains in nuclear generation are expected in 1987, as 9 gigawatts of additional capacity from eight new nuclear units come on line. An 8 percent increase in nuclear generation was seen in 1986; nearly 12 percent growth is seen for 1987 (Figure 18).
- Coal-fired generation should almost keep pace with growth in overall generation in 1987. This growth follows a small decline in 1986 caused by low growth in overall generation and a loss of share to oil-fired units, hydroelectric power, and nuclear power in various parts of the country.
- Oil-fired generation in 1986 was at its highest level in 3 years at 137 billion kilowatthours. The increase was caused by declines in oil prices to levels below those for natural gas in many regions of the country. If oil prices rise to expected levels and additional nuclear and coal-fired capacity comes on line as scheduled, petroleum demand at electric utilities should decline by 11 percent in 1987 and lose some of its share in meeting total generation needs.
- As a result of competition from oil and new nuclear capacity in 1986, natural gas-fired generation fell by 15 percent. Although oil prices should rise in 1987 and cause some electric utilities to switch back to natural gas, further additions of nuclear and coal-fired capacity will stabilize natural gas consumption this year.
- Hydroelectric generation will decline somewhat in 1987, to 286 billion kilowatthours. Below-normal streamflow is expected to continue for water basins in the Rocky Mountains, Southwest, and West, as winter rainfall, snowfall, and snowpack conditions in these regions were far below average.

Special Topics

- *Summer Outlook for Motor Gasoline*

- *Sales of Natural Gas to Industry to Recover From 1986 Slump*

- *Domestic Oil Production Activity and the Rebound in Oil Prices*

Summer Outlook for Motor Gasoline

Rising gasoline prices in 1987 should curb the growth in motor gasoline demand experienced during 1986. With retail gasoline prices 11 percent higher in real terms this summer than last, motor gasoline demand is projected to be 7.18 million barrels per day, or 1.2 percent, lower during the third quarter of 1987 than last summer. While 1987 summer demand should fall slightly below the 1986 level, it will still be well above demand levels reported for any year between 1979 and 1985.

The forecast for a slight decline in gasoline demand in 1987 reflects a modest rise in demand for travel, which is more than compensated for by improvements in motor vehicle efficiency. Demand for travel in gasoline-powered vehicles (including passenger cars, personal vans and trucks, and commercial vehicles) is projected to be 2.1 percent higher this summer compared to last year's level.[5] The higher price forecast for 1987 is the key factor pulling the rate of growth in travel well below the 5 percent growth experienced during the summer of 1986. Offsetting the price impact are a 1 percent rise in income, plus a number of factors which encouraged vacation travel within the United States as opposed to abroad last year and which are still likely to have an impact in 1987. These factors include continued declines in the value of the dollar, as well as continued perceptions of potential terrorist threats to airline travelers in many foreign countries.

Increases in vehicle efficiency projected for 1987 and 1988 more than compensate for the impact of increased driving activity on motor gasoline consumption. New car sales were very strong during 1986; these new cars, with an average on-the-road rated efficiency of close to 23 miles per gallon, are helping to push the fleet average up by 2 percent in 1987 to 17.3 miles per gallon.[6] New car sales will be slower in 1987, but will still put upward pressure on the fleet average. The recent downward revision in the Corporate Average Fuel Economy (CAFE) standard from 27.5 to 26 miles per gallon in 1987 and 1988 will reduce some of the pressure on car manufacturers to increase new car efficiency. Lowering the CAFE standard will also minimize the impact of the "Gas Guzzler Tax," which was designed to penalize cars with efficiencies falling below the standard by a certain amount. Currently, only a few large American-made cars are subject to the tax. Purchasers of some of the more inefficient, high-priced luxury imports will be required to pay as much as $500 to $3500, but the tax probably will not dampen the demand for such cars significantly in light of their already very high prices.

In addition to the impact of new cars on the average fleet efficiency, the new Federal legislation allowing States to decide whether or not to raise the speed limit to 65 miles per hour on rural interstate highways will also have an effect. As of mid-April, six States had already posted the new 65 mile per hour signs, with another six States scheduled to change signs in May. Most of the other States have bills under consideration to increase the speed limit. This change will increase gasoline usage, as cars traveling at 65 miles per hour operate less efficiently than those traveling at 55 miles per hour. In a study performed by Oak Ridge National Laboratory, the increase in driving speed was found to reduce the fuel economies of a sample of cars by 5 to 30 percent.[7] The average loss for the sample of 15 popular domestic and foreign cars, calculated on the basis of sales volumes, was 17.7 percent. The maximum impact that the higher speeds could have on motor gasoline consumption was estimated to be on the order of several hundred thousand barrels per day. The impact of this change was not explicitly accounted for in this forecast, as not enough information is yet available as to how many miles of road will ultimately be affected, how much travel is done on these roads, and to what extent driving patterns will actually change.

Motor gasoline supplies are expected to be adequate throughout the summer. Stock levels are currently well above normal levels for this time of year. While stocks should fall during the second quarter, refiners are likely to still hold an estimated 26 days of supply at the beginning of the third quarter.

[5]Federal Highway Administration, Highway Statistics Division, *Traffic Volume Trends* (April 1987).
[6]Vehicle efficiency is calculated by dividing vehicle miles traveled by finished motor gasoline product supplied.
[7]Oak Ridge National Laboratory, *Transportation Energy Data Book: Edition 8*, ORN-6205 (Oak Ridge, Tennessee, November 1985).

Sales of Natural Gas to Industry to Recover From 1986 Slump

Industrial demand for natural gas is projected to increase by more than 6 percent between 1986 and 1987. Much of this increase is attributed to anticipated switching from residual fuel oil back to natural gas. Increased industrial activity also is likely to be responsible for some of the growth.

Industrial demand for natural gas declined to 6.4 quadrillion Btu in 1986, down from 7.1 quadrillion Btu in 1985. Much of the decline appears to have been due to switching from gas to oil among users with dual-fired capability. This conclusion is based on an analysis of monthly deliveries of natural gas to industrial customers, collected on Form EIA-857, and of monthly sales of residual fuel oil to industrial customers, collected on Form EIA-194. While deliveries of natural gas to industrial customers consistently fell, sales of residual fuel oil to industrial customers consistently rose throughout the year. This change is associated with price movements for these two fuels.

To the extent that industrial buyers increased their purchases of residual fuel oil relative to natural gas in 1986, they are expected to start switching back to natural gas during 1987 as the price difference between oil and natural gas decreases substantially. On a Btu basis, the difference between the price of natural gas to industrial users and No. 2 residual fuel oil sold to nonutility customers is projected to decline from $0.80 per million Btu in 1986 to $0.20 per million Btu in 1987. Not all users will have an incentive to switch back, however, as the natural gas price is projected to remain above the residual fuel oil price throughout the forecast period.

In addition to the impact of fuel switching, natural gas use is projected to rise in 1987 due to growth in the industrial sector. A weighted production index for the principal gas users is projected to grow by more than 3 percent. This index is calculated as a weighted sum of industrial activity at the six major industries using natural gas (foods, paper, chemicals, petroleum, clay, glass and stone, and primary metals), with the weights based on the relative amounts of natural gas historically consumed. Growth in industrial activity should translate into a similar rate of increase in gas demand. Conservation trends could act to lower the rate of growth for gas demand relative to industrial output but are not likely to play a major role over the short time period considered, particularly since the economic incentive to reduce natural gas use has been declining since 1984.

As of this writing, both houses of Congress have passed a bill to repeal the Powerplant and Industrial Fuel Use Act (FUA), together with the incremental pricing provisions of the Natural Gas Policy Act. The repeal of FUA removes a potential restraint on the construction of large oil- or gas-capable boilers in both the industrial and electric utility sectors. The repeal of incremental pricing should provide for a more efficient allocation of the increased costs of natural gas, in the unlikely event that near-term wellhead prices of natural gas rise due to deregulation.

Domestic Oil Production Activity and the Rebound in Oil Prices

Since world oil prices (measured as the average cost of imported crude oil to U.S. refiners) reached a low point of under $11 per barrel in July 1986, the renewed commitment by OPEC members to restrain their sales, the small increase in petroleum demand worldwide, and the slightly lower net availability of non-OPEC crude oil supplies (including domestic production) have all combined to yield a more stable market. World oil prices are now holding steady in the range of $17 per barrel (see "World Oil Prices," page 11). (Average domestic oil prices generally range around $2 per barrel less than the imported refiner acquisition cost, but demonstrate comparable changes over time.)

A recent EIA study of the impact of falling oil prices in 1986 on domestic producers indicated that much of the 700,000-barrel-per-day drop in crude oil production from December 1985 to December 1986 was not associated with any permanent loss in recoverable oil.[8] Approximately 400,000 barrels per day of the decline was attributed to the consequences of deferred well maintenance and an increase in the number of shut-in wells, while the other 300,000 barrels per day came from reduced drilling activity (and the failure to compensate for the normal year-to-year decline in production from existing wells). Significantly, the study found that very little production was lost due to permanent abandonment of wells and producing leases. This observation led to the conclusion that, with a sufficiently large and timely price recovery, much of the recovery lost in 1986 could reappear. With insufficient or delayed price incentives, however, the current high number of shut-in and poorly maintained wells may foreshadow a more permanent and increasing loss of recoverable oil in the future.

With the partial rebound in oil prices of the past 7 months (most notably the approximately $2-per-barrel rise from July to September 1986, and the $3-per-barrel rise from November to January 1987), domestic petroleum industry activity has picked up somewhat, but it is not yet clear whether the current level of prices will be adequate to yield any significant recovery in oil production or prevent more sustained damage to the developed resource base. Important indicators of near-term production activity include the number of crews engaged in seismic exploration, the number of rotary drilling rigs in operation, and the number of oil and gas wells drilled each month. Activity in each of these areas picked up somewhat from their respective low points last year, but has since fallen off again. The number of active seismic crews increased from 155 in September 1986 to 160 in December, but has since dropped again, to 151 in February 1987. Active rotary rigs increased from 686 in July 1986 to 963 in December, but were down to 772 in March 1987. The total number of well completions (including dry holes) rose from 2,150 in September to 2,800 in January 1987, but has since declined even further to 1,840 in February. Although these data indicate progress (especially considering that drilling activity normally falls off in the winter months), they still fall far short of the respective activity levels recorded as recently as December 1985 (326 seismic crews, 1,950 rotary rigs, and 5,440 wells).

Consistent with the rising trend in exploration and development activity through the end of 1986, total production of crude oil and lease condensate, which had dropped from 9.03 million barrels per day in December 1985 to 8.33 million barrels per day in September 1986, has changed little since that time. Estimated January 1987 production actually increased to 8.48 million barrels per day (largely on the strength of increased Alaskan output), and was still as high as 8.34 million barrels per day in March. Additional data on the volume of first purchases of domestic crude oil (from Form EIA-182, which is available earlier than the State surveys on which EIA bases its national crude oil production estimates) also indicate essentially no change in total production from August 1986 through February 1987. However, Lower-48 production continues its decline in the third and fourth quarters of 1987.

(continued on page 38)

[8]Energy Information Administration, *Future Supply Capabilities of the United States Petroleum Industry* (Service Report), SR/EAFD/87-04 (Washington, DC, March 1987).

(continued from page 37)

It appears that much of the downturn in drilling activity since the first of the year may be associated with the return to a more normal seasonal pattern of reduced winter activity, although the level of activity has now stabilized at something less than half that recorded in 1985. This *Outlook* projects a further decline in total oil production from 8.37 million barrels per day in the fourth quarter of 1986 to 8.04 million barrels per day in the fourth quarter of 1987. This change reflects an anticipated 5 percent drop in production from the Lower 48 States. The significance of this drop may be underscored by comparison with the average 2 percent annual rate of decline in this region since 1973 and the generally increasing production levels recorded from 1980 to 1985 in the Lower 48 States.

Detailed Tables

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

	1986				1987				1988		Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	1985	1986	1987
Supply[a]													
Production													
U.S. (50 States)	**11.4**	**10.9**	**10.6**	**10.5**	*10.6*	*10.4*	*10.2*	*10.2*	*10.3*	*10.1*	**11.2**	**10.8**	*10.3*
OPEC	**18.7**	**19.9**	**20.9**	**19.1**	*17.4*	*18.4*	*18.9*	*19.8*	*20.6*	*19.3*	**17.2**	**19.7**	*18.6*
Other Non-OPEC	**15.6**	**15.3**	**15.8**	**16.0**	*16.1*	*15.8*	*16.1*	*16.2*	*16.2*	*15.9*	**15.5**	**15.7**	*16.0*
Total Market Economies	**45.7**	**46.2**	**47.3**	**45.5**	*44.0*	*44.5*	*45.2*	*46.2*	*47.1*	*45.3*	**43.9**	**46.2**	*45.0*
Net Communist Exports	**1.4**	**1.7**	**1.9**	**1.8**	*1.3*	*1.6*	*1.8*	*1.7*	*1.2*	*1.5*	**1.8**	**1.7**	*1.6*
Total Supply	**47.1**	**47.9**	**49.2**	**47.3**	*45.3*	*46.1*	*47.0*	*47.9*	*48.3*	*46.8*	**45.7**	**47.9**	*46.6*
Net Stock Withdrawals or Additions (-)													
U.S. (50 States excl. SPR)	**.4**	**-.5**	**-.8**	**.3**	*.6*	*.0*	*-.4*	*.1*	*.6*	*-.2*	**.2**	**-.2**	*.1*
U.S. SPR	**.0**	**-.1**	**-.1**	**-.1**	*-.1*	*-.1*	*-.1*	*.0*	*.0*	*.0*	**-.1**	**-.1**	*-.1*
Other Market Economies	**.5**	**-.6**	**-1.6**	**.2**	*2.4*	*.2*	*-.1*	*.5*	*.5*	*-.3*	**.2**	**-.4**	*.7*
Total Stock Withdrawals	**.9**	**-1.2**	**-2.5**	**.5**	*2.9*	*.1*	*-.5*	*.5*	*1.1*	*-.6*	**.3**	**-.6**	*.7*
Product Supplied													
U.S. (50 States)	**16.1**	**15.9**	**16.2**	**16.5**	*16.2*	*15.9*	*16.0*	*16.4*	*16.4*	*15.8*	**15.7**	**16.1**	*16.1*
U.S. Territories	**.2**	**.2**	**.2**	**.2**	*.3*	*.3*	*.3*	*.2*	*.3*	*.3*	**.3**	**.2**	*.3*
Japan	**5.0**	**3.8**	**3.9**	**4.8**	*5.0*	*3.9*	*4.1*	*4.6*	*5.1*	*4.0*	**4.3**	**4.4**	*4.4*
OECD Europe	**12.4**	**11.7**	**11.8**	**12.0**	*12.5*	*11.7*	*11.7*	*12.5*	*13.0*	*11.7*	**11.6**	**12.0**	*12.1*
Other Market Economies	**14.5**	**14.6**	**14.7**	**14.8**	*14.7*	*14.8*	*14.9*	*15.0*	*15.0*	*15.0*	**14.4**	**14.7**	*14.9*
Total Market Economies	**48.2**	**46.3**	**46.9**	**48.4**	*48.7*	*46.7*	*46.9*	*48.8*	*49.8*	*46.7*	**46.4**	**47.4**	*47.8*
Statistical Discrepancy	**.3**	**-.4**	**.1**	**.5**	*.5*	*.4*	*.4*	*.4*	*.4*	*.4*	**.4**	**.1**	*.4*
Closing Stocks (billion barrels)	**4.7**	**4.8**	**5.1**	**5.0**	*4.8*	*4.7*	*4.8*	*4.7*	*4.6*	*4.7*	**4.8**	**5.0**	*4.7*

[a] 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(87/01); and *International Energy Annual 1985,* DOE/EIA-0219(85); Organization for Economic Cooperation and Development, Monthly Oil Statistics Database through December 1986.

Table printed at 0957, May 11, 1987

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

	Annual Average 1970-1984	1985	1986	1987
OECD Total[a]	**2.8**	**3.0**	**2.4**	*2.5*
United States[b]	**2.6**	**2.7**	**2.5**	*2.9*
Western Europe	**2.4**	**2.5**	**2.5**	*2.2*
Japan	**4.4**	**4.5**	**2.2**	*2.5*
Other OECD[c]	**3.5**	**3.9**	**2.2**	*2.0*

[a] 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).

[b] Gross national product.

[c] Canada, Australia, and New Zealand.

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

Sources: Historical data: Organization for Economic Cooperation and Development, *Main Economic Indicators,* March 1987, and *National Accounts, Volume I: Main Aggregates, 1960-1985,* 1987. Forecasts: Data Resources, Inc., United States Forecast, CONTROL0387; Wharton Economic Forecasting Associates, *World Economic Outlook,* April 1987.

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

Assumptions	1986				1987	World Oil Price Case	1987			1988		Year		
	1st	2nd	3rd	4th	1st		2nd	3rd	4th	1st	2nd	1985	1986	1987
Macroeconomic[a]														
Real Gross National Product (billion 1982 dollars)	**3,656**	**3,661**	**3,686**	**3,696**	**3,735**	Low	*3,769*	*3,802*	*3,832*	*3,861*	*3,884*	-	-	*3,784*
						Base	*3,769*	*3,798*	*3,827*	*3,856*	*3,877*	**3,585**	**3,675**	*3,782*
						High	*3,769*	*3,798*	*3,825*	*3,853*	*3,873*	-	-	*3,782*
Percent Change from Prior Year	**3.1**	**2.6**	**2.3**	**2.0**	**2.2**	Low	*3.0*	*3.1*	*3.7*	*3.4*	*3.1*	-	-	*3.0*
						Base	*3.0*	*3.0*	*3.5*	*3.2*	*2.9*	**2.7**	**2.5**	*2.9*
						High	*3.0*	*3.0*	*3.5*	*3.2*	*2.8*	-	-	*2.9*
GNP Implicit Price Deflator (index, 1982: 100)	**113.5**	**114.0**	**115.0**	**115.2**	**116.2**	Low	*116.4*	*117.2*	*117.8*	*118.4*	*119.2*	-	-	*116.9*
						Base	*116.8*	*117.9*	*118.8*	*119.8*	*120.9*	**111.5**	**114.4**	*117.4*
						High	*116.8*	*117.9*	*118.9*	*120.0*	*121.1*	-	-	*117.5*
Percent Change from Prior Year	**3.0**	**2.6**	**2.9**	**2.1**	**2.4**	Low	*2.1*	*1.9*	*2.3*	*1.9*	*2.4*	-	-	*2.2*
						Base	*2.5*	*2.5*	*3.1*	*3.1*	*3.5*	**3.3**	**2.6**	*2.6*
						High	*2.5*	*2.5*	*3.2*	*3.3*	*3.7*	-	-	*2.7*
Real Disposable Personal Income[b] (billion 1982 dollars)	**2,581**	**2,626**	**2,606**	**2,595**	**2,621**	Low	*2,631*	*2,653*	*2,679*	*2,695*	*2,697*	-	-	*2,646*
						Base	*2,618*	*2,633*	*2,655*	*2,669*	*2,670*	**2,528**	**2,602**	*2,632*
						High	*2,616*	*2,628*	*2,649*	*2,662*	*2,663*	-	-	*2,629*
Percent Change from Prior Year	**3.4**	**2.9**	**3.2**	**2.1**	**1.5**	Low	*.2*	*1.8*	*3.2*	*2.8*	*2.5*	-	-	*1.7*
						Base	*-.3*	*1.0*	*2.3*	*1.8*	*2.0*	**2.3**	**2.9**	*1.2*
						High	*-.4*	*.8*	*2.1*	*1.6*	*1.8*	-	-	*1.0*
Index of Industrial Production (Mfg.) (index, 1977: 100)	**128.4**	**128.4**	**129.4**	**130.4**	**131.3**	Low	*132.1*	*133.9*	*135.7*	*136.9*	*138.5*	-	-	*133.3*
						Base	*132.1*	*133.8*	*135.2*	*136.2*	*136.9*	**126.4**	**129.2**	*133.1*
						High	*132.1*	*133.6*	*134.9*	*135.9*	*136.3*	-	-	*133.0*
Percent Change from Prior Year	**2.5**	**1.7**	**2.1**	**2.4**	**2.3**	Low	*2.9*	*3.5*	*4.1*	*4.3*	*4.8*	-	-	*3.1*
						Base	*2.9*	*3.4*	*3.7*	*3.7*	*3.6*	**2.4**	**2.2**	*3.0*
						High	*2.9*	*3.2*	*3.5*	*3.5*	*3.2*	-	-	*2.9*
Oil Price														
Imported Crude Oil Price[c] (U.S. dollars/barrel)	**19.05**	**12.85**	**11.88**	**13.47**	**17.00**	Low	*15.00*	*14.00*	*14.00*	*15.00*	*15.00*	-	-	*15.00*
						Base	*18.00*	*18.00*	*18.00*	*19.00*	*19.00*	**26.99**	**13.98**	*17.80*
						High	*19.00*	*20.00*	*20.00*	*21.00*	*21.00*	-	-	*19.00*
U.S. Refiners' Cost[d] (U.S. dollars/barrel)	**20.11**	**12.98**	**12.18**	**13.40**	**16.80**	Low	*15.00*	*14.00*	*14.00*	*15.00*	*15.00*	-	-	*15.00*
						Base	*18.00*	*18.00*	*18.00*	*19.00*	*19.00*	**26.75**	**14.55**	*17.70*
						High	*19.00*	*20.00*	*20.00*	*21.00*	*21.00*	-	-	*19.00*
Weather[e]														
Heating Degree Days	**2,209**	**460**	**103**	**1,640**	**2,213**		*538*	*88*	*1,668*	*2,401*	*538*	**4,773**	**4,412**	*4,507*
Cooling Degree Days	**33**	**359**	**744**	**74**	**13**		*328*	*754*	*62*	*28*	*328*	**1,154**	**1,210**	*1,157*

[a] 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.

[b] Seasonally adjusted at annual rates.

[c] Cost of imported crude oil to U.S. refiners.

[d] U.S. Refiner Acquisition Cost of foreign and domestic crude oil.

[e] Population-weighted average degree days, revised December 1981. A degree day indicates the temperature variation from 65 degrees Farenheit (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(87/01); Bureau of Economic Analysis, U.S. Department of Commerce, *Survey of Current Business*, March 1987; 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,* April 1987. Macroeconomic projections are based on modifications to Data Resources, Inc., Forecast CONTROL0387.

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

Product	1986				1987	World Oil Price Case	1987			1988		Year		
	1st	2nd	3rd	4th	1st		2nd	3rd	4th	1st	2nd	1985	1986	1987
Petroleum														
Imported Crude Oil Price[a]						Low	*15.00*	*14.00*	*14.00*	*15.00*	*15.00*	-	-	*15.00*
(dollars per barrel)	**19.05**	**12.85**	**11.88**	**13.47**	**17.00**	Base	*18.00*	*18.00*	*18.00*	*19.00*	*19.00*	**26.99**	**13.98**	*17.80*
						High	*19.00*	*20.00*	*20.00*	*21.00*	*21.00*	-	-	*19.00*
Gasoline[b]						Low	*.94*	*.91*	*.89*	*.90*	*.92*	-	-	*.91*
(dollars per gallon)	**1.10**	**.93**	**.87**	**.83**	**.90**	Base	*.97*	*1.00*	*1.00*	*1.02*	*1.04*	**1.20**	**.93**	*.97*
						High	*.98*	*1.04*	*1.06*	*1.08*	*1.11*	-	-	*1.00*
No. 2 Diesel Oil, Retail						Low	*.88*	*.87*	*.88*	*.90*	*.91*	-	-	*.88*
(dollars per gallon)	**1.04**	**.87**	**.80**	**.82**	**.89**	Base	*.91*	*.95*	*.97*	*.99*	*1.01*	**1.15**	**.88**	*.93*
						High	*.94*	*1.00*	*1.03*	*1.05*	*1.07*	-	-	*.96*
No. 2 Heating Oil, Wholesale						Low	*.45*	*.43*	*.43*	*.47*	*.46*	-	-	*.45*
(dollars per gallon)	**.61**	**.44**	**.39**	**.43**	**.50**	Base	*.52*	*.52*	*.54*	*.57*	*.56*	**.78**	**.49**	*.52*
						High	*.54*	*.57*	*.59*	*.62*	*.61*	-	-	*.55*
No. 2 Heating Oil, Retail						Low	*.77*	*.75*	*.80*	*.81*	*.79*	-	-	*.78*
(dollars per gallon)	**.97**	**.77**	**.67**	**.70**	**.79**	Base	*.78*	*.81*	*.89*	*.90*	*.87*	**1.05**	**.84**	*.82*
						High	*.82*	*.87*	*.96*	*.97*	*.94*	-	-	*.86*
No. 6 Residual Fuel Oil[c]						Low	*14.40*	*13.60*	*13.50*	*14.50*	*14.20*	-	-	*14.70*
(dollars per barrel)	**19.87**	**13.01**	**11.51**	**13.31**	**17.20**	Base	*16.90*	*16.70*	*17.10*	*18.40*	*18.10*	**25.62**	**14.44**	*17.00*
						High	*17.70*	*18.10*	*18.70*	*20.20*	*20.00*	-	-	*17.90*
Electric Utility Fuels														
Coal						Low	*1.50*	*1.52*	*1.53*	*1.54*	*1.54*	-	-	*1.52*
(dollars per million Btu)	**1.61**	**1.62**	**1.56**	**1.53**	**1.52**	Base	*1.55*	*1.58*	*1.58*	*1.59*	*1.59*	**1.65**	**1.58**	*1.56*
						High	*1.57*	*1.61*	*1.63*	*1.63*	*1.63*	-	-	*1.58*
Heavy Oil[d]						Low	*2.45*	*2.29*	*2.28*	*2.43*	*2.39*	-	-	*2.45*
(dollars per million Btu)	**3.20**	**2.21**	**1.98**	**2.32**	**2.76**	Base	*2.77*	*2.73*	*2.79*	*3.00*	*2.96*	**4.24**	**2.39**	*2.76*
						High	*2.97*	*3.01*	*3.11*	*3.35*	*3.31*	-	-	*2.96*
Natural Gas						Low	*2.27*	*2.11*	*2.08*	*2.18*	*2.16*	-	-	*2.21*
(dollars per million Btu)	**2.83**	**2.31**	**2.17**	**2.20**	**2.40**	Base	*2.51*	*2.50*	*2.53*	*2.63*	*2.64*	**3.43**	**2.34**	*2.48*
						High	*2.69*	*2.76*	*2.83*	*2.98*	*2.97*	-	-	*2.67*
Other Residential														
Natural Gas						Low	*5.77*	*6.52*	*5.28*	*5.27*	*5.90*	-	-	*5.42*
(dollars per 1,000 cu. ft.)	**5.61**	**6.09**	**6.85**	**5.47**	**5.30**	Base	*5.90*	*6.70*	*5.42*	*5.42*	*6.07*	**6.12**	**5.82**	*5.54*
						High	*6.12*	*6.97*	*5.65*	*5.66*	*6.32*	-	-	*5.77*
Electricity						Low	*7.66*	*7.96*	*7.56*	*7.30*	*7.89*	-	-	*7.61*
(cents per kilowatthour)	**7.49**	**7.91**	**8.18**	**7.58**	**7.27**	Base	*7.83*	*8.18*	*7.79*	*7.53*	*8.13*	**7.79**	**7.79**	*7.77*
						High	*7.97*	*8.41*	*7.96*	*7.71*	*8.33*	-	-	*7.90*

[a] Cost of imported crude oil to U.S. refiners.
[b] Average retail for all grades and services.
[c] Retail residual fuel oil--average, all sulfur contents.
[d] Heavy fuel oil prices include fuel oils No. 4., No. 5, and No. 6, and topped crude fuel oil prices.

Notes: First quarter 1987 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(87/01); and *Petroleum Marketing Monthly*, DOE/EIA-0380(87/01).

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

Supply and Disposition	1986				1987				1988		Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	1985	1986	1987
Supply													
Crude Oil Supply													
Domestic Production [a]	**9.10**	**8.76**	**8.45**	**8.37**	**8.39**	*8.27*	*8.12*	*8.04*	*8.08*	*8.00*	**8.97**	**8.67**	*8.20*
Alaska	**1.88**	**1.88**	**1.83**	**1.87**	**1.95**	*1.92*	*1.89*	*1.88*	*1.94*	*1.98*	**1.83**	**1.86**	*1.91*
Lower 48	**7.22**	**6.88**	**6.62**	**6.50**	**6.44**	*6.36*	*6.22*	*6.16*	*6.13*	*6.02*	**7.15**	**6.80**	*6.29*
Net Imports (Including SPR)[b]	**2.94**	**3.99**	**4.66**	**4.21**	**3.89**	*4.35*	*4.79*	*4.64*	*4.03*	*4.52*	**3.00**	**3.96**	*4.42*
Gross Imports (Excluding SPR)	**3.07**	**4.08**	**4.77**	**4.31**	**3.93**	*4.47*	*4.90*	*4.79*	*4.18*	*4.69*	**3.08**	**4.06**	*4.53*
SPR Imports	**.05**	**.05**	**.05**	**.04**	**.08**	*.07*	*.05*	*.02*	*.02*	*.02*	**.12**	**.05**	*.06*
Exports	**.18**	**.14**	**.15**	**.14**	**.12**	*.20*	*.17*	*.17*	*.18*	*.20*	**.20**	**.15**	*.16*
SPR Stock Withdrawn or Added (-)	**-.04**	**-.05**	**-.05**	**-.06**	**-.09**	*-.08*	*-.06*	*-.03*	*-.03*	*-.03*	**-.12**	**-.05**	*-.07*
Other Stock Withdrawn or Added (-)	**-.22**	**.17**	**-.13**	**.07**	**-.03**	*.00*	*.05*	*-.02*	*-.02*	*-.02*	**.07**	**-.03**	*.00*
Products Supplied and Losses	**-.06**	**-.05**	**-.05**	**-.04**	**-.05**	*-.06*	*-.06*	*-.06*	*-.06*	*-.06*	**-.06**	**-.05**	*-.06*
Unaccounted-for Crude	**.27**	**.18**	**.21**	**.19**	**.15**	*.13*	*.11*	*.12*	*.13*	*.13*	**.15**	**.21**	*.13*
Crude Oil Input to Refineries	**11.98**	**13.00**	**13.09**	**12.75**	**12.26**	*12.61*	*12.94*	*12.70*	*12.12*	*12.53*	**12.00**	**12.71**	*12.63*
Other Supply													
NGL Production	**1.68**	**1.57**	**1.52**	**1.52**	**1.57**	*1.48*	*1.46*	*1.55*	*1.61*	*1.48*	**1.61**	**1.57**	*1.51*
Other Hydrocarbon and Alcohol Inputs	**.04**	**.05**	**.06**	**.05**	**.06**	*.06*	*.06*	*.06*	*.05*	*.06*	**.06**	**.05**	*.06*
Crude Oil Product Supplied	**.06**	**.05**	**.05**	**.04**	**.05**	*.06*	*.06*	*.06*	*.06*	*.06*	**.06**	**.05**	*.06*
Processing Gain	**.55**	**.55**	**.60**	**.53**	**.57**	*.57*	*.58*	*.57*	*.55*	*.58*	**.56**	**.55**	*.57*
Net Product Imports[c]	**1.15**	**1.33**	**1.54**	**1.31**	**1.10**	*1.14*	*1.31*	*1.39*	*1.34*	*1.22*	**1.29**	**1.33**	*1.24*
Gross Product Imports [c]	**1.78**	**1.91**	**2.13**	**1.98**	**1.82**	*1.68*	*1.81*	*1.97*	*1.91*	*1.76*	**1.87**	**1.95**	*1.82*
Product Exports	**.63**	**.58**	**.59**	**.68**	**.71**	*.54*	*.50*	*.58*	*.58*	*.54*	**.58**	**.62**	*.58*
Product Stock Withdrawn or Added (-)[d]	**.59**	**-.69**	**-.67**	**.27**	**.60**	*.00*	*-.42*	*.08*	*.63*	*-.15*	**.15**	**-.13**	*.06*
Total Product Supplied, Domestic Use	**16.06**	**15.86**	**16.18**	**16.47**	**16.21**	*15.91*	*15.99*	*16.42*	*16.36*	*15.77*	**15.73**	**16.14**	*16.13*
Disposition													
Motor Gasoline	**6.64**	**7.09**	**7.27**	**7.06**	**6.62**	*7.23*	*7.18*	*7.04*	*6.65*	*7.15*	**6.83**	**7.02**	*7.02*
Jet Fuel	**1.25**	**1.27**	**1.33**	**1.36**	**1.33**	*1.29*	*1.33*	*1.35*	*1.35*	*1.30*	**1.22**	**1.30**	*1.32*
Distillate Fuel Oil	**3.28**	**2.73**	**2.57**	**3.03**	**3.22**	*2.69*	*2.54*	*3.03*	*3.28*	*2.67*	**2.87**	**2.90**	*2.87*
Residual Fuel Oil	**1.42**	**1.34**	**1.43**	**1.41**	**1.35**	*1.23*	*1.21*	*1.24*	*1.48*	*1.15*	**1.20**	**1.40**	*1.26*
Other Oils Supplied [e]	**3.46**	**3.44**	**3.57**	**3.61**	**3.69**	*3.47*	*3.74*	*3.77*	*3.61*	*3.49*	**3.61**	**3.52**	*3.67*
Total Product Supplied	**16.06**	**15.86**	**16.18**	**16.47**	**16.21**	*15.91*	*15.99*	*16.42*	*16.36*	*15.77*	**15.73**	**16.14**	*16.13*
Total Petroleum Net Imports	**4.08**	**5.32**	**6.21**	**5.52**	**4.99**	*5.50*	*6.10*	*6.03*	*5.37*	*5.74*	**4.29**	**5.29**	*5.66*
Closing Stocks (million barrels)													
Crude Oil (Excluding SPR) [f]	**340.9**	**325.5**	**337.8**	**331.2**	**334.0**	*334.1*	*329.2*	*330.7*	*332.6*	*334.4*	**320.9**	**331.2**	*330.7*
Total Motor Gasoline	**219.9**	**233.4**	**235.1**	**233.3**	**247.2**	*227.4*	*227.4*	*227.3*	*226.5*	*223.8*	**222.8**	**233.3**	*227.3*
Finished Motor Gasoline	**185.0**	**197.6**	**196.7**	**194.3**	**204.8**	*189.9*	*188.8*	*190.2*	*190.0*	*187.1*	**190.3**	**194.3**	*190.2*
Blending Components	**34.9**	**35.8**	**38.3**	**39.0**	**42.4**	*37.5*	*38.5*	*37.1*	*36.5*	*36.8*	**32.5**	**39.0**	*37.1*
Jet Fuel	**47.4**	**46.2**	**48.7**	**49.7**	**49.0**	*45.9*	*46.4*	*45.2*	*46.2*	*45.4*	**40.5**	**49.7**	*45.2*
Distillate Fuel Oil	**99.3**	**108.8**	**152.6**	**155.0**	**106.9**	*112.0*	*145.0*	*155.1*	*105.6*	*115.3*	**143.7**	**155.0**	*155.1*
Residual Fuel Oil	**38.8**	**43.0**	**44.0**	**47.5**	**38.1**	*40.3*	*43.6*	*47.3*	*40.1*	*39.7*	**50.4**	**47.5**	*47.3*
Other Oils [g]	**245.9**	**282.5**	**295.4**	**265.2**	**255.3**	*270.8*	*272.7*	*252.7*	*251.7*	*260.1*	**247.2**	**265.2**	*252.7*
Total Stocks (Excluding SPR)	**992.1**	**1039.3**	**1113.6**	**1082.0**	**1030.5**	*1030.5*	*1064.2*	*1058.2*	*1002.8*	*1018.7*	**1025.5**	**1082.0**	*1058.2*
Crude Oil in SPR	**496.9**	**501.8**	**506.4**	**511.6**	**519.7**	*527.4*	*533.4*	*536.6*	*539.8*	*543.0*	**493.3**	**511.6**	*536.6*
Total Stocks (Including SPR)	**1489.0**	**1541.1**	**1620.0**	**1593.5**	**1550.2**	*1558.0*	*1597.6*	*1594.9*	*1542.6*	*1561.7*	**1518.8**	**1593.5**	*1594.9*

[a] Includes lease condensate.
[b] Net Imports equals Gross Imports plus SPR Imports minus Exports.
[c] Includes finished petroleum products, unfinished oils, gasoline blending components, and natural gas plant liquids for processing.
[d] Includes an estimate of minor product stock change based on monthly data.
[e] 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.
[f] Includes crude oil in transit to refineries.
[g] 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 Jan. 1987; *Weekly Petroleum Status Report*, DOE/EIA-0208(87-11,15).

Table 7. Quarterly Supply and Disposition of Petroleum: Low World Oil Price Case

(Million Barrels per Day, Except Stocks)

Supply and Disposition	1986				1987				1988		Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	1985	1986	1987
Supply													
Crude Oil Supply													
Domestic Production [a]	**9.10**	**8.76**	**8.45**	**8.37**	**8.39**	*8.24*	*8.05*	*7.94*	*7.90*	*7.80*	**8.97**	**8.67**	*8.15*
Alaska	**1.88**	**1.88**	**1.83**	**1.87**	**1.95**	*1.92*	*1.89*	*1.88*	*1.94*	*1.98*	**1.83**	**1.86**	*1.91*
Lower 48	**7.22**	**6.88**	**6.62**	**6.50**	**6.44**	*6.33*	*6.15*	*6.06*	*5.96*	*5.82*	**7.15**	**6.80**	*6.24*
Net Imports (Including SPR)[b]	**2.94**	**3.99**	**4.66**	**4.21**	**3.89**	*4.66*	*5.17*	*5.02*	*4.50*	*5.06*	**3.00**	**3.96**	*4.69*
Gross Imports (Excluding SPR)	**3.07**	**4.08**	**4.77**	**4.31**	**3.93**	*4.78*	*5.28*	*5.17*	*4.66*	*5.23*	**3.08**	**4.06**	*4.79*
SPR Imports	**.05**	**.05**	**.05**	**.04**	**.08**	*.07*	*.05*	*.02*	*.02*	*.02*	**.12**	**.05**	*.06*
Exports	**.18**	**.14**	**.15**	**.14**	**.12**	*.20*	*.17*	*.17*	*.18*	*.20*	**.20**	**.15**	*.16*
SPR Stock Withdrawn or Added (-)	**-.04**	**-.05**	**-.05**	**-.06**	**-.09**	*-.08*	*-.06*	*-.03*	*-.03*	*-.03*	**-.12**	**-.05**	*-.07*
Other Stock Withdrawn or Added (-)	**-.22**	**.17**	**-.13**	**.07**	**-.03**	*-.02*	*.02*	*-.02*	*-.05*	*-.01*	**.07**	**-.03**	*-.01*
Products Supplied and Losses	**-.06**	**-.05**	**-.05**	**-.04**	**-.05**	*-.06*	*-.06*	*-.06*	*-.06*	*-.06*	**-.06**	**-.05**	*-.06*
Unaccounted-for Crude	**.27**	**.18**	**.21**	**.19**	**.15**	*.10*	*.06*	*.08*	*.10*	*.09*	**.15**	**.21**	*.10*
Crude Oil Input to Refineries	**11.98**	**13.00**	**13.09**	**12.75**	**12.26**	*12.83*	*13.17*	*12.93*	*12.37*	*12.84*	**12.00**	**12.71**	*12.80*
Other Supply													
NGL Production	**1.68**	**1.57**	**1.52**	**1.52**	**1.57**	*1.48*	*1.46*	*1.55*	*1.61*	*1.48*	**1.61**	**1.57**	*1.51*
Other Hydrocarbon and Alcohol Inputs	**.04**	**.05**	**.06**	**.05**	**.06**	*.06*	*.06*	*.06*	*.05*	*.06*	**.06**	**.05**	*.06*
Crude Oil Product Supplied	**.06**	**.05**	**.05**	**.04**	**.05**	*.06*	*.06*	*.06*	*.06*	*.06*	**.06**	**.05**	*.06*
Processing Gain	**.55**	**.55**	**.60**	**.53**	**.57**	*.57*	*.58*	*.57*	*.55*	*.57*	**.56**	**.55**	*.57*
Net Product Imports[c]	**1.15**	**1.33**	**1.54**	**1.31**	**1.10**	*1.27*	*1.43*	*1.51*	*1.40*	*1.47*	**1.29**	**1.33**	*1.33*
Gross Product Imports [c]	**1.78**	**1.91**	**2.13**	**1.98**	**1.82**	*1.81*	*1.93*	*2.08*	*1.98*	*2.01*	**1.87**	**1.95**	*1.91*
Product Exports	**.63**	**.58**	**.59**	**.68**	**.71**	*.54*	*.50*	*.58*	*.58*	*.54*	**.58**	**.62**	*.58*
Product Stock Withdrawn or Added (-)[d]	**.59**	**-.69**	**-.67**	**.27**	**.60**	*-.23*	*-.52*	*.06*	*.67*	*-.32*	**.15**	**-.13**	*-.02*
Total Product Supplied, Domestic Use	**16.06**	**15.86**	**16.18**	**16.47**	**16.21**	*16.04*	*16.24*	*16.73*	*16.71*	*16.17*	**15.73**	**16.14**	*16.30*
Disposition													
Motor Gasoline	**6.64**	**7.09**	**7.27**	**7.06**	**6.62**	*7.24*	*7.23*	*7.10*	*6.71*	*7.23*	**6.83**	**7.02**	*7.05*
Jet Fuel	**1.25**	**1.27**	**1.33**	**1.36**	**1.33**	*1.30*	*1.35*	*1.37*	*1.38*	*1.33*	**1.22**	**1.30**	*1.34*
Distillate Fuel Oil	**3.28**	**2.73**	**2.57**	**3.03**	**3.22**	*2.70*	*2.57*	*3.07*	*3.33*	*2.74*	**2.87**	**2.90**	*2.89*
Residual Fuel Oil	**1.42**	**1.34**	**1.43**	**1.41**	**1.35**	*1.31*	*1.32*	*1.37*	*1.63*	*1.31*	**1.20**	**1.40**	*1.34*
Other Oils Supplied [e]	**3.46**	**3.44**	**3.57**	**3.61**	**3.69**	*3.48*	*3.77*	*3.81*	*3.66*	*3.56*	**3.61**	**3.52**	*3.69*
Total Product Supplied	**16.06**	**15.86**	**16.18**	**16.47**	**16.21**	*16.04*	*16.24*	*16.73*	*16.71*	*16.17*	**15.73**	**16.14**	*16.30*
Total Petroleum Net Imports	**4.08**	**5.32**	**6.21**	**5.52**	**4.99**	*5.93*	*6.60*	*6.53*	*5.90*	*6.54*	**4.29**	**5.29**	*6.02*
Stocks (million barrels)													
Crude Oil (Excluding SPR) [f]	**340.9**	**325.5**	**337.8**	**331.2**	**334.0**	*335.9*	*333.6*	*335.5*	*340.0*	*341.2*	**320.9**	**331.2**	*335.5*
Total Motor Gasoline	**219.9**	**233.4**	**235.1**	**233.3**	**247.2**	*232.3*	*233.5*	*234.2*	*228.5*	*233.5*	**222.8**	**233.3**	*234.2*
Finished Motor Gasoline	**185.0**	**197.6**	**196.7**	**194.3**	**204.8**	*194.3*	*194.5*	*196.6*	*191.3*	*195.9*	**190.3**	**194.3**	*196.6*
Blending Components	**34.9**	**35.8**	**38.3**	**39.0**	**42.4**	*38.0*	*39.1*	*37.6*	*37.2*	*37.6*	**32.5**	**39.0**	*37.6*
Jet Fuel	**47.4**	**46.2**	**48.7**	**49.7**	**49.0**	*47.5*	*49.2*	*48.7*	*49.1*	*49.1*	**40.5**	**49.7**	*48.7*
Distillate Fuel Oil	**99.3**	**108.8**	**152.6**	**155.0**	**106.9**	*112.6*	*147.0*	*157.7*	*106.8*	*118.4*	**143.7**	**155.0**	*157.7*
Residual Fuel Oil	**38.8**	**43.0**	**44.0**	**47.5**	**38.1**	*42.0*	*48.7*	*52.2*	*44.7*	*44.0*	**50.4**	**47.5**	*52.2*
Other Oils [g]	**245.9**	**282.5**	**295.4**	**265.2**	**255.3**	*283.0*	*286.8*	*266.5*	*268.8*	*281.8*	**247.2**	**265.2**	*266.5*
Total Stocks (Excluding SPR)	**992.1**	**1039.3**	**1113.6**	**1082.0**	**1030.5**	*1053.3*	*1098.8*	*1094.8*	*1038.0*	*1067.9*	**1025.5**	**1082.0**	*1094.8*
Crude Oil in SPR	**496.9**	**501.8**	**506.4**	**511.6**	**519.7**	*527.4*	*533.4*	*536.6*	*539.8*	*543.0*	**493.3**	**511.6**	*536.6*
Total Stocks (Including SPR)	**1489.0**	**1541.1**	**1620.0**	**1593.5**	**1550.2**	*1580.7*	*1632.2*	*1631.4*	*1577.8*	*1610.9*	**1518.8**	**1593.5**	*1631.4*

[a] Includes lease condensate.

[b] Net Imports equals Gross Imports plus SPR Imports minus Exports.

[c] Includes finished petroleum products, unfinished oils, gasoline blending components, and natural gas plant liquids for processing.

[d] Includes an estimate of minor product stock change based on monthly data.

[e] 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.

[f] Includes crude oil in transit to refineries.

[g] 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 Jan. 1987; *Weekly Petroleum Status Report*, DOE/EIA-0208(87-11,15).

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

Supply and Disposition	1986				1987				1988		Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	1985	1986	1987
Supply													
Crude Oil Supply													
Domestic Production [a]	**9.10**	**8.76**	**8.45**	**8.37**	**8.39**	*8.29*	*8.18*	*8.12*	*8.20*	*8.14*	**8.97**	**8.67**	*8.24*
Alaska	**1.88**	**1.88**	**1.83**	**1.87**	**1.95**	*1.92*	*1.89*	*1.88*	*1.94*	*1.98*	**1.83**	**1.86**	*1.91*
Lower 48	**7.22**	**6.88**	**6.62**	**6.50**	**6.44**	*6.37*	*6.28*	*6.23*	*6.26*	*6.17*	**7.15**	**6.80**	*6.33*
Net Imports (Including SPR)[b]	**2.94**	**3.99**	**4.66**	**4.21**	**3.89**	*4.27*	*4.63*	*4.47*	*3.79*	*4.27*	**3.00**	**3.96**	*4.32*
Gross Imports (Excluding SPR)	**3.07**	**4.08**	**4.77**	**4.31**	**3.93**	*4.39*	*4.74*	*4.62*	*3.94*	*4.44*	**3.08**	**4.06**	*4.42*
SPR Imports	**.05**	**.05**	**.05**	**.04**	**.08**	*.07*	*.05*	*.02*	*.02*	*.02*	**.12**	**.05**	*.06*
Exports	**.18**	**.14**	**.15**	**.14**	**.12**	*.20*	*.17*	*.17*	*.18*	*.20*	**.20**	**.15**	*.16*
SPR Stock Withdrawn or Added (-)	**-.04**	**-.05**	**-.05**	**-.06**	**-.09**	*-.08*	*-.06*	*-.03*	*-.03*	*-.03*	**-.12**	**-.05**	*-.07*
Other Stock Withdrawn or Added (-)	**-.22**	**.17**	**-.13**	**.07**	**-.03**	*.01*	*.07*	*-.01*	*-.02*	*-.02*	**.07**	**-.03**	*.01*
Products Supplied and Losses	**-.06**	**-.05**	**-.05**	**-.04**	**-.05**	*-.06*	*-.06*	*-.06*	*-.06*	*-.06*	**-.06**	**-.05**	*-.06*
Unaccounted-for Crude	**.27**	**.18**	**.21**	**.19**	**.15**	*.12*	*.11*	*.12*	*.14*	*.13*	**.15**	**.21**	*.13*
Crude Oil Input to Refineries	**11.98**	**13.00**	**13.09**	**12.75**	**12.26**	*12.55*	*12.85*	*12.61*	*12.02*	*12.43*	**12.00**	**12.71**	*12.57*
Other Supply													
NGL Production	**1.68**	**1.57**	**1.52**	**1.52**	**1.57**	*1.48*	*1.46*	*1.56*	*1.61*	*1.48*	**1.61**	**1.57**	*1.51*
Other Hydrocarbon and Alcohol Inputs	**.04**	**.05**	**.06**	**.05**	**.06**	*.06*	*.06*	*.06*	*.05*	*.06*	**.06**	**.05**	*.06*
Crude Oil Product Supplied	**.06**	**.05**	**.05**	**.04**	**.05**	*.06*	*.06*	*.06*	*.06*	*.06*	**.06**	**.05**	*.06*
Processing Gain	**.55**	**.55**	**.60**	**.53**	**.57**	*.56*	*.58*	*.57*	*.55*	*.57*	**.56**	**.55**	*.57*
Net Product Imports[c]	**1.15**	**1.33**	**1.54**	**1.31**	**1.10**	*1.12*	*1.27*	*1.34*	*1.30*	*1.15*	**1.29**	**1.33**	*1.21*
Gross Product Imports [c]	**1.78**	**1.91**	**2.13**	**1.98**	**1.82**	*1.66*	*1.77*	*1.92*	*1.88*	*1.69*	**1.87**	**1.95**	*1.79*
Product Exports	**.63**	**.58**	**.59**	**.68**	**.71**	*.54*	*.50*	*.58*	*.58*	*.54*	**.58**	**.62**	*.58*
Product Stock Withdrawn or Added (-)[d]	**.59**	**-.69**	**-.67**	**.27**	**.60**	*.03*	*-.39*	*.07*	*.61*	*-.15*	**.15**	**-.13**	*.08*
Total Product Supplied, Domestic Use	**16.06**	**15.86**	**16.18**	**16.47**	**16.21**	*15.87*	*15.89*	*16.27*	*16.20*	*15.60*	**15.73**	**16.14**	*16.06*
Disposition													
Motor Gasoline	**6.64**	**7.09**	**7.27**	**7.06**	**6.62**	*7.22*	*7.16*	*7.01*	*6.61*	*7.12*	**6.83**	**7.02**	*7.00*
Jet Fuel	**1.25**	**1.27**	**1.33**	**1.36**	**1.33**	*1.29*	*1.33*	*1.34*	*1.34*	*1.29*	**1.22**	**1.30**	*1.32*
Distillate Fuel Oil	**3.28**	**2.73**	**2.57**	**3.03**	**3.22**	*2.69*	*2.52*	*3.00*	*3.25*	*2.64*	**2.87**	**2.90**	*2.85*
Residual Fuel Oil	**1.42**	**1.34**	**1.43**	**1.41**	**1.35**	*1.20*	*1.16*	*1.17*	*1.41*	*1.08*	**1.20**	**1.40**	*1.22*
Other Oils Supplied [e]	**3.46**	**3.44**	**3.57**	**3.61**	**3.69**	*3.46*	*3.72*	*3.75*	*3.59*	*3.47*	**3.61**	**3.52**	*3.66*
Total Product Supplied	**16.06**	**15.86**	**16.18**	**16.47**	**16.21**	*15.87*	*15.89*	*16.27*	*16.20*	*15.60*	**15.73**	**16.14**	*16.06*
Total Petroleum Net Imports	**4.08**	**5.32**	**6.21**	**5.52**	**4.99**	*5.39*	*5.89*	*5.82*	*5.09*	*5.42*	**4.29**	**5.29**	*5.53*
Stocks (million barrels)													
Crude Oil (Excluding SPR) [f]	**340.9**	**325.5**	**337.8**	**331.2**	**334.0**	*332.8*	*326.7*	*327.5*	*329.0*	*330.4*	**320.9**	**331.2**	*327.5*
Total Motor Gasoline	**219.9**	**233.4**	**235.1**	**233.3**	**247.2**	*226.8*	*226.3*	*226.2*	*225.7*	*222.7*	**222.8**	**233.3**	*226.2*
Finished Motor Gasoline	**185.0**	**197.6**	**196.7**	**194.3**	**204.8**	*189.4*	*187.8*	*189.0*	*189.1*	*185.9*	**190.3**	**194.3**	*189.0*
Blending Components	**34.9**	**35.8**	**38.3**	**39.0**	**42.4**	*37.5*	*38.5*	*37.1*	*36.6*	*36.8*	**32.5**	**39.0**	*37.1*
Jet Fuel	**47.4**	**46.2**	**48.7**	**49.7**	**49.0**	*45.8*	*46.0*	*44.8*	*45.9*	*45.2*	**40.5**	**49.7**	*44.8*
Distillate Fuel Oil	**99.3**	**108.8**	**152.6**	**155.0**	**106.9**	*111.7*	*144.1*	*154.2*	*104.9*	*114.1*	**143.7**	**155.0**	*154.2*
Residual Fuel Oil	**38.8**	**43.0**	**44.0**	**47.5**	**38.1**	*39.2*	*41.7*	*45.3*	*38.2*	*37.3*	**50.4**	**47.5**	*45.3*
Other Oils [g]	**245.9**	**282.5**	**295.4**	**265.2**	**255.3**	*270.0*	*271.1*	*252.2*	*252.1*	*261.3*	**247.2**	**265.2**	*252.2*
Total Stocks (Excluding SPR)	**992.1**	**1039.3**	**1113.6**	**1082.0**	**1030.5**	*1026.2*	*1055.9*	*1050.1*	*995.8*	*1011.1*	**1025.5**	**1082.0**	*1050.1*
Crude Oil in SPR	**496.9**	**501.8**	**506.4**	**511.6**	**519.7**	*527.4*	*533.4*	*536.6*	*539.8*	*543.0*	**493.3**	**511.6**	*536.6*
Total Stocks (Including SPR)	**1489.0**	**1541.1**	**1620.0**	**1593.5**	**1550.2**	*1553.6*	*1589.3*	*1586.7*	*1535.6*	*1554.1*	**1518.8**	**1593.5**	*1586.7*

[a] Includes lease condensate.
[b] Net Imports equals Gross Imports plus SPR Imports minus Exports.
[c] Includes finished petroleum products, unfinished oils, gasoline blending components, and natural gas plant liquids for processing.
[d] Includes an estimate of minor product stock change based on monthly data.
[e] 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.
[f] Includes crude oil in transit to refineries.
[g] 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 Jan. 1987; *Weekly Petroleum Status Report,* DOE/EIA-0208(87-11,15).

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

Supply and Disposition	1986				1987				1988		Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	1985	1986	1987
Supply													
Domestic Production[a]	**6.29**	**6.90**	**6.99**	**6.83**	**6.51**	*6.75*	*6.86*	*6.75*	*6.36*	*6.77*	**6.42**	**6.75**	*6.72*
Imports	**.29**	**.33**	**.30**	**.26**	**.26**	*.32*	*.32*	*.31*	*.29*	*.35*	**.38**	**.30**	*.30*
Exports	**.00**	**.00**	**.03**	**.05**	**.03**	*.01*	*.01*	*.01*	*.01*	*.01*	**.01**	**.02**	*.01*
Net Imports	**.29**	**.33**	**.27**	**.21**	**.23**	*.31*	*.31*	*.30*	*.28*	*.35*	**.37**	**.28**	*.29*
Net Withdrawals	**.06**	**-.14**	**.01**	**.03**	**-.12**	*.16*	*.01*	*-.01*	*.00*	*.03*	**.04**	**-.01**	*.01*
Total Primary Supply	**6.64**	**7.09**	**7.27**	**7.06**	**6.62**	*7.23*	*7.18*	*7.04*	*6.65*	*7.15*	**6.83**	**7.02**	*7.02*
Disposition													
Leaded	**2.15**	**2.27**	**2.22**	**2.03**	**1.69**	*1.89*	*1.80*	*1.67*	*1.55*	*1.66*	**2.43**	**2.17**	*1.76*
Unleaded	**4.49**	**4.82**	**5.06**	**5.03**	**4.93**	*5.33*	*5.39*	*5.36*	*5.10*	*5.49*	**4.41**	**4.85**	*5.25*
Total Product Supplied	**6.64**	**7.09**	**7.27**	**7.06**	**6.62**	*7.23*	*7.18*	*7.04*	*6.65*	*7.15*	**6.83**	**7.02**	*7.02*
Stocks													
Primary Finished Stock Levels[b] (million barrels)													
Opening	**190.3**	**185.0**	**197.6**	**196.7**	**194.3**	*204.8*	*189.9*	*188.8*	*190.2*	*190.0*	**205.2**	**190.3**	*194.3*
Closing	**185.0**	**197.6**	**196.7**	**194.3**	**204.8**	*189.9*	*188.8*	*190.2*	*190.0*	*187.1*	**190.3**	**194.3**	*190.2*

[a] Refinery Production plus production at natural gas processing plants.
[b] 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 Jan. 1987; *Weekly Petroleum Status Report*, DOE/EIA-0208(87-11,15).

Table 10. Quarterly Supply and Disposition of Distillate Fuel Oil: Base Case

(Million Barrels per Day, Except Stocks)

Supply and Disposition	1986				1987				1988		Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	1985	1986	1987
Supply													
Refinery Output	**2.71**	**2.79**	**2.83**	**2.86**	**2.58**	*2.69*	*2.81*	*2.95*	*2.70*	*2.71*	**2.69**	**2.80**	*2.76*
Imports	**.22**	**.15**	**.30**	**.27**	**.21**	*.11*	*.15*	*.26*	*.12*	*.13*	**.20**	**.24**	*.18*
Exports	**.14**	**.11**	**.08**	**.07**	**.10**	*.06*	*.07*	*.07*	*.09*	*.06*	**.07**	**.10**	*.07*
Net Imports	**.08**	**.04**	**.22**	**.20**	**.10**	*.05*	*.08*	*.19*	*.03*	*.07*	**.13**	**.14**	*.11*
Net Withdrawals	**.49**	**-.11**	**-.48**	**-.03**	**.53**	*-.06*	*-.36*	*-.11*	*.54*	*-.11*	**.05**	**-.03**	*.00*
Disposition													
Electric Utility Consumption	**.04**	**.04**	**.04**	**.03**	**.04**	*.04*	*.05*	*.05*	*.05*	*.04*	**.04**	**.04**	*.05*
Utility Stock Additions	**-.01**	**.01**	**.00**	**.00**	**.01**	*.00*	*.00*	*.00*	*.00*	*.00*	**-.01**	**.00**	*.00*
Electric Utility Shipments	**.04**	**.04**	**.05**	**.03**	**.04**	*.04*	*.05*	*.05*	*.05*	*.04*	**.03**	**.04**	*.05*
Nonutility Shipments	**3.25**	**2.69**	**2.53**	**3.00**	**3.17**	*2.65*	*2.49*	*2.98*	*3.23*	*2.63*	**2.84**	**2.86**	*2.82*
Total Product Supplied	**3.28**	**2.73**	**2.57**	**3.03**	**3.22**	*2.69*	*2.54*	*3.03*	*3.28*	*2.67*	**2.87**	**2.90**	*2.87*
Stocks													
Electric Utility Stock Levels (million barrels)													
Opening	**16.4**	**15.8**	**16.3**	**16.7**	**16.3**	*16.8*	*16.7*	*16.6*	*16.5*	*16.3*	**19.1**	**16.4**	*16.3*
Closing	**15.8**	**16.3**	**16.7**	**16.3**	**16.8**	*16.7*	*16.6*	*16.5*	*16.3*	*16.2*	**16.4**	**16.3**	*16.5*
Primary Stock Levels (million barrels)													
Opening	**143.7**	**99.3**	**108.8**	**152.6**	**155.0**	*106.9*	*112.0*	*145.0*	*155.1*	*105.6*	**161.1**	**143.7**	*155.0*
Closing	**99.3**	**108.8**	**152.6**	**155.0**	**106.9**	*112.0*	*145.0*	*155.1*	*105.6*	*115.3*	**143.7**	**155.0**	*155.1*

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 Jan. 1987; *Monthly Energy Review*, DOE/EIA-0035(87/01); *Electric Power Monthly*, DOE/EIA-0226(87/02); *Weekly Petroleum Status Report*, DOE/EIA-0208(87-11,15).

Table 11. Quarterly Supply and Disposition of Residual Fuel Oil: Base Case

(Million Barrels per Day, Except Stocks)

Supply and Disposition	1986				1987				1988		Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	1985	1986	1987
Supply													
Refinery Output	**0.87**	**0.89**	**0.87**	**0.93**	**0.87**	*0.84*	*0.79*	*0.80*	*0.90*	*0.77*	**0.88**	**0.89**	*0.83*
Imports	**.59**	**.62**	**.70**	**.69**	**.60**	*.60*	*.60*	*.68*	*.71*	*.56*	**.51**	**.65**	*.62*
Exports	**.17**	**.12**	**.13**	**.17**	**.22**	*.18*	*.16*	*.20*	*.20*	*.18*	**.20**	**.15**	*.19*
Net Imports	**.42**	**.49**	**.57**	**.52**	**.38**	*.42*	*.45*	*.47*	*.51*	*.38*	**.31**	**.50**	*.43*
Net Withdrawals	**.13**	**-.05**	**-.01**	**-.04**	**.10**	*-.02*	*-.04*	*-.04*	*.08*	*.01*	**.01**	**.01**	*.00*
Disposition													
Electric Utility Consumption	**.54**	**.54**	**.73**	**.56**	**.52**	*.47*	*.57*	*.50*	*.52*	*.43*	**.44**	**.59**	*.52*
Utility Stock Additions	**-.02**	**.02**	**.00**	**-.01**	**.01**	*-.02*	*-.02*	*-.02*	*.03*	*-.01*	**-.03**	**.00**	*-.01*
Electric Utility Shipments	**.52**	**.56**	**.73**	**.55**	**.54**	*.45*	*.55*	*.48*	*.54*	*.42*	**.40**	**.59**	*.51*
Nonutility Shipments	**.90**	**.77**	**.70**	**.86**	**.81**	*.78*	*.66*	*.75*	*.94*	*.74*	**.80**	**.81**	*.75*
Total Product Supplied	**1.42**	**1.34**	**1.43**	**1.41**	**1.35**	*1.23*	*1.21*	*1.24*	*1.48*	*1.15*	**1.20**	**1.40**	*1.26*
Stocks													
Electric Utility Stock Levels (million barrels)													
Opening	**57.3**	**55.6**	**57.6**	**57.5**	**56.8**	*58.0*	*56.4*	*54.4*	*52.7*	*55.2*	**68.5**	**57.3**	*56.8*
Closing	**55.6**	**57.6**	**57.5**	**56.8**	**58.0**	*56.4*	*54.4*	*52.7*	*55.2*	*54.5*	**57.3**	**56.8**	*52.7*
Primary Stock Levels (million barrels)													
Opening	**50.4**	**38.8**	**43.0**	**44.0**	**47.5**	*38.1*	*40.3*	*43.6*	*47.3*	*40.1*	**53.0**	**50.4**	*47.5*
Closing	**38.8**	**43.0**	**44.0**	**47.5**	**38.1**	*40.3*	*43.6*	*47.3*	*40.1*	*39.7*	**50.4**	**47.5**	*47.3*

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 Jan. 1987; *Monthly Energy Review*, DOE/EIA-0035(87/01); *Electric Power Monthly*, DOE/EIA-0226(87/02); *Weekly Petroleum Status Report*, DOE/EIA-0208(87-11,15).

Table 12. Quarterly Supply and Disposition of Other Petroleum Products: Base Case[a]

(Million Barrels per Day, Except Stocks)

Supply and Disposition	1986				1987				1988		Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	1985	1986	1987
Supply													
Net Refinery Output[b]	**2.67**	**2.97**	**3.00**	**2.66**	**2.88**	*2.89*	*3.07*	*2.78*	*2.71*	*2.86*	**2.57**	**2.83**	*2.90*
Natural Gas Plant Output	**1.68**	**1.57**	**1.51**	**1.52**	**1.57**	*1.48*	*1.46*	*1.55*	*1.61*	*1.48*	**1.61**	**1.57**	*1.51*
Other Domestic[c]	**.04**	**.05**	**.06**	**.05**	**.06**	*.06*	*.06*	*.06*	*.05*	*.06*	**.06**	**.05**	*.06*
Net Imports	**.35**	**.46**	**.48**	**.38**	**.39**	*.36*	*.46*	*.43*	*.52*	*.42*	**.47**	**.42**	*.41*
Net Withdrawals	**-.09**	**-.40**	**-.20**	**.31**	**.08**	*-.08*	*-.04*	*.25*	*.01*	*-.09*	**.06**	**-.09**	*.05*
Total Primary Supply	**4.65**	**4.66**	**4.85**	**4.93**	**4.97**	*4.70*	*5.01*	*5.06*	*4.90*	*4.74*	**4.76**	**4.77**	*4.94*
Disposition													
Jet Fuel	**1.25**	**1.27**	**1.33**	**1.36**	**1.33**	*1.29*	*1.33*	*1.35*	*1.35*	*1.30*	**1.22**	**1.30**	*1.32*
Liquefied Petroleum Gas[d]	**1.14**	**.82**	**.82**	**1.31**	**1.26**	*.85*	*.90*	*1.21*	*1.24*	*.84*	**1.02**	**1.02**	*1.05*
Petrochemical Feedstocks[e]	**.95**	**.97**	**.95**	**.90**	**.94**	*.95*	*.96*	*.96*	*.97*	*.97*	**.94**	**.94**	*.95*
Miscellaneous[f]	**1.30**	**1.59**	**1.76**	**1.36**	**1.45**	*1.61*	*1.81*	*1.55*	*1.34*	*1.62*	**1.59**	**1.50**	*1.61*
Total Product Supplied	**4.65**	**4.66**	**4.85**	**4.93**	**4.97**	*4.70*	*5.01*	*5.06*	*4.90*	*4.74*	**4.76**	**4.77**	*4.94*
Stock													
Primary Stocks (million barrels)													
Opening	**320.2**	**328.2**	**364.5**	**382.4**	**353.9**	*346.7*	*354.3*	*357.6*	*335.0*	*334.5*	**341.1**	**320.2**	*353.9*
Closing	**328.2**	**364.5**	**382.4**	**353.9**	**346.7**	*354.3*	*357.6*	*335.0*	*334.5*	*342.2*	**320.2**	**353.9**	*335.0*

[a] 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.

[b] Includes refinery production of all other products less natural gas liquids, liquefied refinery gases, and "other liquids" input to refineries.

[c] Field production of other hydrocarbons and alcohol.

[d] Includes propane, normal butane, and isobutane.

[e] Includes ethane plus naphtha and other oils designated for petrochemical feedstock use.

[f] 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 Jan. 1987; and *Weekly Petroleum Status Report*, DOE/EIA-0208(87-11,15). Data for February and March 1987 are preliminary.

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

Sensitivities	1987			1988		Year
	2nd	3rd	4th	1st	2nd	1987
Demand in 50 States						
Low Price	*16.01*	*16.21*	*16.69*	*16.65*	*16.06*	*16.28*
Base Case	*15.91*	*15.99*	*16.42*	*16.36*	*15.77*	*16.13*
High Price	*15.87*	*15.90*	*16.29*	*16.23*	*15.63*	*16.07*
Weather Sensitivity						
Adverse Weather	*.00*	*.00*	*.11*	*.20*	*.01*	*.03*
Favorable Weather	*-.01*	*.00*	*-.12*	*-.19*	*-.02*	*-.03*
Economic Sensitivity						
High Economic Activity	*.01*	*.02*	*.03*	*.04*	*.08*	*.02*
Low Economic Activity	*.00*	*-.01*	*-.02*	*-.01*	*-.03*	*-.01*
Combined Sensitivity Differentials[a] (excl. price)						
Upper Range	*.01*	*.02*	*.11*	*.20*	*.08*	*.04*
Lower Range	*.01*	*.01*	*.12*	*.19*	*.04*	*.04*
Range of Projected Demand						
High Demand[b]	*16.02*	*16.23*	*16.80*	*16.85*	*16.14*	*16.32*
Low Demand[c]	*15.86*	*15.89*	*16.17*	*16.04*	*15.59*	*16.03*

[a] 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.

[b] Low Price demand plus the combined effects of adverse weather and high economic activity.

[c] High Price demand less the combined effects of favorable weather and low economic activity.

Note: Forecast values in *italics*.

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

Supply and Disposition	1986				1987				1988		Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	1985	1986	1987
Supply													
Total Dry Gas Production[a]	**4.25**	**3.81**	**3.80**	**4.11**	**4.34**	*4.14*	*3.68*	*3.93*	*4.53*	*4.20*	**16.38**	**15.97**	*16.08*
Net Imports	**.21**	**.12**	**.14**	**.23**	**.28**	*.18*	*.17*	*.26*	*.28*	*.18*	**.89**	**.70**	*.89*
Supplemental Gaseous Fuels	**.04**	**.04**	**.03**	**.04**	**.04**	*.03*	*.03*	*.03*	*.04*	*.03*	**.13**	**.15**	*.13*
Total New Supply	**4.50**	**3.97**	**3.97**	**4.37**	**4.67**	*4.35*	*3.88*	*4.22*	*4.85*	*4.41*	**17.40**	**16.82**	*17.11*
Underground Working Gas Storage													
Opening	**2.61**	**1.76**	**2.31**	**3.04**	**2.75**	*1.70*	*2.27*	*3.04*	*2.89*	*1.69*	**2.88**	**2.61**	*2.75*
Closing	**1.76**	**2.31**	**3.04**	**2.75**	**1.70**	*2.27*	*3.04*	*2.89*	*1.69*	*2.29*	**2.61**	**2.75**	*2.89*
Net Withdrawals[b]	**.84**	**-.54**	**-.74**	**.31**	**.95**	*-.57*	*-.77*	*.15*	*1.20*	*-.60*	**.23**	**-.12**	*-.24*
Total Primary Supply[a]	**5.35**	**3.42**	**3.24**	**4.69**	**5.62**	*3.78*	*3.11*	*4.37*	*6.05*	*3.81*	**17.63**	**16.70**	*16.88*
Consumption													
Lease and Plant Fuel	**.25**	**.22**	**.22**	**.24**	**.25**	*.22*	*.18*	*.25*	*.35*	*.22*	**.97**	**.94**	*.89*
Pipeline Use	**.13**	**.11**	**.11**	**.12**	**.14**	*.11*	*.09*	*.13*	*.18*	*.11*	**.50**	**.48**	*.47*
Residential	**2.09**	**.77**	**.38**	**1.15**	**2.04**	*.84*	*.37*	*1.17*	*2.13*	*.84*	**4.43**	**4.40**	*4.41*
Commercial	**1.04**	**.42**	**.27**	**.61**	**1.04**	*.47*	*.28*	*.62*	*1.07*	*.48*	**2.43**	**2.35**	*2.41*
Industrial	**1.64**	**1.27**	**1.12**	**1.19**	**1.41**	*1.39*	*1.28*	*1.50*	*1.74*	*1.45*	**5.90**	**5.23**	*5.57*
Electric Utilities	**.51**	**.69**	**.82**	**.58**	**.51**	*.66*	*.82*	*.60*	*.48*	*.62*	**3.04**	**2.60**	*2.59*
Subtotal	**5.67**	**3.49**	**2.93**	**3.91**	**5.38**	*3.68*	*3.01*	*4.27*	*5.95*	*3.72*	**17.28**	**16.00**	*16.34*
Total Disposition	**5.35**	**3.42**	**3.24**	**4.69**	**5.62**	*3.78*	*3.11*	*4.37*	*6.05*	*3.81*	**17.63**	**16.70**	*16.88*
Unaccounted for	**-.32**	**-.07**	**.30**	**.78**	**.24**	*.10*	*.10*	*.10*	*.10*	*.10*	**.35**	**.70**	*.54*

[a] Excludes nonhydrocarbon gases removed.
[b] 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.

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(87/01); *Natural Gas Monthly*, DOE/EIA-0130(87/02); and *Electric Power Monthly*, DOE/EIA-0226(87/02).

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

Supply and Disposition	1986				1987				1988		Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	1985	1986	1987
Supply													
Production	[b] **229**	[b] **222**	[b] **220**	[b] **217**	[c] **216**	*230*	*223*	*244*	*227*	*224*	**884**	[b] **888**	*912*
Primary Stock Levels[a]													
Opening	**33**	**38**	**38**	**34**	**34**	*33*	*32*	*30*	*30*	*30*	**34**	**33**	*34*
Closing	**38**	**38**	**34**	[b] **34**	[c] **33**	*32*	*30*	*30*	*30*	*30*	**33**	[b] **34**	*30*
Net Withdrawals	**-5**	**0**	**4**	[b] **0**	[c] **1**	*1*	*2*	*0*	*0*	*0*	**1**	[b] **-1**	*4*
Imports	**0**	**1**	**1**	[b] **1**	[c] **1**	*1*	*1*	*1*	*1*	*1*	**2**	[b] **2**	*2*
Exports	**17**	**24**	**24**	[b] **20**	[c] **18**	*24*	*24*	*22*	*17*	*24*	**93**	[b] **86**	*88*
Total New Domestic Supply	[b] **208**	[b] **198**	[b] **202**	[b] **197**	[c] **200**	*207*	*202*	*222*	*211*	*200*	**794**	[b] **804**	*831*
Secondary Stock Levels[d]													
Opening	**170**	**166**	**176**	**164**	**174**	*172*	*183*	*169*	*184*	*182*	**197**	**170**	*174*
Closing	**166**	**176**	**164**	[b] **174**	[c] **172**	*183*	*169*	*184*	*182*	*185*	**170**	[b] **174**	*184*
Net Withdrawals	**4**	**-10**	**12**	[b] **-10**	[c] **2**	*-11*	*14*	*-15*	*2*	*-3*	**27**	[b] **-4**	*-10*
Total Indicated Consumption	[b] **212**	[b] **188**	[b] **213**	[b] **187**	[c] **202**	*196*	*216*	*207*	*213*	*197*	**821**	[b] **800**	*821*
Consumption													
Coke Plants	**10**	**10**	**8**	[b] **8**	[c] **8**	*9*	*8*	*8*	*9*	*10*	**41**	[b] **36**	*34*
Electric Utilities	**173**	**158**	**186**	[b] **167**	[c] **171**	*167*	*188*	*176*	*181*	*167*	**694**	[b] **685**	*702*
Retail and General Industry[e]	**23**	**20**	**19**	[b] **22**	[c] **23**	*20*	*20*	*23*	*23*	*20*	**83**	[b] **83**	*85*
Subtotal	**206**	**189**	**213**	[b] **197**	[c] **202**	*196*	*216*	*207*	*213*	*197*	**818**	[b] **804**	*821*
Total Disposition	[b] **212**	[b] **188**	[b] **213**	[b] **187**	[c] **202**	*196*	*216*	*207*	*213*	*197*	**821**	[b] **800**	*821*
Discrepancy[f]	**6**	**0**	**1**	**-10**	**0**	*0*	*0*	*0*	*0*	*0*	**3**	**-4**	*0*

[a] Primary stocks are held at the mines, preparation plants, and distribution points.
[b] Preliminary.
[c] Estimated.
[d] Secondary stocks are held by users. Most of the secondary stocks are held by electric utilities.
[e] Includes consumption at coal gasification plants of 4.8 million tons for 1985. For the first half of 1986 and for the forecast, synfuels account for 1.5 million tons per quarter.
[f] 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(87/01); and *Quarterly Coal Report*, DOE/EIA-0121(86/4Q).

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

Supply and Disposition	1986				1987				1988		Year		
	1st	2nd	3rd	4th	1st[a]	2nd	3rd	4th	1st	2nd	1985	1986	1987
Net Generation													
Coal	**351.6**	**324.0**	**374.2**	**336.0**	**349.6**	*336.6*	*375.2*	*352.7*	*363.6*	*337.6*	**1402.1**	**1385.8**	*1414.1*
Petroleum	**30.7**	**31.2**	**42.4**	**32.2**	**29.9**	*27.5*	*33.8*	*29.8*	*30.3*	*24.9*	**100.2**	**136.6**	*121.0*
Natural Gas	**48.5**	**65.7**	**78.5**	**55.8**	**48.8**	*62.6*	*78.1*	*57.6*	*45.8*	*59.2*	**291.9**	**248.5**	*247.1*
Nuclear Power	**99.7**	**93.7**	**110.0**	**110.6**	**114.9**	*111.3*	*121.9*	*116.3*	*125.8*	*117.2*	**383.7**	**414.0**	*464.4*
Hydropower	**73.1**	**81.0**	**66.4**	**70.5**	**72.6**	*74.2*	*69.5*	*70.1*	*82.0*	*84.4*	**281.1**	**290.8**	*286.4*
Geothermal Power and Other[b]	**3.1**	**2.8**	**3.0**	**2.7**	**3.0**	*2.9*	*2.9*	*3.0*	*3.0*	*3.1*	**10.7**	**11.5**	*11.7*
Total Generation	**606.6**	**598.4**	**674.5**	**607.7**	**618.8**	*615.1*	*681.4*	*629.5*	*650.5*	*626.4*	**2469.8**	**2487.3**	*2544.8*
Net Imports	**10.1**	**9.4**	**12.2**	**12.3**	**9.8**	*10.7*	*13.7*	*10.9*	*10.0*	*10.9*	**40.9**	**44.0**	*45.0*
Total Supply	**616.8**	**607.8**	**686.7**	**620.0**	**628.5**	*625.7*	*695.1*	*640.4*	*660.5*	*637.3*	**2510.8**	**2531.3**	*2589.8*
Losses and Unaccounted for[c]	**26.0**	**38.2**	**48.0**	**42.1**	**24.8**	*46.1*	*45.0*	*60.2*	*45.9*	*44.8*	**185.1**	**154.4**	*176.1*
Total Consumption (sales)	**590.7**	**569.6**	**638.7**	**577.9**	**603.7**	*579.7*	*650.1*	*580.2*	*614.6*	*592.4*	**2325.7**	**2376.9**	*2413.7*

[a] Estimated.
[b] Includes wind, wood, and waste.
[c] Balancing item, mainly transmission losses.

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(87/01); and *Electric Power Monthly*, DOE/EIA-0226(87/02).

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

Supply and Disposition	1986				1987				1988		Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	1985	1986	1987
Supply													
Production													
Petroleum[a]	**5.32**	**5.17**	**5.04**	**4.99**	**4.92**	*4.88*	*4.84*	*4.83*	*4.82*	*4.73*	**21.23**	**20.52**	*19.46*
Natural Gas[b]	**4.39**	**3.93**	**3.93**	**4.25**	**4.48**	*4.27*	*3.81*	*4.05*	*4.68*	*4.34*	**16.92**	**16.49**	*16.61*
Coal	**5.03**	**4.86**	**4.83**	**4.76**	**4.74**	*5.04*	*4.89*	*5.35*	*4.98*	*4.91*	**19.33**	**19.48**	*20.01*
Nuclear Power	**1.08**	**1.01**	**1.19**	**1.20**	**1.24**	*1.20*	*1.32*	*1.26*	*1.36*	*1.27*	**4.15**	**4.48**	*5.02*
Hydropower[c]	**.76**	**.85**	**.69**	**.74**	**.76**	*.78*	*.73*	*.73*	*.86*	*.88*	**2.94**	**3.04**	*2.99*
Geothermal Power and Other[d]	**.06**	**.06**	**.06**	**.05**	**.06**	*.06*	*.06*	*.06*	*.06*	*.06*	**.21**	**.23**	*.23*
Subtotal	**16.64**	**15.87**	**15.75**	**15.98**	**16.20**	*16.22*	*15.63*	*16.28*	*16.76*	*16.19*	**64.78**	**64.25**	*64.34*
Net Imports													
Crude Oil	**1.54**	**2.12**	**2.50**	**2.26**	**2.04**	*2.31*	*2.57*	*2.49*	*2.14*	*2.40*	**6.38**	**8.43**	*9.41*
Other Petroleum	**.57**	**.67**	**.79**	**.66**	**.54**	*.57*	*.67*	*.71*	*.67*	*.61*	**2.57**	**2.69**	*2.49*
Natural Gas	**.21**	**.12**	**.14**	**.23**	**.29**	*.18*	*.17*	*.26*	*.28*	*.18*	**.89**	**.70**	*.90*
Coal and Coke	**-.44**	**-.62**	**-.62**	**-.53**	**-.46**	*-.62*	*-.61*	*-.57*	*-.44*	*-.62*	**-2.40**	**-2.21**	*-2.26*
Electricity	**.10**	**.10**	**.13**	**.13**	**.10**	*.11*	*.14*	*.11*	*.10*	*.11*	**.42**	**.45**	*.47*
Subtotal	**1.98**	**2.39**	**2.94**	**2.75**	**2.51**	*2.55*	*2.94*	*3.00*	*2.76*	*2.68*	**7.87**	**10.06**	*11.01*
Primary Stocks													
Net Withdrawals	**.98**	**-.78**	**-1.03**	**.45**	**1.29**	*-.58*	*-.92*	*.15*	*1.54*	*-.70*	**.63**	**-.37**	*-.06*
SPR Fill Rate Additions(-)	**-.02**	**-.03**	**-.03**	**-.03**	**-.05**	*-.05*	*-.03*	*-.02*	*-.02*	*-.02*	**-.25**	**-.11**	*-.15*
Secondary Stocks[e]													
Net Withdrawals	**.08**	**-.22**	**.26**	**-.22**	**.04**	*-.20*	*.32*	*-.30*	*-.01*	*-.03*	**.69**	**-.10**	*-.14*
Total Supply[f]	**19.66**	**17.23**	**17.89**	**18.94**	**19.99**	*17.95*	*17.94*	*19.12*	*21.02*	*18.13*	**73.73**	**73.72**	*75.00*
Disposition													
Nonutility Uses													
Petroleum	**7.49**	**7.48**	**7.60**	**7.86**	**7.58**	*7.54*	*7.60*	*7.86*	*7.74*	*7.50*	**29.83**	**30.43**	*30.58*
Natural Gas[g]	**5.32**	**2.89**	**2.18**	**3.43**	**5.03**	*3.12*	*2.27*	*3.78*	*5.65*	*3.19*	**14.69**	**13.83**	*14.19*
Coal[h]	**.78**	**.71**	**.61**	**.68**	**.73**	*.69*	*.66*	*.72*	*.74*	*.71*	**2.93**	**2.79**	*2.80*
Industrial Hydropower	**.01**	**.01**	**.01**	**.01**	**.01**	*.01*	*.01*	*.01*	*.01*	*.01*	**.03**	**.03**	*.03*
Subtotal	**13.60**	**11.10**	**10.40**	**11.98**	**13.34**	*11.36*	*10.54*	*12.36*	*14.13*	*11.41*	**47.48**	**47.08**	*47.60*
Electric Utility Inputs													
Petroleum	**.33**	**.33**	**.45**	**.34**	**.32**	*.29*	*.36*	*.32*	*.32*	*.27*	**1.09**	**1.45**	*1.29*
Natural Gas	**.53**	**.72**	**.86**	**.60**	**.53**	*.68*	*.85*	*.63*	*.50*	*.64*	**3.16**	**2.70**	*2.68*
Coal	**3.65**	**3.34**	**3.93**	**3.53**	**3.61**	*3.51*	*3.92*	*3.68*	*3.79*	*3.52*	**14.54**	**14.46**	*14.72*
Nuclear Power	**1.08**	**1.01**	**1.19**	**1.20**	**1.24**	*1.20*	*1.32*	*1.26*	*1.36*	*1.27*	**4.15**	**4.48**	*5.02*
Hydropower[i]	**.86**	**.93**	**.81**	**.86**	**.85**	*.88*	*.86*	*.84*	*.95*	*.98*	**3.33**	**3.46**	*3.43*
Geothermal Power and Other	**.06**	**.06**	**.06**	**.05**	**.06**	*.06*	*.06*	*.06*	*.06*	*.06*	**.21**	**.23**	*.23*
Subtotal	**6.51**	**6.39**	**7.30**	**6.58**	**6.61**	*6.62*	*7.36*	*6.78*	*6.99*	*6.75*	**26.48**	**26.78**	*27.37*
Gross Energy Consumption[f]	**20.11**	**17.49**	**17.70**	**18.56**	**19.95**	*17.99*	*17.90*	*19.14*	*21.12*	*18.16*	**73.96**	**73.86**	*74.97*
Electrical System Energy Losses[j]	**4.49**	**4.45**	**5.12**	**4.61**	**4.55**	*4.65*	*5.14*	*4.80*	*4.89*	*4.72*	**18.55**	**18.67**	*19.14*
Total Net Energy	**15.62**	**13.04**	**12.58**	**13.95**	**15.40**	*13.34*	*12.75*	*14.34*	*16.23*	*13.43*	**55.41**	**55.19**	*55.84*
Total Disposition	**19.66**	**17.23**	**17.89**	**18.94**	**19.99**	*17.95*	*17.94*	*19.12*	*21.02*	*18.13*	**73.73**	**73.72**	*75.00*
Unaccounted for	**-.45**	**-.26**	**.18**	**.38**	**.04**	*-.03*	*.04*	*-.02*	*-.10*	*-.03*	**-0.23**	**-.14**	*.02*

[a] Includes crude oil and lease condensate, natural gas liquids, hydrogen, etc., input to oil refineries.
[b] Total dry gas production excluding nonhydrocarbon gases removed.
[c] Includes industrial production.
[d] Includes wood and waste used to generate electricity.
[e] Primarily electric utility stocks.
[f] This total excludes approximately 2 quadrillion Btu of wood.
[g] Includes natural gas used as refinery fuel.
[h] Includes net imports of coal coke.
[i] Includes net imports of electricity.
[j] 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(87/01); and *Electric Power Monthly*, DOE/EIA-0226(87/02).

Table 18. Conversion Factors

Product	Unit	Heat Content (million Btu per unit)
	Heat Content of Fuels	
Coal		
Production	Short ton	21.934
Consumption	Short ton	21.485
Coke Plants	Short ton	26.800
Industrial and Retail	Short ton	22.200
Electric Utilities	Short ton	21.110
Imports	Short ton	25.000
Exports	Short ton	26.292
Coal Coke	Short ton	24.800
Crude Oil		
Production	Barrel	5.800
Imports	Barrel	5.832
Petroleum Products		
Consumption	Barrel	5.412
Motor Gasoline	Barrel	5.253
Jet Fuel	Barrel	5.621
Distillate Fuel Oil	Barrel	5.825
Residual Fuel Oil	Barrel	6.287
LPG (excluding ethane)	Barrel	3.911
Ethane	Barrel	3.082
Unfinished Oils	Barrel	5.825
Imports	Barrel	5.630
Exports	Barrel	5.855
Natural Gas Plant Liquids		
Production	Barrel	3.792
Natural Gas		
Production, Dry	Cubic foot	1,033
Consumption	Cubic foot	1,033
Non-electric Utilities	Cubic foot	1,032
Electric Utilities	Cubic foot	1,038
Imports	Cubic foot	1,002
Exports	Cubic foot	1,011

Component	Heat Rate (Btu per kilowatthour)
	Heat Rates for Electricity
Plant Generation Efficiency	
Coal	10,435
Petroleum	
Distillate Fuel Oil	11,988
Residual Fuel Oil	10,553
Natural Gas	10,818
Nuclear Energy	10,809
Hydropower	10,339
Geothermal and Other Energy	21,263
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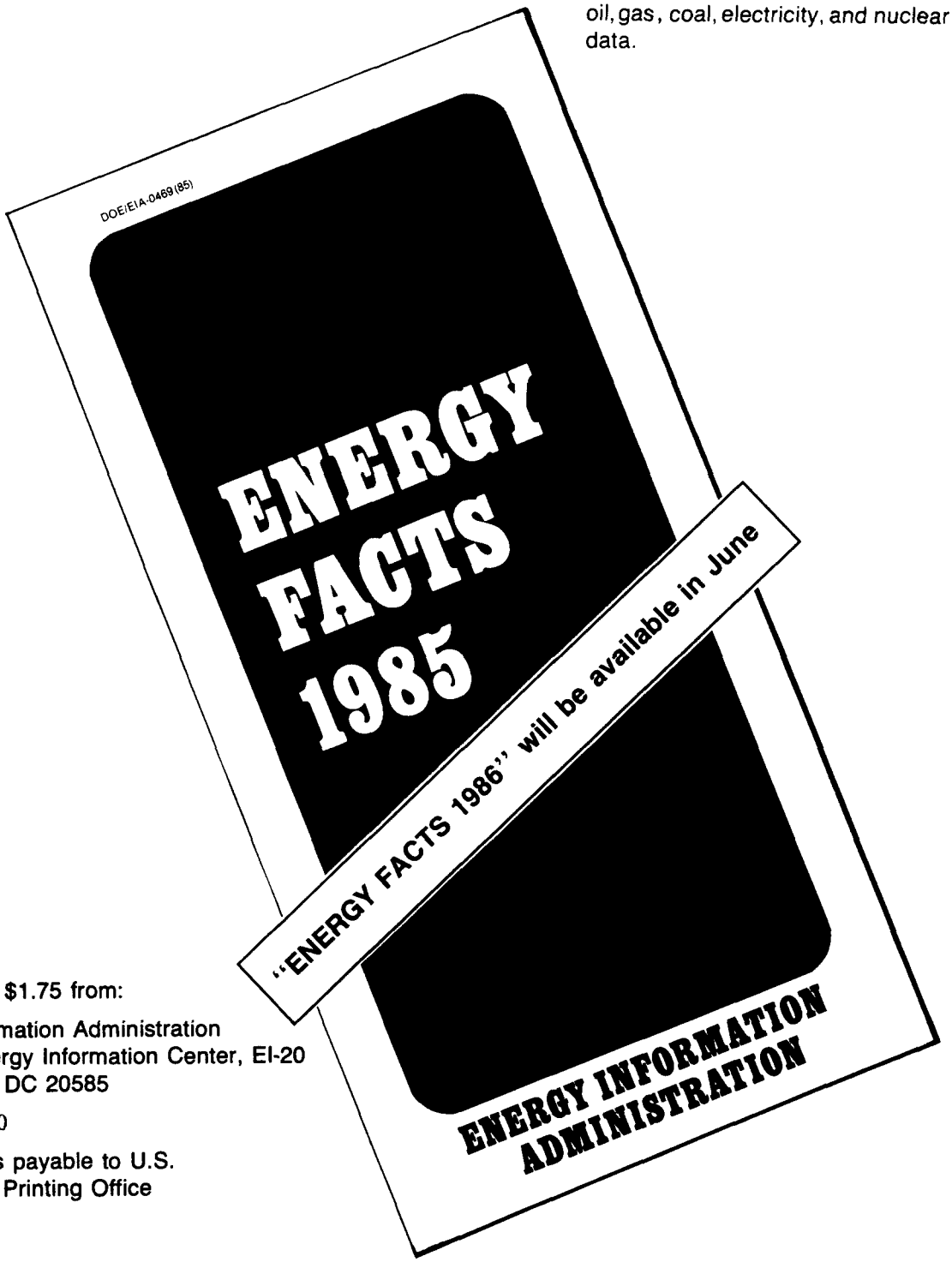

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