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DOE/EIA-0202(87/3Q)
Distribution Category UC-98

Short-Term Energy Outlook

Quarterly Projections
July 1987

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

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Preface

The Energy Information Administration (EIA) quarterly forecasts of short-term energy supply, demand, and prices are revised in January, April, July, and October for publication in the *Short-Term Energy Outlook (Outlook)*. 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 all 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

Significant activity in the Persian Gulf is once again generating a degree of nervousness in crude oil markets. In July, spot prices of crude oil were fluctuating daily, with highs around \$22 per barrel for West Texas Intermediate, despite the official Organization of Petroleum Exporting Countries (OPEC) price of \$18 per barrel. As of the end of July, it was estimated that the average cost per barrel of imported crude oil delivered to the United States was over \$19. The fundamentals, however, are still pointing to essentially flat consumption, with world oil prices close to \$18 per barrel, for the remainder of 1987. In 1988, an increase in world oil prices to \$19 per barrel is expected, based on steadily rising demand and "leaky" but general adherence to OPEC's somewhat tighter production quotas. Unless world oil demand is much stronger than now indicated, it is unlikely that a campaign by the OPEC "hawks" for still higher prices can be sustained.

Prices, Demand for Motor Gasoline Higher in 1987

A return to triple-digit motor gasoline prices is expected by the third quarter of 1987, as refiners and retailers begin to catch up with rising crude oil costs. Demand should also be higher, however, with new car purchases leading an increase in travel demand. Further price increases are seen into 1988, but with little or no further increase in consumption.

New Users Switching Away From Residual Fuel Oil

With an increase in the spread between residual fuel oil and natural gas prices, the sharp rise in residual fuel demand in 1986 is reversing itself in 1987, and a decline of 200,000 barrels per day is projected for the year. Most of the drop is in the utility sector, with further losses expected in 1988.

Nuclear Share of Electricity Generation Increasing

Eleven nuclear units beginning operation in 1987 and 1988 will increase the nuclear share of electricity generation to 19 percent in 1988, with total generation increasing by 2.0 percent in 1987 and 2.5 percent in 1988.

Imports Up, Domestic Production Down in 1987 and 1988

As domestic crude oil production continues to decline, a further dependence on oil imports is projected into 1988. Net petroleum imports are expected to reach their highest level since 1980. Crude oil and product stocks, projected to drop by 29 million barrels between the end of 1986 and the end of 1987, should remain stable through 1988. Very recent data on imports suggest that the United States is importing more oil than necessary to meet expected demand. If this is true, there may be excess stocks on hand in the fall, leading to generally weak prices.

Total Energy Consumption to Rise in 1988

Increasing electricity demand will raise total energy consumption above 76 quadrillion Btu in 1988, a level of demand not seen since the 1979-1980 period. Unlike then, however, petroleum is not a significant contributor to the increase, which is attributable mainly to increased coal-fired and nuclear generation at electric utilities, as well as increased industrial use of natural gas.

The forecasts previously discussed are the base case projections, summarized in Table 1 on page 3. 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 1988 would increase by about 130,000 barrels per day (approximately 0.8 percent and 2.2 percent, respectively).
- For each \$1-per-barrel (approximately 5.3 percent) decline from the base case in the price of imported crude oil, petroleum consumption and total net imports in 1988 would increase by about 90,000 barrels per day (approximately 0.5 percent and 1.5 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 0.9 percent and 2.6 percent, respectively).

Table 1. Summary of Base Case Assumptions and Projections

Assumptions and Projections	Year				Annual Percentage Change		
	1985	1986	1987	1988	1985-1986	1986-1987	1987-1988
Macroeconomic Indicators							
Real Gross National Product (billion 1982 dollars)	3,585	3,675	<i>3,766</i>	<i>3,863</i>	2.5	<i>2.5</i>	<i>2.6</i>
Index of Industrial Production (Mfg.) (index, 1977 = 1.000)	1,264	1,292	<i>1,327</i>	<i>1,358</i>	2.2	<i>2.7</i>	<i>2.3</i>
Imported Crude Oil Price (nominal dollars per barrel)	26.99	13.98	<i>17.70</i>	<i>19.00</i>	-48.2	<i>26.6</i>	<i>7.3</i>
Retail Prices (nominal)^a							
Motor Gasoline ^b (dollars per gallon)	1.20	.93	<i>.96</i>	<i>1.02</i>	-22.5	<i>3.2</i>	<i>6.3</i>
Retail No. 2 Heating Oil (dollars per gallon)	1.05	.84	<i>.79</i>	<i>.86</i>	-20.0	<i>-6.0</i>	<i>8.9</i>
Residential Natural Gas (dollars per thousand cubic feet)	6.12	5.82	<i>5.46</i>	<i>5.54</i>	-4.9	<i>-6.2</i>	<i>1.5</i>
Residential Electricity (cents per kilowatthour)	7.79	7.79	<i>7.74</i>	<i>8.01</i>	.0	<i>-6</i>	<i>3.5</i>
Petroleum Supply							
Crude Oil Production ^c (million barrels per day)	8.97	8.68	<i>8.28</i>	<i>8.06</i>	-3.2	<i>-4.6</i>	<i>-2.7</i>
Net Petroleum Imports, Including SPR (million barrels per day)	4.29	5.44	<i>5.62</i>	<i>5.96</i>	26.8	<i>3.3</i>	<i>6.0</i>
Consumption							
Total Market Economies Petroleum Consumption (million barrels per day)	46.4	47.5	<i>47.9</i>	<i>48.3</i>	2.4	<i>.8</i>	<i>.8</i>
U.S. Total Petroleum Consumption (million barrels per day)	15.73	16.28	<i>16.37</i>	<i>16.35</i>	3.5	<i>.6</i>	<i>-.1</i>
Motor Gasoline	6.83	7.03	<i>7.15</i>	<i>7.15</i>	2.9	<i>1.7</i>	<i>.0</i>
Distillate Fuel Oil	2.87	2.91	<i>2.90</i>	<i>2.94</i>	1.4	<i>-.3</i>	<i>1.4</i>
Residual Fuel Oil	1.20	1.42	<i>1.24</i>	<i>1.18</i>	18.3	<i>-12.7</i>	<i>-4.8</i>
Other Petroleum ^d	4.83	4.92	<i>5.08</i>	<i>5.08</i>	1.9	<i>3.3</i>	<i>.0</i>
Coal Consumption (million short tons)	818	804	<i>815</i>	<i>835</i>	-1.7	<i>1.4</i>	<i>2.5</i>
Natural Gas Consumption (trillion cubic feet)	17.28	16.00	<i>15.84</i>	<i>16.53</i>	-7.4	<i>-1.0</i>	<i>4.4</i>
Electricity Generation (billion kilowatthours)	2,469.8	2,487.3	<i>2,539.3</i>	<i>2,601.0</i>	.7	<i>2.1</i>	<i>2.4</i>
Total Energy Consumption ^e (quadrillion Btu)	73.96	74.09	<i>74.66</i>	<i>76.43</i>	.2	<i>.8</i>	<i>2.4</i>
Thousand Btu/1982 Dollar of GNP	20.63	20.16	<i>19.82</i>	<i>19.79</i>	-2.3	<i>-1.7</i>	<i>-.2</i>

^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 may 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(87/04); *International Energy Annual 1985* DOE/EIA-0219(86); *Petroleum Marketing Monthly*, DOE/EIA-0380(87/04); *Petroleum Supply Monthly*, DOE/EIA-0109(87/04); *Petroleum Supply Annual 1986*, DOE/EIA-0340(86)/1; *Natural Gas Monthly*, DOE/EIA-0130(87/05); *Electric Power Monthly*, DOE/EIA-0226(87/05); and *Quarterly Coal Report*, DOE/EIA-0121(87/1Q); Organization for Economic Cooperation and Development, *Monthly Oil Statistics Database* through March 1987. Macroeconomic projections are based on modifications to Data Resources, Inc., Forecast CONTROL0687.

The Outlook

- *Assumptions*

- *U.S. Petroleum Outlook*

- *Outlook for Other Major Energy Sources*

Assumptions

- *International Petroleum*

- *World Oil Prices*

- *Macroeconomic Activity*

- *Energy Product Prices*

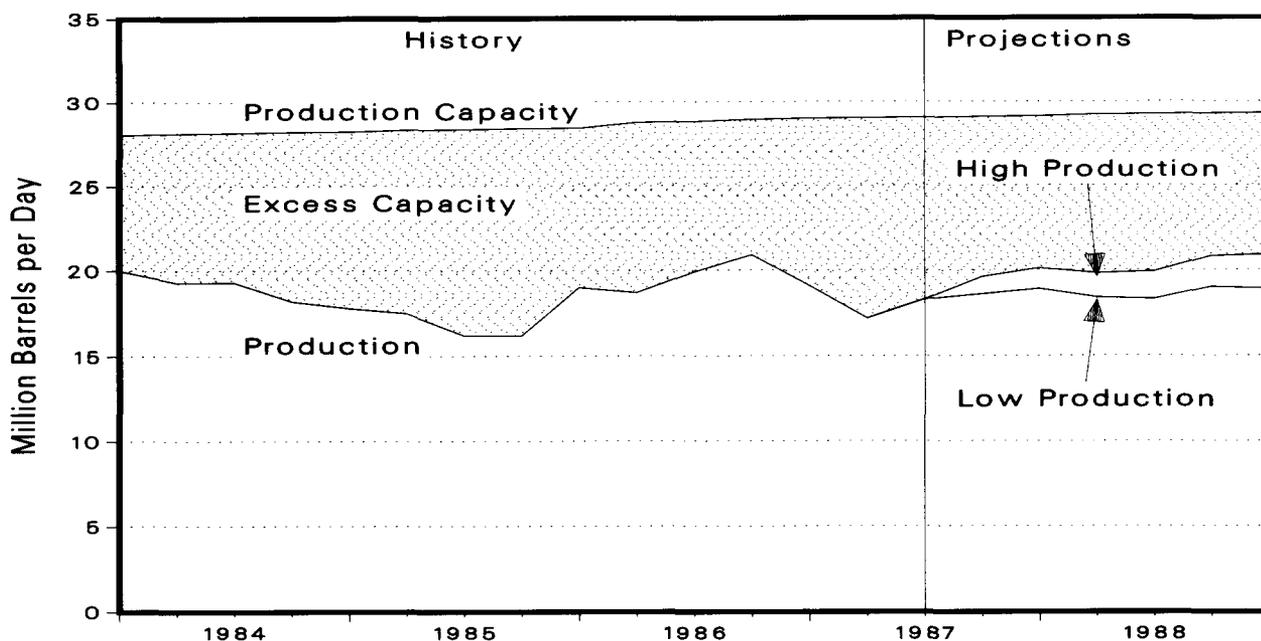
International Petroleum

Recent Developments

The world oil price moved from \$17 per barrel in the first quarter of 1987 to \$18 per barrel in April and May, reflecting the effect on refiners' crude oil acquisition costs of the new OPEC pricing structure, initiated in February, and rising official and spot-market-related prices for non-OPEC crude oils. Subsequent increases in spot and futures prices of U.S. and North Sea crude oils were not substantially reflected in the spot prices for other crude oils until after the OPEC decision in late June to increase its crude oil production ceiling (not including natural gas liquids production and refinery gain) for the second half of 1987 to only 16.6 million barrels per day. Subsequently, fears of a disruption in Persian Gulf crude oil supplies, generated by resumed attacks on oil tankers by Iraq and Iran and U.S. plans to reflag and escort Kuwaiti tankers, have increased the futures prices of U.S. crude oils above \$22 per barrel. At the same time, news reports have indicated that OPEC may attempt to increase its reference price to \$20 per barrel for 1988.

- The price of imported crude oil delivered to U.S. refiners increased from \$16.87 per barrel in the first quarter of 1987 to \$17.88 in April and then further increased to an estimated \$18.24 per barrel in May (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 18.2 million and 18.4 million barrels per day in the second quarter of 1987, an increase of between 1.0 million and 1.2 million barrels per day from the rate for the first quarter of 1987 (Figure 1 on page 10 and Table 2 on page 41). As a result, OPEC crude oil production in the second quarter was about 1.1 million to 1.3 million barrels per day above OPEC's second-quarter production ceiling of 15.8 million barrels per day.
- The OPEC Oil Ministers concluded their regular June Ministerial Conference on June 27 by agreeing to set a crude oil production ceiling of 16.6 million barrels per day for the second half of 1987, in order to maintain OPEC's \$18-per-barrel reference price. OPEC's decision to limit fourth-quarter production to 16.6 million barrels per day, down from a tentative ceiling of 18.3 million barrels per day agreed to in December 1986, was reported to be an attempt to neutralize any downward effect on oil prices of the utilization by Iraq of its increased oil export capacity through Turkey. News reports indicated that the Oil Ministers fear that OPEC crude oil production may exceed the new production ceiling by 1.0 million to 1.5 million barrels per day in the third and fourth quarters, as a result of overproduction and/or "uncounted" production from Iraq, the United Arab Emirates, and the Neutral Zone.
- Iraq, which again refused to sign the OPEC production agreement, is expected to bring a new 0.5-million-barrel-per-day crude oil pipeline through Turkey into full operation by the beginning of the fourth quarter. As a result, Iraq, which was "assigned" a production quota of 1.54 million barrels per day in contrast to a current production rate of between 2.0 million and 2.2 million barrels per day, could be producing as much as 2.7 million barrels per day in the fourth quarter. At this rate, Iraqi production would be well in excess of Gulf war rival Iran's current production quota of almost 2.4 million barrels per day.
- Recent reports indicate that Saudi Arabia may be willing, at the next OPEC Ministerial Conference on December 9, to support a proposal by Iran, Libya, and Algeria to increase the OPEC reference price by \$2, to \$20 per barrel for 1988. Saudi support for the increase, which would probably ensure adoption by the OPEC Conference, was reported to be based on Saudi concern over a continued decrease in foreign reserve holdings and Saudi deference to the growing power of Iran.
- Reports also indicate that OPEC is likely to point to the recent weakness of the U.S. dollar as a factor necessitating the price increase. The decline in the value of the dollar relative to other currencies has raised the import costs of OPEC member countries relative to their oil export revenues. This has occurred because, while OPEC oil export revenues are dollar denominated, most imports by OPEC member countries are denominated in other currencies.

Figure 1. OPEC Oil Production and Production Capacity



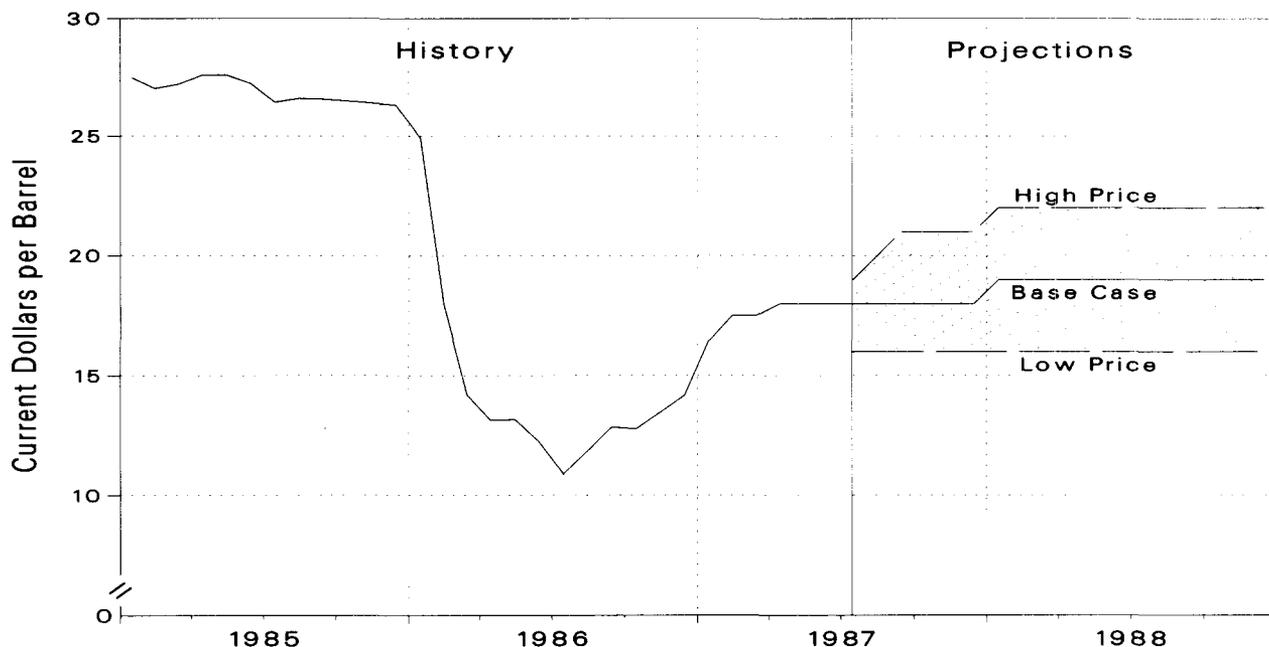
Note: Includes production of crude oil, natural gas liquids, and refinery gain.
Source: Energy Information Administration.

Forecast

The demand for petroleum by the market economies is projected to average 47.9 million barrels per day in 1987, an increase of about 150,000 barrels per day from the rate reported in the last *Outlook*. This increase is the result of an upward revision of over 0.2 million barrels per day in estimated U.S. consumption that more than offsets a small decrease in projected European consumption. As a result of these changes, oil consumption by the market economies in 1987 is now projected to be 0.4 million barrels per day, or about 0.9 percent, higher than the rate for 1986 (Table 2 and Table 3 on page 41). Then, in 1988, petroleum demand is again assumed to increase by 0.4 million barrels per day.

- It now appears that oil production from the non-OPEC market economies will increase by about 80,000 barrels per day in 1987, almost reversing a decline of similar magnitude in 1986. The 1987 rate of about 26.8 million barrels per day is 0.3 million barrels per day higher than the rate reported in the last *Outlook*, primarily because of more optimistic oil production projections for the United States and the North Sea. Subsequently, in 1988, non-OPEC oil supply is expected to return to the lower 1986 rate, as declines in North American and North Sea supplies more than offset production increases in such countries as Mexico and North Yemen.
- Petroleum stocks held by the market economies are projected to be drawn down at a rate of 0.6 million barrels per day in 1987, failing to reverse completely the stock buildup of about 0.8 million barrels per day in 1986.
- These forecasts are based on the projection that OPEC crude oil production will exceed the 16.6-million-barrel-per-day output ceiling by about 1.1 million barrels per day in the third quarter of 1987 as a result of overproduction by Iraq and the United Arab Emirates. Then, in the fourth quarter, OPEC production is projected to exceed the ceiling by about 1.6 million barrels per day as Iraq further increases production to supply the new Iraq-Turkey pipeline and Ecuador resumes full production after completing repairs to its earthquake-damaged crude oil pipeline.
- 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 third quarter of 1987. The high and low production paths in Figure 1 are not based on the alternative world oil price scenarios considered in the *Outlook*, but rather on a range of assumed inventory behavior. 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



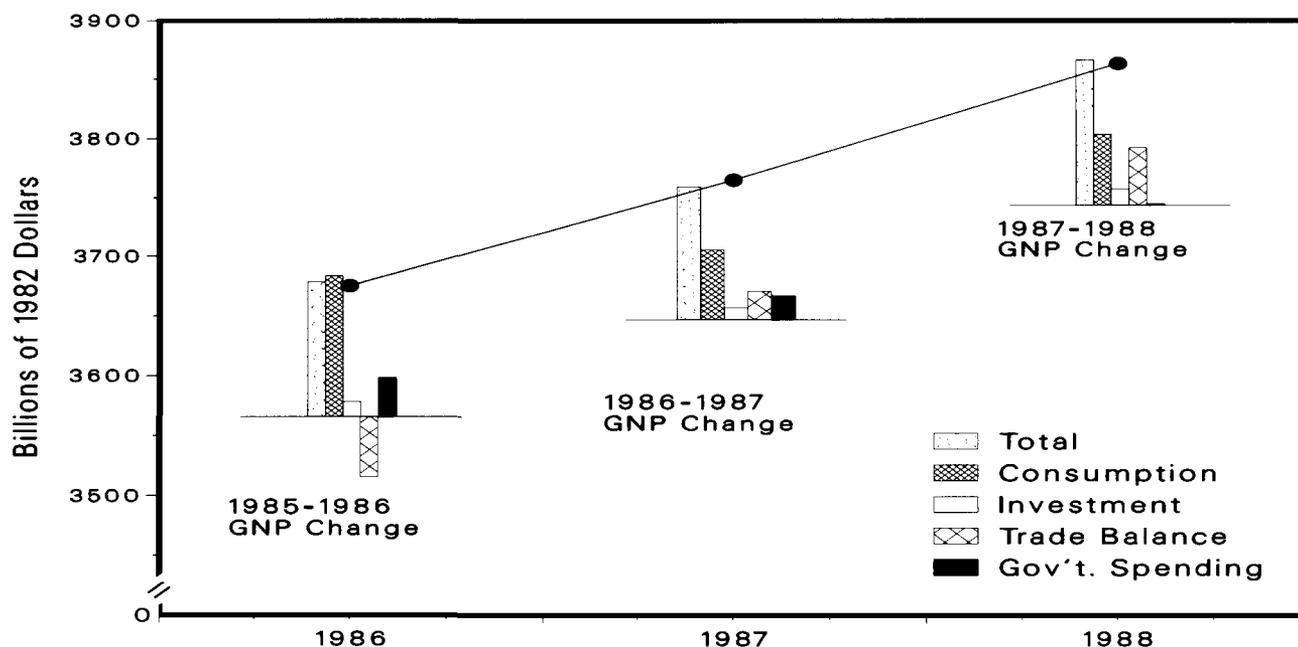
Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(87/04) (Washington, DC, 1987). • Projections: Table 4.

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 prices 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. **None of the scenarios addresses the effects on oil prices of a disruption in Persian Gulf supplies due to increased hostilities.**

- In the base case oil price scenario, the world oil price averages \$18 per barrel in the second half of 1987 and increases to \$19 per barrel in 1988. This scenario is based on the assumption that world oil demand will increase slowly and that OPEC crude oil production will continue to exceed the OPEC production ceiling by moderate amounts. In addition, it is assumed that either (1) OPEC will agree in December to increase its reference price by \$1 to \$19 per barrel, effective January 1, 1988, or (2) an attempt will be made to raise the reference price to \$20 per barrel, but it will not be fully effective.
- In the low oil price scenario, the world oil price decreases from \$18.10 per barrel in the second quarter of 1987 to \$16 for the remainder of the forecast period. In this scenario, it is assumed that worldwide oil demand shows little or no growth and that several OPEC countries produce at well above their current quota levels.
- In the high oil price scenario, the world oil price increases from \$18.10 per barrel in the second quarter of 1987 to \$20 per barrel in the third quarter and then to \$21 per barrel in the fourth quarter. Subsequently, in 1988, the price increases to \$22 per barrel. In this scenario, it is assumed that there is fairly strict adherence to the new OPEC quotas and that Saudi Arabia continues to act as a swing producer. In addition, it is assumed that the worldwide oil stock surplus has been eliminated in conjunction with strong increases in oil demand.

Figure 3. Real GNP and Components of Change



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

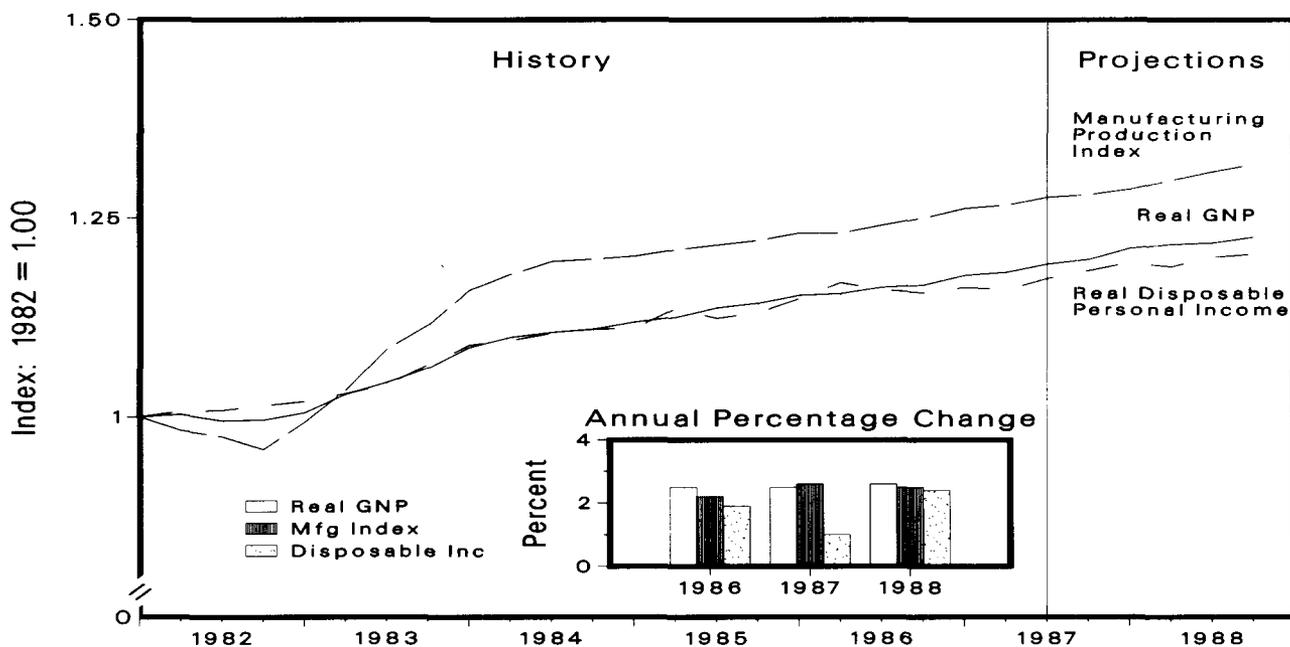
Macroeconomic Activity

The outlook for the economy is for continued steady growth in the Nation's real Gross National Product (GNP) of 2.5 to 2.6 percent per year for 1987 and 1988 (Table 4 on page 42). Real growth in net exports is expected to be an important source of continued moderate expansion in the near term (Figure 3).¹

- Despite an expected dropoff in the growth of personal consumption expenditures from 4.1 percent in 1986 to 1.9 percent for 1987 and 1988, GNP growth is expected to hold at 2.5 percent in 1987 and 2.6 percent in 1988. Partly responsible for this continued growth is a 13-percent reduction in the real trade deficit to \$129 billion in 1987 from \$148 billion in 1986 (Figure 3). An even sharper reduction of 30 percent in the real trade deficit is expected for 1988.
- Economic growth reported in this *Outlook* is down somewhat from the April 1987 *Outlook*, largely because of the unexpectedly early and sharp upturn in interest rates evident during the second quarter of 1987. This development has shifted real interest rate forecasts upward noticeably for the short term. Higher real interest rates are expected to depress investment (particularly in construction) but will also raise imports for services by increasing real payments on foreign investments in the United States.
- Sharply higher real oil prices, the inflationary effects of dollar depreciation on import prices, and other factors are expected to result in consumer price inflation of 4.0 percent in 1987 and 4.7 percent in 1988, compared to 1.9 percent in 1986. Real personal disposable income is projected to grow by only 0.8 percent in 1987. Since no rapid acceleration in price inflation is expected beyond 1987, however, real personal income growth should improve again by late 1987, leading to expected average growth in 1988 of 2.6 percent.

¹The source of the macroeconomic forecast is the Data Resources, Inc. (DRI), base case for June 1987. All figures not shown in Table 4 are from that forecast.

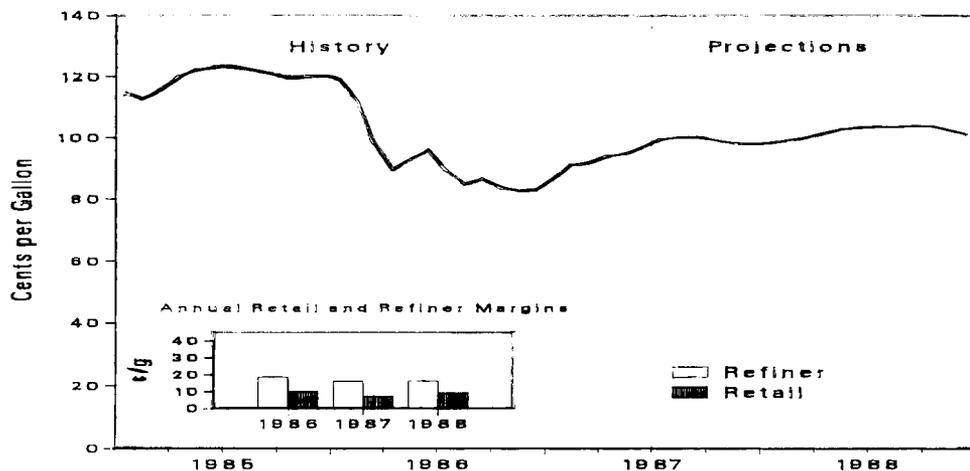
Figure 4. Indices of Economic Activity



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

- Industrial production is expected to continue to grow at the relatively moderate pace of about 2.2 percent in 1987 and 1988. Manufacturing growth, spurred by higher exports, is expected to fare slightly better than overall industry, with growth forecasts of about 2.5 percent for 1987 and 1988 (Table 4 on page 42).
- However, in part because of the downward revision in export growth for this *Outlook* compared to the April *Outlook*, manufacturing growth for 1987 and 1988 is expected to be from 0.4 to 0.5 percentage points less than last reported. In 1987, production of nondurable goods will fall below earlier expectations. By 1988, manufacturing of durable goods will exhibit steady growth, but at a pace noticeably slower than envisioned in the April *Outlook*, reflecting the effects of somewhat higher interest rates and energy prices.
- The macroeconomic forecast used in this *Outlook* was prepared before the July 1987 benchmark GNP account revisions. Although somewhat higher GNP growth for prior years than reported here is implied in the revisions, it is assumed that projected growth rates would not have been materially affected if the forecast had been based on the revised data.

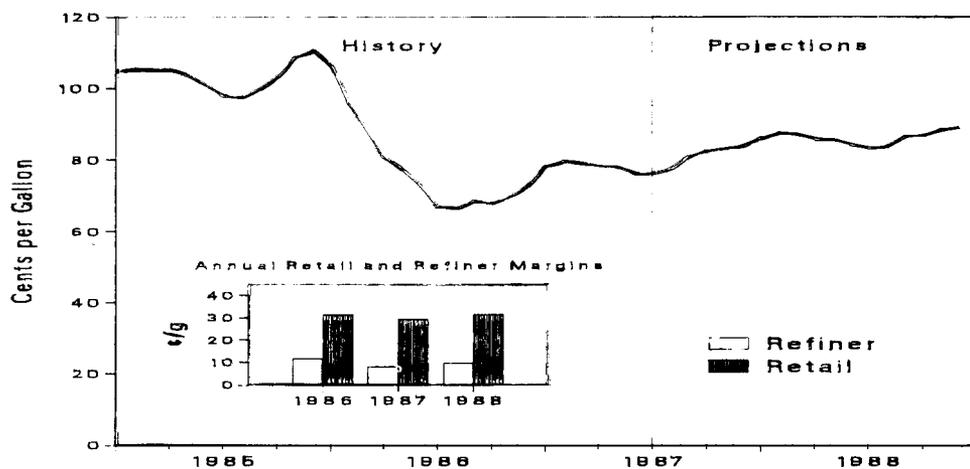
Figure 5. Motor Gasoline Prices



Gasoline Prices Above \$1 per Gallon Will Return This Summer

Sources. • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0036(87/04) (Washington, DC, 1987). • Projections, Table 5.

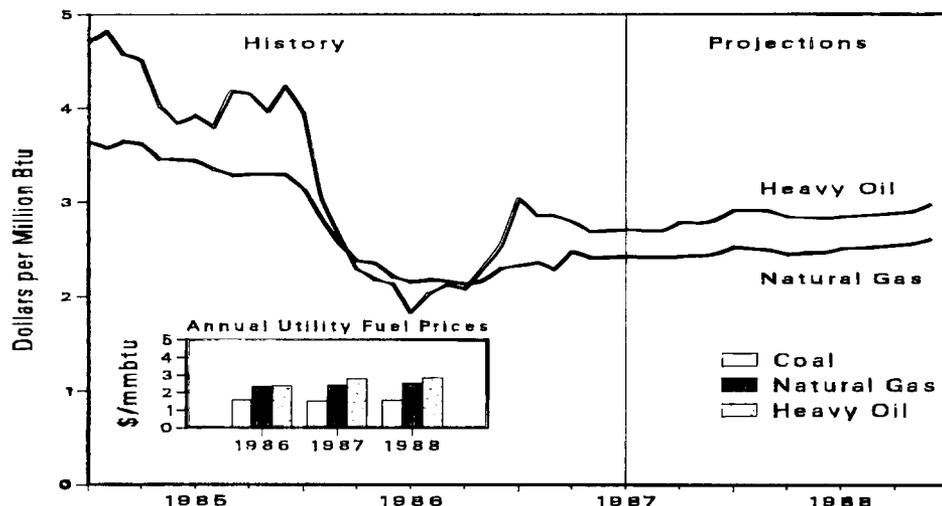
Figure 6. Distillate Prices



Due to Higher Crude Oil Costs, Winter 1987-88 Prices Will Be 10 Cents Higher Than Winter 1986-87

Sources. • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0036(87/04) (Washington, DC, 1987). • Projections, Table 5.

Figure 7. Utility Prices of Oil and Gas



The Gap Between Oil and Gas Prices to Utilities is Returning

Sources. • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0036(87/04) (Washington, DC, 1987). • Projections, Table 5.

Energy Product Prices

In 1986 the world crude oil price plunged, lowering all petroleum product prices and affecting other energy prices as well. In 1987 and 1988, as crude oil prices rise, product prices will follow, but generally at a lagged pace.

- Gasoline prices should peak in 1987 at \$1.00 per gallon during the height of the summer driving season (Figure 5 on page 14). As is generally the case, the price at the pump will lag behind the increase in crude oil costs by some 3 to 6 months, leading to a moderate increase of only about 3 cents per gallon for all of 1987 (compared to an increase of 9 cents per gallon in the cost of crude oil). Margin squeezes should only be temporary, however, as a return to normal stock levels and a workoff of cheap crude oil from inventories help drive the price up by 6 cents per gallon in 1988, compared to year-earlier estimates. As of this writing, surveys conducted by the American Automobile Association (AAA), the Lundberg Survey, and the *Oil and Gas Journal* all indicated rapid price increases at the pump for June and July, concurrent with surprisingly high demand for motor gasoline, further reinforcing the notion that the days of double-digit gasoline prices probably are over.
- Oddly enough, heating oil prices are projected to fall by some 5 cents per gallon for all of 1987, even with the crude oil price rise, mainly because prices were still high in the first quarter of 1986 (\$0.97 per gallon), when most of the seasonal demand occurred (Figure 6 on page 14). Of more relevance is the 1987 second-half forecast, which shows an increase of 12 cents per gallon compared to a year earlier, just about the same as the increase in crude oil costs over the period. Heating oil prices were recovering smartly during the winter heating season (an increase of 12 cents per gallon between October 1986 and February 1987, versus a decline of 7 cents per gallon during the comparable 1985-1986 period). As is traditional, the spring and summer of 1987 have seen basically stable prices, but a run-up of about 10 cents per gallon is expected between now and next winter's peak. As always, unusually cold winter weather could cause prices to rise even further, particularly if accompanied by any rail, barge, or pipeline disruptions.
- In 1986, the prices of both natural gas and heavy oil to electric utilities plummeted with the drop in crude oil prices. By the second quarter of 1987, however, recovery was looming, particularly for oil prices, which were up some 24 percent from year-earlier levels. For the remainder of the year, oil prices should rise even more, almost 28 percent over the second half of 1986 (Figure 7 on page 14). Interestingly enough, all of these increases are less than those for crude oil, because of the competition provided by natural gas. Natural gas prices to utilities are expected to increase only at about the rate of inflation in both 1987 and 1988, as wellhead prices remain relatively low due to competition from "new" gas, decreasing pipeline tariffs, and continuation of the gas "bubble." To the extent that oil and gas compete (about 60 percent of generating capacity is dual-fired), this should help to temper oil price increases to utilities through 1988.
- While natural gas prices to electric utilities and industrial users fell in 1986 by 32 percent and 24 percent, respectively, residential prices dropped by only 5 percent. The main reason for this disparity is that there is no short-term competition in the residential sector, whereas many utilities and industrial users not only can switch to oil but also can often buy relatively cheaper spot market gas directly from producers, avoiding the higher priced gas that the pipelines and distributors have purchased under long-term contracts. Consequently, in a period of generally falling prices, regulators will allow the gas utilities to reduce prices to nonresidential customers while minimizing the price reduction to residential users, in order to maintain overall revenue requirements. While prices in other sectors are bottoming out with world oil prices, residential prices should decline slightly again in 1987, as distributors pass along the savings that are resulting from the abatement in competition with residual fuel oil in the other sectors. In 1988, prices are projected to increase (but by less than 2 percent) as wellhead prices rise in response to higher world oil prices.
- The price of coal to utilities rarely varies outside a range of \$1.50 to \$1.60 per million Btu (Figure 7 on page 14), and 1987 and 1988 will be no exception. The main demand factor is electricity generation, and with coal-fired generating capacity being utilized at only about 52 percent, no great stimulus for price increases would seem to exist on the demand side. On the supply side, the major uncertainty is the expiration of the United Mineworkers of America contract in January 1988. If there is utility or other secondary stock buildup prior to the contract's expiration, there could be some temporary price increase. At this point, the projection is for a continuation of the trends seen in the recent past -- a price of about \$1.60 per million Btu, largely unaffected by the turbulence in the oil and natural gas markets.
- Residential electricity prices are expected to fall slightly in 1987. One reason is the continuation of lower fuel prices. Also, a lessening of capital costs, caused in part by a slowdown in capacity additions and changes in the corporate tax structure, should contribute to a reduction in prices. In 1988, the effects of higher interest rates, coupled with a small rise in fuel costs, should cause prices to increase by 3.5 percent over the previous year, or at about the rate of inflation.

U.S. Petroleum Outlook

- *Petroleum Demand*

- *Motor Gasoline*

- *Distillate Fuel Oil*

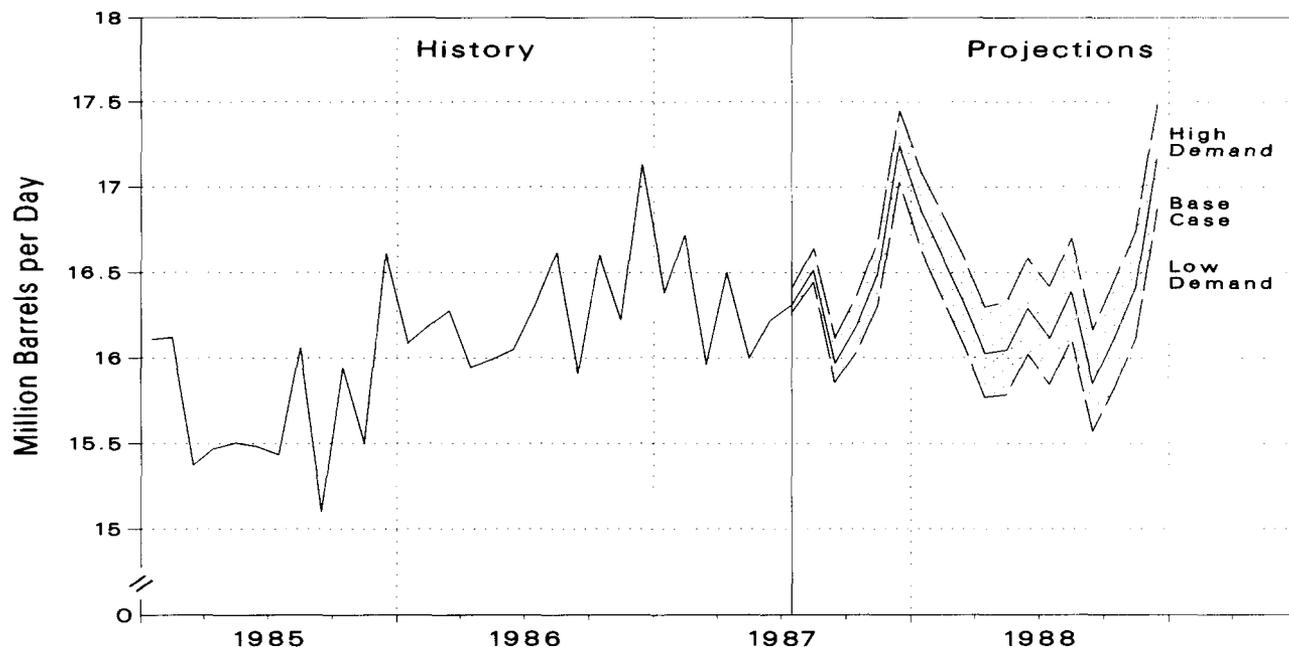
- *Residual Fuel Oil*

- *Petroleum Supply: Overview*

- *Crude Oil and Natural Gas Liquids
Production*

- *Petroleum Stocks and Imports*

Figure 8. Petroleum Demand



Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(87/04) (Washington, DC, 1987). • Projections: Tables 6, 7, and 8.

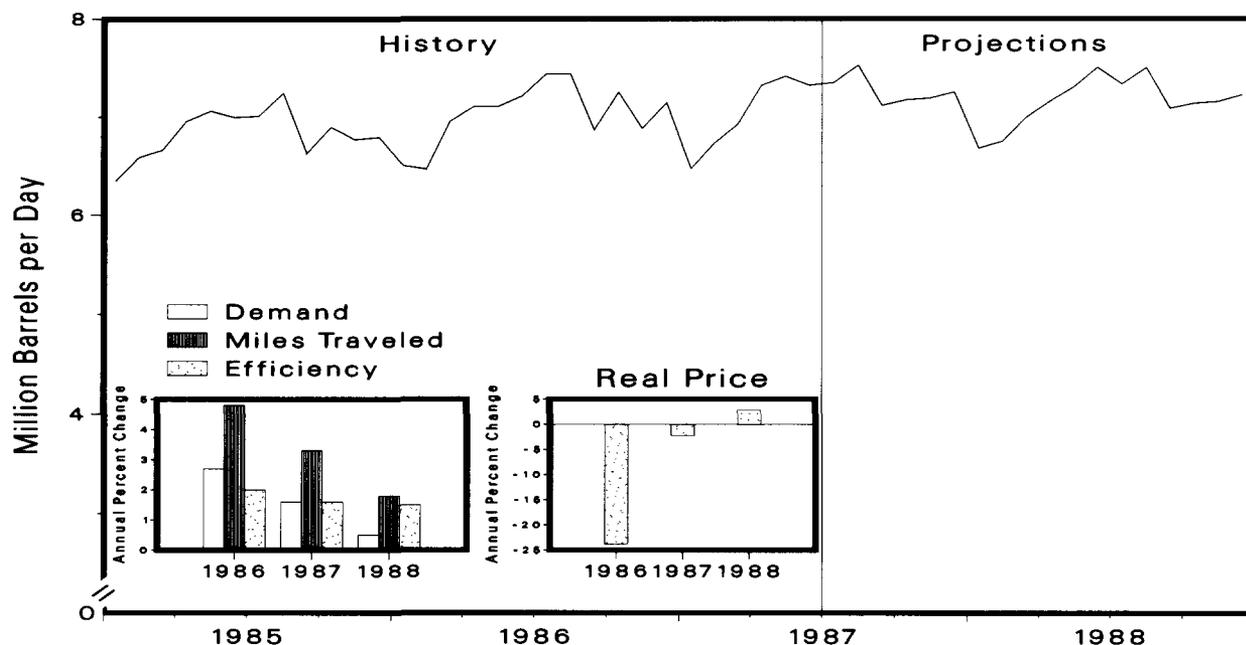
Petroleum Demand

Total petroleum demand should continue increasing but at a slower pace in 1987, before the reality of higher prices sets in to dampen any further growth in 1988 (Table 6 on page 44 and Figure 8). Revised figures for 1986 now show total consumption of 16.3 million barrels per day, a hefty increase of over one-half million barrels per day from 1985 levels. The major increase was in residual fuel oil (220,000 barrels per day), with electric utilities taking advantage of the lowest oil prices in years to switch away from natural gas where feasible. For the first half of 1987, total petroleum demand was up 1.2 percent, or just under 200,000 barrels per day compared to the first half of 1986. Surprisingly high growth in motor gasoline, together with higher demand for jet fuel and other products, has more than offset the decline in residual fuel oil. The outlook for the second half of 1987 and all of 1988 includes:

- A flattening-out of the growth in motor gasoline demand, with higher prices finally putting the brakes on growth in vehicle miles traveled
- Growth in demand for diesel fuel for heavy transport, together with some improvement in industrial demand, outweighing the long-term decline in demand for residential space heating from oil in 1988
- A sharp cutback in 1987, continuing into 1988, in residual fuel oil shipments to utilities, with an increasing spread between oil and gas prices.

The major uncertainty in 1987 and 1988 (Table 13 on page 51 and Figure 8) will be oil prices, which contribute 0.49 million barrels per day to the total range of 0.67 million barrels per day from the low to the high demand case in 1988. The projection for total petroleum demand ranges between 16.0 and 16.7 million barrels per day in 1988.

Figure 9. Motor Gasoline Demand



Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(87/04) (Washington, DC, 1987). • Projections: Table 10.

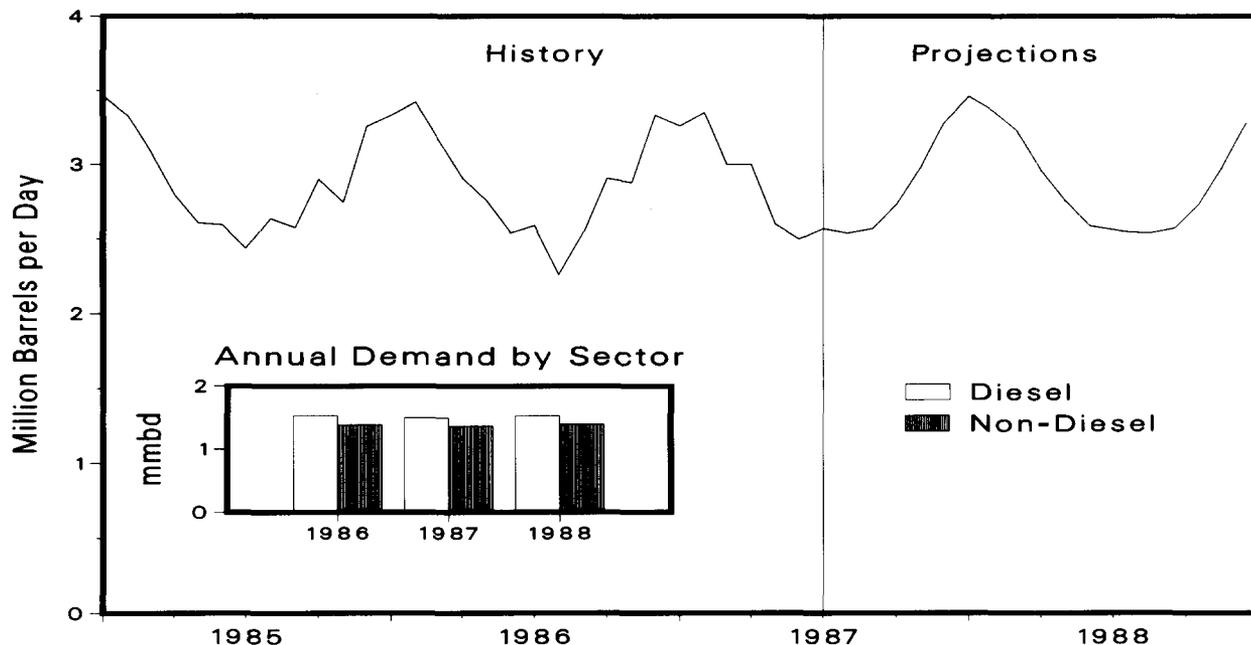
Motor Gasoline

A springtime blossoming of travel has helped boost motor gasoline demand by about 1.9 percent in the first half of 1987, compared to the first half of 1986 (Table 9 on page 47). Second-quarter growth was even stronger, at 7.35 million barrels per day, a surprising 4 percent higher than the second quarter of 1986. The strong showing in vehicle miles traveled has come about for several reasons, not all of them related to the traditional price and income indicators. First, a lot of new cars were bought at the end of 1986 to take advantage of the final year in which sales tax could be deducted from Federal income taxes. It is reasonable to believe that many owners of these new cars were out on the road as the weather turned warmer. Second, the weaker dollar may have induced many travelers to avoid foreign travel and take early vacations at home; by the same token, foreigners traveling to the United States could have boosted travel demand as well. Finally, an impact of higher speed limits is to reduce transit time, thereby encouraging more and longer trips. Higher prices and improving efficiency are projected to result in more moderate growth in demand for motor gasoline for the second half of 1987 and into 1988.

- Vehicle miles traveled, which increased by almost 4 percent in the first half of 1987 (Figure 9), should show a 3-percent increase for all of 1987, tailing off to less than 2 percent in 1988. The key variables of price and disposable personal income point to more moderate increases in travel demand over the forecast period.
- Fleet efficiency, which rose by 2.0 percent in 1986, may be slowing its rate of improvement. Although significant sales of new cars occurred at the end of 1986, these sales may have been "borrowed" from those which would normally have taken place in 1987. Together with a slowdown in the technological efficiency improvements in new cars, overall fleet efficiency increases should be below 2 percent in both 1987 and 1988.² Raising the speed limit on rural interstate highways also will have a negative impact on average efficiency.

²Vehicle efficiency is calculated by dividing vehicle miles traveled by finished motor gasoline product supplied.

Figure 10. Distillate Fuel Oil Demand



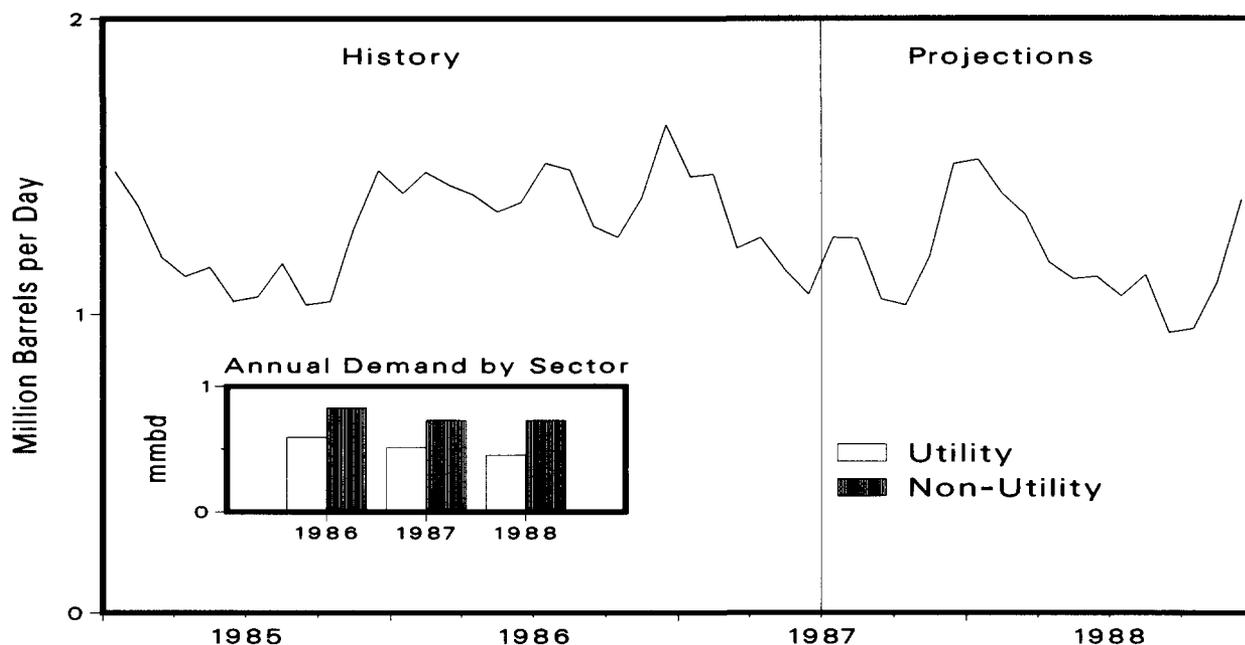
Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(87/04) (Washington, DC, 1987). • Projections: Table 10.

Distillate Fuel Oil

A strong demand for distillate in the second quarter of 1987 may not necessarily indicate further increases ahead. Higher prices, only moderate growth in industrial output, and continued declines in the number of residential households using oil for space heat will mitigate dramatic increases in distillate consumption. Projected demand for 1987 is 2.9 million barrels per day, virtually identical to the final figures for 1986 (Table 10 on page 48). Assuming only modest price increases and normally cold weather in 1988, we expect an increase of just over 1 percent in product supplied (Figure 10), more or less evenly divided between diesel fuel and heating oil (because of the weather).

- Once again, weather plays a strong role in the projection, with assumed normal heating degree-days in 1988 implying a 6-percent increase over 1987, and correspondingly increased demand for space heating. Without that stimulus, continued declines in heating oil demand in the residential and commercial sectors seem certain.
- Higher distillate prices will tend to have differing impacts by sector. In the industrial sector, with short-term switching potential, there should be some movement away from distillate as the spread between oil and gas prices increases. Diesel prices, however, should not affect growth in demand for heavy transport, for which no feasible substitutes exist in the short run.

Figure 11. Residual Fuel Oil Demand

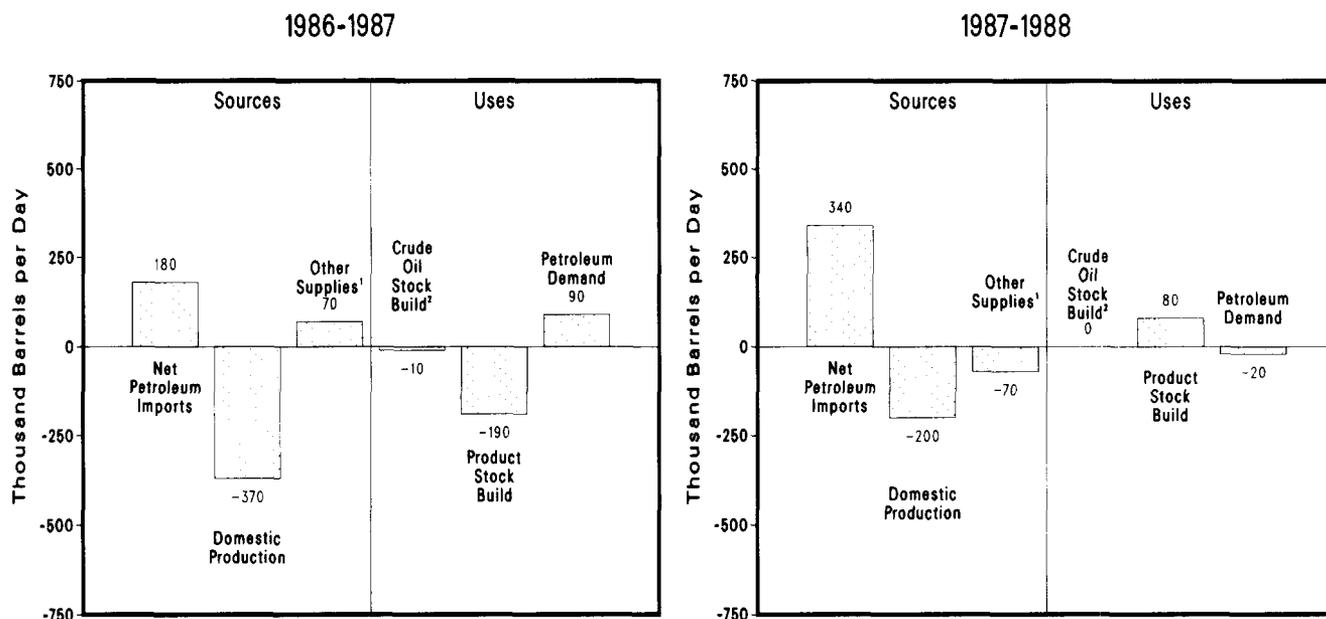


Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(87/04) (Washington, DC, 1987). • Projections: Table 11.

Residual Fuel Oil

- After an 18-percent increase in 1986, higher prices and, more importantly, an increase in the oil/gas price spread will reverse most of that gain over the next 2 years (Table 11 on page 49 and Figure 11).
- A 19-percent increase in the price of residual fuel oil, coupled with flat or declining natural gas prices, should cause demand to drop by 13 percent in 1987. New coal-fired and nuclear power plants as well as increased natural gas consumption should displace oil at electric utilities. In the industrial sector, residual fuel consumption is expected to be displaced by natural gas, while transportation (bunker) consumption will continue its decline, due to continued overseas price advantages.
- In 1988, demand is expected to fall by an additional 5 percent, almost entirely due to losses to natural gas in the electric utility sector.

Figure 12. Changes in Sources and Uses of Petroleum



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.

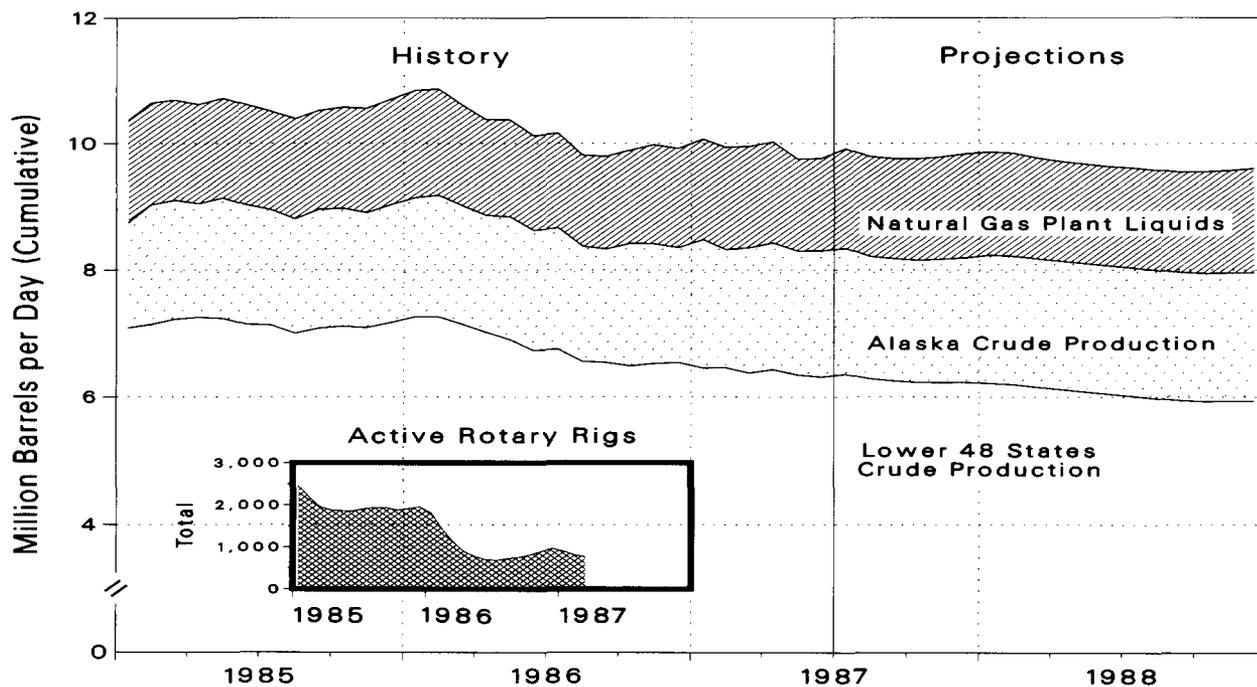
Sources: • History: Energy Information Administration, *Petroleum Supply Annual* (1986), DOE/EIA-0340(86)/1; *Petroleum Supply Monthly*, DOE/EIA-0109, January 1987 to April 1987; and *Weekly Petroleum Status Report*, DOE/EIA-0208(87-24,28) (Washington, DC). • Projections: Table 6.

Petroleum Supply: Overview

The short-term outlook for petroleum markets has changed slightly in the past 3 months. Whereas domestic production of petroleum (including crude oil and natural gas liquids) had been forecast in the April *Outlook* to decline by more than 0.5 million barrels per day from 1986 to 1987, that drop is now expected to be a more moderate 0.37 million barrels per day (Table 6 on page 44 and Figure 12).

- A continued drawdown of refined product stocks in early 1987 combines with the improved oil production picture to support a forecast increase in net petroleum imports of only 0.18 million barrels per day from 1986 to 1987.
- Removal of this product stock overhang (a trend paralleled in the other industrial countries) has eased much of the downward pressure on oil prices seen earlier in 1987.
- In 1988, a small increase in product stocks (as opposed to the drawdown through early 1987) and a continued, although smaller decline in oil production necessitate an increase in net petroleum imports, despite an outlook for stable petroleum demand.

Figure 13. Components of Domestic Petroleum Production



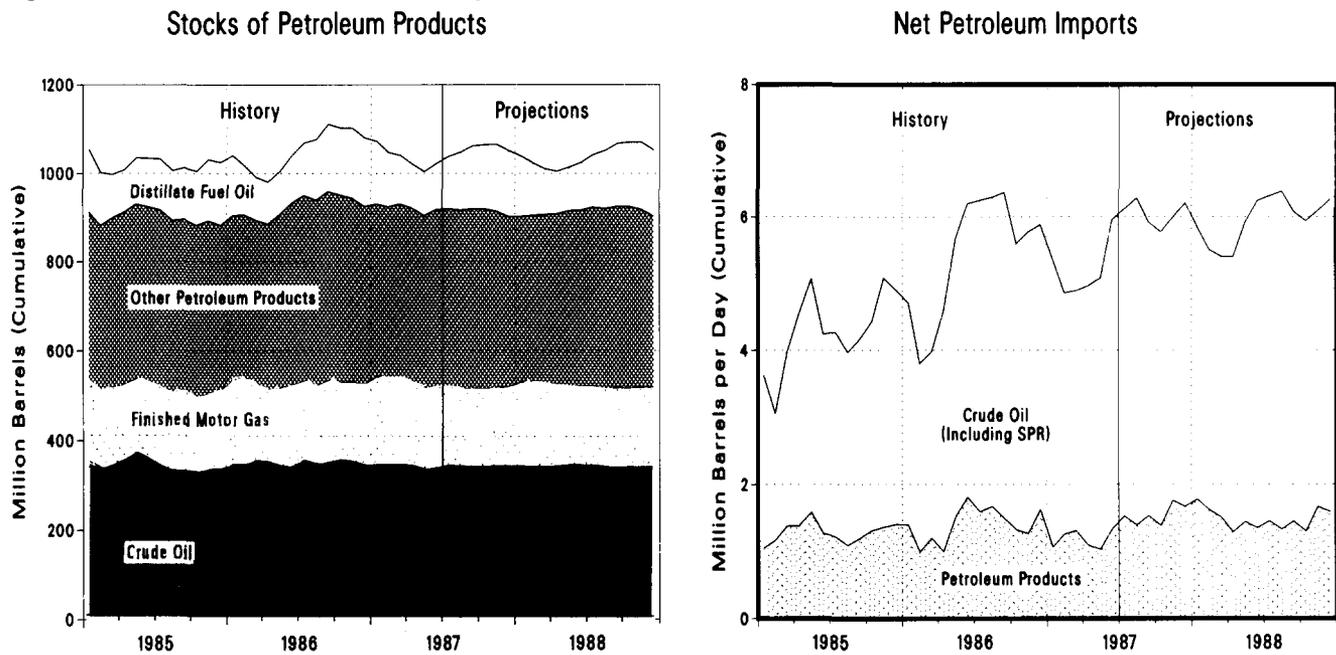
Note: Crude oil production includes lease condensate.
 Sources: • History: Energy Information Administration, *Petroleum Supply Annual* (1985, 1986), DOE/EIA-0340(85,86)/1; *Petroleum Supply Monthly*, DOE/EIA-0109, January 1987 to April 1987; and *Weekly Petroleum Status Report*, DOE/EIA-0208(87-24,28) (Washington, DC). • Projections: Table 6.

Crude Oil and Natural Gas Liquids Production

Following the initial response of the oil industry to the 1986 collapse of oil prices, the decline in domestic production has slowed considerably (Table 6 on page 44 and Figure 13). Total U.S. production of crude oil fell by nearly 0.7 million barrels per day, or 8 percent, from December 1985 to December 1986. In the first 6 months of 1987, however, production is estimated to have declined at only a 2-percent annual rate. Contributing to this improved U.S. outlook are the firming and recent rise of oil prices, the necessity of restoring some production in order to avoid losing oil leases, and greater-than-anticipated increases in Alaskan oil production.

- Declines in production from the lower 48 States are partially offset by increases from Alaska, specifically from the Lisburne reservoir of Prudhoe Bay. Further increases in 1988 are expected from Alaska.
- Near the end of 1988, it is projected that Alaska will surpass Texas as the number one oil-producing State.
- Rotary rig activity in the second quarter of 1987 was still below that in 1986. Drilling activity is expected to increase to near-1986 levels in 1988.
- A small increase in production of natural gas liquids partially offsets the outlook for lower oil production. One reason for this increase is the recovery of petrochemical demand for liquefied petroleum gases in 1987 with the increased competitiveness of gas relative to oil. A second reason is the outlook for increased natural gas production in 1988.
- Total domestic oil production is projected to decline in both the low and high price cases. The spread between the two cases is 0.06 million barrels per day in 1987 and 0.31 million barrels per day in 1988 (Table 7 on page 45 and Table 8 on page 46).

Figure 14. Stocks and Net Imports of Petroleum



Sources: • History: Energy Information Administration, *Petroleum Supply Annual* (1985,1986), DOE/EIA-0340(85,86)/1; *Petroleum Supply Monthly*, DOE/EIA-0109, January 1987 to April 1987; and *Weekly Petroleum Status Report*, DOE/EIA-0208(87-24,28)(Washington, DC). • Projections: Table 8.

Petroleum Stocks and Imports

Consistent with the outlook for stable oil prices and stable petroleum demand, little change in private stocks of either crude oil or refined products is expected in the short term (Table 6 on page 44 and Figure 14).

- The drawdown of product stocks seen in the past year (accumulated in 1986 as refiners processed large volumes of favorably priced netback crude oil) appears to have been largely completed by early 1987 (Table 9 on page 47).
- Stocks of finished gasoline are forecast to remain near 190 million barrels through this summer. This is a level which, when combined with the near-term outlooks for gasoline demand, refinery utilization, and gasoline imports, indicates little potential for extra-seasonal gasoline price increases this summer.
- Net imports of petroleum are forecast to increase by 0.18 million barrels per day in 1987 over year-earlier levels, and again by 0.34 million barrels per day in 1988, largely because domestic petroleum supplies are no longer expected to be supplemented by product stock withdrawals in meeting petroleum consumption requirements.
- Increases in petroleum imports continue to be mainly in the form of crude oil.

Outlook for Other Major Energy Sources

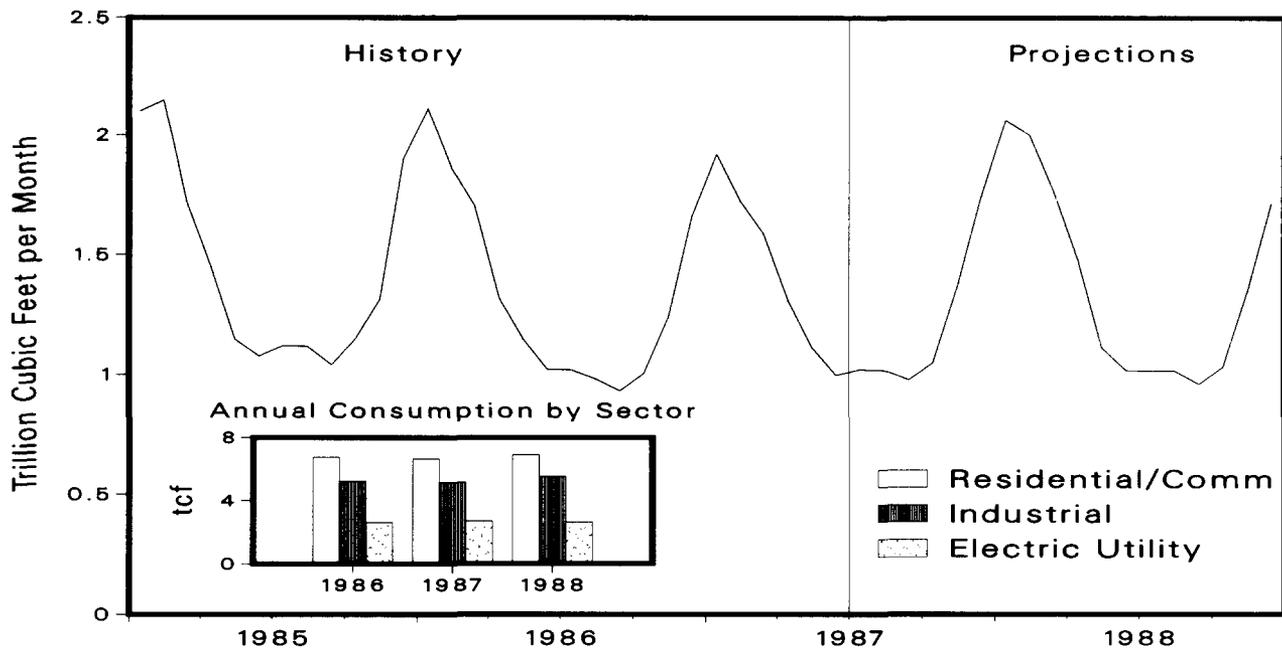
- *Natural Gas*

- *Coal*

- *Electric Power*

- *Electricity Fuel Shares*

Figure 15. Natural Gas Demand



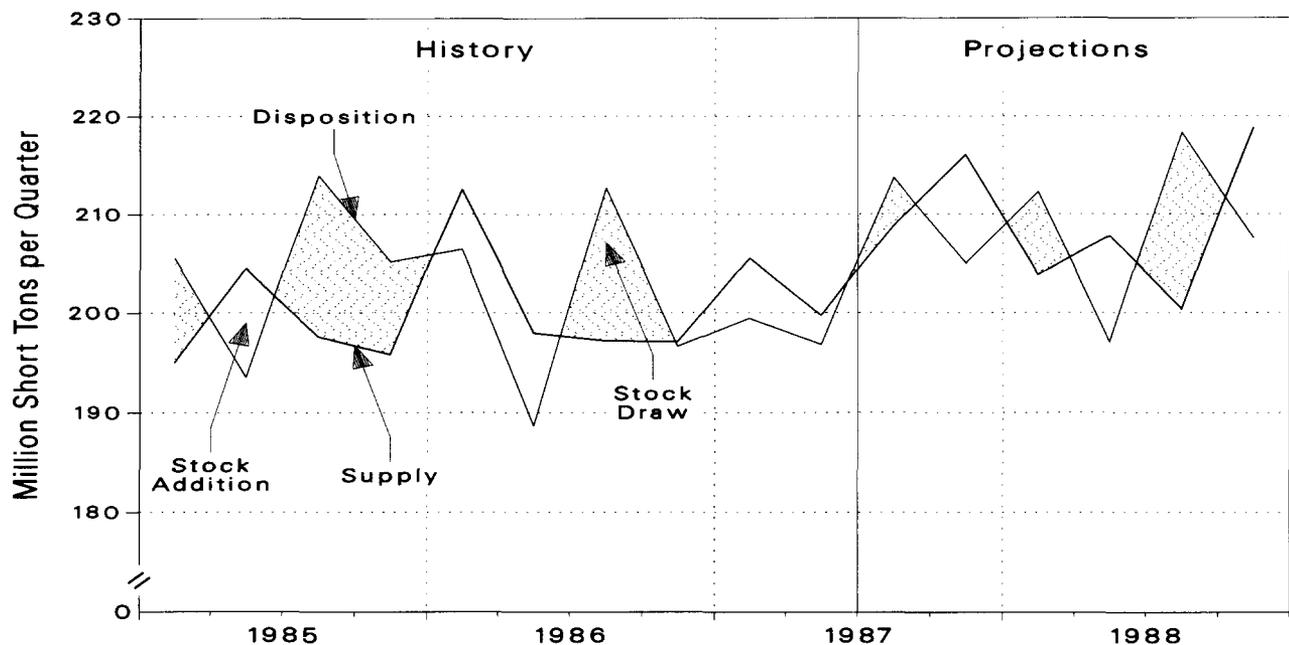
Note: Consumption excludes lease and plant fuel and pipeline compressor fuel.
 Sources: • History: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0036(87/04) (Washington, DC, 1987). • Projections: Table 14.

Natural Gas

Total demand for natural gas is expected to be just below 16 trillion cubic feet in 1987, reflecting unusually low levels reported for the first quarter of this year (Table 14 on page 52 and Figure 15). Demand should be closer to 16.5 trillion cubic feet in 1988, however, as higher oil prices and increased economic activity encourage natural gas use (see "Special Topics," page 37).

- Residential natural gas use is likely to decline slightly between 1986 and 1987, primarily due to a 3-percent drop from the first quarter of 1986 to the first quarter of 1987. A return to normal weather and continued growth in the number of natural gas customers will act to push demand up by 4 percent in 1988.
- A 3-percent increase in sales of natural gas to commercial consumers is likely to occur between 1987 and 1988. Commercial sales were off by 8 percent during the first quarter of this year, a larger decline than occurred during any quarter in 1986. Normal weather, rising economic activity, and higher oil prices should act to restore commercial demand for natural gas.
- Industrial natural gas use should start to pick up during the latter part of 1987, followed by strong growth in 1988. Higher oil prices, combined with increased levels of economic activity, are responsible for much of this growth. Gas demand is not expected to reach pre-1986 levels, however, primarily due to an oil-to-gas price ratio that will remain relatively low compared to 1985 and earlier.
- Natural gas use at electric utilities should remain fairly constant over the forecast period. Coal and nuclear power will continue to squeeze the oil and gas share of total generation, but natural gas is expected to become an increasingly important contributor relative to oil.

Figure 16. Coal Supply and Disposition



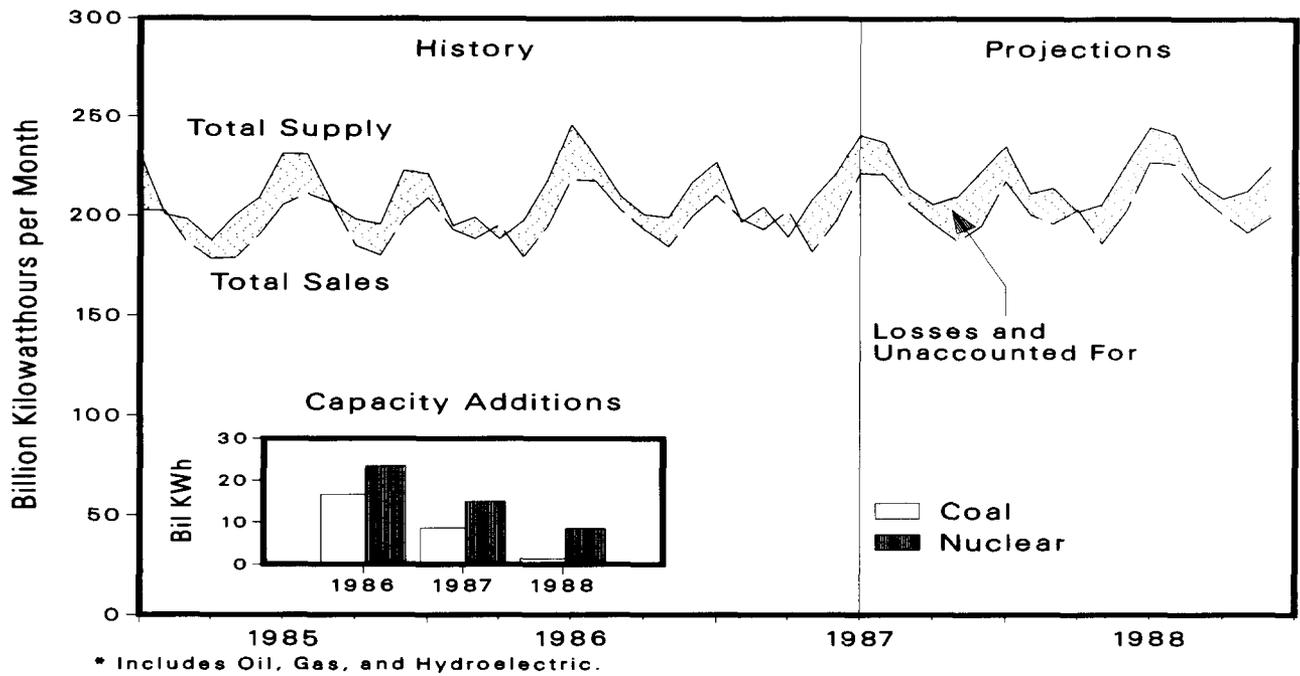
Sources: • History: Energy Information Administration, *Quarterly Coal Report*, DOE/EIA-0121(87/1Q) (Washington, DC, 1987). • Projections: Table 16.

Coal

Total domestic coal consumption is projected to increase by only 1 percent in 1987, reflecting a 3-percent decline in coal use reported for the first quarter of this year (Table 15 on page 53 and Figure 16). Stronger growth is forecast for 1988, corresponding to the anticipated rise in electricity generation.

- Electric utility coal consumption is projected to increase by 11 million tons in 1987 and by 19 million tons in 1988. An increase of 63 billion kilowatthours in electricity generation between 1987 and 1988 will be met with an increase of 31 billion kilowatthours in both nuclear and coal-fired generation. The coal-fired capacity utilization rate will rise in 1987 and 1988 but still will fall below the 1985 average utilization rate.
- Consumption of coking coal is expected to decline by 2 million tons in 1987, following a decrease of 5 million tons in 1986. Coking coal use is expected to 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.
- Retail and general industry coal demand is likely to remain fairly constant in 1987, followed by a 4-percent increase in 1988. The no-growth forecast for 1987 reflects the reported 9-percent decline in demand during the first quarter of 1987 from the first quarter of 1986. This decline occurred despite fairly strong growth in each of the three major coal-consuming industries (stone, clay and glass; chemicals; and paper). As there is no apparent reason for this decline to continue, industrial coal use should return to more normal levels during the latter part of this year.
- Consumer stocks are expected to be built up just prior to the termination of the existing United Mine Worker's contract in January 1988. Stock levels are expected to peak in December 1987 at 184 million tons, or approximately 80 days of supply. 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 contract renegotiations will successfully prevent a strike.
- Coal exports dropped by 11 percent during the first 4 months of 1987 compared to the same period in 1986. Most of this decline was concentrated in exports to France and several other large European importers. Coal exports are likely to recover slightly in 1988 but still fall below 1986 levels due to continued competition from lower cost producers.

Figure 17. Electricity Supply and Disposition

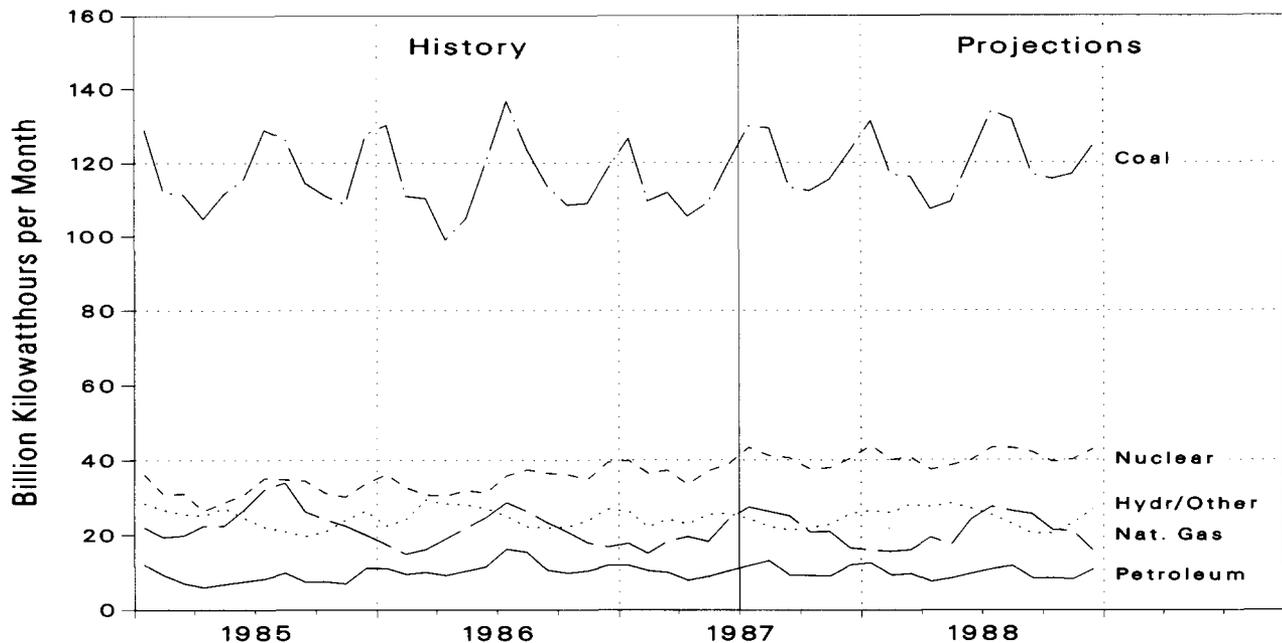


* Includes Oil, Gas, and Hydroelectric.
 Sources: • History: Energy Information Administration, *Electric Power Monthly*, DOE/EIA-0035(87/05) and *Monthly Energy Review*, DOE/EIA-0035(87/04) (Washington, DC, 1987). • Projections: Table 16.

Electric Power

- Growth in electricity generation is expected to be more consistent with economic growth in 1987 and 1988 (Table 16 on page 54 and Figure 17). Electricity growth in 1986 of less than 1 percent was lower than anticipated given the higher level of activity in the economy. Hence, generation is forecast to increase by 2 percent in 1987, a rate more consistent with projected economic growth rates. The 1988 forecast reflects a growth rate of more than 2 percent, which is consistent with economic patterns, and a return to normal, hence colder, weather for the first quarter.
- Net imports of electricity (primarily from Canada, the remainder from Mexico) could reach 41 billion kilowatthours in 1987 and 42 billion kilowatthours in 1988. This assumes that the Phase I transmission facility between Hydro-Quebec and New England will reach full-service operation and that transmission will increase over existing lines, through the resolution of bottlenecks in the U.S. utility grid. This forecast is lower than that reported in the last *Outlook*, because of downward revisions to the data for 1986 net electricity imports. Water supply conditions for domestic hydroelectric generation are less favorable in 1987 than they were in 1986.

Figure 18. Electricity Generation by Fuel Source



Sources: • History: Energy Information Administration, *Electric Power Monthly*, DOE/EIA-0035(87/05) (Washington, DC, 1987). • Projections: Table 16.

Electricity Fuel Shares

- The expected startup of seven nuclear units in 1987 and four units in 1988 should produce 11-percent and 7-percent increases, respectively, in nuclear power generation (Figure 18 and Table 16 on page 54). Average annual capacity factors are estimated to rise from 56 percent in 1986 to 59 percent in 1988, as well.
- Coal capacity additions are expected to be considerably smaller in 1987 and 1988 than in previous years, but demand increases should result in an increase in capacity utilization rates from 51 percent to 52 percent. Coal-fired generation is projected to increase by about 2 percent each year, or an average of 30 billion kilowatthours per year.
- If planned nuclear and coal-fired capacity comes on line, the share of oil- and gas-fired generation left to meet total generation needs should decline through 1988 to 14 percent. Within this share, oil-fired generation is expected to decline from its 1986 level of 137 billion kilowatthours to 109 billion kilowatthours by 1988, concurrent with the ascent in oil prices from 1986 levels. Although gas-fired generation is forecast to decline in 1988 (because of displacement by coal and nuclear), it should reach 70 percent of the combined share for oil and gas, due to rising oil prices.
- Hydroelectric generation will likely decline in 1987 because of below-normal water supply conditions in the Rocky Mountains, the Southwest, and the western United States. The decline is expected to be around 6 percent. While water supply levels for 1988 are not known yet, longer term effects of past poor water conditions are expected to keep hydroelectric generation below normal in 1988, at 292 billion kilowatthours.

Special Topics

- *Rising Import Levels and the Near-Term Prospects for Oil Prices*

- *Natural Gas Sales Remain Low in 1987*

Rising Import Levels and the Near-Term Prospects for Oil Prices

Between the first week of June 1987 and the middle of July, gross imports of crude oil (including purchases for the Strategic Petroleum Reserve) increased by just over 1 million barrels per day. Information on commercial liftings of crude oil through mid-July indicates that these high import levels may be sustained for at least the next month. Unless the industry expects a significant increase in product demand for the rest of this summer, it is not immediately clear what the economic motive for this surge in imports might be.

Despite the upward movement in crude oil spot prices since early July, the increased purchases do not appear to reflect a speculative response to any expected long-term trend toward higher prices; rather, they may indicate increased concern over the security of Persian Gulf oil supplies. Such a response would likely be characterized by a buildup of crude oil stocks in anticipation of tightening oil markets. (Compared to product stocks, crude oil is cheaper to store and affords refiners greater flexibility in meeting future demands.) Yet, so far, most of the increased supply has been processed by domestic refineries as soon as it comes in. Refinery runs of crude oil have increased by about 0.75 million barrels per day since early June.

With little or no change in the demand for the major product categories, the associated increase in refinery output has gone mainly into higher product stocks, especially for distillates and "other oils." Increased gasoline production, which accounts for almost half of the incremental refinery output, has apparently been moved out to secondary distribution and retail storage almost as soon as it leaves the refinery. (Domestic refiners have also reduced their percentage yields of finished gasoline from crude oil by about 2 points over this period.) One interpretation of these developments is that stocks have accumulated only for those products that are currently most difficult to market without major losses.

In a special scenario constructed to help evaluate the consequences of an additional 0.5 million barrels per day of crude oil imports in July and August (that is, beyond the base case forecast for those months), the following situation emerges. First, refinery capacity utilization rates would remain high for the rest of the summer, possibly near 90 percent. Unless offset by higher product prices or by lower crude oil costs (neither of which appears to be forthcoming), the higher operating costs associated with these utilization levels would be expected to cut into refinery profitability for the third quarter of 1987.

Second, with no change in the demand outlook, total petroleum stocks would increase beyond the base case forecast by over 15 million barrels by the end of August. In keeping with recent trends, virtually all of these additional stocks are assumed to be in the form of refined products. However, if percentage refinery yields of the major product categories are assumed to remain unchanged, half of this increase would go into gasoline stocks. Apparently, this is not happening. If the product demand and price forecasts presented in this *Outlook* are otherwise consistent, any effort on the part of refiners to move the additional product out of primary storage could spell weak gasoline prices for the rest of the summer. At the same time, the additional buildup of distillates and other oils (mainly LPGs) could result in difficulty for those markets later in the fall.

The bottom line from this reasoning is that the current rise in imports beyond the base case level could lead to excess product supply and, consequently, a short period of higher product consumption and lower oil prices toward the end of this summer than are forecast here. Thus, while current oil prices are higher than indicated by the 1987 base case forecast of \$18 per barrel, this figure should turn out to be about right for the year on average.

(continued on page 36)

The average refinery acquisition cost (RAC) of imported crude oil in late July was estimated by EIA to be just over \$18.50 per barrel. This estimate is significantly lower than, for example, the widely reported futures cost of \$21 per barrel for West Texas Intermediate (WTI) in late July. For much of 1987, however, the near-month futures price for WTI has averaged around \$2 per barrel above the RAC for imported oil. This reflects not only the large share of lower-priced contract oil in the U.S. import mix but also the large share of lower-quality oils imported. Thus, if the WTI futures price returns to a level near \$20 per barrel, the 1987 average RAC for imported oil should return to a level near the forecast of \$18 per barrel. In addition to the domestic stock situation, significant OPEC overproduction, already being reported for July, is expected to result in such a downward price adjustment.

Natural Gas Sales Remain Low in 1987

Natural gas consumption declined by 8 percent between the first quarter of 1986 and the first quarter of 1987. Industrial sales suffered the most, with more modest declines in the residential and commercial sectors. Lower residential and, to some extent, commercial demand corresponds to warmer winter weather in certain parts of the country. Continued use of oil instead of gas in response to last year's drop in oil prices could explain why industrial natural gas use remains so low. Electric utilities, unlike the other sectors, increased their use of natural gas by 4 percent between the first quarters of 1986 and 1987. Total natural gas sales are expected to recover later in the year, but not enough to compensate fully for the sharp first-quarter drop.

Residential gas sales declined by nearly 3 percent during the first quarter of 1987, despite an increase in the number of customers, higher personal income, and nationally colder weather. American Gas Association data for the first quarter of 1987 show a 1.7-percent increase in the number of customers over the first quarter of 1986; disposable personal income rose by 1.3 percent; and gas-weighted heating degree-days were 1.4 percent higher on a national basis.³ ⁴ In contrast to the national trends, however, an examination of regional weather and sales patterns indicates that the decline in sales is related to changes in local weather patterns, especially in the East North Central region, which is by far the largest residential gas-consuming area.⁵ In contrast to the national weather data, heating degree-days were 8 percent lower in this region in the first quarter of 1987 compared to the first quarter of 1986, and 13 percent lower than normal. This explains virtually all of the 1987 first-quarter drop in residential natural gas demand. Residential demand is expected to be considerably higher during the first quarter of 1988, assuming normal winter weather.

Commercial demand for natural gas was 8 percent lower during the first 3 months of 1987 than in the same quarter of 1986. As with the residential sector, most of the decline in commercial sales took place in the East North Central region, corresponding to the warmer winter weather experienced in this area. With oil prices rising over the past 6 months, some switching from oil back to gas might have been expected. Oil prices still remain well below early 1986 levels, however, indicating that there still may not be enough incentive for commercial users with switching capabilities to go back to natural gas.

Industrial gas demand was 19 percent lower during the first 3 months of 1987 than in the first quarter of 1986. This decline was unexpectedly large given the strong showing in chemical production, which is by far the biggest industrial use of natural gas.⁶ The primary metals industry, which is the second largest group of natural gas users, did not fare as well, but output fell by less than 5 percent. Despite the large first-quarter loss in industrial gas sales, sales to industrial users are not likely to drop further. The year-to-year difference in reported sales for the first quarter of 1987 was smaller than for the fourth quarter of 1986. For the rest of 1987, industrial gas sales are expected to start picking up in response to steady economic growth. In addition, there may be some switching from oil back to gas as the prices for both residual fuel and natural gas stabilize at close to \$3.00 per million Btu.

Demand for natural gas by electric utilities was higher during the first part of 1987 relative to 1986. Electric utilities were quick to respond to last year's drop in oil prices by cutting back on natural gas use, and they appear to have already started switching back to natural gas as crude oil prices have risen over the past several months. Summer demand for natural gas is likely to be particularly high this year, as the unusually hot weather experienced during July has resulted in heavy peak load usage. For 1988, natural gas use at electric utilities is likely to decline, in contrast to anticipated growth in natural gas sales to the other consuming sectors.

³American Gas Association, *Quarterly Report of Gas Industry Operations*, First Quarter 1987, Table 1.

⁴Heating degree-days weighted by number of gas heating customers, from the National Oceanic and Atmospheric Administration, *Monthly Heating Degree Day Summary*, January-March 1987.

⁵Energy Information Administration, *Natural Gas Monthly*, DOE/EIA-0130(87/04) (Washington, DC, May 1987).

⁶The Federal Reserve System Board of Governors, *Federal Reserve Statistical Release*, June 16, 1987.

Detailed Tables

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

	1986		1987				1988				Year		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1986	1987	1988
Supply*													
Production													
U.S. (50 States)	10.6	10.6	10.7	<i>10.5</i>	<i>10.5</i>	<i>10.5</i>	<i>10.5</i>	<i>10.3</i>	<i>10.3</i>	<i>10.2</i>	10.9	<i>10.5</i>	<i>10.3</i>
OPEC	20.9	19.1	17.2	<i>18.3</i>	<i>19.1</i>	<i>19.5</i>	<i>19.1</i>	<i>19.1</i>	<i>19.9</i>	<i>19.9</i>	19.6	<i>18.5</i>	<i>19.5</i>
Other Non-OPEC	15.9	16.0	16.2	<i>15.9</i>	<i>16.2</i>	<i>16.3</i>	<i>16.4</i>	<i>16.1</i>	<i>16.3</i>	<i>16.3</i>	15.7	<i>16.1</i>	<i>16.3</i>
Total Market Economies	47.4	45.7	44.1	<i>44.8</i>	<i>45.7</i>	<i>46.2</i>	<i>45.9</i>	<i>45.5</i>	<i>46.4</i>	<i>46.5</i>	46.3	<i>45.2</i>	<i>46.1</i>
Net Communist Exports	1.9	1.8	1.3	<i>1.6</i>	<i>1.8</i>	<i>1.7</i>	<i>1.2</i>	<i>1.5</i>	<i>1.7</i>	<i>1.6</i>	1.7	<i>1.6</i>	<i>1.5</i>
Total Supply	49.3	47.5	45.4	<i>46.4</i>	<i>47.5</i>	<i>47.9</i>	<i>47.1</i>	<i>47.1</i>	<i>48.2</i>	<i>48.1</i>	48.0	<i>46.8</i>	<i>47.6</i>
Net Stock Withdrawals or Additions (-)													
U.S. (50 States excl. SPR)	-0.8	-0.3	.4	<i>.2</i>	<i>-.4</i>	<i>.1</i>	<i>.5</i>	<i>-.2</i>	<i>-.5</i>	<i>.2</i>	-0.2	<i>.1</i>	<i>.0</i>
U.S. SPR	-0.1	-0.1	-0.1	<i>-0.1</i>	0.0	<i>-0.1</i>	<i>-0.1</i>						
Other Market Economies	-2.0	-0.1	2.7	<i>-0.5</i>	<i>.0</i>	<i>.2</i>	<i>1.9</i>	<i>-0.3</i>	<i>-0.8</i>	<i>.5</i>	-0.6	<i>.6</i>	<i>.3</i>
Total Stock Withdrawals	-2.8	.2	3.0	<i>-0.3</i>	<i>-.5</i>	<i>.3</i>	<i>2.3</i>	<i>-0.5</i>	<i>-1.4</i>	<i>.6</i>	-0.8	<i>.6</i>	<i>.3</i>
Product Supplied													
U.S. (50 States)	16.3	16.7	16.3	<i>16.2</i>	<i>16.3</i>	<i>16.6</i>	<i>16.6</i>	<i>16.1</i>	<i>16.1</i>	<i>16.6</i>	16.3	<i>16.4</i>	<i>16.4</i>
U.S. Territories3	.3	.2	<i>.2</i>	<i>.3</i>	<i>.3</i>	<i>.2</i>	<i>.2</i>	<i>.3</i>	<i>.3</i>	.3	<i>.3</i>	<i>.3</i>
Canada	1.5	1.6	1.6	<i>1.5</i>	<i>1.5</i>	<i>1.6</i>	<i>1.6</i>	<i>1.5</i>	<i>1.6</i>	<i>1.6</i>	1.5	<i>1.5</i>	<i>1.6</i>
Japan	3.9	4.8	4.8	<i>3.9</i>	<i>4.2</i>	<i>4.8</i>	<i>5.1</i>	<i>4.0</i>	<i>4.1</i>	<i>4.7</i>	4.4	<i>4.4</i>	<i>4.5</i>
Australia and New Zealand7	.7	.7	<i>.7</i>	.7	<i>.7</i>	<i>.7</i>						
OECD Europe	11.8	12.0	12.7	<i>11.4</i>	<i>11.9</i>	<i>12.1</i>	<i>12.9</i>	<i>11.7</i>	<i>11.7</i>	<i>12.4</i>	12.0	<i>12.0</i>	<i>12.2</i>
Total OECD	34.5	36.0	36.4	<i>34.0</i>	<i>34.8</i>	<i>36.0</i>	<i>37.1</i>	<i>34.2</i>	<i>34.4</i>	<i>36.3</i>	35.1	<i>35.3</i>	<i>35.5</i>
Other Market Economies	12.4	12.4	12.6	<i>12.6</i>	<i>12.6</i>	<i>12.7</i>	<i>12.8</i>	<i>12.8</i>	<i>12.8</i>	<i>12.9</i>	12.4	<i>12.6</i>	<i>12.8</i>
Total Market Economies	46.9	48.5	49.0	<i>46.6</i>	<i>47.4</i>	<i>48.6</i>	<i>49.9</i>	<i>47.0</i>	<i>47.2</i>	<i>49.1</i>	47.5	<i>47.9</i>	<i>48.3</i>
Statistical Discrepancy4	.7	.6	<i>.5</i>	<i>.4</i>	<i>.4</i>	<i>.4</i>	<i>.4</i>	<i>.4</i>	<i>.4</i>	.4	<i>.5</i>	<i>.4</i>
Closing Stocks (billion barrels)	5.1	5.1	4.8	<i>4.8</i>	<i>4.9</i>	<i>4.9</i>	<i>4.6</i>	<i>4.7</i>	<i>4.8</i>	<i>4.8</i>	5.1	<i>4.9</i>	<i>4.8</i>

* 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(87/04); and *International Energy Annual 1985*, DOE/EIA-0219(86); Organization for Economic Cooperation and Development, Monthly Oil Statistics Database through January 1987.

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

	Annual Average 1975-1985	1986	1987	1988
OECD Total ^a	2.8	2.4	<i>2.3</i>	<i>2.3</i>
United States ^b	2.9	2.5	<i>2.5</i>	<i>2.6</i>
Western Europe	2.2	2.5	<i>1.9</i>	<i>2.1</i>
Japan	4.4	2.2	<i>2.7</i>	<i>2.4</i>
Other OECD ^c	3.0	2.2	<i>2.3</i>	<i>2.7</i>

^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*, June 1987, and *National Accounts, Volume I: Main Aggregates, 1960-1985*, 1987. Forecasts: Data Resources, Inc., United States Forecast, CONTROL0687; Wharton Econometrics, *World Economic Outlook: Developed Economies Volume*, July 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		
	3rd	4th	1st	2nd		3rd	4th	1st	2nd	3rd	4th	1986	1987	1988
Macroeconomic^a														
Real Gross National Product (billion 1982 dollars)	3,686	3,696	3,739	3,748	Low	<i>3,776</i>	<i>3,800</i>	<i>3,846</i>	<i>3,867</i>	<i>3,877</i>	<i>3,900</i>	-	<i>3,766</i>	<i>3,872</i>
					Base	<i>3,778</i>	<i>3,799</i>	<i>3,841</i>	<i>3,860</i>	<i>3,866</i>	<i>3,886</i>	3,675	<i>3,766</i>	<i>3,863</i>
					High	<i>3,779</i>	<i>3,797</i>	<i>3,836</i>	<i>3,852</i>	<i>3,856</i>	<i>3,873</i>	-	<i>3,766</i>	<i>3,854</i>
Percentage Change from Prior Year	2.3	2.0	2.3	2.4	Low	<i>2.4</i>	<i>2.8</i>	<i>2.8</i>	<i>3.2</i>	<i>2.7</i>	<i>2.6</i>	-	<i>2.5</i>	<i>2.8</i>
					Base	<i>2.5</i>	<i>2.8</i>	<i>2.7</i>	<i>3.0</i>	<i>2.3</i>	<i>2.3</i>	2.5	<i>2.5</i>	<i>2.6</i>
					High	<i>2.5</i>	<i>2.7</i>	<i>2.6</i>	<i>2.7</i>	<i>2.0</i>	<i>2.0</i>	-	<i>2.5</i>	<i>2.3</i>
GNP Implicit Price Deflator (index, 1982=1.000)	1.150	1.152	1.164	1.174	Low	<i>1.186</i>	<i>1.192</i>	<i>1.199</i>	<i>1.211</i>	<i>1.224</i>	<i>1.234</i>	-	<i>1.179</i>	<i>1.217</i>
					Base	<i>1.185</i>	<i>1.193</i>	<i>1.201</i>	<i>1.213</i>	<i>1.227</i>	<i>1.238</i>	1.144	<i>1.179</i>	<i>1.220</i>
					High	<i>1.185</i>	<i>1.194</i>	<i>1.204</i>	<i>1.217</i>	<i>1.231</i>	<i>1.243</i>	-	<i>1.179</i>	<i>1.224</i>
Percentage Change from Prior Year	2.9	2.1	2.6	3.0	Low	<i>3.1</i>	<i>3.5</i>	<i>3.0</i>	<i>3.1</i>	<i>3.2</i>	<i>3.5</i>	-	<i>3.1</i>	<i>3.2</i>
					Base	<i>3.1</i>	<i>3.6</i>	<i>3.2</i>	<i>3.4</i>	<i>3.5</i>	<i>3.7</i>	2.6	<i>3.1</i>	<i>3.5</i>
					High	<i>3.0</i>	<i>3.6</i>	<i>3.4</i>	<i>3.6</i>	<i>3.9</i>	<i>4.1</i>	-	<i>3.1</i>	<i>3.8</i>
Real Disposable Personal Income ^b (billion 1982 dollars)	2,606	2,595	2,614	2,587	Low	<i>2,641</i>	<i>2,666</i>	<i>2,690</i>	<i>2,693</i>	<i>2,711</i>	<i>2,722</i>	-	<i>2,627</i>	<i>2,704</i>
					Base	<i>2,637</i>	<i>2,659</i>	<i>2,680</i>	<i>2,681</i>	<i>2,697</i>	<i>2,707</i>	2,602	<i>2,624</i>	<i>2,692</i>
					High	<i>2,633</i>	<i>2,651</i>	<i>2,669</i>	<i>2,669</i>	<i>2,684</i>	<i>2,693</i>	-	<i>2,621</i>	<i>2,679</i>
Percentage Change from Prior Year	3.2	2.1	1.3	-1.5	Low	<i>1.3</i>	<i>2.7</i>	<i>2.9</i>	<i>4.1</i>	<i>2.6</i>	<i>2.1</i>	-	<i>1.0</i>	<i>2.9</i>
					Base	<i>1.2</i>	<i>2.5</i>	<i>2.5</i>	<i>3.7</i>	<i>2.3</i>	<i>1.8</i>	2.9	<i>.8</i>	<i>2.6</i>
					High	<i>1.0</i>	<i>2.1</i>	<i>2.1</i>	<i>3.2</i>	<i>1.9</i>	<i>1.6</i>	-	<i>.7</i>	<i>2.2</i>
Index of Industrial Production (Mfg.) (index, 1977=1.000)	1,294	1,304	1,318	1,324	Low	<i>1,332</i>	<i>1,337</i>	<i>1,345</i>	<i>1,359</i>	<i>1,374</i>	<i>1,387</i>	-	<i>1,328</i>	<i>1,366</i>
					Base	<i>1,331</i>	<i>1,334</i>	<i>1,341</i>	<i>1,353</i>	<i>1,364</i>	<i>1,374</i>	1,292	<i>1,327</i>	<i>1,358</i>
					High	<i>1,330</i>	<i>1,332</i>	<i>1,337</i>	<i>1,347</i>	<i>1,355</i>	<i>1,361</i>	-	<i>1,326</i>	<i>1,350</i>
Percentage Change from Prior Year	2.1	2.4	2.6	3.1	Low	<i>3.0</i>	<i>2.5</i>	<i>2.1</i>	<i>2.7</i>	<i>3.1</i>	<i>3.7</i>	-	<i>2.8</i>	<i>2.9</i>
					Base	<i>2.9</i>	<i>2.3</i>	<i>1.8</i>	<i>2.2</i>	<i>2.5</i>	<i>3.0</i>	2.2	<i>2.7</i>	<i>2.3</i>
					High	<i>2.8</i>	<i>2.1</i>	<i>1.4</i>	<i>1.8</i>	<i>1.9</i>	<i>2.2</i>	-	<i>2.6</i>	<i>1.8</i>
Oil Price														
Imported Crude Oil Price ^c (U.S. dollars/barrel)	11.88	13.47	16.88	18.10	Low	<i>16.00</i>	<i>16.00</i>	<i>16.00</i>	<i>16.00</i>	<i>16.00</i>	<i>16.00</i>	-	<i>16.70</i>	<i>16.00</i>
					Base	<i>18.00</i>	<i>18.00</i>	<i>19.00</i>	<i>19.00</i>	<i>19.00</i>	<i>19.00</i>	13.98	<i>17.70</i>	<i>19.00</i>
					High	<i>20.00</i>	<i>21.00</i>	<i>22.00</i>	<i>22.00</i>	<i>22.00</i>	<i>22.00</i>	-	<i>19.00</i>	<i>22.00</i>
U.S. Refiners' Cost ^d (U.S. dollars/barrel)	12.18	13.40	16.67	17.60	Low	<i>16.00</i>	<i>16.00</i>	<i>16.00</i>	<i>16.00</i>	<i>16.00</i>	<i>16.00</i>	-	<i>16.60</i>	<i>16.00</i>
					Base	<i>18.00</i>	<i>18.00</i>	<i>19.00</i>	<i>19.00</i>	<i>19.00</i>	<i>19.00</i>	14.55	<i>17.60</i>	<i>19.00</i>
					High	<i>19.00</i>	<i>20.00</i>	<i>22.00</i>	<i>22.00</i>	<i>22.00</i>	<i>22.00</i>	-	<i>18.30</i>	<i>22.00</i>
Weather^e														
Heating Degree Days	103	1,657	2,213	460		<i>88</i>	<i>1,668</i>	<i>2,401</i>	<i>538</i>	<i>88</i>	<i>1,668</i>	4,429	<i>4,429</i>	<i>4,695</i>
Cooling Degree Days	744	74	13	393		<i>754</i>	<i>62</i>	<i>28</i>	<i>328</i>	<i>754</i>	<i>62</i>	1,210	<i>1,222</i>	<i>1,172</i>

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

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

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(87/04); Bureau of Economic Analysis, U.S. Department of Commerce, *Survey of Current Business*, June 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*, July 1987. Macroeconomic projections are based on modifications to Data Resources, Inc., Forecast CONTROL0687.

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

Product	1986		1987		World Oil Price Case	1987		1988				Year		
	3rd	4th	1st	2nd		3rd	4th	1st	2nd	3rd	4th	1986	1987	1988
Petroleum														
Imported Crude Oil Price ^a (dollars per barrel)	11.88	13.47	16.87	18.10	Low	<i>16.00</i>	<i>16.00</i>	<i>16.00</i>	<i>16.00</i>	<i>16.00</i>	<i>16.00</i>	-	<i>16.70</i>	<i>16.00</i>
					Base	<i>18.00</i>	<i>18.00</i>	<i>19.00</i>	<i>19.00</i>	<i>19.00</i>	<i>19.00</i>	13.98	<i>17.70</i>	<i>19.00</i>
					High	<i>20.00</i>	<i>21.00</i>	<i>22.00</i>	<i>22.00</i>	<i>22.00</i>	<i>22.00</i>	-	<i>19.00</i>	<i>22.00</i>
Gasoline ^b (dollars per gallon)87	.83	.90	.95	Low	<i>.98</i>	<i>.94</i>	<i>.92</i>	<i>.93</i>	<i>.94</i>	<i>.92</i>	-	<i>.94</i>	<i>.93</i>
					Base	<i>1.00</i>	<i>.99</i>	<i>.99</i>	<i>1.03</i>	<i>1.04</i>	<i>1.02</i>	.93	<i>.96</i>	<i>1.02</i>
					High	<i>1.02</i>	<i>1.05</i>	<i>1.09</i>	<i>1.13</i>	<i>1.14</i>	<i>1.13</i>	-	<i>.98</i>	<i>1.12</i>
No. 2 Diesel Oil, Retail (dollars per gallon)80	.82	.89	.89	Low	<i>.88</i>	<i>.88</i>	<i>.89</i>	<i>.89</i>	<i>.89</i>	<i>.89</i>	-	<i>.89</i>	<i>.89</i>
					Base	<i>.92</i>	<i>.94</i>	<i>.97</i>	<i>.98</i>	<i>.98</i>	<i>.98</i>	.88	<i>.91</i>	<i>.98</i>
					High	<i>.96</i>	<i>1.02</i>	<i>1.05</i>	<i>1.06</i>	<i>1.07</i>	<i>1.07</i>	-	<i>.94</i>	<i>1.06</i>
No. 2 Heating Oil, Wholesale (dollars per gallon)39	.43	.50	.50	Low	<i>.46</i>	<i>.46</i>	<i>.47</i>	<i>.47</i>	<i>.47</i>	<i>.47</i>	-	<i>.48</i>	<i>.47</i>
					Base	<i>.50</i>	<i>.51</i>	<i>.55</i>	<i>.55</i>	<i>.54</i>	<i>.54</i>	.49	<i>.50</i>	<i>.55</i>
					High	<i>.55</i>	<i>.59</i>	<i>.63</i>	<i>.62</i>	<i>.62</i>	<i>.63</i>	-	<i>.53</i>	<i>.62</i>
No. 2 Heating Oil, Retail (dollars per gallon)67	.70	.79	.77	Low	<i>.74</i>	<i>.77</i>	<i>.78</i>	<i>.76</i>	<i>.75</i>	<i>.78</i>	-	<i>.77</i>	<i>.77</i>
					Base	<i>.78</i>	<i>.83</i>	<i>.87</i>	<i>.85</i>	<i>.85</i>	<i>.88</i>	.84	<i>.79</i>	<i>.86</i>
					High	<i>.82</i>	<i>.92</i>	<i>.97</i>	<i>.95</i>	<i>.94</i>	<i>.98</i>	-	<i>.83</i>	<i>.96</i>
No. 6 Residual Fuel Oil ^c (dollars per barrel)	11.51	13.31	17.10	17.20	Low	<i>14.80</i>	<i>15.00</i>	<i>15.30</i>	<i>14.70</i>	<i>14.70</i>	<i>15.00</i>	-	<i>16.00</i>	<i>14.90</i>
					Base	<i>17.00</i>	<i>17.60</i>	<i>18.30</i>	<i>17.90</i>	<i>18.00</i>	<i>18.40</i>	14.41	<i>17.20</i>	<i>18.20</i>
					High	<i>18.10</i>	<i>19.50</i>	<i>20.60</i>	<i>20.20</i>	<i>20.40</i>	<i>20.90</i>	-	<i>18.00</i>	<i>20.50</i>
Electric Utility Fuels														
Coal (dollars per million Btu)	1.56	1.53	1.52	1.52	Low	<i>1.47</i>	<i>1.48</i>	<i>1.48</i>	<i>1.51</i>	<i>1.52</i>	<i>1.52</i>	-	<i>1.50</i>	<i>1.51</i>
					Base	<i>1.53</i>	<i>1.53</i>	<i>1.54</i>	<i>1.56</i>	<i>1.58</i>	<i>1.58</i>	1.58	<i>1.52</i>	<i>1.56</i>
					High	<i>1.56</i>	<i>1.57</i>	<i>1.58</i>	<i>1.59</i>	<i>1.61</i>	<i>1.61</i>	-	<i>1.54</i>	<i>1.60</i>
Heavy Oil ^d (dollars per million Btu)	1.98	2.32	2.92	2.73	Low	<i>2.36</i>	<i>2.38</i>	<i>2.43</i>	<i>2.33</i>	<i>2.34</i>	<i>2.39</i>	-	<i>2.60</i>	<i>2.37</i>
					Base	<i>2.71</i>	<i>2.80</i>	<i>2.92</i>	<i>2.84</i>	<i>2.87</i>	<i>2.93</i>	2.40	<i>2.79</i>	<i>2.89</i>
					High	<i>2.88</i>	<i>3.11</i>	<i>3.28</i>	<i>3.21</i>	<i>3.24</i>	<i>3.32</i>	-	<i>2.91</i>	<i>3.26</i>
Natural Gas (dollars per million Btu)	2.17	2.20	2.33	2.44	Low	<i>2.34</i>	<i>2.32</i>	<i>2.34</i>	<i>2.28</i>	<i>2.33</i>	<i>2.38</i>	-	<i>2.36</i>	<i>2.33</i>
					Base	<i>2.42</i>	<i>2.44</i>	<i>2.51</i>	<i>2.46</i>	<i>2.52</i>	<i>2.58</i>	2.34	<i>2.41</i>	<i>2.52</i>
					High	<i>2.57</i>	<i>2.67</i>	<i>2.77</i>	<i>2.73</i>	<i>2.80</i>	<i>2.87</i>	-	<i>2.50</i>	<i>2.79</i>
Other Residential														
Natural Gas (dollars per 1,000 cu. ft.)	6.85	5.47	5.30	5.80	Low	<i>6.40</i>	<i>5.19</i>	<i>5.18</i>	<i>5.65</i>	<i>6.48</i>	<i>5.12</i>	-	<i>5.32</i>	<i>5.42</i>
					Base	<i>6.60</i>	<i>5.35</i>	<i>5.35</i>	<i>5.85</i>	<i>6.75</i>	<i>5.45</i>	5.82	<i>5.46</i>	<i>5.54</i>
					High	<i>6.80</i>	<i>5.51</i>	<i>5.52</i>	<i>6.05</i>	<i>7.02</i>	<i>5.68</i>	-	<i>5.60</i>	<i>5.77</i>
Electricity (cents per kilowatthour)	8.18	7.58	7.33	7.71	Low	<i>8.02</i>	<i>7.63</i>	<i>7.30</i>	<i>7.87</i>	<i>8.23</i>	<i>7.89</i>	-	<i>7.67</i>	<i>7.82</i>
					Base	<i>8.15</i>	<i>7.77</i>	<i>7.47</i>	<i>8.05</i>	<i>8.44</i>	<i>8.09</i>	7.79	<i>7.74</i>	<i>8.01</i>
					High	<i>8.30</i>	<i>7.93</i>	<i>7.64</i>	<i>8.23</i>	<i>8.66</i>	<i>8.30</i>	-	<i>7.82</i>	<i>8.21</i>

^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: Second 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(87/04); and *Petroleum Marketing Monthly*, DOE/EIA-0380(87/04).

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

Supply and Disposition	1986		1987				1988				Year		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1986	1987	1988
Supply													
Crude Oil Supply													
Domestic Production ^a	8.46	8.39	8.38	8.34	<i>8.24</i>	<i>8.17</i>	<i>8.21</i>	<i>8.10</i>	<i>8.00</i>	<i>7.95</i>	8.68	<i>8.28</i>	<i>8.06</i>
Alaska	1.83	1.87	1.95	1.97	<i>1.94</i>	<i>1.94</i>	<i>2.02</i>	<i>2.02</i>	<i>2.02</i>	<i>2.02</i>	1.87	<i>1.95</i>	<i>2.02</i>
Lower 48	6.62	6.52	6.43	6.37	<i>6.30</i>	<i>6.23</i>	<i>6.19</i>	<i>6.08</i>	<i>5.98</i>	<i>5.94</i>	6.81	<i>6.33</i>	<i>6.05</i>
Net Imports (Including SPR) ^b	4.72	4.34	3.83	4.17	<i>4.63</i>	<i>4.39</i>	<i>3.95</i>	<i>4.49</i>	<i>4.85</i>	<i>4.58</i>	4.02	<i>4.26</i>	<i>4.47</i>
Gross Imports													
(Excluding SPR)	4.82	4.44	3.93	4.33	<i>4.74</i>	<i>4.49</i>	<i>4.07</i>	<i>4.63</i>	<i>4.95</i>	<i>4.69</i>	4.13	<i>4.38</i>	<i>4.59</i>
SPR Imports	.05	.04	.08	.06	<i>.05</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	.05	<i>.07</i>	<i>.06</i>
Exports	.15	.14	.18	.22	<i>.17</i>	<i>.17</i>	<i>.18</i>	<i>.20</i>	<i>.17</i>	<i>.17</i>	.15	<i>.19</i>	<i>.18</i>
SPR Stock Withdrawn													
or Added (-)	-.05	-.06	-.09	-.08	<i>-.06</i>	<i>-.07</i>	<i>-.07</i>	<i>-.07</i>	<i>-.07</i>	<i>-.07</i>	-.05	<i>-.08</i>	<i>-.07</i>
Other Stock Withdrawn													
or Added (-)	-.12	.07	-.02	.08	<i>-.02</i>	<i>-.02</i>	<i>-.01</i>	<i>-.02</i>	<i>.06</i>	<i>-.01</i>	-.03	<i>.00</i>	<i>.00</i>
Products Supplied and Losses	-.05	-.04	-.04	-.05	<i>-.06</i>	<i>-.06</i>	<i>-.06</i>	<i>-.06</i>	<i>-.06</i>	<i>-.06</i>	-.05	<i>-.05</i>	<i>-.06</i>
Unaccounted-for Crude	.15	.04	.26	.25	<i>.14</i>	<i>.14</i>	<i>.15</i>	<i>.14</i>	<i>.13</i>	<i>.14</i>	.14	<i>.20</i>	<i>.14</i>
Crude Oil Input to Refineries	13.10	12.75	12.32	12.71	<i>12.86</i>	<i>12.55</i>	<i>12.15</i>	<i>12.58</i>	<i>12.90</i>	<i>12.53</i>	12.72	<i>12.61</i>	<i>12.54</i>
Other Supply													
NGL Production	1.47	1.54	1.61	1.51	<i>1.58</i>	<i>1.62</i>	<i>1.62</i>	<i>1.57</i>	<i>1.58</i>	<i>1.62</i>	1.55	<i>1.58</i>	<i>1.60</i>
Other Hydrocarbon and													
Alcohol Inputs	.06	.07	.07	.06	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	.06	<i>.06</i>	<i>.06</i>
Crude Oil Product Supplied	.05	.04	.04	.05	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	.05	<i>.05</i>	<i>.06</i>
Processing Gain	.66	.59	.62	.63	<i>.63</i>	<i>.61</i>	<i>.59</i>	<i>.61</i>	<i>.62</i>	<i>.61</i>	.62	<i>.62</i>	<i>.61</i>
Net Product Imports ^c	1.59	1.41	1.21	1.16	<i>1.49</i>	<i>1.61</i>	<i>1.64</i>	<i>1.37</i>	<i>1.41</i>	<i>1.52</i>	1.41	<i>1.37</i>	<i>1.49</i>
Gross Product Imports ^c	2.20	2.09	1.87	1.77	<i>1.99</i>	<i>2.19</i>	<i>2.22</i>	<i>1.91</i>	<i>1.92</i>	<i>2.10</i>	2.05	<i>1.96</i>	<i>2.04</i>
Product Exports	.60	.68	.66	.61	<i>.51</i>	<i>.58</i>	<i>.58</i>	<i>.54</i>	<i>.51</i>	<i>.58</i>	.63	<i>.59</i>	<i>.55</i>
Product Stock Withdrawn													
or Added (-) ^d	-.64	.26	.46	.13	<i>-.41</i>	<i>.13</i>	<i>.47</i>	<i>-.13</i>	<i>-.52</i>	<i>.16</i>	-.12	<i>.07</i>	<i>-.01</i>
Total Product Supplied,													
Domestic Use	16.28	16.66	16.33	16.24	<i>16.27</i>	<i>16.64</i>	<i>16.59</i>	<i>16.12</i>	<i>16.12</i>	<i>16.57</i>	16.28	<i>16.37</i>	<i>16.35</i>
Disposition													
Motor Gasoline	7.25	7.09	6.70	7.35	<i>7.33</i>	<i>7.20</i>	<i>6.81</i>	<i>7.32</i>	<i>7.31</i>	<i>7.17</i>	7.03	<i>7.15</i>	<i>7.15</i>
Jet Fuel	1.33	1.37	1.36	1.32	<i>1.40</i>	<i>1.43</i>	<i>1.43</i>	<i>1.39</i>	<i>1.44</i>	<i>1.46</i>	1.31	<i>1.38</i>	<i>1.43</i>
Distillate Fuel Oil	2.58	3.04	3.20	2.80	<i>2.58</i>	<i>3.03</i>	<i>3.37</i>	<i>2.79</i>	<i>2.57</i>	<i>3.03</i>	2.91	<i>2.90</i>	<i>2.94</i>
Residual Fuel Oil	1.43	1.43	1.38	1.16	<i>1.18</i>	<i>1.24</i>	<i>1.42</i>	<i>1.13</i>	<i>1.04</i>	<i>1.14</i>	1.42	<i>1.24</i>	<i>1.18</i>
Other Oils Supplied ^e	3.68	3.73	3.70	3.61	<i>3.78</i>	<i>3.75</i>	<i>3.56</i>	<i>3.49</i>	<i>3.75</i>	<i>3.76</i>	3.61	<i>3.71</i>	<i>3.64</i>
Total Product Supplied	16.28	16.66	16.34	16.24	<i>16.27</i>	<i>16.64</i>	<i>16.59</i>	<i>16.12</i>	<i>16.12</i>	<i>16.57</i>	16.28	<i>16.37</i>	<i>16.35</i>
Total Petroleum Net Imports	6.31	5.75	5.04	5.33	<i>6.12</i>	<i>6.00</i>	<i>5.59</i>	<i>5.86</i>	<i>6.27</i>	<i>6.10</i>	5.44	<i>5.62</i>	<i>5.96</i>
Closing Stocks (million barrels)													
Crude Oil (Excluding SPR) ^f	337.8	331.2	333.4	326.1	<i>328.0</i>	<i>329.5</i>	<i>330.8</i>	<i>333.0</i>	<i>327.7</i>	<i>328.7</i>	331.2	<i>329.5</i>	<i>328.7</i>
Total Motor Gasoline	233.9	233.1	249.2	232.6	<i>227.9</i>	<i>227.0</i>	<i>234.4</i>	<i>225.2</i>	<i>228.3</i>	<i>227.6</i>	233.1	<i>227.0</i>	<i>227.6</i>
Finished Motor Gasoline	196.0	194.2	205.8	193.9	<i>188.5</i>	<i>189.8</i>	<i>196.2</i>	<i>187.8</i>	<i>189.4</i>	<i>190.4</i>	194.2	<i>189.8</i>	<i>190.4</i>
Blending Components	38.0	38.8	43.4	38.7	<i>39.3</i>	<i>37.2</i>	<i>38.2</i>	<i>37.4</i>	<i>38.9</i>	<i>37.2</i>	38.8	<i>37.2</i>	<i>37.2</i>
Jet Fuel	48.9	49.7	48.1	44.4	<i>47.2</i>	<i>46.3</i>	<i>46.2</i>	<i>47.4</i>	<i>49.3</i>	<i>48.1</i>	49.7	<i>46.3</i>	<i>48.1</i>
Distillate Fuel Oil	152.4	155.1	110.0	104.6	<i>142.1</i>	<i>150.2</i>	<i>104.5</i>	<i>108.6</i>	<i>142.4</i>	<i>150.8</i>	155.1	<i>150.2</i>	<i>150.8</i>
Residual Fuel Oil	44.0	47.4	39.6	42.0	<i>43.3</i>	<i>46.0</i>	<i>39.0</i>	<i>38.2</i>	<i>43.2</i>	<i>45.4</i>	47.4	<i>46.0</i>	<i>45.4</i>
Other Oils ^g	294.5	264.4	261.1	272.7	<i>273.8</i>	<i>253.1</i>	<i>256.0</i>	<i>272.5</i>	<i>276.7</i>	<i>253.0</i>	264.4	<i>253.1</i>	<i>253.0</i>
Total Stocks (Excluding SPR)	1111.6	1080.9	1041.4	1022.4	<i>1062.4</i>	<i>1052.1</i>	<i>1010.9</i>	<i>1024.9</i>	<i>1067.5</i>	<i>1053.5</i>	1080.9	<i>1052.1</i>	<i>1053.5</i>
Crude Oil in SPR	506.4	511.6	520.0	527.1	<i>533.1</i>	<i>540.0</i>	<i>546.8</i>	<i>553.6</i>	<i>560.5</i>	<i>567.4</i>	511.6	<i>540.0</i>	<i>567.4</i>
Total Stocks (Including SPR)	1618.0	1592.5	1561.4	1549.5	<i>1595.4</i>	<i>1592.0</i>	<i>1557.7</i>	<i>1578.5</i>	<i>1628.1</i>	<i>1620.9</i>	1592.5	<i>1592.0</i>	<i>1620.9</i>

^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. 1987 to Apr. 1987; *Weekly Petroleum Status Report*, DOE/EIA-0208(87-24,28).

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		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1986	1987	1988
Supply													
Crude Oil Supply													
Domestic Production ^a	8.46	8.39	8.38	8.34	<i>8.20</i>	<i>8.11</i>	<i>8.09</i>	<i>7.95</i>	<i>7.82</i>	<i>7.75</i>	8.68	<i>8.26</i>	<i>7.90</i>
Alaska	1.83	1.87	1.95	1.97	<i>1.94</i>	<i>1.94</i>	<i>2.00</i>	<i>2.00</i>	<i>2.00</i>	<i>2.00</i>	1.87	<i>1.95</i>	<i>2.00</i>
Lower 48	6.62	6.52	6.43	6.37	<i>6.26</i>	<i>6.17</i>	<i>6.09</i>	<i>5.95</i>	<i>5.82</i>	<i>5.76</i>	6.81	<i>6.31</i>	<i>5.91</i>
Net Imports (Including SPR) ^b	4.72	4.34	3.83	4.17	<i>4.87</i>	<i>4.60</i>	<i>4.29</i>	<i>4.86</i>	<i>5.26</i>	<i>5.03</i>	4.02	<i>4.37</i>	<i>4.86</i>
Gross Imports													
(Excluding SPR)	4.82	4.44	3.93	4.33	<i>4.98</i>	<i>4.71</i>	<i>4.41</i>	<i>5.00</i>	<i>5.36</i>	<i>5.14</i>	4.13	<i>4.49</i>	<i>4.98</i>
SPR Imports	.05	.04	.08	.06	<i>.05</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	.05	<i>.07</i>	<i>.06</i>
Exports	.15	.14	.18	.22	<i>.17</i>	<i>.17</i>	<i>.18</i>	<i>.20</i>	<i>.17</i>	<i>.17</i>	.15	<i>.19</i>	<i>.18</i>
SPR Stock Withdrawn or Added (-)	-.05	-.06	-.09	-.08	<i>-.06</i>	<i>-.07</i>	<i>-.07</i>	<i>-.07</i>	<i>-.07</i>	<i>-.07</i>	-.05	<i>-.08</i>	<i>-.07</i>
Other Stock Withdrawn or Added (-)	-.12	.07	-.02	.08	<i>-.05</i>	<i>-.02</i>	<i>-.03</i>	<i>-.03</i>	<i>.07</i>	<i>-.02</i>	-.03	<i>.00</i>	<i>.00</i>
Products Supplied and Losses	-.05	-.04	-.04	-.05	<i>-.06</i>	<i>-.06</i>	<i>-.06</i>	<i>-.06</i>	<i>-.06</i>	<i>-.06</i>	-.05	<i>-.05</i>	<i>-.06</i>
Unaccounted-for Crude	.15	.04	.26	.25	<i>.14</i>	<i>.14</i>	<i>.15</i>	<i>.14</i>	<i>.12</i>	<i>.13</i>	.14	<i>.20</i>	<i>.14</i>
Crude Oil Input to Refineries	13.10	12.75	12.32	12.71	<i>13.03</i>	<i>12.70</i>	<i>12.36</i>	<i>12.79</i>	<i>13.14</i>	<i>12.77</i>	12.72	<i>12.69</i>	<i>12.76</i>
Other Supply													
NGL Production	1.47	1.54	1.61	1.51	<i>1.58</i>	<i>1.62</i>	<i>1.62</i>	<i>1.57</i>	<i>1.58</i>	<i>1.62</i>	1.55	<i>1.58</i>	<i>1.60</i>
Other Hydrocarbon and Alcohol Inputs	.06	.07	.07	.06	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	.06	<i>.06</i>	<i>.06</i>
Crude Oil Product Supplied	.05	.04	.04	.05	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	.05	<i>.05</i>	<i>.06</i>
Processing Gain	.66	.59	.62	.63	<i>.63</i>	<i>.62</i>	<i>.60</i>	<i>.62</i>	<i>.63</i>	<i>.62</i>	.62	<i>.62</i>	<i>.62</i>
Net Product Imports ^c	1.59	1.41	1.21	1.16	<i>1.56</i>	<i>1.65</i>	<i>1.69</i>	<i>1.43</i>	<i>1.49</i>	<i>1.59</i>	1.41	<i>1.40</i>	<i>1.55</i>
Gross Product Imports ^c	2.20	2.09	1.87	1.77	<i>2.06</i>	<i>2.23</i>	<i>2.27</i>	<i>1.97</i>	<i>2.00</i>	<i>2.17</i>	2.05	<i>1.99</i>	<i>2.10</i>
Product Exports	.60	.68	.66	.61	<i>.51</i>	<i>.58</i>	<i>.58</i>	<i>.54</i>	<i>.51</i>	<i>.58</i>	.63	<i>.59</i>	<i>.55</i>
Product Stock Withdrawn or Added (-) ^d	-.64	.26	.46	.13	<i>-.46</i>	<i>.12</i>	<i>.45</i>	<i>-.13</i>	<i>-.53</i>	<i>.17</i>	-.12	<i>.06</i>	<i>-.01</i>
Total Product Supplied, Domestic Use	16.28	16.66	16.33	16.24	<i>16.46</i>	<i>16.83</i>	<i>16.84</i>	<i>16.40</i>	<i>16.43</i>	<i>16.90</i>	16.28	<i>16.47</i>	<i>16.64</i>
Disposition													
Motor Gasoline	7.25	7.09	6.70	7.35	<i>7.34</i>	<i>7.23</i>	<i>6.85</i>	<i>7.37</i>	<i>7.36</i>	<i>7.23</i>	7.03	<i>7.16</i>	<i>7.20</i>
Jet Fuel	1.33	1.37	1.36	1.32	<i>1.40</i>	<i>1.44</i>	<i>1.45</i>	<i>1.41</i>	<i>1.47</i>	<i>1.49</i>	1.31	<i>1.38</i>	<i>1.45</i>
Distillate Fuel Oil	2.58	3.04	3.20	2.80	<i>2.59</i>	<i>3.05</i>	<i>3.40</i>	<i>2.83</i>	<i>2.61</i>	<i>3.07</i>	2.91	<i>2.91</i>	<i>2.98</i>
Residual Fuel Oil	1.43	1.43	1.38	1.16	<i>1.27</i>	<i>1.35</i>	<i>1.55</i>	<i>1.27</i>	<i>1.19</i>	<i>1.30</i>	1.42	<i>1.29</i>	<i>1.33</i>
Other Oils Supplied ^e	3.68	3.73	3.70	3.61	<i>3.79</i>	<i>3.77</i>	<i>3.59</i>	<i>3.52</i>	<i>3.80</i>	<i>3.81</i>	3.61	<i>3.72</i>	<i>3.68</i>
Total Product Supplied	16.28	16.66	16.34	16.24	<i>16.39</i>	<i>16.83</i>	<i>16.84</i>	<i>16.40</i>	<i>16.43</i>	<i>16.90</i>	16.28	<i>16.45</i>	<i>16.64</i>
Total Petroleum Net Imports	6.31	5.75	5.04	5.33	<i>6.42</i>	<i>6.25</i>	<i>5.98</i>	<i>6.30</i>	<i>6.75</i>	<i>6.62</i>	5.44	<i>5.77</i>	<i>6.41</i>
Stocks (million barrels)													
Crude Oil (Excluding SPR) ^f	337.8	331.2	333.4	326.1	<i>330.9</i>	<i>332.7</i>	<i>335.5</i>	<i>338.6</i>	<i>332.4</i>	<i>334.3</i>	331.2	<i>332.7</i>	<i>334.3</i>
Total Motor Gasoline	233.9	233.1	249.2	232.6	<i>228.4</i>	<i>227.8</i>	<i>235.7</i>	<i>226.4</i>	<i>229.5</i>	<i>228.9</i>	233.1	<i>227.8</i>	<i>228.9</i>
Finished Motor Gasoline	196.0	194.2	205.8	193.9	<i>189.1</i>	<i>190.6</i>	<i>197.5</i>	<i>189.1</i>	<i>190.7</i>	<i>191.7</i>	194.2	<i>190.6</i>	<i>191.7</i>
Blending Components	38.0	38.8	43.4	38.7	<i>39.3</i>	<i>37.2</i>	<i>38.2</i>	<i>37.3</i>	<i>38.8</i>	<i>37.2</i>	38.8	<i>37.2</i>	<i>37.2</i>
Jet Fuel	48.9	49.7	48.1	44.4	<i>47.4</i>	<i>46.6</i>	<i>46.8</i>	<i>47.9</i>	<i>49.9</i>	<i>48.6</i>	49.7	<i>46.6</i>	<i>48.6</i>
Distillate Fuel Oil	152.4	155.1	110.0	104.6	<i>143.0</i>	<i>151.4</i>	<i>105.7</i>	<i>110.3</i>	<i>144.7</i>	<i>152.9</i>	155.1	<i>151.4</i>	<i>152.9</i>
Residual Fuel Oil	44.0	47.4	39.6	42.0	<i>45.7</i>	<i>48.5</i>	<i>41.4</i>	<i>41.3</i>	<i>47.3</i>	<i>49.0</i>	47.4	<i>48.5</i>	<i>49.0</i>
Other Oils ^g	294.5	264.4	261.1	272.7	<i>274.4</i>	<i>253.7</i>	<i>257.5</i>	<i>273.2</i>	<i>276.9</i>	<i>253.1</i>	264.4	<i>253.7</i>	<i>253.1</i>
Total Stocks (Excluding SPR)	1111.6	1080.9	1041.4	1022.4	<i>1069.8</i>	<i>1060.7</i>	<i>1022.6</i>	<i>1037.7</i>	<i>1080.7</i>	<i>1066.8</i>	1080.9	<i>1060.7</i>	<i>1066.8</i>
Crude Oil in SPR	506.4	511.6	520.0	527.1	<i>533.1</i>	<i>540.0</i>	<i>546.8</i>	<i>553.6</i>	<i>560.5</i>	<i>567.4</i>	511.6	<i>540.0</i>	<i>567.4</i>
Total Stocks (Including SPR)	1618.0	1592.5	1561.4	1549.5	<i>1602.9</i>	<i>1600.7</i>	<i>1569.4</i>	<i>1591.4</i>	<i>1641.3</i>	<i>1634.2</i>	1592.5	<i>1600.7</i>	<i>1634.2</i>

^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. 1987 to Apr. 1987; *Weekly Petroleum Status Report*, DOE/EIA-0208(87-24,28).

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		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1986	1987	1988
Supply													
Crude Oil Supply													
Domestic Production ^a	8.46	8.39	8.38	8.34	<i>8.27</i>	<i>8.25</i>	<i>8.35</i>	<i>8.26</i>	<i>8.19</i>	<i>8.17</i>	8.68	<i>8.31</i>	<i>8.24</i>
Alaska	1.83	1.87	1.95	1.97	<i>1.94</i>	<i>1.94</i>	<i>2.05</i>	<i>2.05</i>	<i>2.05</i>	<i>2.05</i>	1.87	<i>1.95</i>	<i>2.05</i>
Lower 48	6.62	6.52	6.43	6.37	<i>6.33</i>	<i>6.31</i>	<i>6.30</i>	<i>6.22</i>	<i>6.14</i>	<i>6.12</i>	6.81	<i>6.36</i>	<i>6.19</i>
Net Imports (Including SPR) ^b	4.72	4.34	3.83	4.17	<i>4.39</i>	<i>4.14</i>	<i>3.61</i>	<i>4.12</i>	<i>4.42</i>	<i>4.14</i>	4.02	<i>4.13</i>	<i>4.07</i>
Gross Imports													
(Excluding SPR)	4.82	4.44	3.93	4.33	<i>4.51</i>	<i>4.24</i>	<i>3.73</i>	<i>4.26</i>	<i>4.52</i>	<i>4.24</i>	4.13	<i>4.26</i>	<i>4.19</i>
SPR Imports05	.04	.08	.06	<i>.05</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	.05	<i>.07</i>	<i>.06</i>
Exports15	.14	.18	.22	<i>.17</i>	<i>.17</i>	<i>.18</i>	<i>.20</i>	<i>.17</i>	<i>.17</i>	.15	<i>.19</i>	<i>.18</i>
SPR Stock Withdrawn													
or Added (-)	-.05	-.06	-.09	-.08	<i>-.06</i>	<i>-.07</i>	<i>-.07</i>	<i>-.07</i>	<i>-.07</i>	<i>-.07</i>	-.05	<i>-.08</i>	<i>-.07</i>
Other Stock Withdrawn													
or Added (-)	-.12	.07	-.02	.08	<i>.03</i>	<i>-.02</i>	<i>-.01</i>	<i>-.02</i>	<i>.06</i>	<i>-.01</i>	-.03	<i>.02</i>	<i>.01</i>
Products Supplied and Losses	-.05	-.04	-.04	-.05	<i>-.06</i>	<i>-.06</i>	<i>-.06</i>	<i>-.06</i>	<i>-.06</i>	<i>-.06</i>	-.05	<i>-.05</i>	<i>-.06</i>
Unaccounted-for Crude15	.04	.26	.25	<i>.13</i>	<i>.14</i>	<i>.14</i>	<i>.14</i>	<i>.12</i>	<i>.13</i>	.14	<i>.19</i>	<i>.13</i>
Crude Oil Input to Refineries	13.10	12.75	12.32	12.71	<i>12.70</i>	<i>12.37</i>	<i>11.96</i>	<i>12.37</i>	<i>12.66</i>	<i>12.29</i>	12.72	<i>12.53</i>	<i>12.32</i>
Other Supply													
NGL Production	1.47	1.54	1.61	1.51	<i>1.58</i>	<i>1.62</i>	<i>1.62</i>	<i>1.57</i>	<i>1.58</i>	<i>1.62</i>	1.55	<i>1.58</i>	<i>1.60</i>
Other Hydrocarbon and													
Alcohol Inputs06	.07	.07	.06	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	.06	<i>.06</i>	<i>.06</i>
Crude Oil Product Supplied05	.04	.04	.05	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	.05	<i>.05</i>	<i>.06</i>
Processing Gain66	.59	.62	.63	<i>.63</i>	<i>.61</i>	<i>.59</i>	<i>.61</i>	<i>.62</i>	<i>.60</i>	.62	<i>.62</i>	<i>.60</i>
Net Product Imports ^c	1.59	1.41	1.21	1.16	<i>1.51</i>	<i>1.61</i>	<i>1.62</i>	<i>1.33</i>	<i>1.38</i>	<i>1.49</i>	1.41	<i>1.37</i>	<i>1.45</i>
Gross Product Imports ^c	2.20	2.09	1.87	1.77	<i>2.01</i>	<i>2.19</i>	<i>2.20</i>	<i>1.86</i>	<i>1.88</i>	<i>2.06</i>	2.05	<i>1.96</i>	<i>2.00</i>
Product Exports60	.68	.66	.61	<i>.51</i>	<i>.58</i>	<i>.58</i>	<i>.54</i>	<i>.51</i>	<i>.58</i>	.63	<i>.59</i>	<i>.55</i>
Product Stock Withdrawn													
or Added (-) ^d	-.64	.26	.46	.13	<i>-.27</i>	<i>.13</i>	<i>.45</i>	<i>-.13</i>	<i>-.51</i>	<i>.15</i>	-.12	<i>.11</i>	<i>-.01</i>
Total Product Supplied, Domestic Use	16.28	16.66	16.33	16.24	<i>16.27</i>	<i>16.46</i>	<i>16.35</i>	<i>15.86</i>	<i>15.85</i>	<i>16.27</i>	16.28	<i>16.32</i>	<i>16.08</i>
Disposition													
Motor Gasoline	7.25	7.09	6.70	7.35	<i>7.32</i>	<i>7.17</i>	<i>6.76</i>	<i>7.26</i>	<i>7.25</i>	<i>7.11</i>	7.03	<i>7.14</i>	<i>7.09</i>
Jet Fuel	1.33	1.37	1.36	1.32	<i>1.39</i>	<i>1.42</i>	<i>1.42</i>	<i>1.37</i>	<i>1.42</i>	<i>1.44</i>	1.31	<i>1.37</i>	<i>1.41</i>
Distillate Fuel Oil	2.58	3.04	3.20	2.80	<i>2.56</i>	<i>2.99</i>	<i>3.33</i>	<i>2.75</i>	<i>2.53</i>	<i>2.99</i>	2.91	<i>2.89</i>	<i>2.90</i>
Residual Fuel Oil	1.43	1.43	1.38	1.16	<i>1.14</i>	<i>1.16</i>	<i>1.32</i>	<i>1.02</i>	<i>.94</i>	<i>1.03</i>	1.42	<i>1.21</i>	<i>1.08</i>
Other Oils Supplied ^e	3.68	3.73	3.70	3.61	<i>3.77</i>	<i>3.72</i>	<i>3.53</i>	<i>3.45</i>	<i>3.71</i>	<i>3.71</i>	3.61	<i>3.70</i>	<i>3.60</i>
Total Product Supplied	16.28	16.66	16.34	16.24	<i>16.19</i>	<i>16.46</i>	<i>16.35</i>	<i>15.86</i>	<i>15.85</i>	<i>16.27</i>	16.28	<i>16.31</i>	<i>16.08</i>
Total Petroleum Net Imports	6.31	5.75	5.04	5.33	<i>5.90</i>	<i>5.74</i>	<i>5.23</i>	<i>5.45</i>	<i>5.80</i>	<i>5.62</i>	5.44	<i>5.51</i>	<i>5.52</i>
Stocks (million barrels)													
Crude Oil (Excluding SPR) ^f	337.8	331.2	333.4	326.1	<i>322.9</i>	<i>324.6</i>	<i>325.2</i>	<i>327.2</i>	<i>321.5</i>	<i>322.3</i>	331.2	<i>324.6</i>	<i>322.3</i>
Total Motor Gasoline	233.9	233.1	249.2	232.6	<i>224.3</i>	<i>223.6</i>	<i>231.5</i>	<i>221.7</i>	<i>225.3</i>	<i>224.7</i>	233.1	<i>223.6</i>	<i>224.7</i>
Finished Motor Gasoline	196.0	194.2	205.8	193.9	<i>187.2</i>	<i>188.2</i>	<i>194.4</i>	<i>186.2</i>	<i>187.8</i>	<i>188.8</i>	194.2	<i>188.2</i>	<i>188.8</i>
Blending Components	38.0	38.8	43.4	38.7	<i>37.1</i>	<i>35.4</i>	<i>37.2</i>	<i>35.5</i>	<i>37.5</i>	<i>35.9</i>	38.8	<i>35.4</i>	<i>35.9</i>
Jet Fuel	48.9	49.7	48.1	44.4	<i>46.1</i>	<i>45.2</i>	<i>45.2</i>	<i>46.5</i>	<i>48.3</i>	<i>47.1</i>	49.7	<i>45.2</i>	<i>47.1</i>
Distillate Fuel Oil	152.4	155.1	110.0	104.6	<i>141.1</i>	<i>148.4</i>	<i>103.1</i>	<i>106.9</i>	<i>140.0</i>	<i>148.6</i>	155.1	<i>148.4</i>	<i>148.6</i>
Residual Fuel Oil	44.0	47.4	39.6	42.0	<i>41.4</i>	<i>43.7</i>	<i>36.9</i>	<i>35.5</i>	<i>39.7</i>	<i>42.3</i>	47.4	<i>43.7</i>	<i>42.3</i>
Other Oils ^g	294.5	264.4	261.1	272.7	<i>268.2</i>	<i>248.6</i>	<i>252.1</i>	<i>270.2</i>	<i>274.2</i>	<i>251.3</i>	264.4	<i>248.6</i>	<i>251.3</i>
Total Stocks (Excluding SPR)	1111.6	1080.9	1041.4	1022.4	<i>1044.0</i>	<i>1034.1</i>	<i>994.1</i>	<i>1008.0</i>	<i>1049.1</i>	<i>1036.2</i>	1080.9	<i>1034.1</i>	<i>1036.2</i>
Crude Oil in SPR	506.4	511.6	520.0	527.1	<i>533.1</i>	<i>540.0</i>	<i>546.8</i>	<i>553.6</i>	<i>560.5</i>	<i>567.4</i>	511.6	<i>540.0</i>	<i>567.4</i>
Total Stocks (Including SPR)	1618.0	1592.5	1561.4	1549.5	<i>1577.1</i>	<i>1574.0</i>	<i>1540.8</i>	<i>1561.6</i>	<i>1609.6</i>	<i>1603.6</i>	1592.5	<i>1574.0</i>	<i>1603.6</i>

^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. 1987 to Apr. 1987; *Weekly Petroleum Status Report*, DOE/EIA-0208(87-24,28).

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

Supply and Disposition	1986		1987				1988				Year		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1986	1987	1988
Supply													
Domestic Production ^a	6.98	6.83	6.54	6.92	<i>6.94</i>	<i>6.88</i>	<i>6.55</i>	<i>6.87</i>	<i>6.99</i>	<i>6.85</i>	6.75	<i>6.82</i>	<i>6.81</i>
Imports31	.31	.32	.33	<i>.34</i>	<i>.35</i>	<i>.34</i>	<i>.37</i>	<i>.35</i>	<i>.34</i>	.33	<i>.34</i>	<i>.35</i>
Exports04	.06	.03	.03	<i>.01</i>	<i>.01</i>	<i>.01</i>	<i>.01</i>	<i>.01</i>	<i>.01</i>	.03	<i>.02</i>	<i>.01</i>
Net Imports27	.25	.29	.30	<i>.33</i>	<i>.34</i>	<i>.33</i>	<i>.36</i>	<i>.34</i>	<i>.33</i>	.29	<i>.32</i>	<i>.34</i>
Net Withdrawals00	.02	-.13	.13	<i>.06</i>	<i>-.01</i>	<i>-.07</i>	<i>.09</i>	<i>-.02</i>	<i>-.01</i>	-.01	<i>.01</i>	<i>.00</i>
Total Primary Supply	7.25	7.09	6.70	7.35	<i>7.33</i>	<i>7.20</i>	<i>6.81</i>	<i>7.32</i>	<i>7.31</i>	<i>7.17</i>	7.03	<i>7.15</i>	<i>7.15</i>
Disposition													
Leaded	2.20	2.03	1.73	1.84	<i>1.83</i>	<i>1.71</i>	<i>1.58</i>	<i>1.70</i>	<i>1.61</i>	<i>1.49</i>	2.18	<i>1.78</i>	<i>1.60</i>
Unleaded	5.05	5.07	4.97	5.51	<i>5.50</i>	<i>5.49</i>	<i>5.22</i>	<i>5.62</i>	<i>5.70</i>	<i>5.68</i>	4.85	<i>5.37</i>	<i>5.56</i>
Total Product Supplied	7.25	7.09	6.70	7.35	<i>7.33</i>	<i>7.20</i>	<i>6.81</i>	<i>7.32</i>	<i>7.31</i>	<i>7.17</i>	7.03	<i>7.15</i>	<i>7.15</i>
Stocks													
Primary Finished Stock Levels ^b (million barrels)													
Opening	195.8	196.0	194.2	205.8	<i>193.9</i>	<i>188.5</i>	<i>189.8</i>	<i>196.2</i>	<i>187.8</i>	<i>189.4</i>	190.3	<i>194.2</i>	<i>189.8</i>
Closing	196.0	194.2	205.8	193.9	<i>188.5</i>	<i>189.8</i>	<i>196.2</i>	<i>187.8</i>	<i>189.4</i>	<i>190.4</i>	194.2	<i>189.8</i>	<i>190.4</i>

^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. 1987 to Apr. 1987; *Weekly Petroleum Status Report*, DOE/EIA-0208(87-24,28).

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		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1986	1987	1988
Supply													
Refinery Output	2.83	2.86	2.58	2.60	<i>2.77</i>	<i>2.79</i>	<i>2.63</i>	<i>2.65</i>	<i>2.77</i>	<i>2.83</i>	2.80	<i>2.69</i>	<i>2.72</i>
Imports32	.28	.23	.21	<i>.28</i>	<i>.39</i>	<i>.33</i>	<i>.25</i>	<i>.24</i>	<i>.36</i>	.25	<i>.28</i>	<i>.30</i>
Exports08	.07	.10	.07	<i>.07</i>	<i>.07</i>	<i>.09</i>	<i>.06</i>	<i>.07</i>	<i>.07</i>	.10	<i>.08</i>	<i>.07</i>
Net Imports24	.21	.12	.14	<i>.21</i>	<i>.32</i>	<i>.24</i>	<i>.19</i>	<i>.17</i>	<i>.29</i>	.15	<i>.20</i>	<i>.22</i>
Net Withdrawals	-.48	-.03	.50	.06	<i>-.41</i>	<i>-.09</i>	<i>.50</i>	<i>-.05</i>	<i>-.37</i>	<i>-.09</i>	-.03	<i>.01</i>	<i>.00</i>
Disposition													
Electric Utility Consumption04	.03	.04	.04	<i>.05</i>	<i>.05</i>	<i>.05</i>	<i>.04</i>	<i>.05</i>	<i>.04</i>	.04	<i>.05</i>	<i>.04</i>
Utility Stock Additions00	.00	.00	.00	<i>.00</i>	<i>.00</i>	<i>.00</i>	<i>.00</i>	<i>.00</i>	<i>.00</i>	.00	<i>.00</i>	<i>.00</i>
Electric Utility Shipments05	.03	.04	.04	<i>.05</i>	<i>.04</i>	<i>.04</i>	<i>.04</i>	<i>.05</i>	<i>.04</i>	.04	<i>.04</i>	<i>.04</i>
Nonutility Shipments	2.54	3.01	3.16	2.76	<i>2.52</i>	<i>2.98</i>	<i>3.33</i>	<i>2.76</i>	<i>2.53</i>	<i>2.99</i>	2.88	<i>2.86</i>	<i>2.90</i>
Total Product Supplied	2.58	3.04	3.20	2.80	<i>2.58</i>	<i>3.03</i>	<i>3.37</i>	<i>2.79</i>	<i>2.57</i>	<i>3.03</i>	2.91	<i>2.90</i>	<i>2.94</i>
Stocks													
Electric Utility Stock Levels (million barrels)													
Opening	16.3	16.7	16.3	16.0	<i>15.8</i>	<i>15.6</i>	<i>15.4</i>	<i>15.2</i>	<i>15.0</i>	<i>14.9</i>	16.4	<i>16.3</i>	<i>15.4</i>
Closing	16.7	16.3	16.0	15.8	<i>15.6</i>	<i>15.4</i>	<i>15.2</i>	<i>15.0</i>	<i>14.9</i>	<i>14.8</i>	16.3	<i>15.4</i>	<i>14.8</i>
Primary Stock Levels (million barrels)													
Opening	107.9	152.4	155.1	110.0	<i>104.6</i>	<i>142.1</i>	<i>150.2</i>	<i>104.5</i>	<i>108.6</i>	<i>142.4</i>	143.7	<i>155.1</i>	<i>150.2</i>
Closing	152.4	155.1	110.0	104.6	<i>142.1</i>	<i>150.2</i>	<i>104.5</i>	<i>108.6</i>	<i>142.4</i>	<i>150.8</i>	155.1	<i>150.2</i>	<i>150.8</i>

Notes: Minor discrepancies with other EIA published historical data are due to rounding. Historical values are printed in **boldface**, forecasts in *italics*.
Sources: Historical data: Energy Information Administration, *Petroleum Supply Annual 1985*, DOE/EIA-0340(85)/1; *Petroleum Supply Monthly*, DOE/EIA-0109, Jan. 1987 to Apr. 1987; *Monthly Energy Review*, DOE/EIA-0035(87/04); *Electric Power Monthly*, DOE/EIA-0226(87/05); *Weekly Petroleum Status Report*, DOE/EIA-0208(87-24,28).

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		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1986	1987	1988
Supply													
Refinery Output	0.87	0.93	0.87	0.83	<i>0.73</i>	<i>0.76</i>	<i>0.81</i>	<i>0.73</i>	<i>0.66</i>	<i>0.69</i>	0.89	<i>0.80</i>	<i>0.72</i>
Imports70	.71	.61	.55	<i>.63</i>	<i>.71</i>	<i>.74</i>	<i>.57</i>	<i>.60</i>	<i>.68</i>	.67	<i>.62</i>	<i>.65</i>
Exports13	.17	.19	.19	<i>.16</i>	<i>.20</i>	<i>.20</i>	<i>.18</i>	<i>.16</i>	<i>.20</i>	.15	<i>.18</i>	<i>.19</i>
Net Imports58	.54	.42	.36	<i>.47</i>	<i>.51</i>	<i>.53</i>	<i>.39</i>	<i>.44</i>	<i>.47</i>	.52	<i>.44</i>	<i>.46</i>
Net Withdrawals	-.01	-.04	.09	-.03	<i>-.01</i>	<i>-.03</i>	<i>.08</i>	<i>.01</i>	<i>-.05</i>	<i>-.02</i>	.01	<i>.00</i>	<i>.00</i>
Disposition													
Electric Utility Consumption73	.56	.57	.45	<i>.57</i>	<i>.50</i>	<i>.50</i>	<i>.41</i>	<i>.50</i>	<i>.44</i>	.59	<i>.52</i>	<i>.46</i>
Utility Stock Additions00	-.01	-.08	.01	<i>-.01</i>	<i>.01</i>	<i>-.03</i>	<i>-.01</i>	<i>-.02</i>	<i>.02</i>	.00	<i>-.02</i>	<i>-.01</i>
Electric Utility Shipments73	.55	.49	.46	<i>.56</i>	<i>.51</i>	<i>.47</i>	<i>.40</i>	<i>.48</i>	<i>.46</i>	.59	<i>.51</i>	<i>.45</i>
Nonutility Shipments70	.88	.89	.70	<i>.62</i>	<i>.73</i>	<i>.95</i>	<i>.72</i>	<i>.57</i>	<i>.69</i>	.83	<i>.73</i>	<i>.73</i>
Total Product Supplied	1.43	1.43	1.38	1.16	<i>1.18</i>	<i>1.24</i>	<i>1.42</i>	<i>1.13</i>	<i>1.04</i>	<i>1.14</i>	1.42	<i>1.24</i>	<i>1.18</i>
Stocks													
Electric Utility Stock Levels (million barrels)													
Opening	57.6	57.5	56.8	50.0	<i>50.5</i>	<i>50.0</i>	<i>50.7</i>	<i>48.4</i>	<i>47.6</i>	<i>45.8</i>	57.3	<i>56.8</i>	<i>50.7</i>
Closing	57.5	56.8	50.0	50.5	<i>50.0</i>	<i>50.7</i>	<i>48.4</i>	<i>47.6</i>	<i>45.8</i>	<i>47.3</i>	56.8	<i>50.7</i>	<i>47.3</i>
Primary Stock Levels (million barrels)													
Opening	42.8	44.0	47.4	39.6	<i>42.0</i>	<i>43.3</i>	<i>46.0</i>	<i>39.0</i>	<i>38.2</i>	<i>43.2</i>	50.4	<i>47.4</i>	<i>46.0</i>
Closing	44.0	47.4	39.6	42.0	<i>43.3</i>	<i>46.0</i>	<i>39.0</i>	<i>38.2</i>	<i>43.2</i>	<i>45.4</i>	47.4	<i>46.0</i>	<i>45.4</i>

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

Sources: Historical data: Energy Information Administration, *Petroleum Supply Annual 1985*, DOE/EIA-0340(85)/11; *Petroleum Supply Monthly*, DOE/EIA-0109, Jan. 1987 to Apr. 1987; *Monthly Energy Review*, DOE/EIA-0035(87/04); *Electric Power Monthly*, DOE/EIA-0226(87/05); *Weekly Petroleum Status Report*, DOE/EIA-0208(87-24,28).

**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		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1986	1987	1988
Supply													
Net Refinery Output ^b	3.08	2.73	2.95	2.99	<i>3.06</i>	<i>2.73</i>	<i>2.76</i>	<i>2.95</i>	<i>3.11</i>	<i>2.77</i>	2.89	<i>2.93</i>	<i>2.90</i>
Natural Gas Plant Output	1.47	1.54	1.61	1.51	<i>1.58</i>	<i>1.62</i>	<i>1.62</i>	<i>1.57</i>	<i>1.58</i>	<i>1.62</i>	1.55	<i>1.58</i>	<i>1.60</i>
Other Domestic ^c06	.07	.07	.06	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	<i>.06</i>	.06	<i>.06</i>	<i>.06</i>
Net Imports51	.41	.38	.36	<i>.47</i>	<i>.44</i>	<i>.54</i>	<i>.42</i>	<i>.46</i>	<i>.42</i>	.45	<i>.42</i>	<i>.46</i>
Net Withdrawals	-.15	.31	.00	-.03	<i>-.05</i>	<i>.26</i>	<i>-.04</i>	<i>-.18</i>	<i>-.08</i>	<i>.29</i>	-.09	<i>.04</i>	<i>.00</i>
Total Primary Supply	4.97	5.05	5.01	4.88	<i>5.12</i>	<i>5.11</i>	<i>4.93</i>	<i>4.82</i>	<i>5.14</i>	<i>5.17</i>	4.87	<i>5.03</i>	<i>5.01</i>
Disposition													
Jet Fuel	1.33	1.37	1.36	1.32	<i>1.40</i>	<i>1.43</i>	<i>1.43</i>	<i>1.39</i>	<i>1.44</i>	<i>1.46</i>	1.31	<i>1.38</i>	<i>1.43</i>
Liquefied Petroleum Gas ^d86	1.32	1.29	.91	<i>.92</i>	<i>1.22</i>	<i>1.22</i>	<i>.84</i>	<i>.90</i>	<i>1.21</i>	1.02	<i>1.08</i>	<i>1.04</i>
Petrochemical Feedstocks ^e95	.91	.93	.96	<i>.97</i>	<i>.96</i>	<i>.97</i>	<i>.98</i>	<i>.99</i>	<i>1.01</i>	.96	<i>.95</i>	<i>.99</i>
Miscellaneous ^f	1.83	1.45	1.44	1.69	<i>1.83</i>	<i>1.50</i>	<i>1.31</i>	<i>1.61</i>	<i>1.80</i>	<i>1.48</i>	1.58	<i>1.62</i>	<i>1.55</i>
Total Product Supplied	4.97	5.05	5.02	4.88	<i>5.12</i>	<i>5.11</i>	<i>4.93</i>	<i>4.82</i>	<i>5.14</i>	<i>5.17</i>	4.87	<i>5.03</i>	<i>5.01</i>
Stock													
Primary Stocks (million barrels)													
Opening	368.0	381.4	352.9	352.6	<i>355.8</i>	<i>360.3</i>	<i>336.6</i>	<i>340.4</i>	<i>357.3</i>	<i>364.9</i>	320.2	<i>352.9</i>	<i>336.6</i>
Closing	381.4	352.9	352.6	355.8	<i>360.3</i>	<i>336.6</i>	<i>340.4</i>	<i>357.3</i>	<i>364.9</i>	<i>338.3</i>	352.9	<i>336.6</i>	<i>338.3</i>

^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. 1987 to Apr. 1987; and *Weekly Petroleum Status Report*, DOE/EIA-0208(87-24,28). Data for May and June 1987 are preliminary.

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

Sensitivities	1987		1988				Year	
	3rd	4th	1st	2nd	3rd	4th	1987	1988
Demand in 50 States								
Low Price	<i>16.38</i>	<i>16.82</i>	<i>16.82</i>	<i>16.38</i>	<i>16.39</i>	<i>16.85</i>	<i>16.45</i>	<i>16.61</i>
Base Case	<i>16.27</i>	<i>16.64</i>	<i>16.59</i>	<i>16.12</i>	<i>16.12</i>	<i>16.57</i>	<i>16.37</i>	<i>16.35</i>
High Price	<i>16.20</i>	<i>16.47</i>	<i>16.37</i>	<i>15.89</i>	<i>15.88</i>	<i>16.33</i>	<i>16.31</i>	<i>16.12</i>
Weather Sensitivity								
Adverse Weather	<i>.00</i>	<i>.10</i>	<i>.19</i>	<i>.02</i>	<i>.00</i>	<i>.11</i>	<i>.03</i>	<i>.08</i>
Favorable Weather	<i>.00</i>	<i>-.11</i>	<i>-.19</i>	<i>-.02</i>	<i>.00</i>	<i>-.11</i>	<i>-.03</i>	<i>-.08</i>
Economic Sensitivity								
High Economic Activity	<i>.00</i>	<i>.01</i>	<i>.02</i>	<i>.02</i>	<i>.03</i>	<i>.04</i>	<i>.00</i>	<i>.03</i>
Low Economic Activity	<i>-.01</i>	<i>-.01</i>	<i>-.01</i>	<i>-.02</i>	<i>-.03</i>	<i>-.04</i>	<i>-.01</i>	<i>-.03</i>
Combined Sensitivity Differentials ^a (excl. price)								
Upper Range	<i>.00</i>	<i>.10</i>	<i>.19</i>	<i>.03</i>	<i>.03</i>	<i>.12</i>	<i>.03</i>	<i>.09</i>
Lower Range	<i>.01</i>	<i>.11</i>	<i>.19</i>	<i>.03</i>	<i>.03</i>	<i>.12</i>	<i>.03</i>	<i>.09</i>
Range of Projected Demand								
High Demand ^b	<i>16.38</i>	<i>16.92</i>	<i>17.01</i>	<i>16.41</i>	<i>16.42</i>	<i>16.97</i>	<i>16.47</i>	<i>16.70</i>
Low Demand ^c	<i>16.19</i>	<i>16.36</i>	<i>16.18</i>	<i>15.86</i>	<i>15.85</i>	<i>16.21</i>	<i>16.28</i>	<i>16.03</i>

^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		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1986	1987	1988
Supply													
Total Dry Gas Production ^a	3.78	4.14	4.26	3.92	<i>3.69</i>	<i>3.82</i>	<i>4.41</i>	<i>4.10</i>	<i>3.64</i>	<i>3.76</i>	16.04	<i>15.68</i>	<i>15.91</i>
Net Imports	<i>.14</i>	<i>.23</i>	<i>.26</i>	<i>.18</i>	<i>.17</i>	<i>.26</i>	<i>.28</i>	<i>.18</i>	<i>.17</i>	<i>.26</i>	.70	<i>.87</i>	<i>.89</i>
Supplemental Gaseous Fuels	<i>.03</i>	<i>.04</i>	<i>.04</i>	<i>.03</i>	<i>.03</i>	<i>.03</i>	<i>.04</i>	<i>.03</i>	<i>.03</i>	<i>.03</i>	.14	<i>.14</i>	<i>.13</i>
Total New Supply	3.95	4.40	4.57	4.13	<i>3.89</i>	<i>4.11</i>	<i>4.73</i>	<i>4.31</i>	<i>3.84</i>	<i>4.05</i>	16.88	<i>16.69</i>	<i>16.93</i>
Underground Working Gas Storage													
Opening	2.31	3.04	2.75	1.88	<i>2.27</i>	<i>3.04</i>	<i>2.89</i>	<i>1.69</i>	<i>2.29</i>	<i>3.04</i>	2.61	<i>2.75</i>	<i>2.89</i>
Closing	3.04	2.75	1.88	2.27	<i>3.04</i>	<i>2.89</i>	<i>1.69</i>	<i>2.29</i>	<i>3.04</i>	<i>2.89</i>	2.75	<i>2.89</i>	<i>2.89</i>
Net Withdrawals ^b	<i>-.73</i>	<i>.31</i>	<i>.87</i>	<i>-.55</i>	<i>-.77</i>	<i>.15</i>	<i>1.20</i>	<i>-.60</i>	<i>-.75</i>	<i>.15</i>	-.12	<i>-.29</i>	<i>.00</i>
Total Primary Supply ^a	3.22	4.72	5.44	3.58	<i>3.12</i>	<i>4.26</i>	<i>5.93</i>	<i>3.71</i>	<i>3.09</i>	<i>4.20</i>	16.76	<i>16.40</i>	<i>16.93</i>
Consumption													
Lease and Plant Fuel22	.24	.25	.21	<i>.18</i>	<i>.25</i>	<i>.34</i>	<i>.21</i>	<i>.18</i>	<i>.24</i>	.95	<i>.88</i>	<i>.98</i>
Pipeline Use	<i>.11</i>	<i>.12</i>	<i>.13</i>	<i>.10</i>	<i>.09</i>	<i>.12</i>	<i>.17</i>	<i>.11</i>	<i>.09</i>	<i>.12</i>	.48	<i>.45</i>	<i>.50</i>
Residential38	1.15	2.02	.77	<i>.39</i>	<i>1.16</i>	<i>2.15</i>	<i>.83</i>	<i>.39</i>	<i>1.16</i>	4.40	<i>4.35</i>	<i>4.53</i>
Commercial27	.61	.96	.42	<i>.30</i>	<i>.62</i>	<i>1.06</i>	<i>.45</i>	<i>.29</i>	<i>.57</i>	2.35	<i>2.30</i>	<i>2.37</i>
Industrial	1.12	1.19	1.33	1.21	<i>1.22</i>	<i>1.39</i>	<i>1.59</i>	<i>1.35</i>	<i>1.20</i>	<i>1.39</i>	5.22	<i>5.15</i>	<i>5.52</i>
Electric Utilities82	.58	.53	.71	<i>.83</i>	<i>.61</i>	<i>.51</i>	<i>.66</i>	<i>.85</i>	<i>.62</i>	2.60	<i>2.69</i>	<i>2.63</i>
Subtotal	2.93	3.91	5.23	3.43	<i>3.02</i>	<i>4.16</i>	<i>5.83</i>	<i>3.61</i>	<i>2.99</i>	<i>4.10</i>	16.00	<i>15.84</i>	<i>16.53</i>
Total Disposition	3.22	4.72	5.44	3.58	<i>3.12</i>	<i>4.26</i>	<i>5.93</i>	<i>3.71</i>	<i>3.09</i>	<i>4.20</i>	16.76	<i>16.40</i>	<i>16.93</i>
Unaccounted for29	.81	.21	.16	<i>.10</i>	<i>.10</i>	<i>.10</i>	<i>.10</i>	<i>.10</i>	<i>.10</i>	.76	<i>.57</i>	<i>.40</i>

^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(87/04); *Natural Gas Monthly*, DOE/EIA-0130(87/05); and *Electric Power Monthly*, DOE/EIA-0226(87/05).

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

Supply and Disposition	1986		1987				1988				Year		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1986	1987	1988
Supply													
Production	220	217	222	221	<i>230</i>	<i>237</i>	<i>220</i>	<i>230</i>	<i>223</i>	<i>239</i>	888	<i>910</i>	<i>913</i>
Primary Stock Levels ^a													
Opening	38	34	32	37	<i>35</i>	<i>35</i>	<i>35</i>	<i>33</i>	<i>31</i>	<i>30</i>	33	<i>32</i>	<i>35</i>
Closing	34	32	37	35	<i>35</i>	<i>35</i>	<i>33</i>	<i>31</i>	<i>30</i>	<i>30</i>	32	<i>35</i>	<i>30</i>
Net Withdrawals	4	2	-4	2	<i>0</i>	<i>0</i>	<i>2</i>	<i>2</i>	<i>1</i>	<i>0</i>	1	<i>-3</i>	<i>5</i>
Imports	1	1	0	1	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	2	<i>2</i>	<i>2</i>
Exports	24	20	17	22	<i>22</i>	<i>21</i>	<i>17</i>	<i>23</i>	<i>23</i>	<i>21</i>	86	<i>82</i>	<i>84</i>
Total New Domestic Supply	202	199	201	201	<i>209</i>	<i>216</i>	<i>206</i>	<i>210</i>	<i>201</i>	<i>219</i>	806	<i>827</i>	<i>836</i>
Secondary Stock Levels ^d													
Opening	176	165	175	173	<i>178</i>	<i>173</i>	<i>184</i>	<i>177</i>	<i>190</i>	<i>173</i>	170	<i>175</i>	<i>184</i>
Closing	165	175	173	178	<i>173</i>	<i>184</i>	<i>177</i>	<i>190</i>	<i>173</i>	<i>184</i>	175	<i>184</i>	<i>184</i>
Net Withdrawals	11	-10	2	-4	<i>5</i>	<i>-11</i>	<i>6</i>	<i>-13</i>	<i>17</i>	<i>-11</i>	-5	<i>-9</i>	<i>-1</i>
Total Indicated Consumption	213	188	203	197	<i>214</i>	<i>205</i>	<i>212</i>	<i>197</i>	<i>218</i>	<i>208</i>	801	<i>819</i>	<i>835</i>
Consumption													
Coke Plants	8	8	8	9	<i>8</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>8</i>	<i>8</i>	36	<i>34</i>	<i>34</i>
Electric Utilities	186	167	171	167	<i>185</i>	<i>175</i>	<i>181</i>	<i>167</i>	<i>190</i>	<i>177</i>	685	<i>699</i>	<i>715</i>
Retail and General Industry ^e	19	22	21	20	<i>20</i>	<i>22</i>	<i>23</i>	<i>21</i>	<i>20</i>	<i>22</i>	83	<i>83</i>	<i>86</i>
Subtotal	213	197	199	197	<i>214</i>	<i>205</i>	<i>212</i>	<i>197</i>	<i>218</i>	<i>208</i>	804	<i>815</i>	<i>835</i>
Total Disposition	213	188	203	197	<i>214</i>	<i>205</i>	<i>212</i>	<i>197</i>	<i>218</i>	<i>208</i>	801	<i>819</i>	<i>835</i>
Discrepancy ^f	0	-8	4	0	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	-3	<i>4</i>	<i>0</i>

^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, symfuels 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(87/04); and *Quarterly Coal Report*, DOE/EIA-0121(87/1Q).

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

Supply and Disposition	1986		1987				1988				Year		
	3rd	4th	1st	2nd ^a	3rd	4th	1st	2nd	3rd	4th	1986	1987	1988
Net Generation													
Coal	374.2	336.0	348.2	341.2	<i>373.6</i>	<i>352.5</i>	<i>366.1</i>	<i>338.8</i>	<i>383.0</i>	<i>357.6</i>	1385.8	<i>1415.4</i>	<i>1445.5</i>
Petroleum	42.4	32.2	32.4	26.4	<i>33.6</i>	<i>29.6</i>	<i>29.3</i>	<i>24.1</i>	<i>29.6</i>	<i>26.1</i>	136.6	<i>122.1</i>	<i>109.1</i>
Natural Gas	78.5	55.8	51.3	68.2	<i>79.3</i>	<i>58.3</i>	<i>48.8</i>	<i>62.3</i>	<i>80.4</i>	<i>58.5</i>	248.5	<i>257.0</i>	<i>250.0</i>
Nuclear Power	110.0	110.6	113.9	105.7	<i>125.2</i>	<i>116.1</i>	<i>124.8</i>	<i>116.1</i>	<i>128.8</i>	<i>122.7</i>	414.0	<i>460.9</i>	<i>492.4</i>
Hydropower	66.4	70.5	69.9	69.2	<i>65.2</i>	<i>67.7</i>	<i>77.9</i>	<i>80.1</i>	<i>65.9</i>	<i>67.6</i>	290.8	<i>271.9</i>	<i>291.5</i>
Geothermal Power and Other ^b	3.0	2.7	3.0	2.9	<i>3.0</i>	<i>3.0</i>	<i>3.0</i>	<i>2.9</i>	<i>3.1</i>	<i>3.2</i>	11.5	<i>11.9</i>	<i>12.3</i>
Total Generation	674.5	607.7	618.6	613.6	<i>679.9</i>	<i>627.2</i>	<i>650.0</i>	<i>624.5</i>	<i>690.8</i>	<i>635.7</i>	2487.3	<i>2539.3</i>	<i>2601.0</i>
Net Imports	10.1	9.1	9.9	9.0	<i>11.6</i>	<i>10.4</i>	<i>10.2</i>	<i>9.3</i>	<i>11.9</i>	<i>10.7</i>	35.9	<i>41.0</i>	<i>42.0</i>
Total Supply	684.7	616.9	628.5	622.7	<i>691.5</i>	<i>637.7</i>	<i>660.2</i>	<i>633.7</i>	<i>702.6</i>	<i>646.4</i>	2523.2	<i>2580.3</i>	<i>2643.0</i>
Losses and Unaccounted for ^c	46.0	39.0	25.7	44.4	<i>43.2</i>	<i>59.0</i>	<i>45.9</i>	<i>41.6</i>	<i>38.6</i>	<i>53.8</i>	146.3	<i>172.4</i>	<i>179.9</i>
Total Consumption (sales)	638.7	577.9	602.8	578.2	<i>648.3</i>	<i>578.6</i>	<i>614.3</i>	<i>592.1</i>	<i>664.1</i>	<i>592.6</i>	2376.9	<i>2407.9</i>	<i>2463.1</i>

^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(87/04); and *Electric Power Monthly*, DOE/EIA-0226(87/05).

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

Supply and Disposition	1986		1987				1988				Year		
	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1986	1987	1988
Supply													
Production													
Petroleum ^a	5.03	5.02	4.93	4.92	4.95	4.93	4.89	4.82	4.82	4.81	20.52	19.73	19.34
Natural Gas ^b	3.91	4.28	4.40	4.04	3.81	3.95	4.56	4.24	3.76	3.88	16.57	16.20	16.43
Coal	4.83	4.76	4.86	4.85	5.05	5.19	4.83	5.05	4.89	5.25	19.48	19.95	20.02
Nuclear Power	1.19	1.20	1.23	1.14	1.35	1.25	1.35	1.25	1.39	1.33	4.48	4.98	5.32
Hydropower ^c	.69	.74	.73	.73	.68	.71	.81	.84	.69	.71	3.04	2.84	3.05
Geothermal Power and Other ^d	.06	.05	.06	.06	.06	.06	.06	.06	.06	.06	.23	.24	.25
Subtotal	15.71	16.03	16.21	15.75	15.90	16.08	16.50	16.26	15.61	16.04	64.32	63.95	64.41
Net Imports													
Crude Oil	2.56	2.36	2.04	2.24	2.51	2.38	2.12	2.41	2.64	2.49	8.68	9.18	9.66
Other Petroleum	.81	.72	.60	.58	.76	.82	.83	.69	.72	.78	2.85	2.76	3.02
Natural Gas	.14	.23	.26	.18	.17	.26	.28	.18	.17	.26	.70	.88	.89
Coal and Coke	-.62	-.53	-.43	-.57	-.57	-.54	-.44	-.59	-.59	-.54	-2.21	-2.10	-2.16
Electricity	.10	.09	.10	.09	.12	.11	.11	.10	.12	.11	.37	.42	.43
Subtotal	3.00	2.87	2.57	2.54	3.00	3.03	2.90	2.79	3.06	3.10	10.39	11.14	11.84
Primary Stocks													
Net Withdrawals	-1.01	.49	1.04	-.43	-1.00	.17	1.52	-.63	-.96	.18	-.32	-.22	.10
SPR Fill Rate Additions(-)	-.03	-.03	-.05	-.04	-.04	-.04	-.04	-.04	-.04	-.04	-.11	-.17	-.16
Secondary Stocks ^e													
Net Withdrawals	.24	-.21	.09	-.10	.12	-.22	.11	-.24	.38	-.24	-.12	-.11	.01
Total Supply^f	17.92	19.15	19.86	17.71	17.98	19.02	20.99	18.13	18.05	19.04	74.16	74.58	76.21
Disposition													
Nonutility Uses													
Petroleum	7.66	7.95	7.62	7.72	7.75	7.97	7.86	7.69	7.72	7.98	30.73	31.06	31.24
Natural Gas ^g	2.18	3.43	4.85	2.80	2.25	3.66	5.49	3.05	2.21	3.59	13.83	13.56	14.35
Coal ^h	.61	.68	.67	.69	.66	.70	.74	.71	.66	.70	2.80	2.73	2.81
Industrial Hydropower	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.03	.03	.03
Subtotal	10.46	12.08	13.15	11.22	10.67	12.35	14.10	11.46	10.60	12.28	47.39	47.38	48.43
Electric Utility Inputs													
Petroleum	.45	.34	.35	.28	.36	.32	.31	.26	.32	.28	1.45	1.30	1.16
Natural Gas	.86	.60	.55	.74	.87	.64	.53	.68	.88	.64	2.70	2.80	2.73
Coal	3.93	3.53	3.61	3.54	3.90	3.68	3.82	3.54	4.00	3.73	14.46	14.72	15.08
Nuclear Power	1.19	1.20	1.23	1.14	1.35	1.25	1.35	1.25	1.39	1.33	4.48	4.98	5.32
Hydropower ⁱ	.79	.82	.82	.81	.79	.81	.91	.92	.80	.81	3.38	3.24	3.45
Geothermal Power and Other	.06	.05	.06	.06	.06	.06	.06	.06	.06	.06	.23	.24	.25
Subtotal	7.28	6.55	6.62	6.57	7.33	6.75	6.99	6.71	7.45	6.85	26.70	27.27	28.00
Gross Energy Consumption^f	17.74	18.62	19.77	17.79	18.00	19.10	21.09	18.17	18.05	19.13	74.09	74.66	76.43
Electrical System Energy Losses ^j	5.10	4.58	4.56	4.60	5.12	4.78	4.89	4.69	5.18	4.83	18.59	19.06	19.59
Total Net Energy	12.64	14.05	15.21	13.19	12.88	14.32	16.20	13.48	12.86	14.30	55.50	55.60	56.83
Total Disposition	17.92	19.15	19.86	17.71	17.98	19.02	20.99	18.13	18.05	19.04	74.16	74.58	76.21
Unaccounted for	.18	.52	.09	-.07	-.01	-.09	-.10	-.04	.01	-.09	.07	-.08	-.22

^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(87/04); and *Electric Power Monthly*, DOE/EIA-0226(87/05).

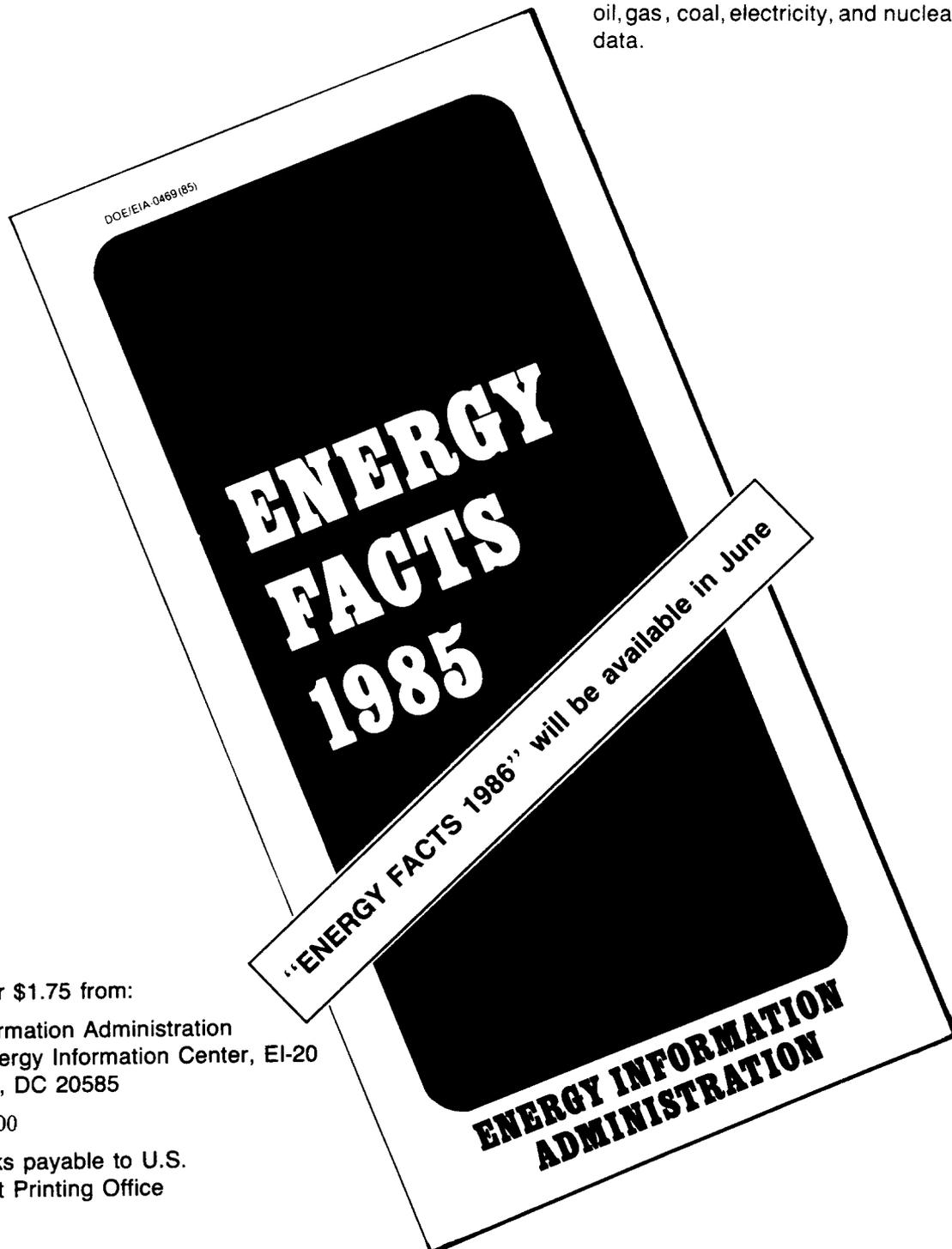
Table 18. Conversion Factors

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	22.198
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	5.903
Petroleum Products		
Consumption	Barrel	5.415
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	3.912
Ethane	Barrel	3.082
Unfinished Oils	Barrel	5.825
Imports	Barrel	5.624
Exports	Barrel	5.839
Natural Gas Plant Liquids		
Production	Barrel	3.797
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	10,870
Nuclear Energy	10,809
Hydropower	10,339
Geothermal and Other Energy	21,263
Electricity Consumption	3,412

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