Short-Term Energy Outlook

See Notice Inside

Quarterly Projections

August 1984

.JOK Short-.
.gy Outlook Short-Term .
.nergy Outlook Short-Term Ene.
. Energy Outlook Short-Term Energ,
.m Energy Outlook Short-Term Energy .
.erm Energy Outlook Short-Term Energy Ou.
.Term Energy Outlook Short-Term Energy Out.
t-Term Energy Outlook Short-Term Energy Outlc
rt-Term Energy Outlook Short-Term Energy Outloc
ort-Term Energy Outlook Short-Term Energy Outloo.
.ort-Term Energy Outlook Short-Term Energy Outlook
iort-Term Energy Outlook Short-Term Energy Outlook
iort-Term Energy Outlook Short-Term Energy Outlook
iort-Term Energy Outlook **Short-Term Energy Outlook**
iort-Term Energy Outlook Short-Term Energy Outlook
iort-Term Energy Outlook Short-Term Energy Outlook
ort-Term Energy Outlook Short-Term Energy Outlook
ort-Term Energy Outlook Short-Term Energy Outlool
rt-Term Energy Outlook Short-Term Energy Outloc'
t-Term Energy Outlook Short-Term Energy Outlo'
-Term Energy Outlook Short-Term Energy Outl'
Term Energy Outlook Short-Term Energy Out
rm Energy Outlook Short-Term Energy O-
n Energy Outlook Short-Term Energy
nergy Outlook Short-Term Ener
ngy Outlook Short-Term F-
utlook Short-T-

Contacts

The Short-Term Energy Outlook is prepared by the Energy Information
Administration (EIA), Office of Energy Markets and End Use (EMEU). General
questions concerning the contents of the report may be referred to W. David
Montgomery (202/252-1617), Director, EMEU; John D. Pearson (202/252-6160),
Director, Energy Analysis and Forecasting Division; Mark E. Rodekohr
(202/252-5209), Chief of the Demand Analysis and Forecasting Branch; and Edward
Flynn (202/252-5748), Chief of the Supply Analysis and Integration Branch.

Detailed questions may be referred to Colleen Cornett (202/252-5243) or the
following analysts, who can be reached at the Division of Energy Analysis and
Forecasting (202/252-5382).

Macroeconomic Forecast:	William Curtis
Energy Product Prices:	Neil Gamson
International Petroleum Markets:	E. Stanley Paul
Petroleum Demands:	Scott Sitzer/Linda Barber
Petroleum and Natural Gas Supply:	Robert Lassinger
Petroleum Inventories:	Paul Kondis
Coal:	David Costello
Electricity Generation:	Colleen Cornett
Electricity Imports:	Karen Elwell
Total Energy Balance:	Robert Lassinger
Forecast Integration:	Henry Clarius/Paul Kondis

Forecasts for domestic crude oil production are made by the EIA Dallas Field
Office, Thomas M. Garland, Director. Forecasts of nuclear electricity generation
are produced by Roger Diedrich of the EIA Office of Coal, Nuclear, Electric, and
Alternate Fuels. World petroleum forecasts are prepared by the International and
Contingency Information Division, W. Calvin Kilgore, Director.

This publication is available on an annual subscription basis from the
Superintendent of Documents, U.S. Government Printing Office (GPO). Ordering
information and purchase of this and other EIA publications can be obtained from
the GPO or the EIA's National Energy Information Center (NEIC). Questions on
energy statistics should be directed to the NEIC. Addresses and telephone
numbers appear below.

National Energy Information Center, EI-20
Energy Information Administration
Forrestal Building, Room 1F-048
Washington, D.C. 20585
(202) 252-8800

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402
(202) 783-3238

Short-Term Energy Outlook

Quarterly Projections

August 1984

**Published:
September 1984**

ook Short-
_sy Outlook Short-Term _
.ergy Outlook Short-Term Ene.
. Energy Outlook Short-Term Energ
_.m Energy Outlook Short-Term Energy _
erm Energy Outlook Short-Term Energy Ou
Term Energy Outlook Short-Term Energy Out.
t-Term Energy Outlook Short-Term Energy Outlc
rt-Term Energy Outlook Short-Term Energy Outloc
ort-Term Energy Outlook Short-Term Energy Outloo.
ort-Term Energy Outlook Short-Term Energy Outlook
iort-Term Energy Outlook Short-Term Energy Outlook
iort-Term Energy Outlook Short-Term Energy Outlook
ort-Term Energy Outlook **Short-Term Energy Outlook**
iort-Term Energy Outlook Short-Term Energy Outlook
iort-Term Energy Outlook Short-Term Energy Outlook
ort-Term Energy Outlook Short-Term Energy Outlook
ort-Term Energy Outlook Short-Term Energy Outlool
rt-Term Energy Outlook Short-Term Energy Outloc
t-Term Energy Outlook Short-Term Energy Outlo
-Term Energy Outlook Short-Term Energy Outl'
Term Energy Outlook Short-Term Energy Out
rm Energy Outlook Short-Term Energy O
n Energy Outlook Short-Term Energv
'nergy Outlook Short-Term Ener
gy Outlook Short-Term F
Outlook Short-T

Released for printing September 7, 1984.

Preface

The Energy Information Administration (EIA) quarterly forecasts of short-term energy supply, demand, and prices have been revised in February, May, August, and November for publication in the Short-Term Energy Outlook (Outlook). Methodology volumes, which are published periodically, contain descriptions of major changes in the forecasting system, an analysis of previous forecast errors, and detailed analyses of current issues that affect EIA's short-term energy forecasts. The principal users of the Outlook are managers and energy analysts in private industry and government. The projections in this volume extend through 1985.

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

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

The forecasts and historical data are based on EIA data published in the Monthly Energy Review, Petroleum Supply Monthly, and other EIA publications. Minor discrepancies between the data in these publications and the historical data in this Outlook are due to independent rounding.

Please note that, beginning with the next issue of the Outlook, the publication schedule will be moved ahead 1 month to follow an October, January, April, and July schedule.

Contents

Figures

Tables

1. Highlights

The projections in this Outlook offer the first look at the entire year 1985 and thus allow comparisons between the energy situation this year and the expected future situation. The energy picture next year is projected to be quite different from that during 1984, mainly because of a slower rate of increase expected for economic activity. The year 1984 so far has experienced very rapid economic growth, as the recovery from the recent recession continues. The demand for most energy sources in 1984 is expected to be up significantly from 1983 levels, in some instances reversing downward trends that have persisted for several years. In contrast, 1985 is projected to be a year of economic expansion, where the economy continues to grow, but at much lower rates than during 1984. The combination of slower economic growth and continued energy conservation in 1985 is expected to result in much slower growth in energy demand than during 1984.

Domestic petroleum demand in 1984 is expected to show an increase, on an annual basis, for the first time since 1978. Due to the projected continuation of the current economic expansion, domestic petroleum consumption in 1984 is expected to average almost 15.9 million barrels per day--more than 4 percent higher than the 1983 level. (The base case projections are summarized on Table 1.) Despite continued economic growth forecast for next year, however, U.S. petroleum demand is projected to be flat between 1984 and 1985. Likewise, net petroleum imports, which are projected to rise by nearly 16 percent in 1984 to 5.0 million barrels per day, are expected to remain at about that level in 1985. The price of imported crude oil to the United States is expected to remain stable at $29 per barrel (in nominal terms) through 1985. This analysis also assumes no major disruption of world oil markets, an event that could have major impacts on the domestic oil price and on the supply, demand, and imports situation.

Compared to the May 1984 Short-Term Energy Outlook forecast, projected domestic demand for petroleum in 1984 is up significantly, primarily due to higher-than-expected demand in the second quarter and upwardly revised estimates of economic growth for the rest of the year. Data for the first half of 1984 show a slightly higher rate of economic activity than previously forecast: Real gross national product is now expected to grow by over 7 percent from 1983 to 1984. The upward revision in petroleum demand reflects, in particular, a higher projected demand for both motor gasoline (as a result of a lower-than-expected increase in automobile efficiency) and other petroleum products.

Oil consumption in the market economies (a group of countries which excludes Communist countries) is projected to increase in 1984 (by over 2 percent) for the first time since 1979, and then increase by less than 1 percent between 1984 and 1985. Their demand for oil is expected to be met comfortably by current production with no rise in the world oil price through the forecast period. The economic growth that is underway in the industrial nations is expected to continue in 1985, although at a more modest rate.

Growth in domestic coal consumption is projected to remain strong over the forecast period, with forecasted increases of nearly 8 percent from 1983 to 1984 and 6 percent from 1984 to 1985. This forecast is contingent upon growth in electricity generation of almost 6 percent from 1983 to 1984 and almost 3 percent from 1984 to 1985. To meet the projected increases in coal demand, coal production is forecast to increase by 11 percent between 1983 and 1984 and by 4 percent between 1984 and 1985. This forecast assumes that there will not be a coal

Table 1. Summary of Base Case Assumptions and Projections

	History		Projections		Annual Percentage Change		
	1982	1983	1984	1985	1982-1983	1983-1984	1984-1985
Assumptions							
Real Gross National Product (billion 1972 dollars)	1,480	1,535	1,647	1,693	3.7	7.3	2.8
Index of Industrial Production (index, 1967=100)	137.5	148.2	165.0	171.1	7.8	11.3	3.7
Average Cost of Imported Crude Oil (nominal dollars per barrel)	33.55	29.30	29.02	29.00	-12.7	-1.0	-0.1
Price Projections (nominal values)[a]							
Motor Gasoline[b] (dollars per gallon)	1.28	1.22	1.20	1.20	-4.7	-1.6	0.0
Retail No. 2 Heating Oil (dollars per gallon)	1.19	1.08	1.10	1.11	-9.2	1.9	0.9
Residential Natural Gas (dollars per thousand cubic feet)	5.17	5.99	6.08	6.23	15.9	1.5	2.5
Residential Electricity (cents per kWh)	6.86	7.18	7.48	7.78	4.7	4.2	4.0
Consumption Projections							
Total Market Economies Petroleum Consumption (million barrels per day)	45.7	45.1	46.1	46.3	-1.3	2.2	0.4
U.S. Total Petroleum Consumption (million barrels per day)	15.30	15.23	15.88	15.87	-0.5	4.3	-0.1
Motor Gasoline	6.54	6.62	6.78	6.78	1.2	2.4	0.0
Distillate Fuel Oil	2.67	2.69	2.87	2.79	0.7	6.7	-2.8
Residual Fuel Oil	1.72	1.42	1.43	1.37	-17.4	0.7	-4.2
Other Petroleum[c]	4.37	4.50	4.80	4.93	3.0	6.7	2.7
Net Petroleum Imports (million barrels per day, including SPR[d])	4.30	4.31	(4.98)	5.01	0.2	15.5	0.6
Coal Consumption (million short tons)	707	737	795	842	4.2	7.9	5.9
Natural Gas Consumption (trillion cubic feet)	18.00	17.00	18.06	18.32	-5.6	6.2	1.4
Electricity Generation (billion kilowatthours)	2,241.2	2,310.3	2,438.5	2,510.4	3.1	5.5	2.9
Total Energy Consumption[e] (quadrillion Btu)	70.82	70.65	74.84	76.13	-0.2	5.9	1.7
Thousand Btu/1972 Dollar of GNP	47.85	46.03	45.44	44.97	-3.8	-1.3	-1.0

[a] All prices include taxes except retail no. 2 heating oil prices.
[b] Average for all grades and services.
[c] Includes crude oil, pentanes plus, other hydrocarbons and alcohol, unfinished oil, and gasoline blending components.
[d] SPR = Strategic Petroleum Reserve.
[e] The conversion from physical units to Btu is calculated by STIFS using a subset of Monthly Energy Review (MER) conversion factors. Consequently, the historical data will not precisely match that published in the MER.

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

Sources: Historical data: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(84/05); 1982 International Energy Annual, DOE/EIA-0219(82); Organization for Economic Cooperation and Development, Quarterly Oil Statistics, First Quarter 1984; Petroleum Economics Limited, World Quarterly Primary Energy and Supply/Demand, January 25, 1984; Petroleum Marketing Monthly, DOE/EIA-0380(84/05); Petroleum Supply Monthly, DOE/EIA-0109(84/06); Petroleum Supply Annual, 1983, DOE/EIA-0340(83)/1; Natural Gas Monthly, DOE/EIA-0130(84/06); Electric Power Monthly, DOE/EIA-0226-(84/06); Quarterly Coal Report, DOE/EIA-0121(84/1Q). Macroeconomic forecasts based on modifications to Data Resources, Inc., forecast CONTROL072984.

2

strike in 1984, although the forecast data do take into account historical production and stock alterations in anticipation of a possible strike.

The highlights from the base case forecast are:

- Based on continued economic growth in 1984, total U.S. petroleum consumption is projected to be approximately 4.3 percent above year-earlier levels. Petroleum consumption in 1985 is projected to remain at the 1984 level. (See Table 1.)

  - Motor gasoline consumption is expected to increase by 2.4 percent between 1983 and 1984, but is projected to remain flat between 1984 and 1985.

  - A 6.7-percent increase in the consumption of distillate fuel oil, to almost 2.9 million barrels per day, is projected for 1984; a 2.8-percent decline is expected in 1985.

  - Residual fuel oil consumption is projected to remain constant between 1983 and 1984, at 1.4 million barrels per day, but fall by 4.2 percent in 1985.

- A 16-percent annual rise in net oil imports, to nearly 5.0 million barrels per day, is projected from 1983 to 1984. However, no significant change in the net imports level is expected in 1985.

- Assuming continued economic growth and a moderation in natural gas prices, consumption of natural gas is projected to rise to 18.1 trillion cubic feet in 1984 and to 18.3 trillion cubic feet in 1985. Natural gas production is projected to increase by almost 10 percent between 1983 and 1984, followed by a 2-percent increase between 1984 and 1985.

- Domestic coal consumption is expected to increase to 795 million tons in 1984. All categories of coal consumption are expected to increase, leading to record-high coal production of 872 million tons, 11 percent higher than the year-earlier level. Coal consumption in 1985 is forecast to increase by 5.9 percent from the 1984 level; coal production also is expected to rise significantly from 1984 to 1985 to meet this demand.

- As a result of the projected continuation of economic growth, especially in the industrial sector, a 5.5-percent increase in total electric power generation is projected from 1983 to 1984 and an increase of almost 3 percent is expected from 1984 to 1985.

  - Generation levels from coal, natural gas, and nuclear power are projected to increase from 1983 to 1984, while petroleum-fired and hydroelectric generation levels are expected to decline. Levels of electricity generation from coal and nuclear power are projected to show significant increases from 1984 to 1985.

- Hydroelectric generation, which averaged about 283 billion kilowatt-
  hours per year from 1973 to 1983, is projected to be 321 billion
  kilowatthours in 1984, 13 percent above the average level, due to the
  current high water availability. Hydroelectric generation is assumed
  to return to normal levels in 1985.

- Net imports of electricity are expected to be about 38 billion kilowatt-
  hours in 1984, an increase of about 3 billion kilowatthours from the
  1983 level. This increasing trend is projected to continue in 1985 as
  net imports are expected to reach 41 billion kilowatthours.

- Total U.S. energy consumption (as measured by gross energy consump-
  tion) is projected to rise by almost 6 percent, to 74.8 quadrillion
  Btu, in 1984 and to increase by nearly 2 percent between 1984 and
  1985.

  - The energy intensity of U.S. economic activity is projected to
    decline to 45.4 thousand Btu per 1972 dollar of real gross
    national product (GNP) in 1984. With U.S. energy use projected to
    rise less rapidly than GNP from 1984 to 1985, a further slight
    decline in the energy/GNP ratio to 45.0 thousand Btu per 1972
    dollar of GNP is expected.

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

- For each 1-percent increase in GNP above the forecast levels, petroleum consumption and total imports in 1985 would increase by about 200,000 barrels per day (approximately 1.2 percent and 3.5 percent, respectively).

- For each $1-per-barrel (approximately 3.4 percent) decline in the price of imported crude oil, petroleum consumption and total imports in 1985 would increase by 55,000 barrels per day (approximately 0.3 percent and 1.0 percent, respectively).

- For each 10-percent increase in heating degree days (from the base case level) during the first and fourth quarters, petroleum consumption and total imports would increase by an average of about 270,000 barrels per day (approximately 1.6 percent and 4.8 percent, respectively).

- For each 15-percent increase in cooling degree days (from the base case level) during the second and third quarters, petroleum consumption and total imports would increase (because of higher electric utility demand for residual fuel oil) by an average of about 25,000 barrels per day (approximately 0.2 percent and 0.4 percent, respectively).

- Assuming that the impacts of price, income, and weather on petroleum demand are symmetric, the above estimates would also hold for changes in the opposite direction.

5

2. The Outlook

Forecast Assumptions

World Oil Prices

The price of imported crude oil delivered to U.S. refiners is assumed to remain at approximately $29 per barrel through 1985. Several factors have been responsible for downward pressure on crude oil prices in recent years: the decline in world energy demand because of conservation and a generally depressed world economy; inventory drawdowns and resulting lower imports in major consuming countries; and additional oil production, particularly by countries that are not members of the Organization of Petroleum Exporting Countries (OPEC).

In the base case, the nominal price of imported crude oil is assumed to remain level through 1985 because:

- Projected higher demands for oil compared with recent levels are expected to counteract recent downward pressure on prices due to the excess crude oil production capacity, especially in OPEC.

- The large drawdown of inventories, which contributed to the decline in crude oil prices during the last 2 years, appears to have ended in 1983. With no significant change projected for inventory levels (seasonally adjusted) during 1984 and 1985, this source of downward pressure on prices will also be absent from the market.

- Recent attempts to restrain OPEC crude oil production are assumed to succeed. Production is expected to be adjusted to meet projected demand.

The three alternative forecasts presented in this Outlook incorporate differing economic growth and price assumptions in order to provide a range of energy consumption projections. The petroleum price assumptions associated with these cases are as follows (see Figure 1):

High Economic
Growth Case: As a result of lower levels of petroleum demand and/or higher levels of production than expected in the base case, the average price of imported crude oil to U.S. refiners is assumed to fall to $25 per barrel in the fourth quarter of 1984, and then to remain at that level for the remainder of the forecast period.

Base Case: The price of imported crude oil is assumed to remain at $29 per barrel throughout 1984 and 1985.

Low Economic
Growth Case: As a result of increased tension and concerns about the availability of future supply in the oil market, the price of imported crude oil is assumed to rise at more than twice the U.S. rate of inflation and to reach nearly $33 per barrel by the end of 1985.

7
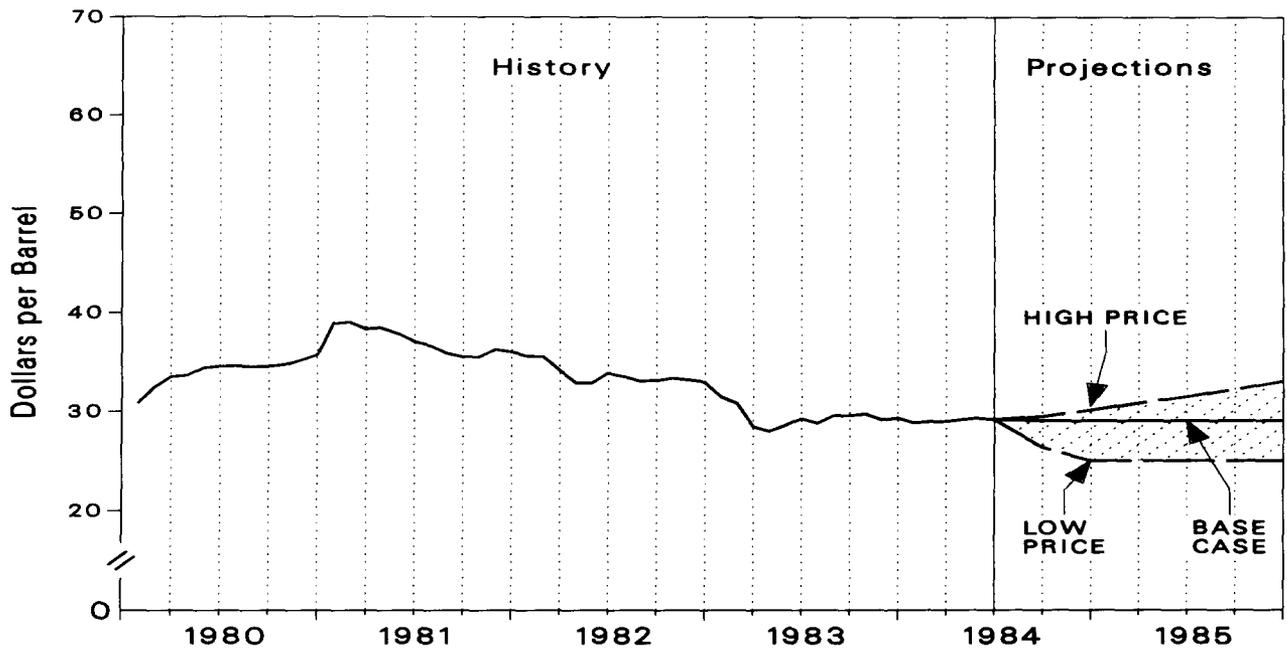
Figure 1. Imported Crude Oil Prices

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

Macroeconomic Activity

The economic recovery that began in the first quarter of 1983 is projected to continue through the forecast period, although at lower rates in 1985 than have been experienced in 1984. Real gross national product (GNP) is projected to grow by 7.3 percent from 1983 to 1984 and then slow to 2.8 percent between 1984 and 1985. This projection is based on the Data Resources, Incorporated, (DRI) CONTROL072984 forecast of July 1984, modified to reflect the projected base case price of imported oil.

Real disposable personal income is projected to increase 6.9 percent from 1983 to 1984 and by 3.2 percent from 1984 to 1985. Manufacturing activity is forecast to increase by more than 11 percent from 1983 to 1984 and then slow to a 3.7-percent increase from 1984 to 1985. Inflation, as measured by the GNP implicit price deflator, is projected to continue recent trends; the deflator is projected to rise by 3.8 percent between 1983 and 1984 and by 4.1 percent between 1984 and 1985. (Assumptions pertaining to the price of imported crude oil, the economy, and weather are shown in Table 2.)

The consensus of private forecasters is that economic expansion will continue through 1985. This belief has been sustained recently by continued good news on inflation and the outlook for interest rates. Nevertheless, given that this noninflationary recovery has been going on for some time, the possibility of either a significant slowdown or an overheating of the economy in 1985 cannot be dismissed.

8

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

Assumptions	Economic Growth	1982 1st	1982 2nd	1982 3rd	1982 4th	1982 Year	1983 1st	1983 2nd	1983 3rd	1983 4th	1983 Year	1984 1st	1984 2nd	1984 3rd	1984 4th	1984 Year	1985 1st	1985 2nd	1985 3rd	1985 4th	1985 Year
Macroeconomic																					
Real Gross National Product[a] (billion 1972 dollars)	High													1,661	1,679	1,668	1,695	1,706	1,718	1,730	1,712
	Base	1,484	1,481	1,477	1,479	1,480	1,491	1,525	1,550	1,573	1,535	1,611	1,640	1,662	1,676	1,667	1,688	1,692	1,694	1,697	1,693
	Low													1,656	1,665	1,663	1,670	1,670	1,673	1,680	1,673
Percent Change from Prior Year	High													7.2	6.7	7.4	5.2	4.0	3.4	3.0	3.9
	Base	-2.0	-2.1	-3.0	-1.5	-2.1	0.5	3.0	4.9	6.4	3.7	8.0	7.5	7.2	6.5	7.3	4.8	3.2	1.9	1.3	2.8
	Low													6.8	5.8	7.0	3.7	1.8	1.0	0.9	1.8
GNP Implicit Price Deflator (Index, 1972=100)	High													224.2	226.0	225.3	227.9	229.6	231.3	233.5	230.6
	Base	204.0	206.8	208.5	210.3	207.4	212.9	214.3	215.9	218.2	215.3	220.6	222.3	224.4	226.5	225.5	229.0	231.2	233.7	236.6	232.6
	Low													224.3	226.4	225.4	228.9	231.1	233.4	236.2	232.4
Percent Change from Prior Year	High													3.8	3.6	3.7	3.3	3.3	3.2	3.3	3.3
	Base	7.4	7.2	5.5	4.3	6.0	4.4	3.6	3.5	3.8	3.8	3.6	3.7	3.9	3.8	3.8	3.8	4.0	4.1	4.5	4.1
	Low													3.9	3.8	3.8	3.8	4.0	4.1	4.3	4.0
Real Disposable Personal Income[b]	High													1,180	1,188	1,171	1,202	1,209	1,218	1,226	1,214
	Base	1,053	1,055	1,058	1,068	1,059	1,073	1,082	1,102	1,124	1,095	1,148	1,167	1,180	1,189	1,171	1,201	1,205	1,210	1,216	1,208
	Low													1,179	1,187	1,170	1,198	1,200	1,205	1,211	1,204
Percent Change from Prior Year	High													7.1	5.7	6.9	4.7	3.6	3.2	3.2	3.7
	Base	1.1	1.3	0.0	1.1	1.0	1.9	2.6	4.2	5.2	3.4	7.0	7.9	7.1	5.8	6.9	4.6	3.3	2.5	2.3	3.2
	Low													7.0	5.6	6.8	4.4	2.8	2.2	2.0	2.9
Index of Industrial Production (Mfg.) (Index, 1967=100)	High													166.8	169.7	165.4	172.8	174.8	176.7	178.6	175.7
	Base	139.8	138.1	137.7	134.5	137.5	138.4	145.2	152.8	156.5	148.2	161.0	164.2	166.4	168.5	165.0	170.9	171.2	171.1	171.1	171.1
	Low													165.2	165.8	164.1	166.4	165.6	165.7	166.8	166.1
Percent Change from Prior Year	High													9.2	8.4	11.6	7.3	6.5	5.9	5.2	6.2
	Base	-7.6	-9.4	-9.7	-7.2	-8.5	-1.0	5.1	11.0	16.4	7.8	16.3	13.1	8.9	7.7	11.3	6.1	4.3	2.8	1.5	3.7
	Low													8.1	5.9	10.7	3.4	0.9	0.3	0.6	1.2
Oil Price (U.S. nominal dollars/barrel)																					
Imported Crude Oil Prices[c]	High													27.67	25.00	27.69	25.00	25.00	25.00	25.00	25.00
	Base	35.03	33.13	33.14	33.07	33.55	30.20	28.57	29.27	29.35	29.30	28.89	29.19	29.00	29.00	29.02	29.00	29.00	29.00	29.00	29.00
	Low													29.21	29.84	29.28	30.52	31.16	31.84	32.66	31.55
U.S. Refiners' Cost[d]	High													27.41	24.74	27.43	24.74	24.74	24.74	24.74	24.74
	Base	33.05	31.20	31.53	31.78	31.87	29.62	28.61	28.87	28.94	28.99	28.76	28.79	28.74	28.74	28.76	28.74	28.74	28.74	28.74	28.74
	Low													28.95	29.58	29.02	30.27	30.91	31.59	32.40	31.29
Weather[e] (number of degree days)																					
Heating Degree Days		2,542	600	105	1,506	4,753	2,227	662	64	1,801	4,754	2,423	596	88	1,668	4,775	2,401	538	88	1,668	4,695
Cooling Degree Days		35	295	701	64	1,095	18	270	876	70	1,234	17	360	754	62	1,193	28	328	754	62	1,172

[a] Macroeconomic projections from three DRI model forecasts are seasonally adjusted at annual rates, and modified as appropriate to the three world oil price cases. Historical data: U.S. Department of Commerce, Survey of Current Business, July 1984.

[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°F (calculated as the simple average of the daily minimum and maximum temperatures).

Sources: Historical data: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(84/05); Bureau of Economic Analysis, U.S. Department of Commerce, Survey of Current Business, as revised, July 1984; National Oceanic and Atmospheric Administration, U.S. Department of Commerce, Monthly State, Regional, and National Heating Degree Days Weighted by Population, July 1984; and Federal Reserve System, Data Release G.12.3, July 1984. Macroeconomic forecasts based on modifications to Data Resources, Inc., forecasts CONTROL072984, OPTIM073184, and SLOWDOWN073184.

Alternative forecast cases are designated as high and low economic growth. These macroeconomic projections (as modified by alternative oil price assumptions) provide a range of possible paths for energy consumption above and below the base case forecast. The high economic growth case is based on a modification of the DRI forecast OPTIM073184, assuming a lower oil price than in the base case. The high growth case projects that real GNP will grow by 7.4 percent from 1983 to 1984 and by 3.9 percent from 1984 to 1985. The low economic growth case is based on a modification of SLOWDOWN073184, assuming a higher oil price than in the base case. In the low growth case, real GNP is projected to grow by 7.0 percent from 1983 to 1984 and by 1.8 percent from 1984 to 1985.

Energy Product Prices

Petroleum product prices in nominal terms (unadjusted for inflation) generally are expected to remain stable throughout the forecast period, in line with the assumption of constant world oil prices (see Figure 2 and Table 3). Product price fluctuations, which tend to be small under normal circumstances, are projected to result mainly from seasonal variations in demand.

On an annual basis, the nominal price of motor gasoline is expected to fall slightly to an average of $1.20 per gallon in 1984 and then remain at that level in 1985. Normal season fluctuations are expected in the forecast period. However, as a result of more than adequate supplies, the price of motor gasoline is expected to drop by 2 cents between the second and third quarters of 1984, rather than rise as normal seasonal patterns would dictate. This flat nominal price projected for gasoline through 1985 implies a falling real price (adjusted for inflation) over this period.
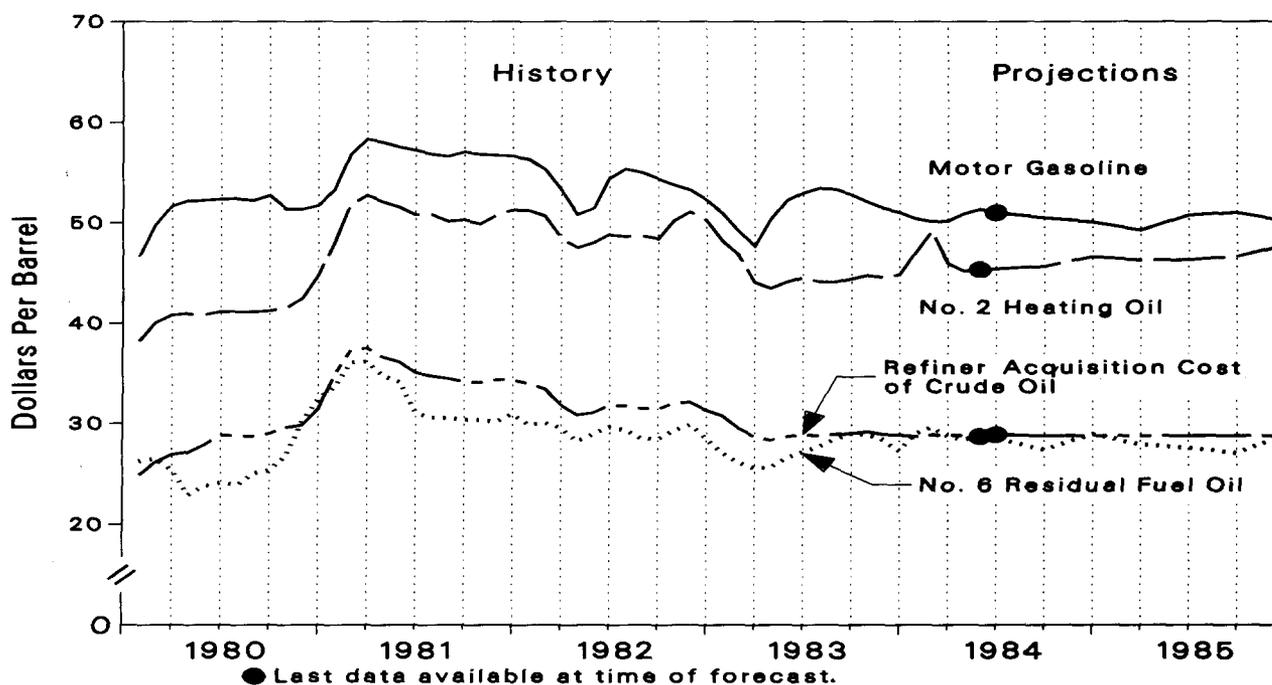
Figure 2. Retail Prices For Petroleum Products

10

Higher demand during the unusually cold weather last winter reduced heating oil inventories and raised the average retail price of heating oil by 7 cents per gallon in the first quarter of 1984 over the fourth-quarter 1983 level. Returning to the normal seasonal pattern, the nominal price of heating oil declined in the second quarter of 1984. Assuming normal weather throughout the forecast period, the annual average retail price of heating oil is expected to rise by about 2 percent from 1983 to 1984. Although the rate of inflation is projected to be slightly higher in 1985 than in 1984, the increase in heating oil prices is expected to be lower in 1985, mainly because the year-earlier rate was heavily weighted by the higher level of consumption during the cold first quarter of 1984.

In the first quarter of 1984, the domestic price of residual fuel oil exceeded the refiner acquisition cost of crude oil, a reversal of their usual price relationship. This situation could be the result of increased demand for heavy feedstocks and relatively low domestic production. (The surge in demand during the first quarter of 1984 was caused by the unusually cold weather on the East Coast.) The price of residual fuel oil is expected to stay slightly below the price of crude oil for the remainder of 1984. Because of the large price increase in the beginning of 1984, the average price of residual fuel oil for the year is expected to increase by 4.6 percent (in nominal terms) from the 1983 level. The price of residual fuel oil in 1985 (assuming normal weather) is expected to decline slightly (by less than 2 percent) from the 1984 level as a result of the gradual slackening of demand for this fuel.

Residential natural gas prices in the first half of 1984 averaged less than 0.5 percent higher than the levels during the first half of 1983. Previous price projections for natural gas anticipated much larger increases. In fact, the price of natural gas in the second quarter of 1984 was almost 1 percent lower than the second-quarter 1983 price. The residential price of natural gas appears to be leveling off, at least for the short term, due mainly to relatively flat wellhead prices. The annual average price of residential natural gas is projected to increase by 1.5 percent from 1983 to 1984.

In January 1985, decontrol of the wellhead price goes into effect on about half of all natural gas. Assuming that supplies remain adequate and that prices of competitive fuels remain flat in 1985, the nominal price of residential natural gas in the base case is expected to increase by only 2.5 percent over the 1984 level. The wellhead price in the high price case is assumed to increase considerably faster after controls are lifted; in this case, the nominal price of residential natural gas is forecast to increase by 8.5 percent from 1984 to 1985. The low case assumes that natural gas prices remain constant in nominal terms through 1985.

The price of natural gas to electric utilities in the base case is projected to increase by only 1.2 percent between 1983 and 1984, due mainly to the moderation projected for the nominal price of gas at the wellhead. In 1985, the utility price of natural gas is projected to average 4 percent above year-earlier levels, the same increase projected for both the wellhead price in the base case and the rate of inflation.

The price of residential electricity is expected to increase by about 4 percent annually for both 1984 and 1985. This compares to a 4.7-percent increase between 1982 and 1983.

11

International Petroleum Situation

Current Situation

The current international petroleum situation is characterized by a generally soft market resulting from recent world supply and demand trends. World production rates of crude oil are being maintained at fairly high levels, concurrent with a relatively slow growth in world market demand. As a result, spot prices for most crude oil are considerably lower than official contract prices, with a significant portion of crude oil being sold at a discount. In addition, world oil inventory levels are believed to be sufficient to meet forecasted consumption needs and to cushion the effects of a possible disruption in supply from the Persian Gulf.

Recent Trends

World oil consumption increased in the second half of 1983 compared to year-earlier levels, reversing a 4-year decline, as economic growth and lower real oil prices contributed to the increased demand for petroleum in the industrial countries. In the first half of 1984, world oil consumption continued its upward trend, due to colder-than-normal weather in the Northern Hemisphere and the strong economic growth in the United States and Japan. (See Tables 4 and 5.) However, oil demand in Europe remains weak. The generally flat demand in Europe is attributed to a slow economic recovery, increased use of natural gas in the residential and industrial sectors (especially in France), and policies that encourage electricity generation from energy sources other than fuel oil.

In response to the increase in world petroleum demand and the seasonal inventory buildup, oil production by the market economies increased by about 3.7 million barrels per day between first-half 1983 and second-half 1983. Of this increase, production from OPEC members contributed about 3 million barrels per day, raising their oil production in 1983 to 18.5 million barrels per day (including about 1 million barrels per day of natural gas liquids production). In the first half of 1984, world oil supply remained at a relatively high level, mainly because oil production in the non-OPEC market economies increased. Crude oil production by OPEC members declined by about 1 million barrels per day in the first half of 1984 compared with the level during the last half of 1983, although its production continued to run about one-half million barrels per day above the quota.

Official crude oil prices in the first half of 1984 have remained at about $29 per barrel, the price OPEC established in March 1983. Spot prices increased in January in response to higher demand, then fluctuated slightly, and stabilized at about the official price by May. Spot prices by the end of July had declined to levels below the official price, with declines ranging from $2 per barrel for marker crude to more than $3 per barrel for North Sea oil. Since then, there has been some recovery in spot prices. The lack of a strong recovery in world demand for petroleum, high production rates, and the continued strength of the U.S. dollar against most major currencies have resulted in strong downward pressure on world oil prices. However, the projected strengthening of demand during the second half of 1984 is expected to lessen the downward pressure on prices.

12

International Petroleum Forecast

World economic growth is expected to remain strong through 1985, but at a rate somewhat lower than was experienced during the first half of 1984 (see Table 5). Total petroleum demand (product supplied) in the market economies is projected to increase by about 1 million barrels per day during 1984, with about two-thirds of this increase occurring in the United States (see Figure 3). Relatively little growth in U.S. petroleum demand is expected in 1985. Petroleum demand in the other market economies is projected to increase slightly over the forecast period, with very modest growth expected in Europe in 1984 and no growth expected in 1985. Petroleum demand in the developing countries is expected to remain relatively level during 1984 because of economic problems in Latin America but could pick up in 1985 if economic conditions improve.

OPEC's average crude oil production is expected to exceed its 1983 production quota by about one-half million barrels per day in 1984 and 1985. Non-OPEC production (excluding production of natural gas liquids) is expected to increase by about 1 million barrels per day in 1984 and by an additional one-half million barrels per day in 1985. Net exports of oil from the Communist countries are forecast to remain about the same between 1984 and 1985. The total world supply of oil is forecast to increase by 3.6 percent in 1984 and by less than 1 percent in 1985.
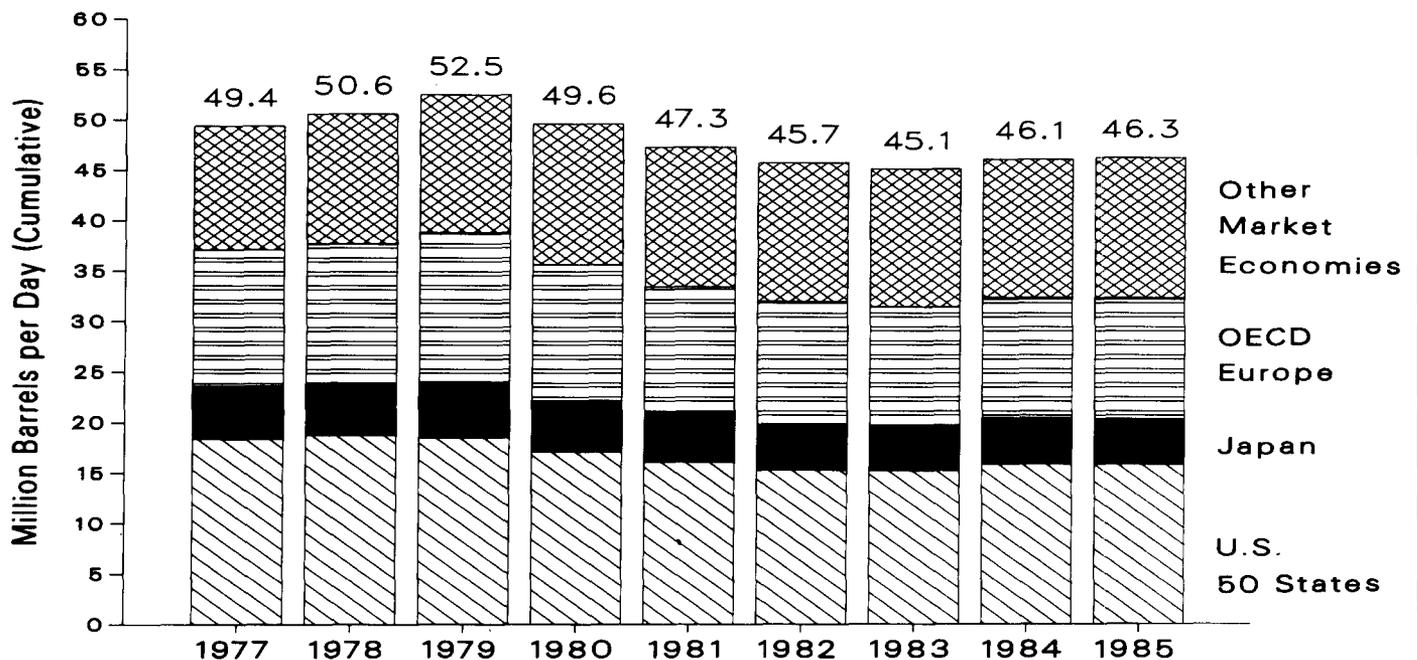
Figure 3. Market Economies Demand for Petroleum

13

Commercial petroleum stocks in the market economies at the end of 1984 are
projected to be slightly lower than the year-earlier level, and no significant
stock build is expected in 1985. (See Figure 4.) However, continued growth is
expected for the U.S. strategic petroleum reserves inventory during this period.
Total world petroleum stocks (including strategic petroleum reserves) were
equivalent to about 100 days of forward consumption (at the next quarter's
average consumption rate) at the end of the second quarter of 1984.

The Iran/Iraq war is a continuing source of uncertainty and a threat to the
stability of the world oil market. The conflict presents the possibility of a
disruption in oil shipments from the Persian Gulf, as evidenced by recent attacks
on oil tankers. Because 8 to 10 million barrels per day of oil are expected to
pass through the Strait of Hormuz during 1984, the effects of a disruption on
world oil prices are highly uncertain, depending both on what happens in the Gulf
and on how effectively oil stocks and excess world production capacity are used.
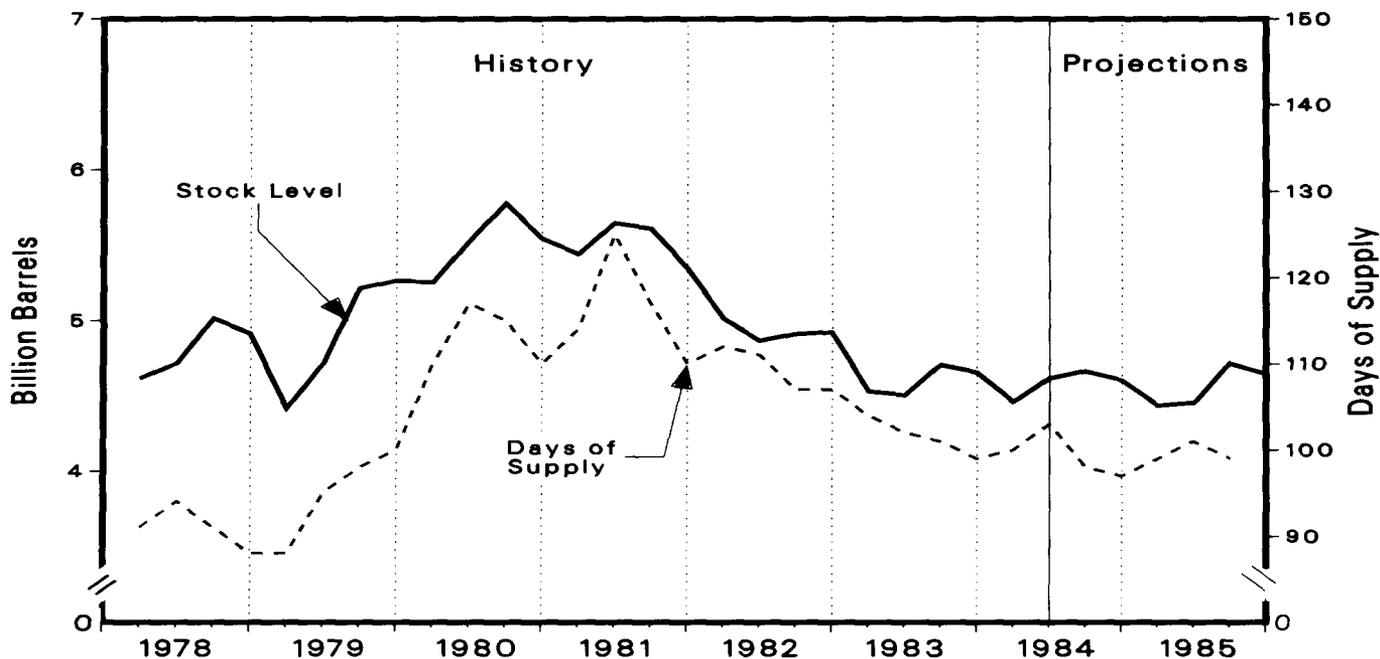
Figure 4. Market Economies Oil Stocks

U.S. Petroleum Outlook

Overview

The 5-year downward trend in total petroleum demand is expected to be reversed in 1984, with total petroleum consumption projected to increase by 4.3 percent over year-earlier levels. (The base case forecast is shown in Table 6; alternative cases for high and low economic growth are shown in Tables 7 and 8, respectively.) With the slowdown in economic growth expected next year, however, petroleum demand is projected to remain flat in 1985. The stimulating effects on petroleum demand expected in 1985 as a result of economic growth are forecast to be offset by continued improvements in the fuel efficiency of the automobile fleet, industrial and utility conservation in the use of residual fuel oil, and continued declines in household use of distillate fuel oil.

Motor gasoline demand is projected to increase by about 2 percent in 1984, as higher average fuel efficiency partially offsets the effects of an improving economy, and then remain at that level in 1985. Demands for distillate fuel oil and "other" petroleum products are expected to show substantial increases (of about 7 percent for each) from 1983 to 1984, based on the assumption of normal weather for the remainder of 1984 and the projected increases in industrial production. Continued growth in other products demand is expected in 1985. Residual fuel oil demand is forecast to be flat between 1983 and 1984 and then decline in 1985 as a result of continued conservation by industry and electric utilities.

Primary petroleum stocks are projected to be built to about 1,096 million barrels by the end of 1984, slightly above the closing level of stocks in 1983. The substantial drawdown in primary petroleum stocks during the first quarter of 1983 was not repeated during the first quarter of 1984. By mid-1984, stocks were slightly above year-earlier levels. A slight buildup in petroleum stocks is projected in 1984 from the unusually low level at the end of 1983, a result of the colder-than-normal weather in the fourth quarter of 1983. In 1985, petroleum stocks are expected to decline slightly, despite the rather large seasonal withdrawal expected in the first quarter.

Net petroleum imports, including those for the Strategic Petroleum Reserve (SPR), are projected to average nearly 5 million barrels per day in 1984, up about 16 percent from the 1983 level. Petroleum imports are forecast to remain at about that level in 1985, given the relatively stable projections for demand, production, and stocks.

Domestic Petroleum Production

Domestic crude oil production was nearly 8.7 million barrels per day in 1983, and is projected to remain at about that level in 1984. Production from the Alaska North Slope is expected to increase slightly from 1984 to 1985 as additional production comes on line from the Kuparuk River field. This production is expected to have a substantial impact during the first quarter of 1985 and could be higher than projected, depending on the success of field operations. Subarctic crude oil production is also expected to increase slightly from 1983 to 1984, with Louisiana production projected to make a major contribution. However, subarctic production is estimated to decline slightly from 1984 to 1985.

15

Exploration and drilling activities have recovered from the decline during 1981 through 1983 and are expected to increase in the forecast period. The average number of rotary rigs in operation during the first 6 months of 1984 was more than 12 percent above the prior year's level.[1] The average number of crews engaged in seismic exploration dropped about 4 percent in the first quarter of 1984 from the fourth-quarter 1983 level. However, the average number of crews rebounded in the second quarter of 1984 to 488, a level comparable to the third-quarter high of 1983, and is expected to increase during the forecast period.

Motor Gasoline

Data for the first 6 months of 1984 indicate that earlier projections for gasoline demand involved an overly optimistic growth rate in passenger-car efficiency. In the May 1984 Outlook, total gasoline demand was projected to increase by 0.3 percent from 1983 to 1984, assuming an increase in auto fuel efficiency of 5.0 percent over that period. For this Outlook, passenger car efficiency is projected to increase by 2.9 percent between 1983 and 1984. As a result, total gasoline demand (product supplied) is now expected to reach an average of almost 6.8 million barrels per day in 1984 (see Table 9), or 2.1 percent higher than the forecast in the May 1984 Outlook and 2.4 percent above the level in 1983.

Miles traveled in passenger cars powered by gasoline are projected to increase by about 4 percent in 1984 over 1983 levels and by another 3 percent from 1984 to 1985. However, auto efficiency is now projected to increase by more than 4 percent between 1984 and 1985, resulting in a 1-percent net drop in automobile gasoline consumption. Despite the implied falloff in gasoline consumed by passenger cars in 1985, nonauto (mostly commercial) gasoline use is expected to increase sufficiently during 1985 to keep total gasoline demand at 1984 levels.

Lower real fuel costs per mile (RCM) of travel have had an impact on travel demand in the United States. Based on current projections, the average real retail cost of gasoline per mile of travel will decline by more than 8 percent in 1984 compared to 1983 levels, and should decline by an additional 9 percent in 1985. Real fuel costs per mile, measured as the ratio of the average real retail price of gasoline to average automobile miles per gallon, peaked in 1980 at 3.3 cents per mile (in 1967 dollars). By 1985, RCM is expected to reach 2.0 cents per mile, the lowest level in over a decade. Of the nearly 10-percent increase expected in passenger-car travel from 1980 to 1985, it is estimated that approximately 4 percent will have been attributable to declines in RCM, 5 percent to higher real income, and the remainder to other factors such as a somewhat lower level of unemployment. It should be noted that fuel costs are only a part of the total per-mile cost of operating a car, and that if finance costs, purchase price, and maintenance costs rise significantly in real terms relative to fuel costs, incentives for increased travel will be diminished. However, in the short run, these other components of cost are relatively fixed when considering the entire stock of cars (because changes in these costs mostly affect new car buyers), and thus may contribute relatively little to changes in average per-mile travel costs.

---

[1]See Energy Information Administration, Monthly Energy Review, DOE/EIA-0035 (84/05).

16

Distillate Fuel Oil

Continued economic recovery and stable or falling real prices of distillate fuel oil are projected to result in a significant increase in distillate demand in 1984 for the first time in 6 years. (See Table 10.) This upward trend is not expected to be sustained through 1985, however. Because of the moderation in economic growth projected for 1985, distillate demand is expected to decline from the 1984 level, although to a level considerably above demand in 1983.

Distillate fuel oil consumption in 1984 is expected to average almost 2.9 million barrels per day, up about 7 percent from the 1983 level. The primary cause of the demand increase is the rise in economic activity, particularly industrial production, which is projected to rise by more than 11 percent between 1983 and 1984. The real price of heating oil is expected to remain about constant between 1983 and 1984. However, an increase in the Federal excise tax on diesel fuel, which took effect on August 1, 1984, will result in an increase of about 6 cents per gallon, leading to somewhat lower demand for diesel fuel oil than would otherwise have been forecast.

The strong growth in distillate demand (12 percent) seen in the first half of 1984 compared to year-earlier levels is expected to moderate during the second half of 1984, under current price, income, and weather assumptions. Industrial production in the first half of 1984 was 15 percent above first-half 1983 levels, and heating degree days were more than 4 percent higher. During the second half of 1984, assumed normal weather and more moderate growth in industrial production are expected to slow the rate of growth in distillate demand to about 1 percent over year-earlier levels. The increased excise tax on diesel fuel and fewer households using distillate fuel oil for space heating also are expected to contribute to the growth slowdown.

In 1985, distillate demand is forecast to decline by about 3 percent, despite modest growth in industrial production. Diesel fuel declines in the first half of the year are projected as a result of the effects of the tax increase. Demand for heating oil is predicted to decline primarily because of the assumption of continued fuel switching.

Residual Fuel Oil

Total demand for residual fuel oil in 1984 is expected to remain almost the same as in 1983 (see Table 11), following several years of declining demand. This leveling of residual fuel oil demand is expected to be only a temporary break, as the decline is expected to continue in 1985.

An unusually cold January in the East Coast, where nearly half of all residual fuel oil is used, caused consumption to increase during that month. However, barring any further unusual cold spells in 1984, nonutility demand for residual fuel oil is projected to remain flat from 1983 to 1984. Utility use of residual fuel also is projected to be unchanged from 1983 to 1984. In 1985, demand for residual fuel oil is projected to decrease by more than 4 percent from year-earlier levels. The main reasons for this projected decrease are the assumed return to normal weather for next winter, the displacement of residual fuel oil by coal and nuclear power at electric utilities, and slower economic growth.

17

Other Petroleum Products

Other petroleum products supplied, which include all petroleum products except motor gasoline, distillate, and residual fuel, are expected to increase by nearly 7 percent between 1983 and 1984, mainly in response to higher levels of economic activity. (See Table 12.) Unlike the demands for the major petroleum product categories, which are expected to remain level or actually drop in 1985, the demand for other petroleum products is expected to continue its upward trend in 1985, although at a slower rate.

Jet fuel, feedstocks, and liquefied petroleum gases (LPG) are the principal components of the other products category, comprising 2.95 million barrels per day out of total other products supplied of 4.50 million barrels per day in 1983. The remaining 1.55 million barrels per day includes kerosene, still gas, road oil and asphalt, petroleum coke, lubricants, waxes, aviation gasoline, special naphthas, miscellaneous products, crude oil, pentanes plus, unfinished oils, and aviation and motor gasoline blending components.

The decline in LPG product supplied, which bottomed out in mid-1983, reflected the combined impacts of the economic recession, long-term conservation trends, and price pressures resulting from an international shortage of natural gas liquids. Economic recovery and more ample supplies of LPG in international markets encouraged domestic consumption starting at the end of 1983. High end-use propane prices reported for the first part of this year, however, appear to have kept demand from growing as rapidly as for some of the other petroleum products. The projection of modest growth for LPG product supplied through 1985 is the expected net result of economic forces encouraging demand and continued long-term conservation trends discouraging demand.

Demand for jet fuel during the first 6 months of 1984 has far exceeded expectations based on prior experience. Jet fuel product supplied averaged 1.13 million barrels per day over this period, compared to 1.02 million barrels per day in the first half of 1983. This increase in product supplied corresponds to an increase in air traffic levels of nearly 11 percent over the same period. Jet fuel product supplied is projected to continue to grow in 1984 relative to year-earlier levels and then hold fairly constant in 1985, at an average level of 1.14 million barrels per day.

Petrochemical feedstock product supplied has grown rapidly during the first half of 1984, following a prolonged period in 1983 during which feedstock demand failed to respond to the rebound in economic activity. An increase in product supplied from 0.93 million barrels per day during the first half of 1983 to 1.01 million barrels per day for the first half of 1984 is related directly to the 9.7-percent growth in overall chemical manufacturing, Standard Industrial Classification (SIC)[2] 28, and 8.8-percent growth in organic chemicals manufac-

---

[2]The Standard Industrial Classification (SIC) system defines industries in accordance with the composition and structure of the economy. The Federal Reserve Board production indices are based on the 1967 edition of the Standard Industrial Classification Manual, Executive Office of the President, Office of Management and Budget.

18

turing (SIC 2818). Plastics and synthetic materials (SIC 282), which are the principal derivatives of the primary petrochemicals, also recovered strongly with a 13.5-percent increase in production in the first half of 1984 compared with year-earlier levels. Chemical manufacturing, and thus demand for petrochemical feedstocks, are projected to continue to grow, although at a more modest pace, throughout the forecast period. Some downward pressures on demand for domestically produced feedstocks are likely to be felt during 1985, as several world-scale petrochemical plants are brought online in the oil-exporting nations. Given a clear advantage with respect to feedstock costs, Saudi Arabia, in particular, will be in a strong position to compete for traditional U.S. export markets as well as domestic markets.

Demand for the remaining other petroleum products increased by 12.9 percent from the first half of 1983 to the first half of 1984. For 1984 and 1985, product supplied for the total miscellaneous category is projected to average 1.67 million barrels per day and 1.70 million barrels per day, respectively. Only kerosene, which accounts for approximately 8 percent of these products, is forecast to decline over the forecast period. In contrast, road oil and asphalt product supplied is projected to grow by approximately 7 percent in both 1984 and 1985, as the Federal highway budget, funded by the incremental 5-cent motor gasoline tax imposed in 1983, continues to encourage road building and maintenance projects.[3]

Petroleum Inventories

The 3-year decline in total primary petroleum stocks that began in 1981 is expected to end in 1984. An increased level of products supplied, combined with some product stocks approaching their minimum operating inventory levels, has contributed to total stock projections that level off over the next 18 months. (See Figure 5.) End-of-year primary stocks, which exclude stocks held in the Strategic Petroleum Reserve (SPR), were equivalent to 66.9 days of supply at the end of 1983 and are projected to be 68.5 days of supply at the end of 1984 (at the next quarters' anticipated rate of product supplied). Total primary stocks are expected to decline slightly between 1984 and 1985.

Changes in stocks of major petroleum products from the end of the second quarter of 1983 to the end of the second quarter of 1984 were: finished motor gasoline was up nearly 12 percent; distillate fuel oil was down less than 1 percent; and residual fuel oil was down about 6 percent. From the end of 1984 to the end of 1985, finished motor gasoline and distillate fuel oil stocks are projected to change relatively little. Seasonal swings in total petroleum inventories are expected to continue to be dominated by stocks of the major petroleum products; crude oil inventories are projected to remain stable.

---

[3]Historical data for the individual components of "other" petroleum products are available in the EIA, Petroleum Supply Monthly, DOE/EIA-0109. Detailed forecasts are available through the Division of Energy Analysis and Forecasting.

19
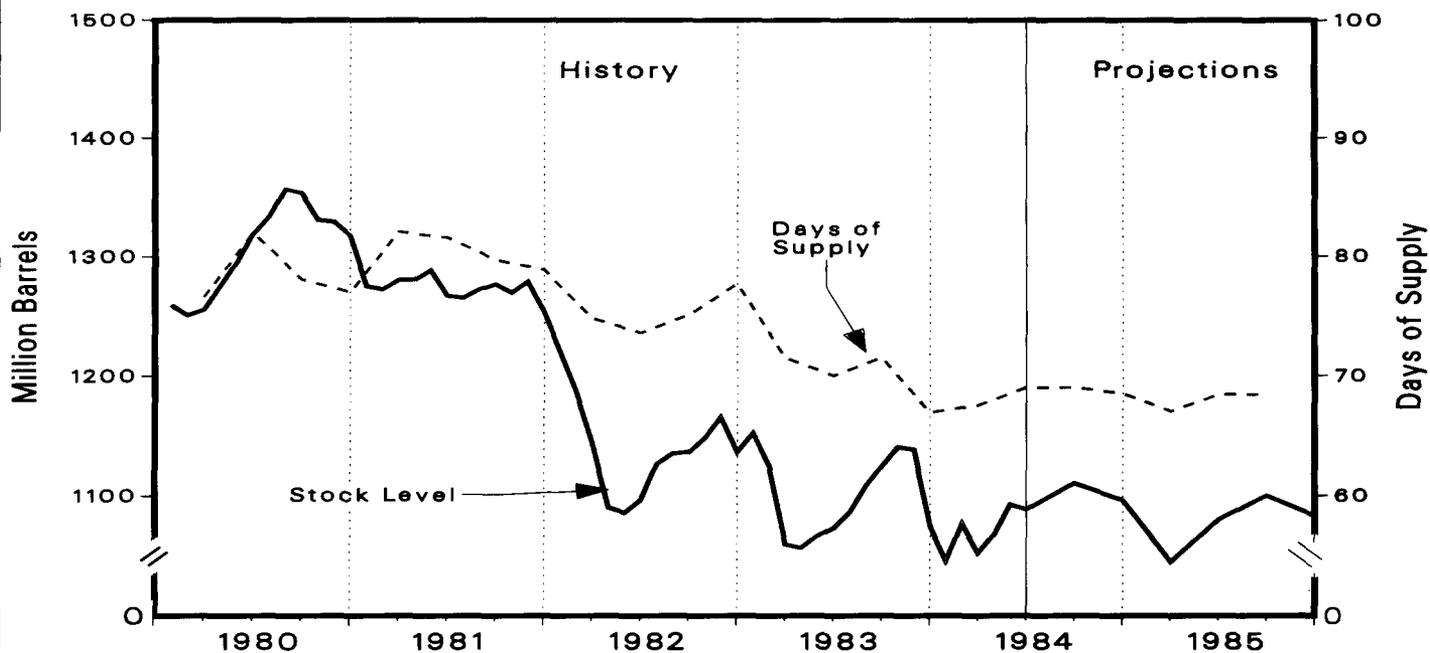
Figure 5. Total Petroleum Inventories Excluding SPR

Stocks in the SPR currently are forecast to reach 445 million barrels by the end of 1984 and about 496 million barrels by the end of 1985, with the planned final level at 750 million barrels. At the end of June 1984, SPR crude oil inventories had reached 413 million barrels. Crude oil fill rates for the SPR are projected to average 185,000 barrels per day in 1984 and 145,000 barrels per day in 1985, based on a forecast of deliveries provided by the SPR program office.

Petroleum Demand Sensitivities

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

- The low and high price demands are based on the price paths shown in Table 3, holding the variables representing economic activity at their base case levels.

- The economic sensitivity cases are derived from the low and high growth economic assumptions given in Table 2, holding prices at their base case trajectories.

- The weather sensitivity cases are based on variations in population-weighted heating degree days and cooling degree days of 10 percent in the first and fourth quarters, and 15 percent in the second and third quarters, respectively.

- The fuel-switching adjustment is based on an econometric estimate of the effect of households switching out of heating oil into other fuels for space heating. The adjustment is an estimate of the incremental demand which would exist if additional switching does not take place over the forecast period.

The range of petroleum demand projected for 1984 is 210,000 barrels per day, with the largest source of uncertainty being the weather. (The fuel-switching adjustment increases the range on the high demand side.) In 1985, the level of economic activity becomes the greatest source of uncertainty, with the total range of demand projected to be about 900,000 barrels per day.
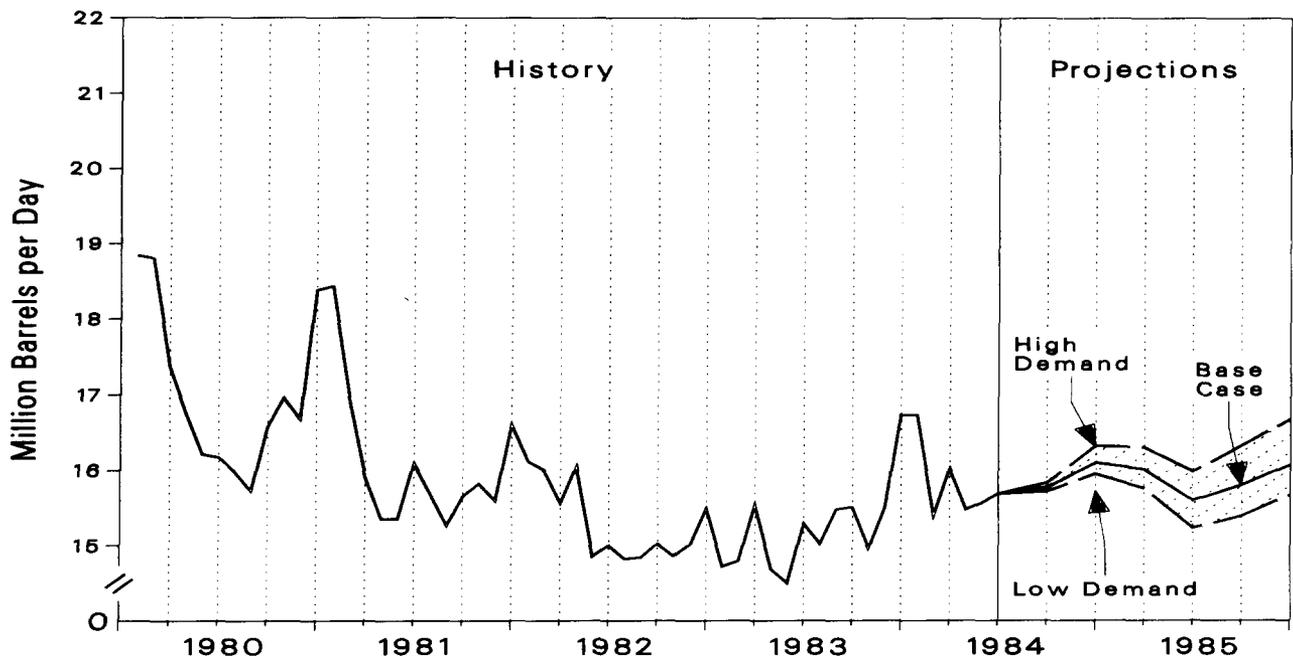
Figure 6. Total Petroleum Demand

Projections for Other Major Energy Sources

Natural Gas

Total U.S. natural gas consumption and production are forecast to increase by 6
percent and nearly 10 percent, respectively, from 1983 to 1984, ending the 4-year
decline for both items. (See Table 14.) These increasing trends are expected to
continue through 1985, although at lower rates. In the first half of 1984, domes-
tic natural gas consumption rose by about 9 percent over year-earlier levels,
while domestic gas production increased by nearly 13 percent. The projection for
natural gas demand is contingent on the effects of the assumed economic growth,
the moderation in natural gas price increases during 1984, and only small nominal
price increases after natural gas deregulation goes into effect in January 1985.

Natural Gas Demand. Demand for natural gas in the United States now is
responding to the economic expansion. Total residential, commercial, and
industrial use of natural gas was almost 9 percent higher in the first half of
1984 compared to year-earlier levels, and is projected to increase by about 6
percent from 1983 to 1984. Continued economic expansion and the assumption of
normal heating season requirements are expected to result in an increase in
nonutility gas consumption of nearly 2 percent from 1984 to 1985.

Electric utility demand for natural gas declined by almost 10 percent from 1982
to 1983. In the first half of 1984, electric utility consumption of natural gas
was more than 10 percent above year-earlier levels as a result of the increase in
total electricity generation and the moderation in gas price increases. In 1984,
electric utility demand for natural gas is projected to be about 7 percent above
the 1983 level but then is projected to fall by about 1 percent from 1984 to
1985, as higher levels of generation from other fuels are expected to displace
natural gas. Despite the projected decline in electric utility gas use from 1984
to 1985, total gas consumption in 1985 is forecast to be 18.3 trillion cubic
feet, the highest level since 1981.

Natural Gas Supply. Total dry gas production is projected to increase by nearly
10 percent to 17.5 trillion cubic feet in 1984 and then increase to 17.9 trillion
cubic feet in 1985. A lower price floor on Canadian pipeline exports of natural
gas to the United States is expected to result in an increase in U.S. imports.
Although the differential between the imported and domestic prices of natural gas
is expected to decrease through the forecast period (because of the expected rise
in the nominal price of U.S. natural gas at the wellhead), the delivered price of
Canadian gas is expected to remain above the U.S. price. Net pipeline imports of
natural gas are projected to be 910 billion cubic feet in 1984 and 1 trillion
cubic feet in 1985, a level still below the record of 1.2 trillion cubic feet of
gas imports set in 1979.

Coal

Total shipments of domestic coal (production plus primary stock withdrawals) are
expected to reach 881 million tons in 1984 compared to 788 million tons in 1983.
Increases are also expected in 1985, when coal shipments are projected to be 909
million tons. The growth in coal shipments in 1985 is expected to be much slower
than in 1984, mainly because of a lower projected rate of growth in total domestic
coal consumption and because of reduced stockpiling requirements. (See Table 15.)

22

Approximately 32 percent of this expected 93-million-ton increase in shipments in 1984 is related to the movement away from a period of rapid coal stock liquidation (which had a negative effect on production) to a period in which net stock building is expected. In addition, coal shipments in 1984 are expected to help meet a projected increase in domestic consumption of 58 million tons. Coal production, which grew at an average annual rate of 3.3 percent from 1961 to 1982 (in terms of tons of coal), will have returned to its long-term growth trend if the projected level of 872 million tons is achieved in 1984.

Coal Consumption. The increase in domestic coal consumption from 1983 to 1984 is expected to be 7.9 percent overall, with a 22-percent increase for coke plants, 7.0 percent for electric utilities, and 8.1 percent for other consumption. The slightly lower expected growth for domestic coal consumption compared with the forecast in the May 1984 Outlook is the result of a somewhat lower-than-expected level of utility coal consumption reported for the second quarter of 1984 and a more pessimistic outlook for domestic metallurgical coal demand now being forecast for the remainder of 1984. For industrial users of coal other than coke plants, the last 6 months of available data show that the impact of the recovery on industrial coal use is somewhat more substantial than was expected in the May 1984 Outlook. As a result, retail and general industry demand through the forecast period is expected to be 3 million tons per year higher than was forecast in the previous Outlook. For 1985, an increase in total domestic coal consumption of nearly 6 percent is anticipated, with the strongest growth (in absolute and relative terms) occurring in the electric utility market.

Increases projected for coal consumption at electric utilities reflect the increase in electricity forecast to be generated from coal-fired plants. In this section, a review of the implications for the utilization of coal-fired electric plants should provide insight into the utility coal demand forecast.

Average utilization rates at coal-fired generating plants, which have been trending upward since 1982, are expected to approach 1980 levels by the end of 1984. Coal plant utilization reached a low point of 49 percent during the recession year of 1982, but reached 52 percent during the first half of 1984.[4] The current projections assume an increase in coal plant utilization to nearly 54 percent in 1985. A critical assumption in this projection is that average utilization for oil- and gas-fired plants will fall by about 2 to 3 percent in 1985 compared to 1984. This assumption is implicit in the forecast of 1,432 billion kilowatthours of coal-fired generation in 1985 compared to the 1,348 billion kilowatthours forecast in 1984.

---

[4]In this analysis, electric plant utilization is defined as monthly generation (kilowatthours) divided by capacity, where capacity is defined as the nameplate rating (kilowatts) times the number of hours in the month.

23

Coal is assumed to displace oil and gas when possible for electricity generation. The amount of displacement projected here presumes that future growth in coal capacity and in overall electricity requirements will be distributed geographically in such a way as to promote the general patterns of displacement observed in the past. However, it is possible that oil- and gas-fired generation could be higher than projected if future displacement exhibits a different pattern than expected. A reasonable upper bound to changes in the oil and gas share of generation would be that it remains at the projected 1984 level through 1985, rather than falling from 17 percent in 1984 to 16 percent in 1985, as expected. Under this alternative assumption, coal-fired generation would be expected to rise by only 59 billion kilowatthours, assuming that all of the increase in oil- and gas-fired generation replaces coal. Translated into tons of coal consumed, this would mean that utility coal consumption could range as low as 701 million tons in 1985, but will more likely approach the 713 million ton level shown in Table 15.

In the May 1984 Outlook, domestic coking coal demand was projected to increase to 48 million tons in 1984 from the 37 million tons used in 1983. Now the outlook for increases in domestic steel production is less optimistic; consequently, domestic requirements for coke from coal are expected to be lower. For this Outlook, 45 million tons is projected for coking coal consumption in 1984, increasing by 4.4 percent to 47 million tons in 1985. Behind this forecast is an expected increase in raw steel production to about 101 million tons in 1985 from a level of 85 million tons in 1983. It should be noted that even as steel production is increasing, the share of that production using iron from blast furnaces (which use coke) is declining. According to the latest figures from the American Iron and Steel Institute, the share of steel production from basic oxygen furnaces and open hearth furnaces was 68.5 percent in 1983 but, for the first 6 months of 1984, fell to 66.5 percent. For this Outlook, the 66.5-percent share was assumed to hold throughout the forecast period.

For the retail and general industry sector, coal consumption is expected to rise to 80 million tons in 1984, a 6-million-ton increase from the 1983 level. The projected 1984 consumption level is 3 million tons higher than the forecast in the May 1984 Outlook. One-third of this increase is due to the fact that actual consumption for the first quarter of 1984 was 1 million tons higher than expected. The first quarter of 1984 exhibited a much more broad-based increase in coal consumption at manufacturing plants (other than coke plants) than was apparent during 1983.[5] Although by the third quarter of 1983 most major coal-consuming industries showed strong growth in coal use, increased coal consumption in the industrial sector, for the year as a whole, was concentrated in the stone, clay, and glass, and paper and allied products industries.[6] So far in 1984, virtually all industries have shown significant growth in coal consumption over 1983 levels, at least at the 2-digit SIC code level.[7] Although the rate of growth in coal consumption for the industrial sector is projected to decline

---

[5] See Energy Information Administration, Quarterly Coal Report, DOE/EIA-0121(83/1Q-84/1Q).
[6] Ibid.
[7] Ibid.

considerably during the second half of 1984 from year-earlier levels, it is estimated that, for the year as a whole, industrial consumption of coal outside of coke plants will increase by about 9 percent. The retail and commercial portion of retail and general industry consumption is expected to remain about flat throughout the forecast period.

Coal Production

Coal production is expected to increase by 11 percent between 1983 and 1984 and by more than 4 percent between 1984 and 1985. Preliminary data through the first half of 1984 indicate that production is running over 19 percent ahead of 1983 levels. For the remainder of this year, however, growth in production should be considerably lower, as any activities designed to replenish stocks and prepare for a potential miners' strike in the fourth quarter are completed. Approximately 27 million tons of the 737 million tons of domestic coal consumption in 1983 were met through reductions in consumers' stocks. This situation helped to depress orders for new production during 1983. In contrast, assuming that no coal strike occurs in 1984, domestic consumers' stocks of coal may exhibit a net buildup of about 3 million tons.

Effects of Labor Contract Negotiations. The coal production and stock level forecasts shown in Table 15 were developed under the assumption that there will be no coal strike in 1984. The current contract between the United Mine Workers of America (UMWA) and the Bituminous Coal Operators Association expires at the end of September 1984. Historically, normal patterns of production and stock withdrawal have been altered in anticipation of impending coal contract negotiations, and the current forecast takes this behavior into account by modifying the quarterly pattern of behavior. In particular, it is assumed that production is increased and consumer stock drawdowns are avoided or minimized in the first three quarters of 1984. Should a strike actually occur, it is possible that both production and stocks will be lower at the end of 1984 than the levels forecast here.

Uncertainty Due to a Potential Coal Strike. With the potential for a coal miners' strike during the fourth quarter of 1984, some of the coal forecasts in this Outlook have a higher degree of uncertainty than usual. Although coal production obviously would be affected by a miners' strike, it is unclear how much less than the current forecast production might be should a strike occur, since production has accelerated to accommodate stockpiling in anticipation of a work stoppage. Presumably, a sustained general strike would cause production to be significantly less than the 207 million tons projected for the fourth quarter. On the demand side, a general strike, if it were severe enough, could cause coal consumption to be less than forecast. The length of the strike and the extent of excess coal stocks held by consumers would determine the magnitude of the impacts on coal consumption.

In the electric utility industry, there is evidence of significant prestrike stockpiling of coal. A recent survey showed that, by July of this year, coal inventories at key eastern and midwestern plants had grown to a range of 90 to

25

120 days of supply.[8] Interestingly, aggregate data on utility coal stocks do not show abnormally high levels of coal stocks for the Nation as a whole. For example, assuming that electric utility coal consumption reaches the 180-million-ton level forecast for the third quarter, then days of supply of coal at utilities will have been about 88 days at the end of June. This level of stocks is similar to that for the end of 1983, which was a period during which rapid stock draw-downs occurred.[9] Evidently, except for the threat of a strike, utilities which use coal are reducing their average desired level of coal stocks significantly compared to historical averages.[10]

Despite prestrike stockpiling, reductions in coal consumption due to general coal strikes have occurred in the past. Both the 1978 and 1981 coal strikes resulted in reductions in utility coal consumption relative to levels that probably would have prevailed if the strikes had not occurred. It is estimated that during the 1978 strike, utility consumption of coal was reduced by about 10 percent because of coal production cutbacks, whereas during the 1981 strike, the reduction appears to have been about 4 percent.[11] Of couse, the length of the strike is a critical factor in determining the average magnitude of these impacts. The 1978 strike lasted effectively 4 months (December 1977 through March 1978), while the 1981 strike significantly affected production for only 2 months (April and May).

Electric utility generation data suggest that, during the 1978 strike, the reduction in coal-based generation may have been replaced mostly by oil-fired generation, whereas natural gas probably filled a larger proportion during the 1981 strike.[12] Assuming that the fourth-quarter 1984 ratio of oil-fired generation to combined oil- and natural gas-fired generation remain the same (whether or not a strike occurs during the fourth quarter) and that any reduction in coal use is made up by either natural gas or petroleum, then it is estimated that:

---

[8]See Coal Age (McGraw Hill: August 1984), p. 15.
[9]See Energy Information Administration, Monthly Energy Review, DOE/EIA-0035 (84/05).
[10]Between 1978 and 1984, opening year days of supply of coal averaged at least 93 days.
[11]The estimates for the apparent strike-induced reduction in coal consumption come from regression analysis which separates strike effects from other determinants of utility coal consumption.
[12]See Monthly Energy Review, DOE/EIA-0035(79/02 and 82/11). The determination of which fuels would tend to replace coal-fired electricity generation during a strike depends on a number of factors, including relative availability and relative price of fuel to replace coal-based generation, as well as time of year (which affects the geographical distribution of electricity demand and the mix of fuel used). The discussion here does not attempt to explain which factors would be important if there were a strike, but simply points out that during the past two strikes, natural gas and oil seemed to have played different roles in meeting generation requirements.

26

- For each percentage point reduction in coal used at electric utilities:

  - Utility natural gas use will increase by about 272 million cubic feet per day.

  - Utility petroleum use will increase by about 20,000 barrels per day.

- A 5-percent cutback in utility coal use will generate an increase of about 17 percent in the amount of electricity output required from oil and gas combined.

Since utilization of oil- and gas-powered generating plants taken together has been about 22 percent of nominal capacity in recent years[13] and no supply constraints are foreseen for natural gas and oil, it seems unlikely that utilities would have great difficulty replacing any lost coal-fired generation with other types of generation if a strike lasts 2 months or less.

Coal Exports. For the first 6 months of 1984, coal exports were 9 percent above year-earlier levels. Most of the increase was from increased shipments of bituminous steam coal to Canada.[14] Although increased shipments to Canada for the first part of 1984 were to some extent due to increased electricity require-ments associated with greater Canadian economic growth, the possibility that a significant amount of prestrike stockpiling by the Canadians (as well as other foreign buyers) is occurring cannot be discounted. To the extent that excess stockpiling is a factor in export growth during the first three quarters of 1984, a sharp drop-off in exports by the fourth quarter is possible. In general, despite the expectation of continued economic growth in countries which import U.S. coal, exports from the United States are projected to remain relatively flat through 1985.

---

[13] Energy Information Administration data on (nameplate) generating capacity and actual electricity generation show that the average utilization rate for oil and gas generating plants combined was 21.6 percent in 1983. The projected utilization rate for this Outlook for 1984 is 22.0 percent. For capacity numbers, see EIA, Inventory of Power Plants (1982 and 1983), DOE/EIA-0095.

[14] The Commerce Department reports that coal exports through June totaled 38.9 million short tons, 25 percent of which consisted of steam coal shipments. Of the total 9.6 million tons in steam coal exports, 51 percent went to Canada, a share which was 2.6 times greater than the year-earlier level. For these and other details on coal exports, see Energy Information Administration, Weekly Coal Production, DOE/EIA-0218 (August 31, 1981) and Quarterly Coal Report, DOE/EIA-0121 (83/1Q and 83/2Q).

27

Electric Power

Electricity generation in 1984 is expected to increase by 5.5 percent from the 1983 level to 2,439 billion kilowatthours. (See Table 16.) Continuing the upward trend in generation that began during the second half of 1983, total generation in the first half of 1984 was more than 9 percent above year-earlier levels. This rate of growth is expected to moderate in the forecast period, with growth in electricity generation during the last half of 1984 projected to be only 2.2 percent above year-earlier levels. Based on an assumed growth in economic activity of about 3 percent during 1985, electricity generation is forecast to grow at a similar rate, to 2,510 billion kilowatthours.

These electricity forecasts are based primarily on the expected continuation of the economic expansion. If economic activity surpasses the growth rates assumed in the base case (growth in real disposable personal income is projected to be 6.9 percent between 1983 and 1984 and 3.2 percent between 1984 and 1985), total electricity demand could be higher than the levels forecast here. Because the forecast for growth in personal income between 1983 and 1984 was revised from 5.7 percent in the May 1984 Outlook to 6.9 percent in this Outlook, the total generation forecast was also revised upward.

The nominal price of residential electricity, which increased at double-digit rates in 1981 and 1982, increased by less than 5 percent between 1982 and 1983. A 4-percent increase in the residential price of electricity is forecast between 1983 and 1984. One reason for the lower than expected increases in electricity prices over the last 2 years is that increases in the average costs of fuels to electric utilities between 1983 and 1984 are expected to be more moderate than in years prior to 1983. Residential electricity prices are forecast to increase by about 4 percent between 1984 and 1985, mainly because of the continued moderation expected for fuel prices.

Generation by Energy Source. Fuel shares of electricity generation in 1984 are expected to be: 55 percent coal, 12 percent natural gas, 14 percent nuclear power, 5 percent petroleum, 13 percent hydroelectric power, and less than 1 percent for other energy sources. The projected increase of 128 billion kilowatthours from 1983 to 1984 is projected to be supplied primarily by increases in generation from coal and nuclear power. (See Figure 7.) A continuation of these trends is forecast from 1984 to 1985, with a projected increase of almost 84 billion kilowatthours from coal and 40 billion kilowatthours from nuclear power.

Growth in nuclear generation is projected to be 15 percent between 1983 and 1984 and nearly 12 percent between 1984 and 1985. The increases in these projections over those published in the May 1984 Outlook reflect an increase in the average nuclear plant capacity factors assumed over the forecast period. (This revision is based on the sizeable change in the three most recent months of historical data that showed higher capacity factors than assumed in the previous projections.) The average capacity factor experienced during the first 5 months of 1984 was about 7.5 percent higher than that experienced for the same period in 1983. Thus, these nuclear generation projections assume a return to more normal levels of operation after the unusually low average performance level experienced in 1983. This forecast assumes full power operation of 7 new reactors (LaSalle 2,

28

WNP 2, Susquehanna 2, Diablo Canyon 1, Waterford 3, Grand Gulf 1, and Watts Bar 1) totaling almost 8 gigawatts in 1984 and 10 new reactors (Byron 1, Callaway, Fermi 2, Diablo Canyon 2, Catawba 1, Commanche Peak 1, Shoreham, Limerick 1, Palo Verde 1, and Wolf Creek) totaling more than 11 gigawatts in 1985.

In the absence of a prolonged coal strike in the fall of 1984, coal-fired generation of electricity is expected to increase by about 7 percent from 1983 to 1984 as the demand for electricity increases and as new coal generating capacity begins operation. The outlook for coal-fired generation between 1984 and 1985 shows a 6-percent increase. Following the projected addition of more than 10 gigawatts of coal-fired capacity in 1984, almost 8 additional gigawatts of capacity are expected in 1985.

Hydroelectric generation in 1983 was a record-breaking 332 billion kilowatthours, 17 percent above normal levels. The current high water availability is projected to result in higher than normal hydroelectric generation through 1984, with total generation forecast to reach 321 billion kilowatthours (assuming normal precipitation levels for the remainder of the year). With the assumed return to normal weather in 1985, a decrease of 12 percent in hydropower generation is projected between 1984 and 1985.

Oil and natural gas consumption at electric utilities decreased over the past 4 years in both absolute and percentage terms. Combined generation from oil and natural gas in 1984 is expected to be only slightly higher than the 1983 level because of increased gas usage. However, the combined oil and gas share of total generation is expected to decline in 1984 because of higher levels of generation from coal and nuclear power and continued high availability of hydropower. A decline is expected in 1985 because further gains in the contributions from other fuels are expected to displace oil- and gas-fired generation.

* Includes hydroelectric, geothermal, and other
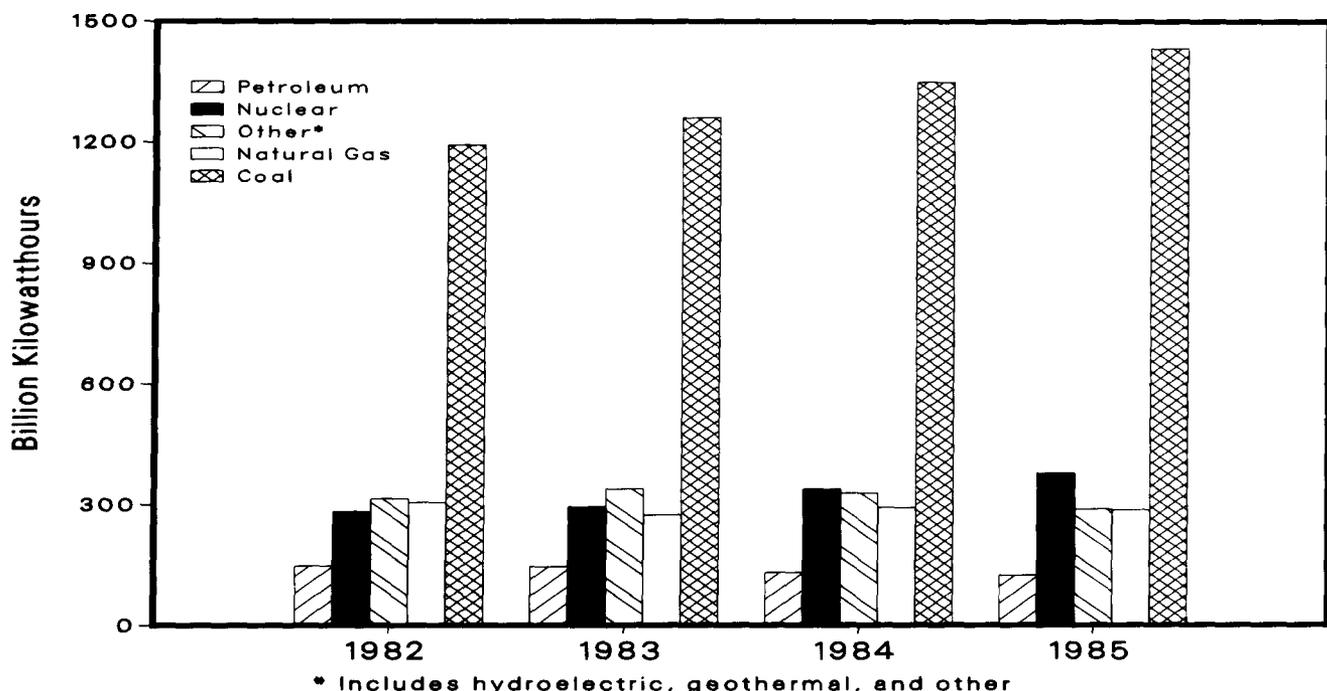
Figure 7. Electricity Generation by Fuel Source

29

Net Electricity Imports

Electricity imports have increased in recent years and are becoming a more important source of electricity for some regions of the country. Nearly all electricity imports come from Canada, with a small amount received from Mexico. Net imports of electricity were about 35 billion kilowatthours in 1983, accounting for more than 1 percent of total electricity supply. (See Table 16.) The increase of about 3 billion kilowatthours forecast for electricity imports in 1984 is attributable both to increased purchases of power (more than half of which is generated from hydroelectric power) over existing lines and to the opening of new transmission lines (the Niagara Interties from Canada and the Imperial Valley-La Rosita Line from Mexico). Transmission capability also is being improved within the United States to increase the ability of the electrical system to move purchased power. Net electricity imports in 1985 are expected to reach 41 billion kilowatthours; this increase is attributable mainly to purchases using existing transmission lines.

30

Weather-Normalized Demand for Electricity

Nationally, the demand for electricity exhibits a major peak during the summer cooling season because of electricity use for air conditioning. In the modeling system used to forecast electricity output, this expected seasonal increase is accounted for by the number of cooling degree days per month. Because normal weather is assumed for the forecast period, a departure in the actual weather from normal levels will contribute to the observed difference between the projected and actual levels of electricity demand. Although there are many variables that influence electricity demand, it is often interesting to estimate the amount of the forecast error that is attributable to deviations from normal weather. This "weather-normalizing" procedure attempts to determine the underlying or longer term trend in electricity demand due to other influences, such as price and economic activity, by removing the short-run variances due to fluctuations in the weather.

Two pieces of information in addition to the level of electricity demand are needed for the weather-normalizing procedure: the monthly weather data (including the deviation from normal levels) and a weather elasticity of demand. Weather data are available from the National Oceanic and Atmospheric Administration. The weather elasticity is estimated using more than 7 years of monthly data to determine the average response of electricity demand to changes in cooling degree days. Because most of the incremental demand for electricity during hot weather is estimated to occur in the residential sector, the weather elasticity of +0.15 for this sector is used in the following weather-normalizing calculation.

Multiplying the weather elasticity by the percent deviation in cooling degree days between last year and this year results in an estimate of the "abnormal weather-related" part of the demand change. (This factor represents the effect of the deviation from normal weather, not the entire weather effect on electricity demand.) This percentage then represents the variance in electricity demand associated with the difference in the population-weighted measure of the temperature between the two periods being examined. For example, electricity generation in July of 1984 was almost the same as the level during the previous July. However, temperatures this year were very mild, with cooling degree days 19 percent below year-earlier levels. The percentage attributable to unusual weather can be calculated as:

    (+0.15)   x   (+19 percent)   = 2.85 percent
    weather   deviation from   change due
    elasticity   normal weather   to weather

Thus, the growth in electricity demand between July 1983 and July 1984 in the absence of the unusual weather would have been closer to 2.85 percent. This normalizing procedure helps to smooth out erratic changes in electricity demand due to changing weather and to provide more accurate information on electricity trends.

Total Domestic Energy Balance

U.S. energy consumption (measured as gross energy consumption) in 1983 was 70.7 quadrillion Btu, slightly lower than the 1982 level (See Table 17). In 1984, total energy consumption is projected to increase for the first time since 1979, reaching 74.8 quadrillion Btu (see Figure 8). The projected 5.9-percent increase in total energy consumption from 1983 to 1984 is based on real GNP increasing by 7.3 percent over that period. From 1984 to 1985, total energy consumption is forecast to increase by 1.7 percent to 76.1 quadrillion Btu.

With the GNP forecasted to grow faster than energy consumption from 1983 to 1984, the energy/GNP ratio is projected to decrease for the 14th consecutive year. The energy intensity of U.S. economic activity fell to 46.0 thousand Btu per 1972 dollar in 1983 and is projected to decrease to 45.4 thousand Btu per 1972 dollar in 1984. This decrease in the energy-intensity of the economy is expected to continue through 1985 to 45.0 thousand Btu per 1972 dollar.

U.S. energy production is projected to increase by 6.7 percent from 1983 to 1984. Net imports of energy are projected to increase by 17 percent from 1983 to 1984 to provide 13 percent of the total U.S. energy supplies. From 1984 to 1985, total energy production is expected to increase 1.8 percent and net imports of energy is expected to rise by 2.2 percent. The share of net imports to total energy supplies is expected to remain at 13 percent.
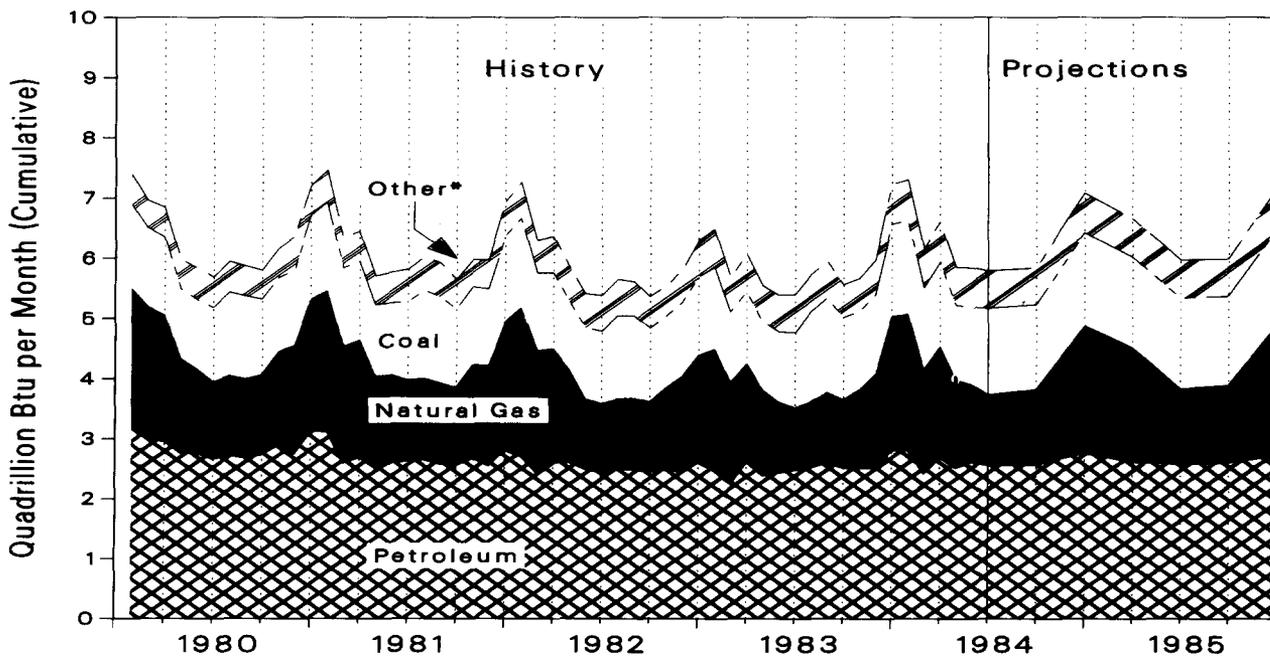
Figure 8. Gross Energy Consumption by Source

32

Table 3. Short-Term Energy Prices (Nominal), History and Projections

Product	History 1983 3rd	4th	Year	1984 1st	2nd	Price[1]	Projections 1984 3rd	4th	Year	1985 1st	2nd	3rd	4th	Year
Petroleum														
Gasoline[2] (dollars per gallon)	1.27	1.23	1.22	1.20	1.22	Low	1.19	1.15	1.19	1.13	1.15	1.17	1.15	1.15
						Base	1.20	1.20	1.20	1.18	1.19	1.22	1.20	1.20
						High	1.21	1.21	1.21	1.19	1.22	1.25	1.24	1.23
No. 2 Fuel Oil, Wholesale (dollars per gallon)	0.83	0.82	0.82	0.86	0.83	Low	0.80	0.74	0.81	0.75	0.74	0.75	0.75	0.75
						Base	0.83	0.84	0.84	0.84	0.84	0.85	0.85	0.84
						High	0.84	0.86	0.84	0.88	0.89	0.91	0.93	0.90
No. 2 Heating Oil, Retail (dollars per gallon)	1.05	1.06	1.08	1.13	1.08	Low	1.05	1.00	1.06	1.02	1.00	1.01	1.03	1.01
						Base	1.08	1.10	1.10	1.11	1.10	1.10	1.12	1.11
						High	1.09	1.12	1.11	1.15	1.15	1.17	1.21	1.17
No. 6 Residual Fuel Oil[3] (dollars per gallon)	0.67	0.69	0.65	0.69	0.68	Low	0.64	0.61	0.66	0.63	0.58	0.58	0.60	0.60
						Base	0.66	0.68	0.68	0.71	0.65	0.64	0.67	0.67
						High	0.66	0.69	0.68	0.74	0.69	0.69	0.74	0.72
Kerosene-Based Jet Fuel (dollars per gallon)	0.86	0.86	0.88	0.86	0.86	Low	0.79	0.79	0.83	0.76	0.75	0.75	0.75	0.75
						Base	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
						High	0.87	0.87	0.86	0.89	0.91	0.93	0.95	0.92
Other														
Coal, Delivered to Utilities (dollars per million Btu)	1.65	1.65	1.66	1.64	1.66	Low	1.64	1.65	1.65	1.67	1.69	1.70	1.73	1.70
						Base	1.67	1.69	1.67	1.70	1.72	1.74	1.76	1.73
						High	1.71	1.73	1.69	1.76	1.78	1.79	1.81	1.79
Natural Gas, Residential (dollars per 1,000 cu. ft.)	6.17	6.04	5.99	5.97	6.09	Low	5.98	6.01	6.01	5.93	6.04	5.98	6.01	5.99
						Base	6.12	6.12	6.08	6.07	6.23	6.25	6.35	6.23
						High	6.33	6.48	6.22	6.51	6.76	6.80	6.96	6.76
Natural Gas, to Utilities (dollars per million Btu)	3.61	3.43	3.47	3.44	3.49	Low	3.56	3.44	3.48	3.40	3.47	3.56	3.44	3.47
						Base	3.61	3.49	3.51	3.50	3.64	3.78	3.69	3.65
						High	3.66	3.57	3.54	3.60	3.74	3.91	3.87	3.78
Electricity, Residential (cents per kilowatthour)	7.52	7.24	7.18	6.97	7.60	Low	7.84	7.40	7.45	7.11	7.65	7.94	7.55	7.56
						Base	7.89	7.46	7.48	7.26	7.85	8.18	7.81	7.78
						High	7.95	7.51	7.51	7.39	8.06	8.42	8.08	7.99

[1] The low prices are used with the high economic growth assumptions and the high prices are used with the low economic growth assumptions referred to in Table 2.
[2] Average for all grades and services.
[3] Retail residual fuel oil--average, all sulfur contents.
Note: Second quarter 1984 estimated for all fuels except gasoline and residential natural gas.
Sources: Historical data: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(84/05) and Petroleum Marketing Monthly, DOE/EIA-0380(84/05).
All prices exclude taxes except gasoline, residential natural gas, and electricity.

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

	History 1983				1984					1985			
	3rd	4th	Year	1st	2nd	3rd	4th	Year	1st	2nd	3rd	4th	Year
Supply¹													
Production													
U.S. (50 States)	10.8	10.8	10.8	10.9	11.0	10.9	10.9	10.9	11.1	11.0	10.9	11.0	11.0
OPEC	20.1	20.0	18.5	19.1	19.3	18.5	20.0	19.2	18.9	18.8	19.8	19.7	19.3
Other Non-OPEC	13.4	13.7	13.3	14.0	14.1	14.2	14.3	14.2	14.3	14.5	14.6	14.7	14.5
Total Market Economies	44.4	44.5	42.6	44.0	44.4	43.7	45.3	44.3	44.2	44.2	45.3	45.3	44.8
Net Communist Exports	1.9	1.8	1.7	1.5	1.8	1.6	1.6	1.6	1.5	1.8	1.6	1.6	1.6
Total Supply	46.3	46.3	44.4	45.5	46.2	45.3	46.9	46.0	45.7	46.0	46.8	46.9	46.4
Net Stock Withdrawals (+) or Additions (-)													
U.S. (50 States excl. SPR)	-0.6	0.5	0.3	0.3	-0.4	-0.2	0.2	-0.1	0.6	-0.4	-0.2	0.2	0.0
U.S. SPR	-0.3	-0.2	-0.2	-0.1	-0.2	-0.2	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1
Other Market Economies	-1.3	0.2	0.7	2.0	-1.1	-0.1	0.7	0.4	1.4	-0.8	-1.4	0.7	-0.0
Total Stock Withdrawals (+)	-2.2	0.5	0.7	2.1	-1.7	-0.5	0.7	0.1	1.9	-1.3	-1.8	0.8	-0.1
Product Supplied													
U.S. (50 States)	15.3	15.7	15.2	16.1	15.6	15.8	16.1	15.9	16.0	15.6	15.8	16.1	15.9
U.S. Territories	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Japan	4.1	4.7	4.4	5.4	4.0	4.0	4.8	4.6	5.1	4.0	4.1	4.8	4.5
OECD Europe	10.9	12.5	11.8	12.5	11.3	11.1	12.7	11.9	12.6	11.2	11.2	12.7	11.9
Other Market Economies	13.4	13.5	13.4	13.5	13.3	13.4	13.6	13.5	13.6	13.5	13.7	13.8	13.7
Total Market Economies	44.1	46.8	45.1	47.7	44.5	44.7	47.5	46.1	47.6	44.7	45.1	47.7	46.3
Closing Stocks (billion barrels)	4.7	4.7	4.7	4.5	4.6	4.7	4.6	4.6	4.4	4.6	4.7	4.6	4.6

¹Includes production of crude oil and natural gas liquids, other hydrogen and hydrocarbons for refinery feedstock, refinery gains, alcohol, liquids produced from coal and other sources, and net exports from Communist countries.
Note: Minor discrepancies with other published EIA historical data are due to rounding.
Sources: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(84/05), and 1982 International Energy Annual, DOE/EIA-0219(82); Organization for Economic Cooperation and Development, Quarterly Oil Statistics, First Quarter 1984; and Petroleum Economics Limited, World Quarterly Primary Energy and Supply/Demand, January 25, 1984.

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

	Annual Average 1970-1982	1983¹	1984	1985
OECD Total²	2.8	2.3	4.7	2.6
United States³	2.7	3.7	7.3	2.7
Western Europe	2.6	1.0	2.1	2.2
Japan³	4.5	3.0	5.1	3.6
Other OECD⁴	3.1	1.4	4.7	2.8

¹Preliminary estimates for Organization for Economic Cooperation and Development (OECD) countries.
²Gross Domestic Product.
³Gross National Product.
⁴Canada, Australia, and New Zealand.
Sources: Historical data: Organization for Economic Cooperation and Development, Main Economic Indicators, July 1984. Forecasts: Wharton Economic Forecasting Associates, World Economic Outlook, July 1984. Data Resources, Inc.: Canada's Forecast, CONTROL042384; European Forecast TRENDLONG0784; and Japan's Forecast, JPCONTROL0684.

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

	History 1983			1984		Projections 1984			1985				
	3rd	4th	Year	1st	2nd	3rd	4th	Year	1st	2nd	3rd	4th	Year
Supply													
Production													
Crude Oil	8.70	8.64	8.69	8.70	8.73	8.77	8.73	8.73	8.79	8.76	8.71	8.70	8.74
Alaska, North Slope	1.65	1.66	1.65	1.67	1.71	1.68	1.64	1.67	1.73	1.71	1.70	1.69	1.70
Subarctic[1]	7.05	6.99	7.04	7.03	7.02	7.09	7.09	7.06	7.07	7.05	7.01	7.01	7.03
Natural Gas Liquids	1.57	1.60	1.56	1.60	1.61	1.54	1.60	1.59	1.67	1.59	1.58	1.64	1.62
Other Domestic	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.05	0.05	0.05	0.05
Processing Gain	0.49	0.50	0.49	0.54	0.56	0.57	0.56	0.56	0.54	0.56	0.57	0.56	0.56
Total Production	10.80	10.79	10.79	10.89	10.95	10.93	10.94	10.93	11.05	10.97	10.90	10.95	10.97
Imports (including SPR)													
Crude Oil	4.10	3.33	3.33	3.15	3.59	3.94	3.75	3.61	3.03	3.73	3.96	3.66	3.60
Refined Products	1.91	1.83	1.72	2.26	1.92	1.94	2.03	2.04	2.14	2.04	1.90	2.04	2.03
Total Imports	6.01	5.17	5.05	5.41	5.51	5.89	5.78	5.65	5.17	5.77	5.87	5.69	5.63
Exports													
Crude Oil	0.16	0.14	0.16	0.19	0.20	0.17	0.18	0.19	0.19	0.16	0.17	0.18	0.18
Refined Products	0.47	0.49	0.58	0.47	0.55	0.43	0.44	0.47	0.44	0.45	0.43	0.43	0.43
Total Exports	0.64	0.63	0.74	0.66	0.76	0.60	0.63	0.66	0.63	0.61	0.60	0.61	0.61
Net Imports (incl. SPR)	5.37	4.54	4.31	4.74	4.76	5.28	5.15	4.98	4.54	5.16	5.26	5.08	5.01
Primary Stock Levels[2] (million barrels)													
Opening	1072.97	1124.33	1167.13	1074.55	1052.24	1088.44	1110.27	1074.55	1096.06	1044.88	1080.04	1099.93	1096.06
Closing	1124.33	1074.55	1074.55	1052.24	1088.44	1110.27	1096.06	1096.06	1044.88	1080.04	1099.93	1083.13	1083.13
Net Withdrawals (million barrels per day)	-0.56	0.54	0.25	0.25	-0.40	-0.24	0.15	-0.06	0.57	-0.39	-0.22	0.18	0.04
SPR Fill Rate Additions(-) (million barrels per day)	-0.31	-0.20	-0.23	-0.14	-0.24	-0.20	-0.14	-0.18	-0.14	-0.14	-0.14	-0.14	-0.14
Total Primary Supply	15.31	15.67	15.12	15.73	15.07	15.77	16.10	15.67	16.01	15.60	15.80	16.07	15.87
Product Supplied													
Motor Gasoline	6.81	6.68	6.62	6.34	6.88	7.03	6.84	6.78	6.51	6.88	6.97	6.76	6.78
Distillate Fuel Oil	2.45	2.95	2.69	3.20	2.79	2.53	2.94	2.87	3.00	2.74	2.52	2.90	2.79
Residual Fuel Oil	1.35	1.40	1.42	1.74	1.30	1.33	1.36	1.43	1.62	1.28	1.26	1.34	1.37
Other Products[3]	4.73	4.70	4.50	4.77	4.61	4.89	4.95	4.80	4.89	4.70	5.05	5.07	4.93
Total Product Supplied	15.33	15.73	15.23	16.06	15.58	15.77	16.10	15.88	16.01	15.60	15.80	16.07	15.87
Unaccounted for	-0.03	-0.06	-0.11	-0.32	-0.51	0.00	0.00	-0.21	0.00	0.00	0.00	0.00	0.00
Total Disposition	15.31	15.67	15.12	15.73	15.07	15.77	16.10	15.67	16.01	15.60	15.80	16.07	15.87

SPR = Strategic Petroleum Reserve.
[1]Lower-48 States and southern Alaska.
[2]Excludes crude oil for the Strategic Petroleum Reserve (SPR). The respondent universe for petroleum inventories was expanded in January 1983. This resulted in the addition of 32 million barrels to total petroleum stocks at the close of December 31, 1982. (See the "Petroleum Supply Reporting System Overview" and Table 30 in the March 1983 Petroleum Supply Monthly.)
[3]Includes Reclassified Petroleum Products.
Note: Minor discrepancies with other EIA published historical data are due to rounding.
Sources: Historical data: Energy Information Administration, Petroleum Supply Annual, 1983, DOE/EIA-340(83/01); and Petroleum Supply Monthly, DOE/EIA-0109(84/06). Data for June 1984 are preliminary.

Table 7. Quarterly Supply and Disposition of Petroleum: High Economic Growth Case
(Million Barrels per Day, Except Stocks)

| | History | | | | | Projections | | | | | | | |
| | 1983 | | | | | 1984 | | | 1985 | | | | |
	3rd	4th	Year	1st	2nd	3rd	4th	Year	1st	2nd	3rd	4th	Year
Supply													
Production													
Crude Oil	8.70	8.64	8.69	8.70	8.73	8.77	8.73	8.73	8.79	8.76	8.71	8.70	8.74
Alaska, North Slope	1.65	1.66	1.65	1.67	1.71	1.68	1.64	1.67	1.73	1.71	1.70	1.69	1.70
Subarctic[1]	7.05	6.99	7.04	7.03	7.02	7.09	7.09	7.06	7.07	7.05	7.01	7.01	7.03
Natural Gas Liquids	1.57	1.60	1.56	1.60	1.61	1.54	1.60	1.59	1.67	1.59	1.58	1.64	1.62
Other Domestic	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.05	0.05	0.05	0.05
Processing Gain	0.49	0.50	0.49	0.54	0.56	0.57	0.56	0.56	0.55	0.57	0.58	0.58	0.57
Total Production	10.80	10.79	10.79	10.89	10.95	10.93	10.94	10.93	11.06	10.98	10.92	10.97	10.98
Imports (including SPR)													
Crude Oil	4.10	3.33	3.33	3.15	3.59	4.15	3.79	3.67	3.14	3.97	4.32	4.09	3.88
Refined Products	1.91	1.83	1.72	2.26	1.92	1.96	2.08	2.05	2.23	2.25	2.13	2.26	2.21
Total Imports	6.01	5.17	5.05	5.41	5.51	6.11	5.87	5.73	5.38	6.21	6.45	6.34	6.10
Exports													
Crude Oil	0.16	0.14	0.16	0.19	0.20	0.16	0.18	0.19	0.18	0.16	0.16	0.17	0.17
Refined Products	0.47	0.49	0.58	0.47	0.55	0.43	0.44	0.47	0.44	0.44	0.42	0.42	0.43
Total Exports	0.64	0.63	0.74	0.66	0.76	0.59	0.62	0.66	0.62	0.60	0.59	0.59	0.60
Net Imports (incl. SPR)	5.37	4.54	4.31	4.74	4.76	5.52	5.25	5.07	4.76	5.61	5.86	5.75	5.50
Primary Stock Levels[2]													
(million barrels)													
Opening	1072.97	1124.33	1167.13	1074.55	1052.24	1088.44	1127.80	1074.55	1103.03	1046.75	1088.86	1116.92	1103.03
Closing	1124.33	1074.55	1074.55	1052.24	1088.44	1127.80	1103.03	1103.03	1046.75	1088.86	1116.92	1108.36	1108.36
Net Withdrawals	-0.56	0.54	0.25	0.25	-0.40	-0.43	0.27	-0.08	0.63	-0.46	-0.31	0.09	-0.01
(million barrels per day)													
SPR Fill Rate Additions(-)	-0.31	-0.20	-0.23	-0.14	-0.24	-0.20	-0.14	-0.18	-0.14	-0.14	-0.14	-0.14	-0.14
(million barrels per day)													
Total Primary Supply	15.31	15.67	15.12	15.73	15.07	15.83	16.32	15.74	16.30	15.98	16.32	16.67	16.32
Product Supplied													
Motor Gasoline	6.81	6.68	6.62	6.34	6.88	7.04	6.88	6.79	6.56	6.96	7.08	6.88	6.87
Distillate Fuel Oil	2.45	2.95	2.69	3.20	2.79	2.55	3.02	2.89	3.08	2.84	2.65	3.05	2.91
Residual Fuel Oil	1.35	1.40	1.42	1.74	1.30	1.34	1.41	1.45	1.68	1.35	1.34	1.43	1.45
Other Products[3]	4.73	4.70	4.50	4.77	4.61	4.90	5.00	4.82	4.97	4.83	5.25	5.30	5.09
Total Product Supplied	15.33	15.73	15.23	16.06	15.58	15.83	16.32	15.95	16.30	15.98	16.32	16.67	16.32
Unaccounted for	-0.03	-0.06	-0.11	-0.32	-0.51	0.00	0.00	-0.21	0.00	0.00	0.00	0.00	0.00
Total Disposition	15.31	15.67	15.12	15.73	15.07	15.83	16.32	15.74	16.30	15.98	16.32	16.67	16.32

SPR = Strategic Petroleum Reserve.
[1] Lower-48 States and southern Alaska.
[2] Excludes crude oil for the Strategic Petroleum Reserve (SPR). The respondent universe for petroleum inventories was expanded in January 1983. This resulted in the addition of 32 million barrels to total petroleum stocks at the close of December 31, 1982. (See the "Petroleum Supply Reporting System Overview" and Table 30 in the March 1983 Petroleum Supply Monthly.)
[3] Includes Reclassified Petroleum Products.
Note: Minor discrepancies with other EIA published historical data are due to rounding.
Sources: Historical data: Energy Information Administration, Petroleum Supply Annual, 1983, DOE/EIA-340(83/01); and Petroleum Supply Monthly, DOE/EIA-0109(84/06). Data for June 1984 are preliminary.

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

| | History | | | | | Projections | | | | | | | |
| | 1983 | | | | | 1984 | | | | 1985 | | | |
	3rd	4th	Year	1st	2nd	3rd	4th	Year	1st	2nd	3rd	4th	Year
Supply													
Production													
Crude Oil	8.70	8.64	8.69	8.70	8.73	8.77	8.73	8.73	8.79	8.76	8.71	8.70	8.74
Alaska, North Slope	1.65	1.66	1.65	1.67	1.71	1.68	1.64	1.67	1.73	1.71	1.70	1.69	1.70
Subarctic[1]	7.05	6.99	7.04	7.03	7.02	7.09	7.09	7.06	7.07	7.05	7.01	7.01	7.03
Natural Gas Liquids	1.57	1.60	1.56	1.60	1.61	1.54	1.60	1.59	1.67	1.59	1.58	1.64	1.62
Other Domestic	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.05	0.05	0.05	0.05
Processing Gain	0.49	0.50	0.49	0.54	0.56	0.55	0.55	0.55	0.53	0.55	0.55	0.55	0.54
Total Production	10.80	10.79	10.79	10.89	10.95	10.91	10.93	10.92	11.03	10.95	10.89	10.94	10.95
Imports (including SPR)													
Crude Oil	4.10	3.33	3.33	3.15	3.59	3.86	3.57	3.54	2.80	3.43	3.75	3.41	3.35
Refined Products	1.91	1.83	1.72	2.26	1.92	1.90	1.95	2.01	2.06	2.03	1.91	1.99	2.00
Total Imports	6.01	5.17	5.05	5.41	5.51	5.75	5.52	5.55	4.86	5.46	5.66	5.40	5.35
Exports													
Crude Oil	0.16	0.14	0.16	0.19	0.20	0.17	0.18	0.19	0.19	0.17	0.18	0.19	0.18
Refined Products	0.47	0.49	0.58	0.47	0.55	0.42	0.44	0.47	0.46	0.47	0.43	0.45	0.45
Total Exports	0.64	0.63	0.74	0.66	0.76	0.60	0.62	0.66	0.66	0.64	0.61	0.64	0.64
Net Imports (incl. SPR)	5.37	4.54	4.31	4.74	4.76	5.15	4.90	4.89	4.21	4.83	5.05	4.76	4.71
Primary Stock Levels[2]													
(million barrels)													
Opening	1072.97	1124.33	1167.13	1074.55	1052.24	1088.44	1102.61	1074.55	1077.71	1017.90	1054.53	1091.63	1077.71
Closing	1124.33	1074.55	1074.55	1052.24	1088.44	1102.61	1077.71	1077.71	1017.90	1054.53	1091.63	1081.15	1081.15
Net Withdrawals	-0.56	0.54	0.25	0.25	-0.40	-0.15	0.27	-0.01	0.66	-0.40	-0.40	0.11	-0.01
(million barrels per day)													
SPR Fill Rate Additions(-)	-0.31	-0.20	-0.23	-0.14	-0.24	-0.20	-0.14	-0.18	-0.14	-0.14	-0.14	-0.14	-0.14
(million barrels per day)													
Total Primary Supply	15.31	15.67	15.12	15.73	15.07	15.72	15.95	15.62	15.76	15.23	15.39	15.67	15.51
Product Supplied													
Motor Gasoline	6.81	6.68	6.62	6.34	6.88	7.02	6.81	6.76	6.45	6.81	6.89	6.68	6.71
Distillate Fuel Oil	2.45	2.95	2.69	3.20	2.79	2.52	2.90	2.85	2.92	2.64	2.42	2.79	2.69
Residual Fuel Oil	1.35	1.40	1.42	1.74	1.30	1.32	1.33	1.42	1.57	1.22	1.20	1.27	1.31
Other Products[3]	4.73	4.70	4.50	4.77	4.61	4.87	4.90	4.79	4.81	4.57	4.88	4.93	4.80
Total Product Supplied	15.33	15.73	15.23	16.06	15.58	15.72	15.95	15.83	15.76	15.23	15.39	15.67	15.51
Unaccounted for	-0.03	-0.06	-0.11	-0.32	-0.51	0.00	0.00	-0.21	0.00	0.00	0.00	0.00	0.00
Total Disposition	15.31	15.67	15.12	15.73	15.07	15.72	15.95	15.62	15.76	15.23	15.39	15.67	15.51

SPR = Strategic Petroleum Reserve.
[1] Lower-48 States and southern Alaska.
[2] Excludes crude oil for the Strategic Petroleum Reserve (SPR). The respondent universe for petroleum inventories was expanded in January 1983. This resulted in the addition of 32 million barrels to total petroleum stocks at the close of December 31, 1982. (See the "Petroleum Supply Reporting System Overview" and Table 30 in the March 1983 Petroleum Supply Monthly.)
[3] Includes Reclassified Petroleum Products.
Note: Minor discrepancies with other EIA published historical data are due to rounding.
Sources: Historical data: Energy Information Administration, Petroleum Supply Annual, 1983, DOE/EIA-340(83/01); and Petroleum Supply Monthly, DOE/EIA-0109(84/06). Data for June 1984 are preliminary.

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

	History 1983			1984					Projections 1985				
	3rd	4th	Year	1st	2nd	3rd	4th	Year	1st	2nd	3rd	4th	Year
Supply													
Domestic Production[1]	6.62	6.37	6.34	6.24	6.60	6.57	6.60	6.50	6.38	6.62	6.67	6.64	6.58
Imports	0.28	0.27	0.25	0.29	0.30	0.25	0.24	0.27	0.23	0.23	0.22	0.20	0.22
Exports	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Net Imports	0.26	0.26	0.24	0.29	0.30	0.25	0.24	0.27	0.22	0.22	0.21	0.19	0.21
Primary Finished Stock Levels[2] (million barrels)													
Opening	182.86	189.32	202.03	185.50	202.80	204.17	183.95	185.50	183.50	192.18	188.20	179.69	183.50
Closing	189.32	185.50	185.50	202.80	204.17	183.95	183.50	183.50	192.18	188.20	179.69	186.41	186.41
Net Withdrawals (million barrels per day)	-0.07	0.04	0.05	-0.19	-0.02	0.22	0.00	0.01	-0.10	0.04	0.09	-0.07	-0.01
Total Primary Supply	6.81	6.68	6.62	6.34	6.88	7.03	6.84	6.78	6.51	6.88	6.97	6.76	6.78
Disposition													
Leaded	3.05	2.89	2.97	2.69	2.86	2.90	2.77	2.81	2.59	2.69	2.68	2.56	2.63
Unleaded	3.76	3.79	3.65	3.65	4.02	4.13	4.07	3.97	3.92	4.19	4.29	4.20	4.15
Total Product Supplied	6.81	6.68	6.62	6.34	6.88	7.03	6.84	6.78	6.51	6.88	6.97	6.76	6.78
Unaccounted for	-0.00	-0.00	-0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.00	-0.00
Total Disposition	6.81	6.68	6.62	6.34	6.88	7.03	6.84	6.78	6.51	6.88	6.97	6.76	6.78

[1]Refinery production plus production at natural gas processing plants.
[2]Includes stocks at natural gas processing plants. Excludes stocks of reclassified motor gasoline blending components. The respondent universe for petroleum inventories was expanded in January 1983. This resulted in the addition of .8 million barrels to total motor gasoline stocks at the close of December 31, 1982. (See the "Petroleum Supply Reporting System Overview" and Table 30 in the March 1983 Petroleum Supply Monthly.)
Note: Minor discrepancies with other EIA published historical data are due to rounding.
Sources: Historical data: Energy Information Administration, Petroleum Supply Annual, 1983, DOE/EIA-340(83/01) and Petroleum Supply Monthly, DOE/EIA-0109(84/06). Data for June 1984 are preliminary.

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

| | History | | | | | | | | Projections | | | | |
| | 1983 | | | 1984 | | | | | 1985 | | | | |
	3rd	4th	Year	1st	2nd	3rd	4th	Year	1st	2nd	3rd	4th	Year
Supply													
Refinery Output	2.65	2.63	2.46	2.64	2.62	2.72	2.68	2.67	2.38	2.67	2.70	2.66	2.60
Imports	0.28	0.23	0.17	0.28	0.25	0.28	0.26	0.27	0.23	0.22	0.22	0.21	0.22
Exports	0.04	0.05	0.06	0.05	0.04	0.02	0.03	0.04	0.04	0.03	0.02	0.03	0.03
Net Imports	0.23	0.17	0.11	0.23	0.20	0.25	0.23	0.23	0.19	0.19	0.20	0.18	0.19
Primary Stock Levels[1]													
(million barrels)													
Opening	113.72	154.00	185.53	140.26	109.64	112.87	153.54	140.26	150.86	112.38	123.53	157.93	150.86
Closing	154.00	140.26	140.26	109.64	112.87	153.54	150.86	150.86	112.38	123.53	157.93	152.32	152.32
Net Withdrawals	-0.44	0.15	0.12	0.34	-0.04	-0.44	0.03	-0.03	0.43	-0.12	-0.37	0.06	-0.00
(million barrels per day)													
Total Primary Supply	2.45	2.95	2.69	3.20	2.79	2.53	2.94	2.87	3.00	2.74	2.52	2.90	2.79
Product Supplied													
Nonutility Shipments	2.41	2.91	2.66	3.15	2.74	2.50	2.92	2.83	2.95	2.71	2.48	2.88	2.76
Electric Utility Shipments	0.04	0.04	0.03	0.05	0.05	0.03	0.03	0.04	0.04	0.02	0.04	0.03	0.03
Total Product Supplied	2.45	2.95	2.69	3.20	2.79	2.53	2.94	2.87	3.00	2.74	2.52	2.90	2.79
Electric Utility Consumption	0.05	0.06	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.03	0.04	0.03	0.04
Electric Utility Stock Levels													
(million barrels)													
Opening	21.47	20.70	23.37	18.80	19.06	19.71	18.31	18.80	17.30	17.22	16.27	16.40	17.30
Closing	20.70	18.80	18.80	19.06	19.71	18.31	17.30	17.30	17.22	16.27	16.40	15.70	15.70
Net Additions	-0.01	-0.02	-0.01	0.00	0.01	-0.02	-0.01	-0.00	-0.00	-0.01	0.00	-0.01	-0.00
(million barrels per day)													
Electric Utility Discrepancy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unaccounted for	0.00	-0.00	-0.00	-0.00	-0.00	0.00	-0.00	-0.00	-0.00	0.00	0.00	0.00	0.00
Total Disposition	2.45	2.95	2.69	3.20	2.79	2.53	2.94	2.87	3.00	2.74	2.52	2.90	2.79

[1]The respondent universe for petroleum inventories was expanded in January 1983. This resulted in
the addition of 7 million barrels to total distillate fuel oil stocks at the close of December 31, 1982.
(See the "Petroleum Supply Reporting System Overview" and Table 30 in the March 1983 Petroleum Supply Monthly.)
   Note: Minor discrepancies with other EIA published historical data are due to rounding.
   Sources: Historical data: Energy Information Administration, Petroleum Supply Annual, 1983, DOE/EIA-340(83/01);
the Petroleum Supply Monthly; DOE/EIA-0109(84/06), the Monthly Energy Review; DOE/EIA-0035(84/05), and the Electric
Power Monthly, DOE/EIA-0226(84/06). Data for June 1984 are preliminary.

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

	History								Projections				
	1983			1984					1985				
	3rd	4th	Year	1st	2nd	3rd	4th	Year	1st	2nd	3rd	4th	Year
Supply													
Refinery Output	0.77	0.85	0.85	0.95	0.84	0.66	0.72	0.79	0.75	0.60	0.50	0.58	0.61
Imports	0.71	0.69	0.70	0.93	0.62	0.78	0.78	0.78	0.89	0.78	0.81	0.89	0.84
Exports	0.13	0.15	0.18	0.15	0.17	0.10	0.13	0.14	0.09	0.10	0.08	0.10	0.09
Net Imports	0.58	0.53	0.51	0.78	0.45	0.68	0.66	0.64	0.80	0.68	0.73	0.79	0.75
Primary Stock Levels[1]													
(million barrels)													
Opening	49.87	49.68	68.53	48.50	47.64	46.81	48.20	48.50	49.90	43.60	44.68	41.71	49.90
Closing	49.68	48.50	48.50	47.64	46.81	48.20	49.90	49.90	43.60	44.68	41.71	45.33	45.33
Net Withdrawals	0.00	0.01	0.05	0.01	0.01	-0.02	-0.02	-0.00	0.07	-0.01	0.03	-0.04	0.01
(million barrels per day)													
Total Primary Supply	1.35	1.40	1.42	1.74	1.30	1.33	1.36	1.43	1.62	1.28	1.26	1.34	1.37
Product Supplied													
Nonutility Shipments	0.70	0.85	0.86	1.11	0.85	0.68	0.83	0.87	0.98	0.81	0.72	0.85	0.84
Electric Utility Shipments	0.65	0.54	0.56	0.63	0.45	0.65	0.53	0.56	0.63	0.46	0.54	0.49	0.53
Total Product Supplied	1.35	1.40	1.42	1.74	1.30	1.33	1.36	1.43	1.62	1.28	1.26	1.34	1.37
Electric Utility Consumption	0.71	0.59	0.63	0.64	0.47	0.61	0.56	0.57	0.65	0.48	0.54	0.50	0.54
Electric Utility Stock Levels													
(million barrels)													
Opening	80.20	74.56	95.51	70.57	69.88	68.10	71.87	70.57	68.80	66.94	65.08	65.34	68.80
Closing	74.56	70.57	70.57	69.88	68.10	71.87	68.80	68.80	66.94	65.08	65.34	63.79	63.79
Net Additions	-0.06	-0.04	-0.07	-0.01	-0.02	0.04	-0.03	-0.00	-0.02	-0.02	0.00	-0.02	-0.01
(million barrels per day)													
Electric Utility Discrepancy	-0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unaccounted for	-0.00	-0.00	-0.00	-0.01	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	0.00	-0.00	-0.00
Total Disposition	1.35	1.40	1.42	1.74	1.30	1.33	1.36	1.43	1.62	1.28	1.26	1.34	1.37

[1]The respondent universe for petroleum inventories was expanded in January 1983. This resulted in the addition of 2 million barrels to total residual fuel oil stocks at the close of December 31, 1982. (See the" Petroleum Supply Reporting System Overview" and Table 30 in the March 1983 Petroleum Supply Monthly.)
Note: Minor discrepancies with other EIA published historical data are due to rounding.
Sources: Historical data: Energy Information Administration, Petroleum Supply Annual, 1983, DOE/EIA-340(83/01); the Petroleum Supply Monthly; DOE/EIA-0109(84/06), the Monthly Energy Review; DOE/EIA-0035(84/05), and the Electric Power Monthly, DOE/EIA-0226(84/06). Data for June 1984 are preliminary.

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

	History			Projections						
	1983	1984					1985			
	Year	1st	2nd	3rd	4th	Year	1st	2nd	3rd	4th	Year
Supply											
Net Refinery Output[a]	2.53	2.58	2.65	2.95	2.57	2.68	2.59	2.70	3.01	2.62	2.73
Natural Gas Plant Output[b]	1.55	1.59	1.61	1.54	1.60	1.59	1.67	1.60	1.58	1.64	1.62
Other Domestic[c]	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.05	0.05	0.05	0.05
Net Imports	0.29	0.49	0.42	0.34	0.46	0.43	0.48	0.50	0.34	0.39	0.43
Primary Stocks (million barrels)											
Opening	359.88	356.43	356.42	371.90	377.20	356.43	358.50	354.61	374.67	374.47	358.50
Closing	356.43	356.42	371.90	377.20	358.50	358.50	354.61	374.67	374.47	346.81	346.81
Net Withdrawals	0.01	0.00	-0.17	-0.06	0.20	-0.01	0.04	-0.22	0.00	0.30	0.03
(million barrels per day)											
Total Primary Supply	4.43	4.71	4.55	4.82	4.88	4.74	4.82	4.63	4.98	5.00	4.86
Product Supplied											
Jet Fuel	1.05	1.14	1.13	1.14	1.12	1.13	1.17	1.11	1.16	1.14	1.14
Liquefied Petroleum Gases[d]	0.98	1.14	0.81	0.86	1.14	0.99	1.21	0.83	0.87	1.14	1.01
Petrochemical Feedstocks[e]	0.92	1.03	0.99	1.01	1.03	1.01	1.05	1.07	1.08	1.08	1.07
Miscellaneous[f]	1.55	1.46	1.68	1.88	1.67	1.67	1.46	1.69	1.95	1.71	1.70
Total Product Supplied	4.50	4.77	4.61	4.89	4.95	4.80	4.89	4.70	5.05	5.07	4.93
Discrepancy[g]	-0.07	-0.06	-0.06	-0.07	-0.07	-0.06	-0.07	-0.07	-0.07	-0.07	-0.07
Total Disposition	4.43	4.71	4.55	4.82	4.88	4.74	4.82	4.63	4.98	5.00	4.86

[a] Includes refinery production of all other products less natural gas liquids, LRG's, and "other liquids" input to refineries.
[b] Includes natural gas processing plant production of all other products except finished motor gasoline.
[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 crude oil and petroleum products supplied except motor gasoline, distillate, residual fuel, liquefied petroleum gases, petrochemical feedstocks, and jet fuel.
[g] Adjustment for crude oil product supplied.

Sources: Historical data: Energy Information Administration, Petroleum Supply Annual, 1983, DOE/EIA-0340(83)/1 and Petroleum Supply Monthly, DOE/EIA-0109(84/06). Data for June 1984 are preliminary.

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

Sensitivities	1984			1985				
	3rd	4th	Year	1st	2nd	3rd	4th	Year
Demand in 50 States								
Low Price	15.82	16.27	15.95	16.22	15.83	16.04	16.31	16.09
Base Case	15.77	16.10	15.88	16.01	15.60	15.80	16.07	15.87
High Price	15.77	16.06	15.88	15.95	15.50	15.66	15.89	15.74
Weather Sensitivity								
Adverse Weather	0.02	0.20	0.06	0.32	0.03	0.02	0.21	0.14
Favorable Weather	-0.02	-0.21	-0.06	-0.32	-0.03	-0.02	-0.20	-0.14
Economic Sensitivity								
High Economic Activity	0.01	0.04	0.02	0.08	0.16	0.27	0.36	0.22
Low Economic Activity	-0.05	-0.11	-0.04	-0.17	-0.26	-0.27	-0.21	-0.23
Fuel-Switching Adjustment	0.0	0.13	0.03	0.18	0.04	0.0	0.13	0.09
Combined Sensitivity Differentials[a] **(excl. price)**								
Upper Range	0.02	0.24	0.07	0.38	0.17	0.27	0.44	0.28
Lower Range	0.05	0.24	0.07	0.36	0.26	0.27	0.29	0.27
Range of Projected Demand								
High Demand[b]	15.84	16.51	16.02	16.60	16.00	16.31	16.75	16.37
Low Demand[c]	15.72	15.82	15.81	15.59	15.24	15.39	15.60	15.47

[a]The upper range of the differentials is calculated by taking the square root of the sum of the squared adverse weather, high economic activity, and fuel-switching sensitivities. The lower range of differentials is calculated by taking the square root of the sum of the squared favorable weather and low economic sensitivities.

[b]Low Price demand plus the combined effects of adverse weather, high economic activity, and the fuel-switching adjustment.

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

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

| | History | | | | | | | | Projections | | | | |
| | 1983 | | | 1984 | | | | | 1985 | | | | |
	3rd	4th	Year	1st	2nd	3rd	4th	Year	1st	2nd	3rd	4th	Year
Supply													
Total Dry Gas Production[1]	3.90	4.27	15.97	4.50	4.28	4.28	4.48	17.54	4.57	4.38	4.38	4.55	17.87
Net Imports of Dry Gas	0.16	0.22	0.79	0.22	0.20	0.21	0.27	0.91	0.28	0.23	0.22	0.28	1.00
Net Imports of LNG	0.01	0.01	0.08	-0.00	0.00	-0.00	-0.00	-0.01	-0.00	0.00	-0.00	-0.00	-0.01
Supplemental Gaseous Fuels	0.03	0.04	0.14	0.04	0.03	0.03	0.04	0.14	0.05	0.03	0.03	0.04	0.15
Total New Supply	4.10	4.55	16.97	4.76	4.51	4.52	4.79	18.58	4.89	4.64	4.62	4.86	19.02
Underground Working Gas Storage													
Opening	2.45	3.14	3.07	2.60	1.57	2.14	3.10	2.60	2.73	1.62	2.33	3.37	2.73
Closing	3.14	2.60	2.60	1.57	2.14	3.10	2.73	2.73	1.62	2.33	3.37	3.08	3.08
Net Withdrawals[2]	-0.69	0.55	0.48	1.02	-0.57	-0.96	0.37	-0.13	1.11	-0.71	-1.04	0.29	-0.35
Total Primary Supply[1]	3.41	5.09	17.45	5.79	3.94	3.56	5.16	18.45	6.00	3.93	3.58	5.15	18.67
Consumption													
Electric Utilities	0.96	0.68	2.91	0.61	0.78	0.99	0.73	3.10	0.68	0.78	0.93	0.68	3.07
Refinery Fuel	0.17	0.16	0.62	0.16	0.16	0.17	0.17	0.65	0.16	0.17	0.17	0.17	0.66
All Other Uses[3]	2.18	4.11	13.47	4.94	2.88	2.32	4.17	14.31	5.07	2.91	2.40	4.21	14.59
Subtotal	3.31	4.95	17.00	5.70	3.82	3.48	5.06	18.06	5.90	3.85	3.50	5.06	18.32
Unaccounted for	0.10	0.14	0.45	0.09	0.12	0.08	0.10	0.39	0.10	0.08	0.08	0.09	0.35
Total Disposition	3.41	5.09	17.45	5.79	3.94	3.56	5.16	18.45	6.00	3.93	3.58	5.15	18.67

LNG=Liquefied Natural Gas.
[1] Excludes nonhydrocarbon gases removed.
[2] Includes withdrawals less injections of natural gas and changes in storage quantities due to gas migration.
[3] Includes residential, commercial, and industrial uses other than for refinery fuel, plus use of supplemental gas.
Note: Minor discrepancies with other EIA published historical data are due to rounding.
Sources: Historical data: Energy Information Administration, Monthly Energy Review; DOE/EIA-0035(84/05),
Natural Gas Monthly; DOE/EIA-0130(84/06), and Electric Power Monthly, DOE/EIA-0226(84/06).

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

| | History | | | | | | | | Projections | | | | |
| | 1983 | | | 1st | 2nd | 1984 | | | 1st | 2nd | 1985 | | |
	3rd	4th	Year			3rd	4th	Year			3rd	4th	Year
Supply													
Production	200.[2]	205.[2]	785.[2]	224.[2]	229.[2]	213.	207.	872.	219.	231.	221.	238.	909.
Primary Stock Levels[1]													
Opening	38.	35.	37.	34.	34.	37.	27.	34.	25.	26.	25.	26.	25.
Closing	35.	34.	34.	34.	37.[2]	27.	25.	25.	26.	25.	26.	25.	25.
Net Withdrawals	3.	1.	3.	0.	-3.[2]	10.	2.	9.	0.	1.	-1.	0.	0.
Imports	0.	0.	1.	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.
Exports	22.	20.	78.	15.	24.	22.	20.	80.	15.	20.	22.	20.	78.
Total New Domestic Supply	180.[2]	186.[2]	711.[2]	209.[2]	202.[2]	202.	190.	802.	203.	212.	199.	218.	832.
Secondary Stock Levels[3]													
Opening	197.	174.	195.	169.	173.	190.	183.	169.	172.	162.	174.	153.	172.
Closing	174.	169.	169.	173.	190.[2]	183.	172.	172.	162.	174.	153.	162.	162.
Net Withdrawals	23.	5.	27.	-4.	-17.[2]	7.	11.	-3.	10.	-12.	21.	-9.	10.
Total Indicated Consumption	204.[2]	191.[2]	730.[2]	205.[2]	184.[2]	209.	201.	799.	213.	200.	220.	209.	842.
Domestic Consumption													
Coke Plants	10.	10.	37.	11.	12.[2]	11.	11.	45.	12.	12.	11.	11.	47.
Electric Utilities	178.	161.	625.	167.	154.	180.	168.	669.	178.	169.	190.	176.	713.
Retail and General Industry	18.	21.	74.	22.	18.[2]	18.	22.	80.	22.	19.	18.	22.	81.
Total Domestic Consumption	206.	192.	737.	200.	184.[2]	209.	201.	795.	213.	200.	220.	209.	842.
Discrepancy[4]	-2.[2]	-1.[2]	1.[2]	4.[2]	0.[2]	0.	0.	4.	0.	0.	0.	0.	0.

[1]Primary stocks are those held at the mines, preparation plants, and distribution points.
[2]Estimated.
[3]Secondary stocks are those held by users. Most of the secondary stocks are held by electric utilities.
[4]Historical period discrepancy reflects unaccounted for shipper and receiver reporting discrepancies.
Note: Rows and columns may not add due to independent rounding. Zeros indicate amounts of less than 500,000 tons.
Sources: Historical data: Energy Information Administration, Monthly Energy Review; DOE/EIA-0035(84/05),
and Quarterly Coal Report, DOE/EIA-0121(84/1Q).

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

	History								Projections				
	1983					1984					1985		
	3rd	4th	Year	1st	2nd	3rd	4th	Year	1st	2nd	3rd	4th	Year
Generation													
Coal	359.7	322.3	1259.4	336.7	313.0	361.1	337.2	1347.9	358.2	340.7	380.9	351.8	1431.5
Petroleum	40.7	35.2	144.5	36.8	27.1	34.8	32.0	130.8	36.6	27.5	31.2	28.9	124.2
Natural Gas	90.8	64.5	274.1	57.7	74.8	92.2	67.9	292.7	63.4	72.8	87.1	63.9	287.2
Nuclear Power	76.8	77.2	293.7	84.2	74.9	89.0	90.2	338.3	93.1	85.3	101.6	98.2	378.2
Hydropower	75.7	77.1	332.1	88.1	90.5	75.2	67.4	321.2	74.6	77.7	65.1	64.1	281.5
Geothermal Power and Other[1] ...	2.0	1.9	6.5	1.9	2.0	1.9	1.9	7.7	1.8	1.8	2.0	2.0	7.8
Total Generation	645.7	578.2	2310.3	605.3	582.3	654.2	596.7	2438.5	627.8	605.9	667.9	608.9	2510.4
Net Imports	9.9	9.7	35.3	8.8	8.1	10.6	10.4	38.0	9.5	8.7	11.5	11.3	41.0
Total Supply	655.6	587.9	2345.6	614.1	590.4	664.8	607.1	2476.5	637.3	614.6	679.4	620.1	2551.4
T & D Loss[2]	53.8	55.7	196.8	33.2	45.0	65.0	61.9	205.1	34.7	49.9	66.4	63.3	214.3
Total Consumption (sales) ..	601.9	532.2	2148.8	581.0	545.4	599.8	545.2	2271.3	602.6	564.7	613.0	556.8	2337.1

[1]Includes wood and waste.
[2]Transmission and distribution losses through the power network, calculated as total supply minus total sales.
Note: Minor discrepancies with other EIA published historical data are due to rounding.
   Source: Historical data: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(84/05);
and Electric Power Monthly DOE/EIA-0226(84/06).

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

	History								Projections				
	1983					1984					1985		
	3rd	4th	Year	1st	2nd	3rd	4th	Year	1st	2nd	3rd	4th	Year
Supply													
Production													
Petroleum[1]	5.20	5.18	20.69	5.15	5.17	5.23	5.22	20.78	5.17	5.18	5.20	5.23	20.78
Natural Gas[2]	4.01	4.39	16.42	4.62	4.40	4.40	4.61	18.03	4.70	4.51	4.50	4.67	18.37
Coal	4.40	4.51	17.26	4.93	5.03	4.68	4.56	19.20	4.81	5.09	4.87	5.23	20.00
Nuclear Power	0.85	0.85	3.23	0.93	0.83	0.98	0.99	3.73	1.03	0.94	1.12	1.08	4.17
Hydropower[3]	0.80	0.81	3.51	0.92	0.95	0.79	0.71	3.16	0.78	0.81	0.68	0.67	2.95
Geothermal Power and Other[4]	0.04	0.04	0.14	0.04	0.04	0.04	0.04	0.17	0.04	0.04	0.04	0.04	0.17
Subtotal	15.30	15.78	61.17	16.60	16.42	16.12	16.13	65.27	16.53	16.57	16.42	16.92	66.44
Net Imports													
Crude Oil	2.11	1.71	6.73	1.57	1.79	2.02	1.91	7.29	1.49	1.89	2.03	1.86	7.27
Other Petroleum	0.74	0.69	2.33	0.91	0.70	0.77	0.80	3.18	0.84	0.79	0.75	0.82	3.20
Natural Gas (Dry)	0.16	0.23	0.80	0.23	0.21	0.21	0.28	0.92	0.28	0.23	0.22	0.28	1.02
Liquefied Natural Gas	0.01	0.01	0.05	-0.00	0.00	-0.00	-0.00	-0.01	-0.00	0.00	-0.00	-0.00	-0.01
Coal and Coke	-0.58	-0.53	-2.03	-0.39	-0.62	-0.56	-0.52	-2.08	-0.39	-0.52	-0.57	-0.53	-2.01
Electricity	0.10	0.10	0.37	0.09	0.08	0.11	0.11	0.40	0.10	0.09	0.12	0.12	0.43
Subtotal	2.54	2.22	8.28	2.40	2.16	2.55	2.58	9.69	2.32	2.48	2.55	2.55	9.90
Primary Stocks													
Net Withdrawals	-0.92	0.82	1.07	1.18	-0.82	-0.90	0.50	-0.04	1.40	-0.91	-1.19	0.40	-0.30
SPR Fill Rate Additions(-)	-0.17	-0.10	-0.49	-0.07	-0.13	-0.11	-0.08	-0.38	-0.08	-0.08	-0.08	-0.08	-0.31
Secondary Stocks[5]													
Net Withdrawals	0.53	0.14	0.75	-0.09	-0.37	0.14	0.27	-0.05	0.22	-0.24	0.45	-0.18	0.25
Total Supply[6]	17.29	18.86	70.78	20.02	17.27	17.81	19.40	74.49	20.39	17.83	18.15	19.62	75.99
Consumption													
Nonutility Uses													
Petroleum	7.20	7.45	28.53	7.51	7.41	7.48	7.68	30.08	7.42	7.43	7.54	7.69	30.08
Natural Gas[7]	2.40	4.38	14.47	5.22	3.12	2.56	4.46	15.36	5.38	3.17	2.64	4.50	15.68
Coal	0.66	0.73	2.65	0.78	0.73	0.71	0.79	3.00	0.82	0.74	0.74	0.81	3.11
Subtotal	10.26	12.58	45.65	13.52	11.26	10.75	12.93	48.45	13.62	11.34	10.93	13.00	48.87
Electric Utility Inputs													
Petroleum	0.44	0.38	1.54	0.39	0.29	0.37	0.34	1.40	0.39	0.30	0.34	0.31	1.34
Natural Gas	1.00	0.71	3.01	0.63	0.81	1.02	0.75	3.21	0.70	0.81	0.96	0.71	3.18
Coal	3.77	3.41	13.23	3.53	3.26	3.79	3.54	14.12	3.76	3.58	4.00	3.69	15.04
Nuclear Power	0.85	0.85	3.23	0.93	0.83	0.98	0.99	3.73	1.03	0.94	1.12	1.08	4.17
Hydropower[8]	0.90	0.91	3.85	1.01	1.03	0.90	0.82	3.76	0.88	0.91	0.80	0.79	3.38
Geothermal Power and Other	0.04	0.04	0.14	0.04	0.04	0.04	0.04	0.17	0.04	0.04	0.04	0.04	0.17
Subtotal	6.99	6.29	25.00	6.54	6.26	7.11	6.49	26.39	6.80	6.56	7.27	6.63	27.26
Gross Energy Consumption[6]	17.25	18.87	70.65	20.07	17.52	17.86	19.42	74.84	20.42	17.90	18.19	19.63	76.13
Electric Utility Adjustments													
Conversion Loss[9]	4.94	4.47	17.67	4.56	4.40	5.06	4.63	18.64	4.75	4.64	5.17	4.73	19.29
Total Net Energy	12.31	14.40	52.98	15.51	13.12	12.80	14.79	56.21	15.67	13.26	13.02	14.90	56.84
Unaccounted for	-0.04	-0.02	-0.12	-0.04	-0.25	-0.05	-0.02	-0.35	-0.03	-0.07	-0.04	-0.01	-0.14
Total Disposition	17.29	18.86	70.78	20.02	17.27	17.81	19.40	74.49	20.39	17.83	18.15	19.62	75.99

SPR = Strategic Petroleum Reserve.
[1] Includes crude oil and lease condensate, natural gas liquids, hydrogen, input to oil refineries.
[2] Total dry gas production excluding nonhydrocarbon gases removed.
[3] Includes industrial production.
[4] Includes wood and waste used to generate electricity.
[5] Primarily electric utility stocks.
[6] This total excludes approximately 2 quadrillion Btu of wood.
[7] Includes natural gas used as refinery fuel.
[8] Includes industrial hydroelectric production and net imports of electricity.
[9] Includes plant use and T & D losses.
Note: 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.
Source: Historical data: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(84/05) and Electric Power Monthly, DOE/EIA-0226(84/06).

Forecast Conversion Factors Used in STIFS

Most of the conversion factors used by the Short-Term Integrated Forecasting System (STIFS) are the 1983-1984 EIA standard conversion factors (found in the Monthly Energy Review). Special factors used in STIFS are derived from data in the Monthly Energy Review or from energy data reports such as the Petroleum Supply Monthly.

Product Identification	Unit	Btu/Unit
A. Thermal Content of Fuels and Energy		
Crude Oil Production	barrel	5,800,000
Crude Oil Imports	barrel	5,824,000
Unfinished Oils	barrel	5,825,000
Total Petroleum Consumed	barrel	5,410,000
Total Petroleum Imports	barrel	5,768,000
Total Petroleum Exports	barrel	5,800,000
Motor Gasoline	barrel	5,253,000
Jet Fuel	barrel	5,607,000
Distillate Fuel Oil	barrel	5,825,000
Refinery Fuel (Liquids)	barrel	5,595,000
All Refinery Inputs	barrel	5,768,000
Residual Fuel Oil	barrel	6,287,000
LPG and LRG	barrel	3,612,000
Ethane	barrel	3,082,000
Hydrogen, etc. (to Refineries)	barrel	3,500,000
Natural Gas Liquids (Production)	barrel	3,859,000
Natural Gas Consumption (dry)	cubic foot	1,028
Natural Gas Imports	cubic foot	1,018
Natural Gas Exports	cubic foot	1,011
Synthetic Gas Production	cubic foot	1,000
Natural Gas Refinery Fuel	cubic foot	1,021
Natural Gas to Utilities	cubic foot	1,035
Bituminous Coal & Lignite Consumed	short ton	21,547,000
Coal to Electric Utilities	short ton	21,160,000
Bituminous Coal and Lignite Prod.	short ton	22,015,000
Coking Coal	short ton	23,800,000
General Ind. and Retail Coal	short ton	23,800,000
Coke	short ton	26,000,000
Bituminous Coal and Lignite Exports	short ton	26,300,000
Bituminous Coal and Lignite Imports	short ton	25,000,000

B. Efficiency of Conversion Processes

1. Electric Power Generation

Fuel or Power Source:	Btu/kWh (heat rate)
Coal	10,504
Crude Oil	10,724
Distillate Fuel Oil	13,501
Residual Fuel Oil	10,625
Geothermal and Other Energy	21,594
Nuclear Energy	11,015
Natural Gas	10,991
Hydropower	10,470

2. Other Conversion Processes

	Btu Out/Btu In
Coke	0.70
Synthetic Gas	0.95

Energy Information Administration
Forrestal Building
Washington, D.C. 20585

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300