1992

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SHORT-TERM ENERGY OUTLOOK

QUARTERLY PROJECTIONS

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Released for Printing: February 5, 1992

The Short-Term Energy Outlook (ISSN 0743-0604) is published quarterly by the Energy Information Administration, 1000 Independence Avenue, SW, Washington, DC 20585, and sells for \$14.00 per year (price subject to change without advance notice). Second-class postage paid at Washington, DC 20066-9998, and additional mailing offices. POSTMASTER: Send address changes to Short-Term Energy Outlook, Energy Information Administration, EI-231, 1000 Independence Avenue, SW, Washington, DC 20585.

Short-Term Energy Outlook

Quarterly Projections

First Quarter 1992

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Preface

The Energy Information Administration (EIA) presents future cases of quarterly short-term energy supply, demand, and prices for publication in February, May, August, and November in the *Short-Term Energy Outlook (Outlook)*. An annual supplement analyzes the performance of previous forecasts, compares recent cases with those of other forecasting services, and discusses current topics related to the short-term energy markets. (See *Short-Term Energy Outlook: Annual Supplement*, DOE/EIA-0202.) The principal users of the *Outlook* are managers and energy analysts in private industry and government.

The forecast period for this issue of the *Outlook* extends from the first quarter of 1992 through the fourth quarter of 1993. Some data for the fourth quarter of 1991 are preliminary EIA estimates (for example, some petroleum estimates are based on statistics from the *Weekly Petroleum Status Report*) or are derived from internal model simulations using the latest exogenous information available (for example, some electricity demand estimates are based on recent weather data).

The cases are produced using the Short-Term Integrated Forecasting System (STIFS). The STIFS model is driven principally by the following sets of assumptions or inputs: estimates of key macroeconomic variables, world oil price assumptions, and assumptions about the severity of weather. Macroeconomic estimates are produced by DRI/McGraw-Hill, but are adjusted by EIA to reflect EIA assumptions about the world price of crude oil, energy product prices, and other assumptions which may affect the macroeconomic outlook. (The EIA model is available on computer tape from the National Technical Information Service.)

The cases and historical data are based on EIA data published in the *Monthly Energy Review, Petroleum Supply Monthly*, and other EIA publications. Minor discrepancies between the data in those publications and the historical data in this *Cutlook* are due to independent rounding. All percentage changes are calculated from the values in the tables rather than from any rounded numbers cited in the text.

For this *Outlook*, methodological changes were introduced into the electricity demand projections for the residential and commercial sectors. Residential and commercial electricity sales are now projected as functions of growth in the housing stock and commercial employment, respectively, plus weather factors and estimated trends in perhousehold or per-employee electricity use. The new projections are, on balance, lower (particularly for residential) than earlier projections from the *Outlook*. Slow housing market growth in the near-term, particularly compared to the average rates during the 1980's, implies lower underlying growth rates for residential demand.

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Highlights

Sluggish Economies and Overseas Production Gains Signal Continued Low Oil Prices

The year 1992 opened with relatively low oil prices, as economic growth in the United States and in countries in the Organization for Economic Cooperation and Development (OECD) continued to be sluggish and OPEC oil production remained high. Kuwait is expected to have the capacity to produce at pre-war levels by the end of 1993. Two uncertainties exist: one is whether or not Iraq will be allowed back into the world market, and the other is the continued availability of exports from the former Soviet Union.

U.S. Petroleum Demand Growth Likely in 1992, but Economy and Weather Minimize Increase U.S. demand for petroleum products in 1992 is expected to be about 220,000 barrels per day above 1991 levels (1.3-percent increase). However, low U.S. economic growth projections and another unseasonably warm winter may minimize this recovery in demand. A first quarter which is 15-percent or more warmer than normal could eliminate more than one-half of the demand growth expected for 1992 in the mid-price case.

Moderate Declines in U.S. Petroleum Output in 1992

In 1992, domestic crude oil production is expected to decline by 220,000 barrels per day in the mid-price case, and by as much as 390,000 barrels per day in the low-price case, from the average 1991 rate. This decline continues a trend started in February 1991, when U.S. production rates had improved with higher prices and the Gulf crisis. U.S. oil drilling activity for 1991 was at its lowest level in 50 years. However, current estimates show output declines may not be as sharp as previously believed.

Growth in Natural Gas Demand Remains Strong Even with the economic recession, demand for natural gas grew by 3.3 percent in 1991. This growth in demand is expected to continue in 1992 and 1993, with gas prices remaining relatively low compared to residual fuel oil prices. The weather is assumed to return to normal, hence colder than in 1991, and the natural gas customer base is expected to continue increasing. While 1992 weather may still average out to normal for the year, very weak gas wellhead prices have prevailed at mid-winter because of weak demand due to mild temperatures in December and January.

Commercial and Industrial Sectors Lead Electricity Demand Growth Through 1993 Total electricity sales are expected to increase by 1.8 percent in 1992 and 2.8 percent in 1993, following a 2.1-percent increase estimated for 1991. The 1991 growth in demand came primarily from the residential sector resulting from the abnormally high summer temperatures. While growth in residential demand should slow, increases in manufacturing output and service sector employment are expected to stimulate industrial and commercial sector electricity demand in the forecast period.

Growth in Coal Consumption Remains Weak; Recovery Accelerates in 1993 While industrial coal consumption (particularly in the steel industry) may rebound at a strong rate in 1992, overall coal consumption growth will be rather anemic this year at about 1.9 percent. Growth could be higher, however, if electricity sales expand beyond expectations. An increase in total coal demand of 2.9 percent is expected for 1993 in response to stronger electricity growth.

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Note: The data referenced may be found in Table 1 or in the tables located in the back of this report.

Table 1. U. S. Energy Supply and Demand Summary

· · · · · · · · · · · · · · · · · · ·	Price			ear		Armua	Percentage (nange
	Range*	1990	1991	1992	1993	1990-1991	1991-1992	1992-1993
Real Gross Domestic Product								
billion 1982 dollars)	Mid	4113	4084	4153	4313	-0.7	1.7	3.8
Real Gross National Product								
billion 1982 dollars)	Mid	4122	4094	4161	4325	-0.7	1.6	3.9
mported Crude Oil Price	Low			16.76	18.00		-10.9	7.4
nominal dollars per barrel)	Mid	21.78	18.81	18.76	20.00	-13.6	-0.3	6.6
	High			20.75	22.00		10.3	6.1
Petroleum Supply								
Crude Oil Production ^b	Low			6.98	6.66		-5.3	-4.6
(million barrels per day)	Mid	7.36	7.37	7.15	6.93	0.1	-3.0	-3.1
	High			7.28	7.17		-1.2	-1.5
Net Petroleum Imports, Including SPR	Low			7.41	7.93		11.9	7.0
(million barrels per day)	Mid	7.16	6.62	7.16	7.55	-7.5	8.2	5.4
	High			6.89	7.17		4.1	4.1
Energy Demand								
Total Petroleum Product Supplied	Low			16.92	17.19		1.7	1.6
(million barrels per day)	Mid	16.99	16.63	16.85	17.08	-2.0	1.3	1.4
	High			16.73	16.92		0.6	1.1
Natural Cas Consumption	Low			19.54	20.11		1.1	2.9
(trillion cubic feet)	Mid	18.72	19.33	19.67	20.23	3.3	1.8	2.8
Coal O ensumption 1	High			19.95	20.53		3.2	2.9
(million short tons)	Mid	895	890	907	933	-0.6	1.9	2.9
Electricity Seles								
(billion kilowatthours)	Mid	2705	2762	2811	2890	2.1	1.8	2.8
Gross Energy Consumption ^d								
(quadrillion Btu)	Mid	81.3	81.6	83.0	84.7	0.4	1.7	2.0
Thousand Btu/1982 Dollar of GNP	Mid	19.72	19.93	19.95	19.58	1.1	0.1	-1.9

^{*&}quot;Price Range" refers to the refiners' acquisition cost of imported crude oil assumed for the scenario depicted. In all cases for this table, the mid-case macroeconomic outlook is assumed, and weather is assumed to be normal.

Sources: Historical data: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(92/01); Petroleum Supply Monthly, DOE/EIA-0190(92/01); Petroleum Supply Annual 1990, DOE/EIA-0340(90)/1; Natural Gas Monthly, DOE/EIA-0130(92/01); Electric Power Monthly, DOE/EIA-0226(92/01); and Quarterly Coal Report, DOE/EIA-0121(91/3Q). Macroeconomic projections are based on DRI/McGraw-Hill Forecast CONTROL0192.

bincludes lease condensate.

[&]quot;Total annual electricity sales for historical periods are derived from the sum of monthly sales figures based on submissions by electric utilities of Form EIA-826, "Monthly Electric Utility Sales and Revenue Report with State Distributions." These historical values differ from annual sales totals based on Form EIA-861, reported in several EIA publications, but match alternate annual totals reported in EIA's Electric Power Monthly, DOE/EIA-0226.

^dThe conversion from physical units to Btu is calculated using a subset of *Monthly Energy Review* (MER) conversion factors. Consequently, the historical data may not precisely match that published in the MER.

SPR: Strategic Petroleum Reserve

Notes: Minor discrepancies with other published EIA historical data are due to independent rounding. Historical values are printed in **boldface**, forecasts in *italics*. The forecasts were generated by the following simulations of the demand and supply subsystems of the Short-Term Integrated Forecasting System: D011392BBB11:01 and S012292BBB12:46 for the middle oil price case; D011392PSB11:34 and S012292PSB12:54 for the low oil price case; and D011392WGB12:06 and S012292WGB13:01 for the high oil price case.

Introduction

The projections in the *Short-Term Energy Outlook* (*Outlook*) depend largely on the magnitude of macroeconomic growth in the United States and in other major energy consuming countries and on world oil prices. World oil price projections reflect various underlying world economic and energy market conditions. The following discussion provides a summary of the key projections that provide the basis for the forecasts.

World Oil Prices

This *Outlook* focuses on three world oil price cases (Figure 1 and Table 1). Price assumptions for 1992 range from an average of \$16.76 per barrel in the low-price case to \$20.75 per barrel in the high-price case. These cases accommodate a range of uncertainty that allows average prices to vary up or down by about 10 percent (\$2.00 per barrel) from their 1991 level of \$18.74 per barrel. The mid-price case assumes prices in 1992 remain close to their 1991 level, on average, at \$18.76 per barrel. For 1993, each of the cases assumes an increase of about \$1.25 per barrel from the 1992 average. This results in a range in average prices from \$18 per barrel in the low-price case to \$22 per barrel in the high-price case, with a mid-price case assumption of \$20 per barrel.

Macroeconomic Activity and Weather

Following a weakening trend through 1991, in 1992 economic growth in the Organization for Economic Cooperation and Development (OECD) is expected to strengthen to an annual rate of about 2.2 percent per year in the mid-price case. Much of the weakness in 1991 is traceable to the United States and U.S. performance is expected to lag behind the OECD average for 1992. Despite expectations of a stagnant first half, real GNP is expected to grow by 1.6 percent in the United States in 1992, after declining by 0.7 percent in 1991. Growth in the United States is expected to be very weak in the near term for several reasons. These reasons include continued excess capacity in housing and residential construction,

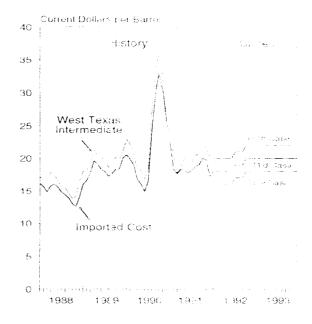


Figure 1. U.S. Crude Oil Prices

Note: Imported prices are defined as the cost of imported crude oil to U.S. efiners.

Sources: History: Energy Information Administration, Monthly Energy Review (January 1992); and Oil and Gas Journal Energy Database. Cases: Table 4.

continued high consumer debt, a weakened banking sector, budget cuts by State and Federal Governments, and depressed consumer confidence.

The magnitude of change in crucial economic variables is uncertain. Any uncertainty related to economic growth can significantly amplify the uncertainty of the energy projections. The possibility of extreme weather also heightens the overall uncertainty of the projections in the *Outlook*. Generally, mid-economic growth and normal weather are used to generate the standard projections, but the high and low economic projections and abnormal weather cases are also considered. High and low macroeconomic growth cases provide a range of projected economic growth rates, roughly 1 percentage point above and below the base case (mid-price) growth rates. Table 8 summarizes the sensitivity of petroleum demand to variations in the economy and weather in the United States.

		•

Outlook for Petroleum

Demand

Based on supply and demand patterns that reflect the mid-price case, a modest increase of 0.9 percent in world demand for petroleum products is expected in 1992, followed by a somewhat larger increase of 1.4 percent in 1993 (Table 3). World demand is expected to increase by 620,000 barrels per day in 1992 to 66.7 million barrels per day, and by another 920,000 barrels per day in 1993. The major factors accounting for the growth in 1992 and 1993 are as follows:

- The return to normal seasonal demand patterns, compared with 1991
- Slightly lower prices through the second quarter of 1992, followed by only slightly higher prices through 1993
- Economic recovery in 1992, which accelerates in 1993.

Petroleum demand is expected to increase in all regions, except the former Soviet Union and the European countries outside the Organization for Economic Cooperation and Development (OECD) (Figure 2). In 1992, OECD demand for petroleum is expected to average 38.4 million barrels per day, up 530,000 barrels per day, or 1.4 percent, from the 1991 rate. This estimate is based on the assumption that the OECD economies will grow at a rate of 2.2 percent in 1992 (Table 2), reflecting sharp rebounds in all OECD countries except Japan. Most of the growth in OECD demand in 1992 is expected to occur in the United States and Europe. In 1993, OECD demand is expected to increase by another 650,000 barrels per day, or 1.7 percent, as the economic recovery of most OECD countries accelerates.

Demand growth in the non-OECD countries is expected to be constrained by declines in demand in the republics of the former Soviet Union of about 400,000 barrels per day in both 1992 and 1993 and smaller declines in other non-OECD countries in Europe. Overall, non-OECD demand is expected to increase by only 90,000 barrels per day in 1992, to 28.3 million barrels per day, and by another 280,000 barrels per day in 1993. However, the increase in non-OECD demand outside the former Soviet Union and Europe is expected

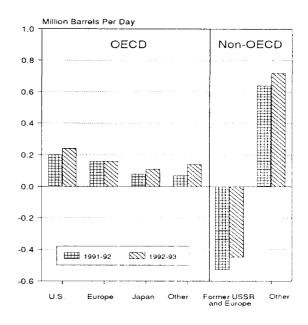


Figure 2. Annual Change in World Petroleum Demand by Region

Source: Table 3.

to exceed that for all OECD countries combined, with growth of over 600,000 barrels per day in 1992 and over 700,000 barrels per day in 1993.

For the United States, a modest recovery in petroleum demand (constrained somewhat by the fact that December was approximately 9 percent warmer than normal) appears to have arrived during the fourth quarter 1991 in comparison to year-earlier levels. Growth through 1993 is expected as the economy gradually gains some momentum and as oil prices remain stable or tend toward the low side. It should be noted that much of the anticipated growth in U.S. petroleum demand in 1992 (220,000 barrels per day in the mid-price case) is due to the assumption of normal weather during the first quarter, which contrasts with an abnormally mild weather pattern during the same period in 1991. Relatively little in the way of increased demand due to economic activity is expected until late

in the year and into 1993. Industrial fuel and feedstock demand will tend to lead demand increases in 1993. Air travel and truck transport increases are expected to induce some contributions to demand growth in the form of jet and diesel fuel increases, although, on balance, transportation sector demand is not expected to rise quickly during the forecast. It seems likely that petroleum demand growth will not reach 2 percent on an annual basis over the next 2 years, even if the economy picks up later this year.

The current forecast is contingent upon factors such as the weather, the economy, and prices (Figure 2 and Table 8). Of these three, the most important in the short run is weather. The estimated probabilities of the occurrence of warmer-than-normal weather are as follows: 19 percent for 8 percent warmer than normal (the average degree-day difference up or down shown in Table 8); 3.9 percent for 15-percent warmer than normal.¹ Of the increase of 700,000 barrels per day in demand in the first quarter 1992 for the mid-price case, 380,000 barrels per day is due to shifting from warm to normal temperatures.² A first quarter which is 15-percent or more warmer than normal could erase more than one-half of all the demand growth expected in all of 1992 for the mid-price case.³

Slow growth for the economy is the short-run outlook. Plausible scenarios for all of 1992 imply a very weak first and second quarter. The slower growth path shown in Table 2 would result in 240,000 barrels per day less demand by the second quarter 1992 than in the mid-price case reported on Table 6.⁴ For the year, demand would be lower by about 180,000 barrels per day.

The high and low oil prices shown in Tables 1 and 4 do not imply a wide range of demand uncertainty. The range of variance in total U.S. petroleum demand is 190,000 barrels per day for 1992, on average, between the low-price case and the high-price case.

The possible combination of weather that is about 8 percent milder than normal, a world oil price of \$22 per barrel, and the low economic growth scenario would result in an estimate for petroleum demand that is 440,000 barrels per day below the mid-price case for all of 1992.⁵ This combination could easily erase any chance for an increase in petroleum demand this year. Figure 3 illustrates demand ranges under various price, economic and weather situations. The probability of demand being this low or lower is not high because of the current oversupply in the market (see "How Low Could Oil Prices Fall" on page 9) and because average temperatures leading to heating degree-days 8 percent

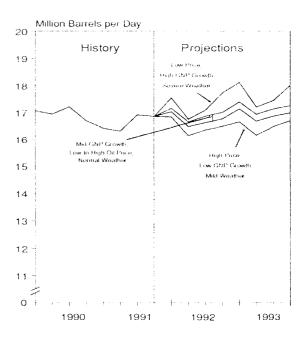


Figure 3. Total U.S. Petroleum Product Supplied

Sources: **History**: Energy Information Administration, *Petroleum Supply Annual 1989*, and *Petroleum Supply Monthly* (December 1991). **Projections**: Tables 5, 6, and 7 and internal model calculations from the Short-Term Integrated Forecasting System.

below normal or lower is only about 19 percent. For 1993, annual petroleum demand growth, which is projected to be 230,000 barrels per day (or 1.4 percent) in the mid-price case, could range between nearly zero and 400,000 barrels per day depending on how extreme the weather, price, and economic growth outcomes are.

Supply

World oil production in 1992 is expected to average only 10,000 barrels per day more than in 1991. Production in the former Soviet Union is expected to decline 2.5 percent each quarter, for an aggregate reduction of more than 1 million barrels per day during 1992. Increases in the North Sea, Mexico, and other non-OECD countries will not offset this large reduction. An increase of about 780,000 barrels per day in OPEC production is anticipated. These production increases are sufficient to meet the relatively larger increases in demand in 1992 because an overall stock buildup (such as that of 1990 and 1991) is not anticipated.

In 1993, world oil production is expected to increase by 930,000 barrels per day even though non-OPEC oil production will decline by about 270,000 barrels per day. A 630,000-barrel-per-day decline in production in the former Soviet Union will more than offset increases in the North Sea, China, Mexico, and other non-OECD countries. As a result of the overall decline in non-OPEC production, OPEC will increase its aggregate production by 1.2 million barrels per day.

Despite a temporary halt to U.S. production declines during the Gulf crisis, the United States is expected to contribute negatively to non-OPEC oil supply over the forecast period. In 1992 and 1993, in the mid-price case, domestic production of crude oil is expected to decline by 220,000 barrels per day. Oil production in Alaska remained fairly constant between 1990 and 1991. However, production is expected to decline at an increasing rate over the forecast period. Production in Alaska is expected to decrease by 70,000 barrels per day in 1992 and by 130,000 barrels per day in 1993. In the lower-48 States, production of crude oil is expected to drop by 140,000 barrels per day in 1992 and by 90,000 barrels per day in 1993.

According to the Baker-Hughes rotary rig count, a measure of resource development activity, the rig count declined throughout 1991 and averaged 805 in November, about 29 percent below the November 1990 count. At the average oil price expected in 1992 and 1993, the rig count should be about the same in 1992 and slightly higher in 1993.

The Point Arguello field in the Pacific Federal Outer Continental Shelf started producing during the second quarter of 1991. It is expected to produce 35,000 barrels per day in the mid-price case. In the low-price case, the Point Arguello field is expected to produce 20,000 barrels per day during the forecast period. In the high-price case, Point Arguello is expected to produce 35,000 barrels per day for the first 5 months of 1992 and 60,000 barrels per day through 1993.

In 1992, the rate of domestic crude oil production ranges from 6.98 million barrels per day in the low-price case to 7.28 million barrels per day in the high-price case. This range increases in 1993, with domestic oil production rates of 6.66 barrels per day in the low-price case and 7.17 million barrels per day in the high-price case. These estimates contain an element of uncertainty that goes beyond expected price impacts in the two cases. For example, for the fourth quarter of 1993, the difference between the low- and high-price case is 580,000 barrels per day. About 40 percent of this range of production can be attributed to uncertainties

concerning both the current production level and the timing of expected events. The larger portion of this range (60 percent) is attributed to the impact of prices on drilling rates and well maintenance.

World Oil Prices

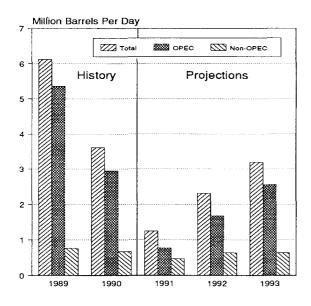
The world oil price is ultimately affected by supply, demand, and other factors, including expectations of market participants. Each of these factors is subject to substantial uncertainty. The uncertainties concerning oil supply, for example, focus on oil exports from the former Soviet Union and oil production from the Organization of Petroleum Exporting Countries (OPEC).

- In the former Soviet Union, the production and consumption of oil are expected to decline. Export volumes will be determined by the relative decline rates of production and consumption and by the competing need for hard currency in the emerging market economies of the new republics.
- Two OPEC countries—Kuwait and Iraq—are in the process of restoring their pre-war production capacity and export facilities. Kuwait is expected to increase production and exports as capacity is restored. Iraqi production will be constrained as long as the United Nations embargo against exports remains in effect.
- Aggregate OPEC production depends on the willingness of other OPEC members to restrain their production, if necessary, as exports from Kuwait—and possibly Iraq—return to the market.

The key uncertainties affecting oil demand are the severity of winter weather and the magnitude of economic growth, especially in the United States and in the other OECD countries.

Two other factors affect the extent to which these supply and demand uncertainties influence oil prices:

• Excess production capacity. Excess capacity of about 1.3 million barrels per day in the first quarter of 1992 is low compared with the levels of about 6 million barrels per day prior to the Gulf War (Figure 4). Excess capacity is expected to increase in 1992 and 1993 as capacity restoration in Kuwait and Iraq and capacity additions in most other OPEC countries more than offset increases in actual OPEC production. Kuwait will have the capacity to produce at pre-war levels by the end of 1993, but Iraqi capacity will continue to be constrained by the United Nations sanctions.



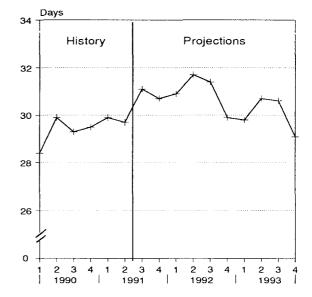


Figure 4. World Excess Oil Production Capacity

Note: Excludes any excess capacity from Iraq.
Source: Energy Information Administration, Office of Energy Markets and End
Use, Energy Markets and Contingency Information Division, Short-Term
Forecasting and Contingency Branch.

 Stocks. The market economies currently have enough stocks readily available to meet petroleum demand for at least 30 days (Figure 5), based on anticipated demand levels. This represents usable commercial stocks only; that is, it excludes strategic government stocks of about 850 million barrels and the minimum inventory levels that must be maintained for normal operations of about 3.1 billion barrels.

During the first quarter of 1992, ample stock levels will tend to mitigate market concern over the low level of excess capacity. However, as excess capacity increases later in the year, the combined effect of these and other factors could push prices downward (see "How Low Could Oil Prices Fall?" on page 9). At the same time, the availability of ample petroleum stocks and excess oil production capacity could prevent sudden or sustained price increases in case of unanticipated supply shortfalls or demand increases.

Because of these uncertainties, three different world oil price cases are developed (Figure 1 and Table 4). These

Figure 5. Days Supply of Usable Market Economies Commercial Petroleum Stocks

Note: Excludes strategic stocks and minimum operating inventory.

Source: Energy Information Administration, Energy Markets and Contingency Information Division, Short-Term Forecasting and Contingency Branch.

cases are used to derive a mid-price case projection and alternative projections for domestic petroleum supply and demand. The three world oil price cases are meant to represent the range over which prices could vary during the forecast period. Given the uncertainties in the world oil market, the world oil price could tend toward the lower end of the range in the second quarter of 1992 or move toward the upper end of the range during high demand periods (first quarter of 1993 and fourth quarter of 1992 and 1993).

In the low-price case, the world oil price decreases from an estimated \$19 per barrel in the fourth quarter of 1991 to \$16 per barrel in the first quarter of 1992; it then increases to \$17 in the third quarter of 1992 and to \$18 in the fourth quarter of 1992 and throughout 1993. In the mid-price case, the world oil price decreases to \$18 in the first quarter of 1992, recovers to \$19 in the third quarter, then stabilizes at \$20 in the fourth quarter and throughout 1993. In the high-price case, the world oil price increases to \$20 per barrel in the first quarter of 1992; it then increases to \$21 in the third quarter of 1992 and to \$22 in the fourth quarter of 1992 and throughout 1993.

How Low Could Oil Prices Fall?

In mid-January, the futures price of West Texas Intermediate (WTI) crude oil traded on the New York Mercantile Exchange was ranging between \$18 and \$19 per barrel, and much attention was being focused on how low oil prices might fall. In this publication, the world oil price refers to the refiner acquisition cost (RAC) of imported crude oil, unless otherwise noted. The RAC is the average cost paid by U.S. refiners for imported crude oil and is typically \$2 to \$3 per barrel less than the futures price of WTI crude oil. This would imply that the RAC was approximately \$16 to \$17 per barrel. The mid-price case of the three price cases analyzed in this Outlook assumes an average price of \$18 per barrel for the first 2 quarters of 1992, slightly above current prices. This article analyzes the main factors that could cause prices to fall even further over the next few months.

The three main factors that may lead to lower oil prices in the near term are increased oil production from Kuwait and possibly Iraq, slower economic growth than is currently expected, and warmer than normal weather over much of the world. Over the next year, Kuwaiti oil production is expected to increase substantially. It is also quite possible that Iraq may begin to export more oil in 1992 either by agreeing to the U.N. resolution that would allow approximately 500,000 to 600,000 barrels per day of oil exports for 6 months or more than 1 million barrels per day for 3 months, or because of a loosening of the current U.N. embargo against Iraq. Without concurrent decreases in supply from other countries, increased production from Kuwait and Iraq would add a large amount of supply into the world oil market, possibly depressing prices sharply. This factor is not limited to the very near term. Iraq and Kuwait are expected to build their production capacity back to pre-war levels sometime in 1993, another 2.5 to 3.5 million barrels per day of production capacity above current levels. Thus, accommodating increases in Iraqi and Kuwaiti oil production capability will be something that the oil market will face continuously over the next 2 years.

Another factor that would lead to lower prices is lower economic growth. If the world economy proves to be

in a much weaker position than is expected in this *Outlook* (as illustrated by the low economic growth case shown for the United States in Table 2), oil demand over the first 2 quarters of 1992 could be from 500,000 to 750,000 barrels per day less than in the midprice case. This would increase the likelihood of surplus oil supply which would put downward pressure on prices.

If the weather in the Northern Hemisphere is much milder than normal on average for the first quarter of 1992, it is estimated that oil demand could easily be at least 500,000 or more barrels per day less than if the weather followed normal patterns. This calculation is based on the assumption of temperatures which are 8 percent milder in the United States and other industrialized countries, using average weather sensitivity factors derived from EIA's Short-Term Integrated Forecasting System model. Such a weather variance would be expected to result in about 250,000 barrels per day less demand in the United States alone. This kind of situation would place additional downward pressure on prices during the first quarter and would increase the likelihood that fuel stocks in Europe and North America would be significantly in excess relative to demand and portend continuing price weakness during the second quarter.

The lowest of the three price cases in the *Outlook* (labeled the "low price" case) accounts for some of the factors described above. If all of the factors occur at the same time for the maximum effect, however, the IRAC would probably decline to \$14 per barrel or less in the near term, a full \$2 below the low-price case. It is unlikely that prices would stay that low for long. If prices fall below \$16 per barrel for a substantial length of time, there would be pressure on oil producing countries to do something to raise prices. Perhaps OPEC would convene an emergency meeting to attempt to raise prices. Meanwhile, the market would react to lower prices, bringing forth higher demand and eventually higher oil prices. It is unlikely that oil prices would remain below the low-price case stated in this Outlook for a full 3 months.

The mid-price case is based on the following assumptions:

- Oil exports from the former Soviet Union will decline by 610,000 barrels per day in 1992 and by 240,000 barrels per day in 1993, as declines in oil production continue to exceed reductions in oil consumption.
- Iraqi production will be limited to domestic requirements plus a small volume of exports to Jordan. This assumes the United Nations embargo against Iraq continues and Iraq does not accept the United Nations terms that would allow limited exports for humanitarian purposes.
- Kuwaiti oil production (excluding the Neutral Zone) will double in 1992, from about 600,000 barrels per day in the first quarter of 1992 to 1.2 million barrels per day in the fourth quarter. By the fourth quarter 1993, production is expected to reach 1.6 million barrels per day.
- Other OPEC members will restrain production to accommodate increasing exports from Kuwait throughout the forecast period. In particular, it is assumed that the OPEC member countries will agree to decrease production by about 1 million barrels per day between the first and second quarters of 1992.

The low-price case assumes that other OPEC members fail to reduce their production to accommodate the increase in Kuwaiti production and any resumption in Iraqi exports. Other supply factors adding to the downward pressure on prices include higher Kuwaiti production and higher exports from the former Soviet Union than in the mid-price case. Demand is also lower due to slower economic growth in the OECD countries and milder weather than assumed in the mid-price case.

The high-price case assumes that oil production from Kuwait and oil exports from the former Soviet Union are lower than in the mid-price case. Other OPEC countries are expected to hold production down in order to push oil prices higher. In addition, abnormally cold winter weather and stronger economic growth than in the mid-price case are assumed.

Petroleum Product Prices

The following discussion provides projections for energy product prices, given the three assumed crude oil price paths presented in Table 4. The variation among cases in the petroleum product prices is based primarily on the pass-through of the differences in crude oil costs. The variation is based to a lesser extent on differences in supply and demand conditions for particular product markets.

Gasoline prices may be subject to additional increases in 1992 due to higher supply costs associated with manufacturing, storing, and transporting gasoline designed to meet Federal requirements for oxygenate content by the fourth quarter for winter sales. However, no provision for this possible cost effect is incorporated here.

The low-price case assumes slightly lower rates of inflation and a slightly better economy than does the mid-price case.⁶ In this scenario, petroleum product prices generally follow the crude oil price path, falling in 1992, then rising in 1993. On average, wellhead and residential natural gas prices would remain flat through 1993, while the natural gas price and residual oil price to electric utilities would more or less follow each other. On the other hand, coal prices would continue downward, as productivity increases more than offset rising operating costs.

The mid-price case assumes motor gasoline prices will remain flat in 1992, on average, as higher margins and increases in State and local taxes (Figure 6) are offset by falling first quarter prices resulting from increases in year-end stocks. Refiner margins for motor gasoline have fallen about 1 cent per gallon in 1991 compared to the relatively high 1990 annual average. In 1993, additional State and local tax increases, higher margins, and increases in crude oil costs are expected to be passed on to the consumer at the gasoline pump. Diesel fuel prices should follow gasoline prices.

Prices for residential heating oil are projected to fall slightly in 1992, as higher-than-normal stock levels keep prices low in the first quarter. Crude oil cost pass-through and normal stock levels will account for the price increase in heating oil in 1993. Prices for retail residual fuel oil averaged about \$4.40 per barrel less than the imported refiner acquisition cost of crude oil in 1991 (Table 4), due to a sluggish economy worldwide, mild weather, and falling natural gas prices. A gradual strengthening of the economy and normal weather should allow prices for residual fuel oil to rebound in 1992, even as the average annual price of crude oil remains flat. Prices for residential fuel oil are expected to rise again in 1993.

The high-price case assumes a slightly higher rate of inflation and a slightly weaker economy than does the mid-price case. In this scenario, prices for petroleum product are projected to increase through 1993.

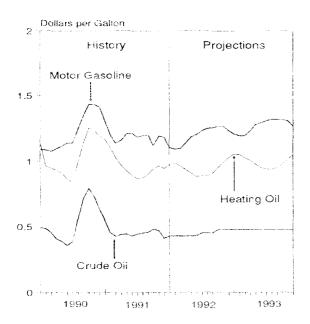


Figure 6. U.S. Crude Oil and Product Prices

Note: Crude oil price is the average cost of imported crude oil to U.S. refiners. Sources: **History:** Energy Information Administration, *Monthly Energy Review* (January 1992). **Projections:** Table 4.

Petroleum Product Demand

Motor Gasoline

Demand for motor gasoline fell by 0.7 percent in 1991 to 7.19 million barrels per day (Table 6). Although growth in highway travel was low, curtailing increases in demand for motor gasoline, efficiency gains also constrained motor gasoline demand. In the context of the *Outlook*, gasoline demand refers to total shipments (product supplied), including product supplied from refineries and bulk terminals as well as net imports. Data indicate that demand for secondary, or downstream, inventories of gasoline may have recovered in early 1991—after being depressed in 1990.7 If so, the decline in demand for motor gasoline in 1991 may be somewhat understated.

For 1992, the *Outlook* sees a rise of only 0.1 percent in the demand for motor gasoline in the mid-price case, followed by stable demand in 1993. Weakening real prices for motor gasoline and eventual improvements in the economy will yield modest increases (2.4 percent) in highway travel in 1992. A similar increase in travel in 1993 is expected to be brought about by accelerating

economic growth despite higher real motor fuel costs. However, these increases are at about the level of average efficiency gains expected over the next 2 years (Figure 7).

Jet Fuel

In 1991, demand for jet fuel declined by 3.3 percent (Figure 8 and Table 6) due chiefly to the recession. Air carriers reduced capacity by more than 2 percent and actual utilization was still down by about 3 percent, resulting in load factors almost as low as those in the early 1980's⁸. Airline activity had surged in the fourth quarter of 1990. However, as hostilities in the Persian Gulf came to an end in the first quarter of 1991, airline activity tapered off, contributing to the year-to-year decline in demand.

Demand for jet fuel should recover with the economy, rising during the forecast period. However, it is expected to remain flat in 1992 in the mid-price case, despite projected growth of 5.8 percent for air travel. The weak jet fuel demand is brought about by a substantial increase in load factors, which will return to pre-recession levels. In addition, fuel efficiency growth will continue.

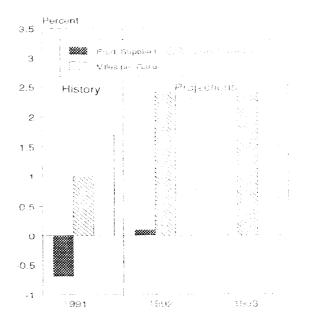


Figure 7. Annual Change in U.S. Motor Gasoline Market Indicators

Sources: **History**: Energy Information Administration, *Petroleum Supply Monthly* (December 1991); Federal Highway Administration, *Traffic Volume Trends*. **Projections**: Table 6 and internal calculations from the Short-Term Integrated Forecasting System.

Figure 8. Annual Change in U.S. Jet Fuel Market Indicators

Sources: **History**: Energy Information Administration, *Petroleum Supply Monthly* (December 1991); Federal Aviation Administration, Form 41. **Projections**: Table 6 and internal calculations from the Short-Term Integrated Forecasting System.

In 1993, demand for jet fuel is projected to increase by 4.8 percent. Travel will grow by 5.2 percent as domestic and international economic growth rates accelerate. The average load factor is expected to stabilize at the 1992 level, contributing to the boost in fuel consumption.

Distillate Fuel Oil

A source for potential strength in U.S. petroleum markets in early 1992 and in 1993 is the demand for distillate fuel oil. High levels of heating oil stocks at year-end 1991 indicate some weakness in demand, but it should be noted that fourth quarter 1991 shipments were 100,000 barrels per day ahead of year-earlier levels. (Domestic shipments were depressed in late 1991 due to the Gulf crisis.) Breaking out of a succession of mild winter quarters could boost demand noticeably in early 1992, and economic recovery could boost shipments by year-end in most sectors. Mild weather in December 1991 and January 1992 have made a strong recovery in the first quarter less likely,

however. In the mid-price case, the economy is expected to push 1993 distillate demand to 3.20 million barrels per day.

Residual Fuel Oil

Total demand for residual fuel oil is expected to remain weak throughout the forecast. The first quarter of 1992 is expected to bring a sizeable recovery in product supplied if cold weather arrives (Table 6). But this strength should dissipate once the effects of colder weather passes. On average, total demand for residual fuel oil is expected to increase by about 130,000 barrels per day for the first 3 months of 1992, compared with the same period of 1991, but demand is expected to be flat or down for the year as a whole.

The electric utility sector is not likely to see net gains in the use of residual fuel oil throughout 1992 although some increase is expected in 1993 in the mid price case. The reason for this expected weakness in 1992 is that, as opposed to the overall national tendency, in regions where oil use is typically high at electric utilities, nuclear power generation is expected to grow. (See "Electricity" section below.) Total demand for residual fuel will not grow significantly in the mid-price and high-price cases because of efficiency trends and the continuing substitution of other fuels. For the low-price case, demand is expected to rise slightly in 1992 (Table 5).

Other Petroleum Products

Overall, demand for petroleum in the "other oils supplied" category declined by 2.8 percent in 1991 (Table 6). Demand for miscellaneous products plunged 11 percent. Production of refinery gas dropped, refinery crude oil runs dropped, and the demand for asphalt and road oil dropped because of budgetary squeezes in many States and because of a weak housing market.9

However, despite the mild weather, shipments of liquefied petroleum gas (LPG) rose by 6.4 percent. This increase occurred for a number of reasons. A recovery in petrochemical activity had begun earlier in the year; operators began rebuilding secondary stocks (including LPG), dampening the normal seasonal buildup of primary stocks later in the year. With the end of the Persian Gulf conflict, prices began to shift in favor of oil-based feedstocks, boosting demand for those products.

The assumed return to normal weather and the economic recovery call for a boost in demand for all major products in the "other oils" category during the forecast period. Demand is expected to rise 2.1 percent in 1992 and 1.5 percent in 1993 in the mid-price case.

Demand for LPG is expected to increase 2.4 percent in 1992, assuming normal weather, but by just 1.1 percent in 1993. Demand for oil-based feedstocks is expected to grow slightly in 1992, but by about 4 percent in 1993. Growth in demand for miscellaneous products will be held to 1.8 percent in 1992 and 1.2 percent in 1993. Demand for asphalt and road oil is expected to remain weak, and still gas production is expected to grow slowly, reflecting slow growth in refinery output.

Total Product Supplied and Production Sensitivities

The petroleum demand and supply outlook for the mid-price case is based on normal temperatures and a particular set of macroeconomic assumptions. In order to enhance the usefulness of the basic projections provided in this *Outlook*, Tables 8 and 9 provide ranges of possible outcomes when alternative macroeconomic, price, and weather assumptions are used.

The petroleum price sensitivity assumes that non-petroleum prices remain constant. The weather sensitivities assume deviations from normal temperatures that correspond to one-half the greatest quarterly variances in weather observed during the past 15 years.

Average petroleum sensitivity factors for 1992 and 1993 for this *Outlook* are summarized below:¹⁰

- A 1-percent increase in real GNP raises petroleum product supplied by about 127,000 barrels per day
- A \$1-per-barrel increase in crude oil prices, assuming no price response from nonpetroleum energy sources, reduces product supplied by about 58,000 barrels per day
- A \$1-per-barrel increase in crude oil prices boosts domestic crude oil production by 90,000 barrels per day, based on the price impact component of the oil production range shown in Table 9 for the fourth quarter 1993.
- A 1-percent increase in heating degree-days increases product supplied by about 31,000 barrels per day; a 1-percent increase in cooling degreedays increases petroleum product supplied by about 8,000 barrels per day.

Outlook for Other Major Energy Sources

Natural Gas

Even with the economic recession, demand for natural gas grew by 3.3 percent in 1991 to 19.3 trillion cubic feet (Table 10). In 1992, demand for natural gas is expected to grow by 1.8 percent in the mid-price case, to 19.7 trillion cubic feet in the mid price case. The expected 1992 growth is concentrated in the residential sector and in the early months of the year. This expectation follows from the assumption of normal weather in 1992, which particularly contrasts with the relatively mild conditions observed during the early months of 1991. Gas demand in the electric utility sector in 1992 is expected to be down slightly, despite the expectation of continued low gas prices and generally plentiful availability. The reason for this seeming anomaly is that in 1992, despite a general tendency toward lower nuclear power availability, electricity from nuclear plants (and other non-fossil fuel sources) is expected to grow in key gas using regions, particularly the west coast.11 In 1993, gas demand in the industrial sector will increase by 4.4 percent and in the electric utility sector by about 2.5 percent, as real GNP growth rises by nearly 4 percent. In 1993, total gas consumption is projected to grow by 2.8 percent—to 20.2 trillion cubic feet.

Wellhead prices for natural gas fell by more than 9 percent in 1991, the result of several mild winter quarters in a row, and sluggish industrial activity. Underground storage levels have remained high in recent years and are expected to decline to more normal levels over the forecast period. Normal weather and a stronger economy in 1992 and 1993 should lead to moderate price increases at the wellhead and in the residential and electric utility sectors. However, relatively mild weather in December and January has resulted in depressed mid-winter wellhead gas prices to well below previous-year levels.

Rising demand for natural gas is projected to cause net imports to rise somewhat in 1992, but by a solid 16 percent in 1993. The Iroquois pipeline, which runs between Canada and Long Island, New York, began operations on December 1, 1991 at a flow rate of 143.6 million cubic feet per day. By November 1992, the pipeline will be transporting about 570 million cubic feet per day.

Dry natural gas production is expected to grow slowly in 1992, then grow by 1.2 percent in 1993, due to a slight rise in gas prices and a gradual reduction in excess inventories. In the mid-price case, natural gas wellhead prices are expected to rise in 1992 to \$1.60 per thousand cubic feet (Table 4), still below the 1990 level of \$1.72 per thousand cubic feet. Wellhead prices are expected to increase in 1993 to \$1.73 per thousand cubic feet as demand expands at a faster rate than production. Natural gas prices to utilities are expected to remain flat in 1992 and to rise by about 6 percent in 1993 after dropping by 8 percent in 1991.

Coal

Coal production is expected to increase by 2.1 percent (Table 11) in 1992. Higher utility and nonutility demand, and increased exports contribute to the growth in production in 1992. Demand growth in all sectors causes production to increase by 1.7 percent in 1993.

Increased demand in all sectors will cause total coal consumption to increase by 1.9 percent in 1992. The continued economic growth forecasted for 1993 will foster growth in the utility and nonutility sectors. Total demand is expected to increase by 2.9 percent in 1993.

Coal demand at electric utilities is projected to increase by 1.9 percent in 1992 (Figure 9). Decreases in petroleum, gas, and nuclear-fired generation and a 1.8 percent increase in electricity demand will offset the impact of the sluggish economy on coal demand. In 1993, a stronger economy, and growing electricity demand cause electric utility coal demand to increase by 2.5 percent.

The projected increase in economic activity in 1992 is expected to foster a significant rise in raw steel production, and result in a higher demand for coking coal.¹² The expected increase in coking coal demand is 5.9 percent in 1992. Continued economic growth will cause coal demand by coke plants to increase by 11.1 percent in 1993. Demand for coal in the retail and general industry sectors is expected to grow slightly in 1992 and 1993.

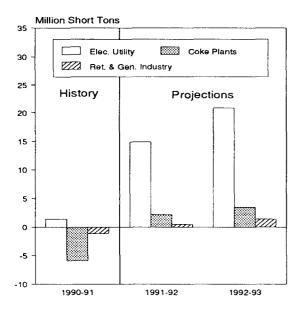


Figure 9. Annual Change in U.S. Coal Consumption

Sources: History: Energy Information Administration, Quarterly Coal Report (Third Quarter 1991). Projections: Table 11.

Electricity

Demand for electricity should continue to grow over the next 2 years, slowing in 1992 and accelerating in 1993 (Table 12). Total sales are expected to increase by 1.8 percent in 1992 and 2.8 percent in 1993, after an increase of 2.1 percent estimated for 1991. Colder temperatures during the first quarter and eventual improvement in the economy in the second half explain the increase in 1992. Cooler summer temperatures assumed for the mid-price case should result in an offset to growth during the second and third quarters of this year, however. Further improvement in the economy drives the growth in electricity sales in 1993. Sales levels for 1991 were boosted by abnormal weather; the upward impact on demand of warmerthan-normal temperatures during the second and third quarters outweighed the downward impact of warmerthan-normal temperatures during the first quarter. If weather had been normal in 1990 and 1991 and returns to normal in 1992 and 1993, growth in total electricity sales would be 1.2 percent in 1991, 2.0 percent in 1992, and 2.7 percent in 1993.¹³ This reveals the slowdown in 1991 demand growth due to the recession and the gradual increase in demand through 1993 due to the expected pickup in the economy.

The outlook for electricity demand among the sectors varies. Growth in demand in both the industrial and commercial sectors is expected to pick up each year from a low in 1991. Increases in manufacturing output and service sector employment drive this scenario. Electricity sales to the residential sector reflect the trend in the stock of housing and trends in use per household and are expected to increase at a more moderate pace between 1992 and 1993 than in the other sectors.

Some of the 1992 growth in electricity demand is expected to be met by nonutility sources and Canadian imports, but the majority is expected to be satisfied by increases in domestic generation from coal and hydroelectric plants. Electricity generation from petroleum and natural gas in 1992 is projected to remain flat despite the continued price weakness in the fossil fuel markets. Although total domestic electricity generation from nuclear plants declines slightly in 1992 this decline is not evenly distributed across regions of the country. Large declines in nuclear generation are projected in regions where the primary alternative generation source is coal (Mountain and North Central Relatively strong growth in nuclear regions). generation, on the other hand, is expected in regions which are more reliant on petroleum and natural gas than coal (Pacific and New England regions). Thus, electricity generation from coal increases in 1992 because of a net decrease in nuclear power and increases in coal capacity and utilization at existing coal-fired plants, while generation from oil and gas remains flat because of strong nuclear growth in large oil and gas using regions.

Growth in electricity generation will appear across the board in 1993. Hydroelectric power, which had been at below normal levels because of continuing effects of recent water levels lower than normal, is expected to return to normal levels by 1993. Higher nuclear power levels result from units coming back on line after being down for maintenance and refueling in 1992. Also, the Comanche Peak 2 nuclear unit is expected to start up in 1993.

Prices for residential electricity are projected to increase slightly over the next 2 years, much less than the rate of inflation. This is the result of small overall fuel cost increases, low capital costs, and very small projected increases in transmission and distribution costs.

References and Notes

- 1. This calculation is based on 15 years of heating degree-day data (first-quarter months) using the assumption that the data are normally distributed. The data and estimated parameters of the probability distribution are available upon request.
- 2. Based on internal Short-Term Integrated Forecasting System model calculations. Average U.S. population-weighted heating degree-days for the first quarter 1992, assuming that normal weather prevails, would be 10.9 percent higher than the level observed in the first quarter 1991. Simulation of the Unified Demand and Price Analysis Subsystem of the Short-Term Integrated Forecasting System with normal heating degree-days and with actual first-quarter 1991 heating degree-days indicates that the weather-related portion of the difference between first quarter 1991 and first quarter 1992 is estimated to be 380,000 barrels per day. These runs are available upon request.
- 3. Based on the rule of thumb that a 1-percent difference in heating degree-days translates into a difference of about 31,000 barrels per day in petroleum demand. A 15-percent warmer-than-normal first quarter (that is, 15 percent fewer heating degree days) implies approximately 465,000 barrels per day less petroleum demand. This represents a decrease of 116,000 barrels per day in petroleum demand in 1992, or more than one-half of the 220,000 barrels per day expected for the mid-price case.
- 4. Based on internal calculations from the Short-Term Integrated Forecasting System model.
- 5. Based on internal calculations from the Short-Term Integrated Forecasting System model.
- 6. For the high oil price case and the low oil price case, the macroeconomic situation is basically the same as in the mid-price case, except for minor effects on real growth and inflation of the changed oil prices. These macroeconomic variations are not reported in the *Outlook*. The more extreme variations of the key economic variables are reported in Table 2, and the effects of these variations are shown in Table 8.
- 7. Platt's Oilgram Price Report. McGraw-Hill, Inc. (New York, NY, various issues.)
- 8. Based on internal calculations from the Short-Term Integrated Forecasting System database.
- 9. The discussion that follows is based on projections obtained from simulation of the EIA Short-Term Integrated Forecasting System (STIFS). Details of these results are available upon request.
- 10. The oil demand sensitivity factors were derived from internal calculations of the Demand Models of the Short-Term Integrated Forecasting System. These factors can generally be derived from Table 8 in this *Outlook*. For the macroeconomic sensitivity, take one-half the total GNP difference in each year and divide by the midpoint value of the GNP range, then divide this percentage into one-half the petroleum demand difference and take the average of this calculation for 1992 and 1993. For the oil price sensitivity, divide the oil price range (the difference between high- and low-price cases) into the total petroleum demand difference, and take the average of this calculation for 1992 and 1993. For the weather sensitivity, calculate the average percentage change in heating degree-days and/or cooling degree-days by dividing one-half the difference in degree-days by the midpoint value of the degree-day range, and divide that calculated value into one-half the associated petroleum demand difference; then take the average of this calculation for 1992 and 1993. It should be noted that in contrast to the price and macroeconomic information in Table 8, the degree-day information applies to certain quarters only, specifically the first and fourth quarters for heating-degree days and the second and third quarters for cooling degree-days. The oil supply sensitivity was derived from Tables 9 and 4, and is calculated as the

ratio of the crude oil production range due to price differences for the fourth quarter 1993 (Table 9) and the corresponding oil price difference (\$4 per barrel in this case).

- 11. Regional electricity generation detail derived from internal Short-Term Integrated Forecasting System model calculations.
- 12. Steel production forecasts are produced by a sub-model in the Coking Coal Demand Model of the Short-Term Integrated Forecasting System.
- 13. Based on internal calculations from the Electricity Model of the Short-Term Integrated Forecasting System.

Table 2. Macroeconomic and Weather Assumptions

		199	91				199	92			199	93			Year	
Assumption	1st	2nd	3rd	4th	Case	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1991	1992	1993
Macroeconomic ^a																
Real Gross Domestic Product ^b					High	4109	4166	4239	4311	4354	4392	4421	4445		4206	4403
(billion 1982 dollars)	4067	4073	4095	4102	Mid Low	4093 4076	4125 4084	4172 4106			4302 4212			4084		4313 4223
Percentage Change from Prior Year	-1.0	-1.3	-0.7	0.2	High Mid Low	1.0 0.6 0.2	2.3 1.3 0.3	3.5 1.9 0.3	5.1 2.9 0.8		5.4 4.3 3.1	4.3 3.8 3.3	3.1 3.1 3.1	-0.7	3.0 1.7 0.4	
Real Gross National Product ^b (billion 1982 dollars)	4084	4080	4103	4109	High Mid Low	4116 4100 4083	4172 4131 4090	4247 4180 4113	4232	4276	4404 4314 4223	4344	4368	4094	4161	4416 4325 4235
Percentage Change from Prior Year	-0.8	-1.1	-0.7	-0.1	High Mid Low	0.8 0.4 0.0	2.3 1.3 0.2	3.5 1.9 0.2	5.2 3.0 0.9	4.3		4.4 3.9 3.4	3.2 3.2 3.2	-0.7	2.9 1.6 0.3	3.9
GNP Implicit Price Deflator ^b (index, 1982=1.000)	1.374	1.388	1.394	1.401	Mid	1.413	1.424	1.426 1.433 1.440	1.444	1.455	1.464	1.475	1.485	1.389	1.428	1.460 1.470 1.480
Percentage Change from Prior Year	4.1	4.0	3.2	3.2	High Mid Low	2.7 2.8 3.0	2.2 2.6 2.9	2.3 2.8 3.3	2.4 3.1 3.8			2.7 2.9 3.1	2.9 2.8 2.8	3.6	2.4 2.8 3.2	2.9
Real Disposable ^b Personal Income (billion 1982 dollars)	2888	2908	2911	2905	High Mid Low	2927 2914 2902	2969 2938 2907	2994 2944 2895	2960	2981	3073 3006 2940	3025	3048	2903	2939	3082 3015 2948
Percentage Change from Prior Year	-0.7	-0.3	-0.3	0.1	High Mid Low	1.4 0.9 0.5	2.1 1.0 0.0	2.9 1.1 -0.5	4.2 1.9 -0.3	2.3		3.3 2.8 2.2		-0.3	2.6 1.2 -0.1	
Index of Industrial Production (Mfg.) ^b	1.061	1.066	1.085	1.084	High Mid Low	1.090 1.080 1.070	1.086	1.144 1.104 1.064	1.125	1.143	1.157	1.167	1.173	1.074	1.099	1,215 1,160 1,105
Percentage Change from Prior Year	-2.8	-3.3	-2.4	-0.6	High Mid Low	2.7 1.8 0.8	4,1 1.9 -0.4	5.4 1.8 -1.9	8.7 3.8 -1.1	5.8	6.5	6.8 5.7 4.5	4.3	-2.3	5.2 2.3 -0.7	5.6
OECD Economic Growth														0.6	2.2	3.6
Weather ^c																
Heating Degree Days	2187 36	420 419	97 803	1605 87		2425 28	536 327	88 755	1669 63	2401 28			1669 63			4694 1172

^aMacroeconomic projections from the Data Resources, Inc., model forecasts are seasonally adjusted at annual rates and modified as appropriate to the mid world oil price case. The mid macroeconomic projections are then modified by the \$16 and \$22 world price cases and by various explicit economic assumptions, with \$16 world oil prices applied to the high macroeconomic case, and \$22 world oil prices applied to the low macroeconomic case.

^bSeasonally adjusted. Gross product and income reported at annualized rates.

Population-weighted average degree days. A degree day indicates the temperature variation from 65 degrees Farenheit (calculated as the simple average of the daily minimum and maximum temperatures) weighted by 1980 population.

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

Source: Historical data: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(92/01); U.S. Department of Commerce, Bureau of Economic Analysis, Survey of Current Business, December 1991; U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Monthly State, Regional, and National Heating/Cooling Degree Days Weighted by Population; Federal Reserve System, Statistical Release G.17(419) December 1991. Macroeconomic projections are based on DRI/McGraw-Hill Forecast CONTROL0192.

Table 3. International Petroleum Balance: Mid World Oil Price Case (Million Barrels per Day, Except Closing Stocks)

16.32 0.23 1.62 12.93 4.92 0.81 36.83 8.22 2.45 1.36 15.99 28.01	16.92 0.21 1.68 12.66 4.95 0.82 37.23 7.92 2.46 1.29	16.86 0.25 1.71 13.50 5.61 0.81 38.73	17.13 0.23 1.65 13.57 6.02 0.80 39.41	16.49 0.25 1.64 12.77 4.82 0.83 36.79	3rd 16.73 0.24 1.70 13.04 5.00	17.03 0.24 1.79 13.83	17.34 0.24 1.77 13.74	2nd 16.73 0.26 1.75 12.92	3rd 16.98 0.25 1.82	4th 17.27 0.25 1.91	1991 16.63 0.24 1.65	1992 16.85 0.24 1.70	1993 17.08 0.25
0.23 1.62 12.93 4.92 0.81 36.83 8.22 2.45 1.36 15.99	0.21 1.68 12.66 4.95 0.82 37.23 7.92 2.46	0.25 1.71 13.50 5.61 0.81 38.73	0.23 1.65 13.57 6.02 0.80 39,41	0.25 1.64 12.77 4.82 0.83	0.24 1.70 13.04	0.24 1.79 13.83	0.24 1.77	0.26 1.75	0.25 1.82	0.25	0.24	0.24	
0.23 1.62 12.93 4.92 0.81 36.83 8.22 2.45 1.36 15.99	0.21 1.68 12.66 4.95 0.82 37.23 7.92 2.46	0.25 1.71 13.50 5.61 0.81 38.73	0.23 1.65 13.57 6.02 0.80 39,41	0.25 1.64 12.77 4.82 0.83	0.24 1.70 13.04	0.24 1.79 13.83	0.24 1.77	0.26 1.75	0.25 1.82	0.25	0.24	0.24	
0.23 1.62 12.93 4.92 0.81 36.83 8.22 2.45 1.36 15.99	0.21 1.68 12.66 4.95 0.82 37.23 7.92 2.46	0.25 1.71 13.50 5.61 0.81 38.73	0.23 1.65 13.57 6.02 0.80 39,41	0.25 1.64 12.77 4.82 0.83	0.24 1.70 13.04	0.24 1.79 13.83	0.24 1.77	0.26 1.75	0.25 1.82	0.25	0.24	0.24	
0.23 1.62 12.93 4.92 0.81 36.83 8.22 2.45 1.36 15.99	0.21 1.68 12.66 4.95 0.82 37.23 7.92 2.46	0.25 1.71 13.50 5.61 0.81 38.73	0.23 1.65 13.57 6.02 0.80 39,41	0.25 1.64 12.77 4.82 0.83	0.24 1.70 13.04	0.24 1.79 13.83	0.24 1.77	0.26 1.75	0.25 1.82	0.25	0.24	0.24	
1.62 12.93 4.92 0.81 36.83 8.22 2.45 1.36 15.99	1.68 12.66 4.95 0.82 37.23 7.92 2.46	1.71 13.50 5.61 0.81 38.73 7.90	1.65 13.57 6.02 0.80 39.41	1.64 12.77 4.82 0.83	1.70 13.04	1.79 13.83	1.77	1.75	1.82				0.25
12.93 4.92 0.81 36.83 8.22 2.45 1.36 15.99	12.66 4.95 0.82 37.23 7.92 2.46	13.50 5.61 0.81 38.73 7.90	13.57 6.02 0.80 39.41	12.77 4.82 0.83	13.04	13.83				7.91	7.65		
4.92 0.81 36.83 8.22 2.45 1.36 15.99	4.95 0.82 37.23 7.92 2.46	5.61 0.81 38.73 7.90	6.02 0.80 39,41	4.82 0.83			13.74	12 92					1.81
0.81 36.83 8.22 2.45 1.36 15.99	0.82 37.23 7.92 2.46	0.81 38.73 7.90	0.80 39.41	0.83	5.00				13.20	14.01	13.14	13.30	13.46
36.83 8.22 2.45 1.36 15.99	37.23 7.92 2.46	38.73 7.90	39,41			5.92	6.14	4.91	5.10	6.04	5.36	5.44	5.55
8.22 2.45 1.36 15.99	7.92 2.46	7.90		36.79	0.83	0.85	0.82	0.85	0.85	0.87	0.81	0.83	0.85
2.45 1.36 15.99	2.46				37.55	39.66	40.04	37.42	38.20	40.34	37.82	38.35	39.00
2.45 1.36 15.99	2.46												
1,36 15.99			8.12	7.66	7.55	7.70	7.71	7.28	7.17	7.32	8.16	7.76	7.37
15.99	1.29	2.46	2.47	2.53	2.58	2.58	2.56	2.62	2.69	2.69	2.44	2.54	2.64
		1.32	1.26	1.23	1.16	1.20	1.20	1.17	1.11	1.14	1.34	1.21	1.15
28.01	16.05	16.66	16.68	16.58	16.62	17.31	17.30	17.19	17.23	17.96	16.26	16.80	17.42
	27.72	28.34	28.53	27.99	27.91	28.79	28.78	28.26	28.19	29.09	28.21	28.30	28.58
64.84	64.94	67.07	67.93	64.78	65.46	68.44	68.82	65.67	66.39	69.44	66.04	66.66	67.58
9.74	9.73	9.78	9.68	9 55	Q 4Q	9.60	9.51	9.34	9.34	9.42	9 79	9.58	9.40
													2.02
													4.40
													1.46
16.82	17.23	17.61	17.01	17.07	17.22	17.52	17.54	16.97	17.16	17.45	17.29	17.36	17.28
	05.53	05.04	05.07	05.00	05.00	07.40	07.45		07.40	00.40	05.00		07.04
													27.21
													8.67
													2.83
3.17	3.16	3.16											3.25
7.54	7.44	7.66	7.57	7.66	7.73	7.80	8.00		8.08	8.14	7.55	7.69	8.06
48.48	49.09	49.46	49.20	48.17	48.78	49.85	50.06	49.24	49.86	50.88	49.05	49.00	50.01
65.30	66.32	67.07	66.81	65.24	66.00	67.38	67.60	66.21	67.03	68.33	66.35	66.36	67.29
-0.82	-0.31	0.34	0.50	-0.40	-0.41	0.11	0.62	-0.32	-0.44	0.06	-0.03	-0.05	-0.02
													0.01
													-0.01
										_			0.30
-0.45	0.23	0.50	0.51	0.50	0.23	0.50	0.50	0.50	0.50	0.50	0.00	0.50	0.50
5.50	5.66	5.68	5.61	5.68	5, <i>7</i> 5	5.68	5.60	5.67	5.76	5.69	5.68	5.68	5.69
52.59	53.05	55.16	55.92	53.20	53.99	56.79	57.15	54.42	55.24	58.11	53.86	54.98	56.23
1.46	1,43	1.20	0.83	1.03	0.92	0.51	0.39	0.69	0.69	0.41		0.82	0.55
	2.01 3.63 1.44 16.82 24.47 10.52 2.80 3.17 7.54 48.48 65.30 -0.82 0.80 -0.02 -0.45 5.50	2.01 2.10 3.63 3.94 1.44 1.46 16.82 17.23 24.47 25.57 10.52 10.12 2.80 2.80 3.17 3.16 7.54 7.44 48.48 49.09 65.30 66.32 -0.82 -0.31 0.80 -1.36 -0.02 -1.67 -0.45 0.29 5.50 5.66 52.59 53.05	2.01 2.10 2.05 3.63 3.94 4.31 1.44 1.46 1.47 16.82 17.23 17.61 24.47 25.57 25.94 10.52 10.12 9.90 2.80 2.80 2.81 3.17 3.16 3.16 7.54 7.44 7.66 48.48 49.09 49.46 65.30 66.32 67.07 -0.82 -0.31 0.34 0.80 -1.36 -0.63 -0.02 -1.67 -0.30 -0.45 0.29 0.30 5.50 5.66 5.68 52.59 53.05 55.16	2.01 2.10 2.05 2.02 3.63 3.94 4.31 4.45 1.44 1.46 1.47 1.45 16.82 17.23 17.61 17.61 24.47 25.57 25.94 25.97 10.52 10.12 9.90 9.65 2.80 2.80 2.81 2.81 3.17 3.16 3.16 3.20 7.54 7.44 7.66 7.57 48.48 49.09 49.46 49.20 65.30 66.32 67.07 66.81 -0.82 -0.31 0.34 0.50 0.80 -1.36 -0.63 0.32 -0.02 -1.67 -0.30 0.81 -0.45 0.29 0.30 0.31 5.50 5.66 5.68 5.61 52.59 53.05 55.16 55.92	2.01 2.10 2.05 2.02 2.02 3.63 3.94 4.31 4.45 4.05 1.44 1.46 1.47 1.45 1.45 16.82 17.23 17.61 17.61 17.07 24.47 25.57 25.94 25.97 25.09 10.52 10.12 9.90 9.65 9.41 2.80 2.81 2.81 2.81 2.81 3.17 3.16 3.16 3.20 3.20 7.54 7.44 7.66 7.57 7.66 48.48 49.09 49.46 49.20 48.17 65.30 66.32 67.07 66.81 65.24 -0.82 -0.31 0.34 0.50 -0.40 0.80 -1.36 -0.63 0.32 -0.37 -0.02 -1.67 -0.30 0.81 -0.76 -0.45 0.29 0.30 0.31 0.30 5.50 5.66 5.68	2.01 2.10 2.05 2.02 2.02 2.02 3.63 3.94 4.31 4.45 4.05 4.25 1.44 1.46 1.47 1.45 1.45 1.45 16.82 17.23 17.61 17.61 17.07 17.22 24.47 25.57 25.94 25.97 25.09 25.86 10.52 10.12 9.90 9.65 9.41 9.18 2.80 2.81 2.81 2.81 2.81 2.81 3.17 3.16 3.16 3.20 3.20 3.20 7.54 7.44 7.66 7.57 7.66 7.73 48.48 49.09 49.46 49.20 48.17 48.78 65.30 66.32 67.07 66.81 65.24 66.00 -0.82 -0.31 0.34 0.50 -0.40 -0.41 0.80 -1.36 -0.63 0.32 -0.37 -0.42 -0.02 -1.	2.01 2.10 2.05 2.02 2.02 2.02 2.02 2.02 2.02 2.02 2.02 2.02 2.02 2.02 2.02 2.02 2.02 2.02 2.02 3.03 3.94 4.31 4.45 4.05 4.25 4.45 1.42 1.75 <td< td=""><td>2.01 2.10 2.05 2.02 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 3.20 <td< td=""><td>2.01 2.10 2.05 2.02 2.03 2.03 4.15 4.15 4.45 4.55 4.15 1.46 1.48 1.69 2.5.00 2.50 <</td><td>2.01 2.10 2.05 2.02 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 1.7.54 16.97 17.16 24.47 25.57 25.94 25.97 25.09 25.86 27.10 27.15 26.41 27.10 10.52 10.12 9.90 9.65 9.41 9.18 8.95 8.84 8.73 8.62 2.80 2.80 2.81 2.81</td><td>2.01 2.10 2.05 2.02 2.03 2.03 <th< td=""><td>2.01 2.10 2.05 2.02 2.03 2.03 3.03 3.04 4.35 4.55 3.99 1.44 1.46 1.47 1.47 1.42 1.72 17.16 17.45 17.16 17.45 17.22 17.52 17.54 1.46 1.42</td><td>2.01 2.10 2.05 2.02 2.03 2.05 2.09 2.03 2.03 2.03 1.046 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 <t< td=""></t<></td></th<></td></td<></td></td<>	2.01 2.10 2.05 2.02 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 3.20 <td< td=""><td>2.01 2.10 2.05 2.02 2.03 2.03 4.15 4.15 4.45 4.55 4.15 1.46 1.48 1.69 2.5.00 2.50 <</td><td>2.01 2.10 2.05 2.02 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 1.7.54 16.97 17.16 24.47 25.57 25.94 25.97 25.09 25.86 27.10 27.15 26.41 27.10 10.52 10.12 9.90 9.65 9.41 9.18 8.95 8.84 8.73 8.62 2.80 2.80 2.81 2.81</td><td>2.01 2.10 2.05 2.02 2.03 2.03 <th< td=""><td>2.01 2.10 2.05 2.02 2.03 2.03 3.03 3.04 4.35 4.55 3.99 1.44 1.46 1.47 1.47 1.42 1.72 17.16 17.45 17.16 17.45 17.22 17.52 17.54 1.46 1.42</td><td>2.01 2.10 2.05 2.02 2.03 2.05 2.09 2.03 2.03 2.03 1.046 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 <t< td=""></t<></td></th<></td></td<>	2.01 2.10 2.05 2.02 2.03 2.03 4.15 4.15 4.45 4.55 4.15 1.46 1.48 1.69 2.5.00 2.50 <	2.01 2.10 2.05 2.02 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 1.7.54 16.97 17.16 24.47 25.57 25.94 25.97 25.09 25.86 27.10 27.15 26.41 27.10 10.52 10.12 9.90 9.65 9.41 9.18 8.95 8.84 8.73 8.62 2.80 2.80 2.81 2.81	2.01 2.10 2.05 2.02 2.03 2.03 <th< td=""><td>2.01 2.10 2.05 2.02 2.03 2.03 3.03 3.04 4.35 4.55 3.99 1.44 1.46 1.47 1.47 1.42 1.72 17.16 17.45 17.16 17.45 17.22 17.52 17.54 1.46 1.42</td><td>2.01 2.10 2.05 2.02 2.03 2.05 2.09 2.03 2.03 2.03 1.046 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 <t< td=""></t<></td></th<>	2.01 2.10 2.05 2.02 2.03 2.03 3.03 3.04 4.35 4.55 3.99 1.44 1.46 1.47 1.47 1.42 1.72 17.16 17.45 17.16 17.45 17.22 17.52 17.54 1.46 1.42	2.01 2.10 2.05 2.02 2.03 2.05 2.09 2.03 2.03 2.03 1.046 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45 <t< td=""></t<>

^aOECD Europe includes eastern Germany.

blncludes production of crude oil (including lease condensates), natural gas plant liquids, other hydrogen and hydrocarbons for refinery feedstocks, refinery gains, alcohol, and liquids produced from coal and other sources.

Includes offshore supply from Denmark, Germany, the Netherlands, Norway, and the United Kingdom.

dExcludes stocks held in the Former CPEs (defined below).

^{*}Excludes demand from the Former CPEs (defined below).

Former CPEs: Albania, Bulgaria, Cambodia, China, Cuba, Czechoslovakia, Hungary, Laos, Mongolia, North Korea, Poland, Romania, the former Soviet Union, Vietnam, and Yugoslavia.

OECD: Organization for Economic Cooperation and Development

OPEC: Organization of Petroleum Exporting Countries

SPR: Strategic Petroleum Reserve

Notes: Minor discrepancies with other published EIA historical data are due to rounding. Historical values are printed in **boldface**, forecasts in *italics*. The forecasts were generated by the following simulations of the demand and supply subsystems of the Short-Term Integrated Forecasting System: D011392BBB11:01 and S012292BBB12:46 for the middle oil price case.

Sources: Energy Information Administration, International Petroleum Statistics Report, DOE/EIA-0520(91/12); and International Energy Annual 1989, DOE/EIA-0219(89); Organization for Economic Cooperation and Development, Annual and Monthly Oil Statistics Database through June 1991.

Table 4. Energy Prices (Nominal Dollars)

D	L	19	91		Price		199	92			199	93			Year	
Product	1st	2nd	3rd	4th	Range	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1991	1992	1993
Imported Crude Oil Price ^a (dollars per barrel)	19.40	18.06	18.89	18.97	Low Mid High	18.00	18.00	19.00	20.00	18.00 20.00 22.00	20.00	20.00	20.00	18.81	16.76 18.76 20.75	
Natural Gas Wellhead Price (dollars per thousand cubic feet)	1.67	1.43	1.39	1.70	Low Mid High	1.57 1.65 1.75	1.43 1.48 1.58	1.39 1.45 1.56	1.74 1.84 1.94	1.66 1.84 2.00	1.43 1.57 1.67	1.39 1.54 1.64	1.74 1.93 2.03	1.55	1.53 1.60 1.71	1.56 1.73 1.84
Petroleum Products																
Gasoline ^b (dollars per gallon)	1.21	1.19	1.19	1.18	Low Mid High	1.06 1.10 1.13	1.13 1.18 1.22	1.20 1.25 1.29	1.21 1.25 1.30	1.15 1.20 1.25	1.22 1.27 1.31	1.27 1.32 1.36	1.25 1.30 1.35	1.19	1.15 1.19 1.24	1.22 1.27 1.32
No. 2 Diesel Oil, Retail (dollars per gallon)	1.20	1.08	1.10	1.14	Low Mid High	1.07 1.11 1.16	1.04 1.09 1.14	1.07 1.12 1.17	1.14 1.19 1.24	1.15 1.19 1.24	1.12 1.17 1.22	1.12 1.17 1.22	1.17 1.22 1.27	1.13	1.08 1.13 1.18	1.14 1.19 1.24
No. 2 Heating Oil, Wholesale (dollars per gallon)	0.69	0.56	0.60	0.63	Low Mid High	0.56 0.61 0.66	0.52 0.57 0.62	0.53 0.58 0.63	0.58 0.63 0.68	0.60 0.65 0.70	0.56 0.62 0.67	0.55 0.61 0.66	0.59 0.64 0.69	0.62	0.55 0.60 0.65	0.58 0.63 0.68
No. 2 Heating Oil, Retail (dollars per gallon)	1.11	0.94	0.88	0.95	Low Mid High	0.93 0.97 1.02	0.87 0.92 0.97	0.85 0.90 0.95	0.95 1.00 1.05	1.00 1.05 1.10	0.94 0.99 1.04	0.89 0.95 1.00	0.98 1.03 1.08	1.01	0.92 0.97 1.02	0.98 1.03 1.08
No. 6 Residual Fuel Oil ^c (dollars per barrel)	17.50	12.68	13.03	14.47	Low Mid High	14.78	13.67	14.92	17.42	16.44 17.98 19.52	16.24	16.43		14.40	13.58 15.16 16.52	15.62 17.20 18.66
Electric Utility Fuels																
Coal (dollars per million Btu)	1.46	1.48	1.43	1.44	Low Mid High	1.44 1.45 1.48	1.44 1.46 1.50	1.42 1.45 1.49	1.42 1.45 1.50	1.43 1.46 1.51	1.44 1.47 1.52	1.42 1.46 1.51	1.42 1.46 1.51	1.45	1.43 1.45 1.49	1.46 1.46 1.5
Heavy Oil ^d (dollars per million Btu)	2.91	2.29	2.31	2.56	Low Mid High	2.31 2.55 2.79	2.31 2.55 2.78	2.46 2.69 2.92	2.63 2.85 3.07	2.61 2.83 3.05	2.55 2.77 2.99	2.55 2.77 2.99	2.59 2.81 3.02	2.50	2.40 2.65 2.87	2.57 2.80 3.01
Natural Gas (dollars per million Btu)	2.40	1.98	1.96	2.28	Low Mid High	2.14 2.20 2.26	1.98 2.05 2.12	1.94 2.01 2.08	2.26 2.34 2.41	2.35 2.41 2.48	2.11 2.17 2.24	2.04 2.11 2.18	2.35 2.42 2.49	2.12	2.04 2.12 2.19	2.17 2.25 2.32
Other Residential																
Natural Gas (dollars per thousand cubic feet)	5.56	6.22	7.16	5.78	Low Mid High	5.49 5.68 5.88	5.90 6.21 6.43	7.13 7.29 7.50	5.70 5.96 6.17	5.59 5.81 6.02	6.11 6.33 6.56	7.18 7.41 7.63	5.84 6.06 6.28	5.86	5.59 5.98 6.19	5.86 6.10 6.33
Electricity (cents per kilowatthour)	7.6	8.2	8.4	8.0	Low Mid High	7.5 7.7 7.9	8.2 8.4 8.6	8.4 8.6 8.8	8.0 8.2 8.4	7.7 8.0 8.2	8.3 8.5 8.7	8.6 8.8 9.0	8.1 8.3 8.5	8.0	8.0 8.2 8.4	8.2 8.4 8.6

^{*}Cost of imported crude oil to U.S. refiners.

^bAverage retail for all grades and services.

^{&#}x27;Retail residual fuel oil-average, all sulfur contents.

^dHeavy fuel oil prices include fuel oils No. 4, No. 5, and No. 6, and topped crude fuel oil prices.

Notes: Fourth quarter 1991 is estimated. Prices exclude taxes, except gasoline, residential natural gas, and diesel prices. Price ranges are derived by simulating all energy product price models in STIFS under the assumptions of the various world oil price cases, with macroeconomic and weather assumptions kept as in the mid case for all cases. Historical values are printed in **boldface**, forecasts in *italics*. The forecasts were generated by the following simulations of the demand and supply subsystems of the Short-Term Integrated Forecasting System: D011392BBB11:01 and S012292BBB12:46 for the middle oil price case; D011392HLL12:46 and S012292HLL13:43 for the low oil price case; and D011392LHS13:13 and S012292LHS14:19 for the high oil price case.

Sources: Historical data: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(92/01); and Petroleum Marketing Monthly, DOE/EIA-0380(92/01).

Table 5. Supply and Disposition of Petroleum: Low World Oil Price Case (Million Barrels per Day, Except Closing Stocks)

		199	91			199	2			199	93			Year	
Supply and Disposition	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1991	1992	1993
Supply															
Crude Oil Supply															
Domestic Production ^a	7.48	7.37	7.31	7.33	7.17	7.00	6.88	6.88	6.80	6.67	6.58	6.60	7.37	6.98	6.6
Alaska	1.88	1.77	1.76	1.78	1.77	1.70	1.63	1.65	1.57	1.52	1.48	1.51	1.80	1.69	1.5
Lower 48	5.60	5.60	5.55	5.55	5.40	5.30	5.25	5.23	5.22	5.15	5.10	5.09	5.57	5.29	5.1
Net Imports (Including SPR) ^b	5.19	5.94	6.04	5.52	6.11	6.38	6.69	6.32	6.54	6.79	7.11	6.86	5.68	6.38	6.8
Gross Imports (Excluding SPR)	5.30	6.08	6.14	5.63	6.22	6.47	6.73	6.44	6.63	6.90	7.17	6.98	5.79	6.46	6.9
SPR Imports	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.03	0.03	0.03	0.03	0.03	0.00	0.03	0.0
Exports	0.11	0.14	0.10	0.11	0.12	0.14	0.09	0.14	0.12	0.14	0.09	0.14	0.12	0.12	0.1
SPR Stock Withdrawn or Added (-)	0.19	0.00	0.00	0.00	0.00	-0.05	-0.05	-0.03	-0.03	-0.03	-0.03	-0.03	0.05	-0.03	-0.0
Other Stock Withdrawn or Added (-)	-0.16	-0.12	0.07 -0.01	0.09 -0.02	-0.14	-0.01 -0.02	0.05 -0.02	-0.02 -0.02	0.01 -0.02	0.02	0.00 -0.02	-0.01 -0.02	-0.03 -0.02	-0.03	0.0
Product Supplied and Losses	-0.02 0.18	-0.02 0.32	0.32	0.15	-0.02 0.16	0.15	0.14	0.15	-0.02	-0.02 0.15	0.15	0.15	0.24	-0.02 0.15	-0.0 0.1
Crude Oil Input to Refineries	12.86	13.50	13.73	13.07	13.28	13.45	13.70	13.29	13.44	13.59	13.79	13.56	13.29	13.43	13.6
Other Supply	4.00	4.64		1.5-	1.04	1.01	1.01	1.00	101	1.00	1.01	1.00	4.05	1.00	4.0
NGL Production	1.66	1.64	1.61	1.67	1.64	1.61	1.61	1.62	1.64	1.62	1.61	1.63	1.65	1.62	1.6
Other Hydrocarbon and Alcohol Inputs	0.08 0.02	0.09 0.02	0.08 0.01	0.09 0.02	0.10 0.02	0.10	0.15 0.02	0.20 0.02	0.16 0.02	0.11	0.16	0.21 0.02	0.09 0.02	0.14	0.1
Crude Oil Product Supplied	0.67	0.64	0.73	0.69	0.02	0.02 0.68	0.02	0.02	0.02	0.02 0.69	0.02 0.71	0.69	0.02	0.02 0.68	0.6
Processing Gain	0.44	1.14	1.13	1.08	0.85	1.16	1.11	1.01	0.86	1.24	1.27	1.05	0.95	1.03	1.1
Gross Product Imports	1.52	1.94	1.89	1.87	1.58	1.83	1.79	1.77	1.59	1.91	1.94	1.81	1.80	1.74	1.8
Product Exports	1.07	0.80	0.76	0.79	0.73	0.67	0.67	0.76	0.74	0.68	0.67	0.76	0.86	0.71	0.7
Product Stock Withdrawn or Added (-) ^d	0.65	-0.70	-0.38	0.24	0.61	-0.36	-0.41	0.20	0.61	-0.31	-0.41	0.11	-0.05	0.01	0.0
Total Product Supplied, Domestic Use Darn いっと	16.40	16.32	16.92	16.86	17.16	16.66	16.87	17.01	17.40	16.94	17.14	17.26	16.63	16.92	17.1
Motor Gasoline	6.83	7.36	7.41	7.14	6.97	7.33	7.37	7.23	6.94	7.32	7.38	7.26	7.19	7.22	7.2
Jet Fuel	1.50	1.38	1.51	1.51	1.47	1.39	1.49	1.54	1.54	1.46	1.56	1.62	1.47	1.47	1.5
Distillate Fuel Oil	3.11	2.79	2.76	3.06	3.50	2.93	2.75	3.27	3.62	3.06	2.88	3.37	2.93	3.11	3.2
Residual Fuel Oil	1.19	1.13	1.13	1.18	1.30	1.21	1.11	0.98	1.28	1.23	1.11	0.96	1.16	1.15	1.1
Other Oils Supplied ^e	3.79	3.65	4.12	3.98	3.93	3.80	4.16	4.00	4.02	3.87	4.21	4.05	3.89	3.97	4.0
Total P reduct Supplie d	16.43	16.32	16.92	16.86	17.16	16.66	16.87	17.01	17.40	16.94	17.14	17.26	16.63	16.92	17.1
Total Petroleum Net Imports	5.63	7.08	7.17	6.60	6.96	7.54	7.81	7.33	7.39	8.03	8.38	7.91	6.62	7.41	7.9
Closing Stocks (million barrels)															
Crude Oil (Excluding SPR) ^f	337	348	341	332	345	346	341	342	342	340	340	340	332	342	34
Total Motor Gasoline	211	215	217	221	224	217	220	225	228	218	220	228	221	225	22
Finished Motor Gasoline	173	177	177	184	182	178	179	183	186	179	180	185	184	183	18.
Blending Components	39	38	39	38	42	39	41	42	42	39	40	43	38	42	4
Jet Fuel	45	49	50	49	46	49	46	48	44	45	45	46	49	48	4
Distillate Fuel Oil	98	113	140	146	112	108	127	131	109	105	128	136	146	131	13
Residual Fuel Oil	43	43	48	48	43	46	48	45	43	47	46	45	48	45	4:
Other Oils ⁹	257	297	299	264	249	287	303	278	247	284	298	272	264	278	27.
Total Stocks (Excluding SPR)	990	1065	1093	1062	1019	1052	1085	1069	1013	1039	1077	1067	1062	1069	106
Crude Oil in SPR	568	568	569	569	569	573	578	580	582	585	587	589	569	580	58.
Total Stocks (Including SPR)	1559	1634	1662	1631	1587	1625	1663	1649	1595	1624	1664	1656	1631	1649	165

^aIncludes lease condensate.

^bNet imports equals gross imports plus SPR imports minus exports.

functudes finished petroleum products, unfinished oils, gasoline blending components, and natural gas plant liquids for processing.

^dIncludes an estimate of minor product stock change based on monthly data.

[&]quot;Includes crude oil product supplied, natural gas liquids, liquefied refinery gas, other liquids, and all finished petroleum products except motor gasoline, jet fuel, distillate, and residual fuel oil.

¹Includes crude oil in transit to refineries.

⁹Includes stocks of all other oils such as aviation gasoline, kerosene, natural gas liquids (including ethane), aviation gasoline blending components, naphtha and other oils for petrochemical feedstock use, special naphthas, lube oils, wax, coke, asphalt, road oil, and miscellaneous oils.

SPR: Strategic Petroleum Reserve

NGL: Natural Gas Liquids

Notes: Minor discrepancies with other EIA published historical data are due to rounding. Historical values are printed in **boldbace**, forecasts in *italics*. The forecasts were generated by the following simulations of the demand and supply subsystems of the Short-Term Integrated Forecasting System: D011392PSB11:34 and S2012292PSB12:54 for the low oil price case.

Sources: Historical data: Energy Information Administration, Petroleum Supply Annual 1990, DOE/EIA-0340(90)/1; Petroleum Supply Monthly, DOE/EIA-0109, various issues; and Weekly Petroleum Status Report, DOE/EIA-0208(various issues).

Table 6. Supply and Disposition of Petroleum: Mid World Oil Price Case (Million Barrels per Day, Except Closing Stocks)

	L	199	91		_	199	2	- 1		199	93			Year	
Supply and Disposition	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1991	1992	1993
Supply															
Crude Oil Supply															
Domestic Production*	7.48	7.37	7.31	7.33	7.29	7.17	7.05	7.10	7.04	6.94	6.86	6.90	7.37	7.15	6.93
Alaska	1.88	1.77	1.76	1.78	1.80	1.74	1.66	1.71	1.64	1.60	1.56	1.59	1.80	1.73	1.60
Lower 48	5.60	5.60	5.55	5.55	5.49	5.43	5.39	5.39	5.40	5.34	5.30	5.31	5.57	5.43	5.34
Net Imports (Including SPR) ^b	5.19	5.94	6.04	5.52	5.95	6.13	6.46	6.06	6.24	6.45	6.81	6.51	5.68	6.15	6.50
Gross Imports (Excluding SPR)	5.30	6.08	6.14	5.63	6.07	6.21	6.50	6.17	6.33	6.57	6.88	6.62	5.79	6.24	6.60
SPR Imports	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.03	0.03	0.03	0.03	0.03	0.00	0.03	0.00
Exports	0.11	0.14	0.10	0.11	0.12	0.14	0.09	0.14	0.12	0.14	0.09	0.14	0.12	0.12	0.12
SPR Stock Withdrawn or Added (-)	0.19	0.00	0.00	0.00	0.00	-0.05	-0.05	-0.03	-0.03	-0.03	-0.03	-0.03	0.05	-0.03	-0.03
Other Stock Withdrawn or Added (-)	-0.16	-0.12	0.07	0.09	-0.14	-0.01	0.05	-0.02	0.01	0.02	0.00	-0.01	-0.03	-0.03	0.0
Product Supplied and Losses	-0.02		-0.01	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02		-0.02	-0.02
Unaccounted-for Crude	0.18	0.32	0.32	0.15	0.16	0.15	0.14	0.15	0.15	0.15	0.15	0.15	0.24	0.15	0.15
Crude Oil Input to Refineries	12.86	13.50	13.73	13.07	13.25	13.37	13.63	13.24	13.38	13.51	13.77	13.51	13.29	13.37	13.55
Other Supply															
NGL Production	1.66	1.64	1.61	1.67	1.64	1.61	1.61	1.62	1.65	1.62	1.61	1.63	1.65	1.62	1.60
Other Hydrocarbon and Alcohol Inputs	0.08	0.09	0.08	0.09	0.10	0.10	0.15	0.20	0.16	0.11	0.16	0.21	0.09	0.14	0.16
Crude Oil Product Supplied	0.02		0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Processing Gain	0.67		0.73	0.69	0.65	0.67	0.69	0.68	0.66	0.68	0.70	0.69	0.68	0.67	0.68
Net Product Imports ^c	0.44	1.14	1.13	1.08	0.84	1.06	1.05	1.09	0.84	1.11	1,12	1.12		1.01 1.72	1.05 1.76
Gross Product Imports ^c	1.52	1.94 0.80	1.89 0.76	1.87 0.79	1.57 0.73	1.73 0.67	1.72 0.67	1.85 0.76	1.57 0.74	1.78 0.68	1.80 0.67	1.88 0.76	1.80 0.86	0.71	0.7
Product Exports Product Stock Withdrawn or Added (-) ^d	1.07 0.65		-0.38	0.79	0.73	-0.33	-0.41	0.17	0.74	-0.32	-0.41	0.10		0.71	0.7
.,															
Total Product Supplied, Domestic Use	16.40	16.32	16.92	16.86	17.13	16.49	16.73	17.03	17.34	16.73	16.98	17.27	16.63	16.85	17.08
Disposition															
Motor Gasoline	6.83	7.36	7.41	7.14	6.94	7.30	7.34	7.20	6.92	7.29	7.36	7.23	7.19	7.20	7.20
Jet Fuel	1.50		1.51	1.51	1.46	1.39	1.48	1.53	1.54	1.46	1,55	1.61	1.47	1.47	1.54
Distillate Fuel Oil	3.11	2.79	2.76	3.06	3.48	2.89	2.72	3.25	3.60	3.03	2.84	3.35	2.93	3.08	3.20
Residual Fuel Oil	1.19		1.13	1.18	1.32	1.11	1.04	1.05	1.28	1.10	1.03	1.04	1.16	1.13	1.1
Other Oils Supplied ^e	3.79	3.65	4.12	3.98	3.93	3.79	4.15	3.99	4.01	3.86	4.20	4.04	3.89	3.97	4.03
Total Product Supplied	16.43	16.32	16.92	16.86	17.13	16.49	16.73	17.03	17.34	16.73	16.98	17.27	16.63	16.85	17.08
Total Petroleum Net Imports	5.63	7.08	7.17	6.60	6.79	7.18	7.51	7.15	7.07	7.56	7.94	7.63	6.62	7.16	7.5
Closing Stocks (million barrels)															
Crude Oil (Excluding SPR)f	337	348	341	332	345	346	341	342	342	340	340	341	332	342	34
Total Motor Gasoline	211	215	217	221	223	216	219	223	227	217	221	226	221	223	226
Finished Motor Gasoline	173	177	177	184	181	177	179	182	185	179	180	184	184	182	184
Blending Components	39	38	39	38	41	39	41	41	42	39	41	42	38	41	42
Jet Fuel	45	49	50	49	46	49	46	47	44	45	45	46		47	46
Distillate Fuel Oil	98			146	111	107	126	130	108	104	127	135		130	
Residual Fuel Oil	43		48	48	43	44	46	47	43	46	44	47	48	47	47
Other Oils ⁹	257	297	299	264	249	286	303	277	247	285	298	272	264	277	27
Total Stocks (Excluding SPR)	990			1062	1017	1048	1081	1067	1010	1037	1075	1066			
Crude Oil in SPR	568		569	569	569	573	578	580	582	585	587	589		580	589
Total Stocks (Including SPR)	1559	1634	1662	1631	1586	1621	1659	1647	1592	1622	1662	1655	1631	1647	165

^{*}Includes lease condensate.

^bNet imports equals gross imports plus SPR imports minus exports.

^{&#}x27;Includes finished petroleum products, unfinished oils, gasoline blending components, and natural gas plant liquids for processing.

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

^{*}Includes crude oil product supplied, natural gas liquids, liquefied refinery gas, other liquids, and all finished petroleum products except motor gasoline, jet fuel, distillate, and residual fuel oil.

^{&#}x27;Includes crude oil in transit to refineries.

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

SPR: Strategic Petroleum Reserve

NGL: Natural Gas Liquids

Notes: Minor discrepancies with other EIA published historical data are due to rounding. Historical values are printed in **boldbace**, forecasts in *italics*. The forecasts were generated by the following simulations of the demand and supply subsystems of the Short-Term Integrated Forecasting System: D011392BBB11:01 and S012292BBB12:46 for the middle oil price case.

Sources: Historical data: Energy Information Administration, Petroleum Supply Annual 1990, DOE/EIA-0340(90)/1; Petroleum Supply Monthly, DOE/EIA-0109, various issues; and Weekly Petroleum Status Report, DOE/EIA-0208(various issues).

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

	1991				1992			1993				Year			
Supply and Disposition	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1991	1992	1993
Supply															
Crude Oil Supply															
Domestic Production ^a	7.48	7.37	7.31	7.33	7.38	7.28	7.20	7.28	7.24	7.15	7.11	7.18	7.37	7.28	7.17
Alaska	1.88	1.77	1.76	1.78	1.83	1.78	1.71	1.77	1.71	1.67	1.66	1.73	1.80	1.77	1.69
Lower 48	5.60	5.60	5.55	5.55	5.55	5.50	5.49	5.51	5.53	5.47	5.44	5.45	5.57	5.51	5.47
Net Imports (Including SPR) ⁶	5.19	5.94	6.04	5.52	5.83	5.98	6.23	5.71	5.88	6.18	6.51	6.05	5.68	5.94	6.15
Gross Imports (Excluding SPR)	5.30	6.08	6.14	5.63	5.95	6.07	6.27	5.83	5.98	6.29	6.57	6.16	5.79	6.03	6.25
SPR Imports	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.03	0.03	0.03	0.03	0.03	0.00	0.03	0.03
Exports	0.11	0.14	0.10	0.11	0.12	0.14	0.09	0.14	0.12	0.14	0.09	0.14	0.12	0.12	0.12
SPR Stock Withdrawn or Added (-)	0.19	0.00	0.00	0.00	0.00	-0.05	-0.05	-0.03	-0.03	-0.03	-0.03	-0.03	0.05	-0.03	-0.03
Other Stock Withdrawn or Added (-)	-0.16	-0.12	0.07	0.09	-0.14	-0.01	0.05	-0.02	0.01	0.02	0.00	-0.01	-0.03	-0.03	0.01
Product Supplied and Losses	-0.02	-0.02	-0.01	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
Unaccounted-for Crude	0.18	0.32	0.32	0.15	0.16	0.15	0.14	0.15	0.14	0.14	0.15	0.15	0.24	0.15	0.15
Crude Oil Input to Refineries	12.86	13.50	13.73	13.07	13.21	13.33	13.55	13.07	13.23	13.44	13.71	13.32	13.29	13.29	13.43
Other Supply															
NGL Production	1.66	1.64	1.61	1.67	1.64	1.61	1.61	1.63	1.65	1.62	1.62	1.63		1.62	1.63
Other Hydrocarbon and Alcohol Inputs	0.08	0.09	0.08	0.09	0.10	0.10	0.15	0.20	0.16	0.11	0.16	0.21	0.09	0.14	0.16
Crude Oil Product Supplied	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02		0.02	0.02
Processing Gain	0.67	0.64	0.73	0.69	0.65	0.67	0.69	0.67	0.66	0.68	0.70	0.67		0.67	0.68
Net Product Imports ^c	0.44	1.14	1.13	1.08	0.76	1.08	1.01	0.97	0.82	1.17	1.07	0.99	0.95	0.95	1.01
Gross Product Imports ^c	1.52	1.94	1.89	1.87	1.48	1.75	1.68	1.73	1.56	1.85	1.74	1.75	1.80	1.66	1.72
Product Exports	1.07	0.80	0.76	0.79	0.73	0.67	0.67	0.76	0.74	0.68	0.67	0.76	0.86	0.71	0.71
Product Stock Withdrawn or Added (-) ^d	0.65	-0.70	-0.38	0.24	0.65	-0.33	-0.39	0.21	0.61	-0.36	-0.40	0.15	-0.05	0.03	0.00
Total Product Supplied, Domestic Use	16.40	16.32	16.92	16.86	17.03	16.48	16.63	16.77	17.14	16.69	16.87	16.99	16.63	16.73	16.92
Disposition															
Motor Gasoline	6.83	7.36	7.41	7.14	6.92	7.28	7.32	7.17	6.89	7.27	7.33	7.21	7.19	7.17	7.18
Jet Fuel	1.50	1.38	1.51	1.51	1.46	1.38	1.47	1.53	1.53	1.45	1.54	1.60		1.46	1.53
Distillate Fuel Oil	3.11	2.79	2.76	3.06	3.44	2.87	2.68	3.17	3.51	2.97	2.79	3.27		3.04	3.13
Residual Fuel Oil	1.19	1.13	1.13	1.18	1.27	1.16	1.02	0.90	1.20	1.15	1.02	0.88		1.09	1.06
Other Oils Supplied®	3.79	3.65	4.12	3.98	3.94	3.79	4.14	3.99	4.00	3.85	4.20	4.03	3.89	3.96	4.02
Total Product Supplied	16.43	16.32	16.92	16.86	17.03	16.48	16.63	16.77	17.14	16.69	16.87	16.99	16.63	16.73	16.92
Total Petroleum Net Imports	5.63	7.08	7.17	6.60	6.59	7.06	7.24	6.68	6.71	7.35	7. 5 7	7.03	6.62	6.89	7.17
Closing Stocks (million barrels)															
Crude Oil (Excluding SPR) ^f	337	348	341	332	345	346	341	343	342	340	340	341	332	343	34
Total Motor Gasoline	211	215	217	221	222	215	218	222	226	216	220	225	221	222	225
Finished Motor Gasoline	173	177	177	184	181	176	178	181	184	178	179	183	184	181	183
Blending Components	39	38	39	38	41	39	40	41	42	38	41	42	38	41	42
Jet Fuel	45	49	50	49	46	48	46	47	44	45	45	45	49	47	45
Distillate Fuel Oil	98	113	140	146	110	106	124	127	106	103	124	132	146	127	132
Residual Fuel Oil	43	43	48	48	43	45	46	43	42	46	44	43	48	43	40
Other Oils ⁹	257	297	299	264	249	286	303	277	246	284	298	272	264	277	272
Total Stocks (Excluding SPR)	990	1065	1093	1062	1016	1046	1078	1060	1004	1035	1072	1058	1062	1060	1058
	568	568	569	569	569	573	578	580	582	585	587	589	569	580	589
Crude Oil in SPR															

^aIncludes lease condensate.

⁶Net imports equals gross imports plus SPR imports minus exports.

elncludes finished petroleum products, unfinished oils, gasoline blending components, and natural gas plant liquids for processing.

dIncludes an estimate of minor product stock change based on monthly data.

elncludes crude oil product supplied, natural gas liquids, liquefied refinery gas, other liquids, and all finished petroleum products except motor gasoline, jet fuel, distillate, and residual fuel oil.

^{&#}x27;Includes crude oil in transit to refineries.

⁹Includes stocks of all other oils such as aviation gasoline, kerosene, natural gas liquids (including ethane), aviation gasoline blending components, naphtha and other oils for petrochemical feedstock use, special naphthas, lube oils, wax, coke, asphalt, road oil, and miscellaneous oils.

SPR: Strategic Petroleum Reserve

NGL: Natural Gas Liquids

Notes: Minor discrepancies with other EIA published historical data are due to rounding. Historical values are printed in **boldbace**, forecasts in *italics*. The forecasts were generated by the following simulations of the demand and supply subsystems of the Short-Term Integrated Forecasting System: D011392WGB12:06 and S012292WGB13:01 for the low oil price case.

Sources: Historical data: Energy Information Administration, Petroleum Supply Annual 1990, DOE/EIA-0340(90)/1; Petroleum Supply Monthly, DOE/EIA-0109, various issues; and Weekly Petroleum Status Report, DOE/EIA-0208(various issues).

Table 8. **Petroleum Demand Sensitivities**

Demand	1992	1993
Determinant	Four Quarters*	Four Quarters ^a
Economic Activity		
Level of GNP ⁵	4,107 - 4,214	4,235 - 4,416
Resulting Petroleum Demand Difference ^c	0.31	0.55
Energy Prices		
Crude Oild	\$ 16.76 - \$2 0.74	\$18 - \$22
Resulting Petroleum.Demand Difference ^b		
All Energy Prices Change	.16	.13
Only Oil Prices Change	.19	.27
Weather		
Heating Degree Days ^e	3,780 - 4,477	3,758 - 4,450
Resulting Petroleum Demand Difference ^b	0.48	0.56
Cooling Degree Days ^d	999 - 1,184	999 - 1,184
Resulting Petroleum Demand Difference ^b	.12	.14

In the case of weather, calculations apply to certain quarters only as follows: for heating degree days, the average of first and fourth quarter results are used; for cooling degree-days, the average of second and third quarter results only are used.

Crude Oil Production Forecast Components Table 9. (Million Barrels per Day)

	High	Low		Difference					
	Price Case	Price Case	Total	Uncertainty	Price Impact				
United States	7.18	6.60	.58	.23	.36				
Lower 48 States	5.45	5.09	.36	.12	.25				
Alaska	1.73	1.51	.22	.11	.11				

Note: Components provided are for the fourth quarter 1993 from Tables 5 and 7. Totals may not add to sum of components due to independent rounding. Source: Energy Information Administration, Office of Oil and Gas, Reserves and Natural Gas Division.

^bReal gross national product, in billion 1982 dollars.

Petroleum demand ranges associated with varying each demand determinant (or set of demand determinants), holding other things equal, in million barrels per

day.

*Refiners' acquisition cost of import oil, in current dollars per barrel.

^{*}Heating and cooling degree days shown are national population-weighted.

Source: Energy Information Administration, Office of Energy Markets and End Use, Short-Term Integrated Forecasting System.

Table 10. Supply and Disposition of Natural Gas: Mid World Oil Price Case (Trillion Cubic Feet)

		19	91		1992				1993				Year		
Supply and Disposition	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1991	1992	1993
Supply															
Total Dry Gas Production	4.55	4.35	4.28	4.52	4.69	4.31	4.33	4.56	4.76	4.38	4.38	4.59	17.71	17.89	18.1
Net Imports	0.41	0.39	0.37	0.39	0.45	0.39	0.37	0.41	0.51	0.46	0.43	0.47	1.56	1.62	1.8
Supplemental Gaseous Fuels	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.03	0.03	0.02	0.02	0.03	0.11	0.10	0.1
Total New Supply	5.00	4.77	4.68	4.93	5.17	4.72	4.72	4.99	5.30	4.86	4.83	5.09	19.38	19.61	20.0
Underground Working Gas Storage															
Opening	3.07	1.91	2.55	3.19	3.03	1.92	2.51	3.35	2.96	1.87	2.46	3.30	3.07	3.03	2.9
Closing	1.91	2.55	3.19	3.03	1.92	2.51	3.35	2.96	1.87	2.46	3.30	2.91	3.03	2.96	2.9
Net Withdrawals ^b	1.04	-0.69	-0.65	0.34	1.11	-0.59	-0.83	0.39	1.09	-0.59	-0.83	0.39	0.04	0.07	0.0
Total Supply ^a	6.03	4.08	4.03	5.28	6.28	4.13	3.89	5.38	6.39	4.27	4.00	5.48	19.41	19.68	20.1
Balancing Item ^c	0.14	0,15	-0.11	-0.27	0.16	0.24	-0.05	-0.36	0.21	0.29	-0.04	-0.37	-0.08	-0.01	0.0
Total Primary Supply ^a	6.17	4.23	3.92	5.01	6.44	4.37	3.84	5.02	6.60	4.56	3.96	5.11	19.33	19.67	20.2
Consumption															
Lease and Plant Fuel	0.32	0.30	0.29	0.31	0.32	0.30	0.29	0.30	0.33	0.32	0.30	0.31	1.22	1.21	1.2
Pipeline Use	0.23	0.20	0.18	0.15	0.15	0.14	0.14	0.14	0.16	0.15	0.14	0.14	0.76	0.57	0.6
Residential	2.09	0.75	0.38	1.37	2.32	0.87	0.38	1.36	2.33	0.88	0.39	1.37	4.60	4.93	4.9
Commercial	1.13	0.51	0.37	0.78	1.21	0.57	0.38	0.79	1.24	0.58	0.39	0.80	2.79	2.95	3.0
Industrial	1.90	1.74	1.77	1.74	1.90	1.79	1.75	1.80	2.00	1.89	1.82	1.84	7.15	7.23	7.5
Electric Utilities	0.51	0.72	0.92	0.66	0.55	0.71	0.90	0.63	0.54	0.74	0.92	0.65	2.81	2.78	2.8
Subtotal	6.17	4.23	3.92	5.01	6.44	4.37	3.84	5.02	6.60	4.56	3.96	5.11	19.33	19.67	20.2

[&]quot;Excludes nonhydrocarbon gases removed.

^bNet withdrawals may vary from the difference between opening and closing stocks of gas in working gas storage due to book transfers between base and working gas categories, and other storage operator revisions of working gas inventories.

[&]quot;The balancing item represents the difference between the sum of the components of natural gas supply and the sum of components of natural gas disposition.

Notes: Minor discrepancies with other EIA published historical data are due to rounding. Historical values are printed in **boldface**, forecasts in *italics*. The forecasts were generated by the following simulations of the demand and supply subsystems of the Short-Term Integrated Forecasting System: D011392BBB11:01 and S012292BBB12:46 for the middle oil price case.

Sources: Historical data: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(92/01); Natural Gas Monthly, DOE/EIA-0130(92/01); and Electric Power Monthly, DOE/EIA-0226(92/01).

Table 11. Supply and Disposition of Coal: Mid World Oil Price Case (Million Short Tons)

		199	91			199	92		1993				Year		
Supply and Disposition	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1991	1992	1993
Supply															
Production	254	237	251	252	254	246	253	263	254	257	255	265	994	1015	1032
Primary Stock Levels ^d															
Opening	33	42	41	34	35	39	36	33	30	39	36	33	33	35	30
Closing	42	41	34	35	39	36	33	30	39	36	33	31	35	30	31
Net Withdrawals	-9	1	7	-1	-4	3	3	3	-9	3	3	2	-2	5	- 1
Imports	1	1	1	1	1	1	1	1	1	1	1	1	3	3	3
Exports	22	26	31	26	24	29	27	27	22	29	27	27	106	108	106
Total Net Domestic Supply	224	213	228	225	226	220	229	240	224	232	232	241	889	915	928
Secondary Stock Levels*															
Opening	167	167	172	164	165	162	172	163	173	164	178	163	167	165	173
Closing	167	172	164	165	162	172	163	173	164	178	163	168	165	173	168
Net Withdrawals	0	-4	8	-1	3	-10	9	-10	9	-14	15	-5	2	-8	5
Total Indicated Consumption	224	208	236	225	229	210	239	230	233	218	247	236	892	907	933
Consumption															
Coke Plants	9	8	9	8	9	9	9	9	10	10	10	10	34	36	40
Electric Utilities	189	183	208	194	199	182	210	198	201	188	217	203	774	789	809
Retail and General Industry	22	19	19	22	22	19	19	22	22	20	20	23	82	83	84
Subtotal	219	209	236	225	229	210	239	230	233	218	247	236	890	907	933
Total Disposition	224	208	236	225	229	210	239	230	233	218	247	236	892	907	933
•															
Discrepancy ⁹	4	-1	-1	0	0	0	0	0	0	0	0	0	2	0	(

^dPrimary stocks are held at the mines, preparation plants, and distribution points.

Sources: Historical data: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(92/01); and Quarterly Coal Report, DOE/EIA-0221(91/3Q).

^{*}Secondary stocks are held by users. Most of the secondary stocks are held by electric utilities.

Synfuels plant consumption in 1990 was 1.7 million tons per quarter, and is assumed to remain at that level in 1991 and 1992.

⁹Historical period discrepancy reflects an unaccounted for shipper and receiver reporting difference.

Notes: Rows and columns may not add due to independent rounding. Zeros indicate amounts of less than 500,000 tons. Historical values are printed in **boldface**, forecasts in *italics*. The forecasts were generated by the following simulations of the demand and supply subsystems of the Short-Term Integrated Forecasting System: D011392BBB11:01 and S012292BBB12:46 for the middle oil price case.

Table 12. Supply and Disposition of Electricity: Mid World Oil Price Case (Billion Kilowatthours)

_		199	91		1992					199	93			Year	
Supply and Disposition	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1991	1992	1993
Net Utility Generation															
Coal	377.3	367.5	416.7	391.8	399.8	366.0	421.2	397.6	404.5	378.6	433.8	408.3	1553.3	1584.7	1625.2
Petroleum	26.7	30.2	31.5	22.1	29.2	29.5	30.2	21.8	29.4	30.8	31.2	22.6	110.6	110.7	113.9
Natural Gas	48.3	68.3	86.9	60.1	51.6	67.1	84.8	59.6	51.2	69.5	87.2	61.3	263.5	263.1	269.4
Nuclear	151.4	142.6	171.1	145.0	159.1	138.5	163.9	145.4	160.0	139.3	164.8	147.2		606.9	
Hydroelectric	73.4	80.0	64.4	63.4	<i>75.5</i>	80.2	66.2	69.1	79.3	81.6	67.9	70.3	281.2		
Geothermal and Other®	2.5	2.5	2.5	2.9	3.1	3.1	3.2	3.2	3.2	3.2	3.3	3.3	10.4	12.5	12.9
Total Utility Generation	679.6	691.1	773.1	685.4	718.3	684.3	769.4	696.9	727.5	703.0	788.3	713.0	2829.2	2869.0	2931.8
Net Imports	2.4	3.5	7.2	7.3	5.1	5.7	7.2	5.1	6.3	7.0	8.8	6.3	20.4	23.1	28.4
Purchase from Nonutilities ^b	31.6	31.9	36.1	31.6	37.1	37.4	42.4	37.0	40.9	41.3	46.8	40.9	131.1	153.9	169.9
Total Supply	713.6	726.5	816.4	724.3	760.4	727.5	819.0	739.1	774.8	751.3	843.8	760.2	2980.7	3046.0	3130.1
Losses and Unaccounted For	39.6	65.7	57.7	55.6	47.9	67.3	61.7	57.6	48.4	69.3	63.5	58.9	218.6	234.5	240.0
Sales															
Residential	247.6	214.6	272.4	223.4	266.1	213.9	270.2	229.2	270.6	218.9	275.8	234.4	958.0	979.5	999.8
Commercial	179.9	186.4	213.7	186.0	190.5	187.1	217.2	190.6	195.6	194.4	225.7	198.7	766.0	785.4	814.4
Industrial	223.5	235.4	246.4	235.8	232.1	236.4	245.1	238.1	236.0	245.2	253.3	244.3	941.0	951.7	978.8
Other	22.9	24.6	26.2	23.5	23.9	22.8	24.7	23.5	24.1	23.5	25.5	24.0	97.1	94.8	97.0
Total	673.9	660.8	758.6	668.7	712.5	660.2	757.3	681.4	726.4	682.0	780.3	701.4	2762.1	2811.4	2890.1

^aOther includes generation from wind, wood, waste, and solar sources.

Notes: Values for purchases from nonutilities, net imports, and losses and unaccounted for are estimated for 1991. Minor discrepancies with other EIA published historical data are due to rounding. Historical values are printed in **boldface**, forecasts in *italics*. The forecasts were generated by the following simulations of the demand and supply subsystems of the Short-Term Integrated Forecasting System: D011392BBB11:01 and S012292BBB12:46 for the middle oil price case.

Sources: Historical data: Energy Information Administration, Monthly Energy Review, DOE/EIA-0035(92/01); and Electric Power Monthly, DOE/EIA-0226(92/01).

^bElectricity received from nonutility sources, including cogenerators and small independent power producers.

Balancing item, mainly transmission and distribution losses.

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1A. Title of Publication	1B. PUBLICATION NO	. 2. Date of Filing			
SHORT-TERM ENERGY OUTLOOK	7 4 3 0 6 0	4 9/12/91			
3. Frequency of Issue	3A. No. of Issues Published Annually	38 Annual Subscription Price Domestic \$ 14.00			
QUARTERLY		Foreign \$ 17.50			
4. Complete Mailing Address of Known Office of Publication (Street, Cin. Co. U. S. Department of Energy Energy Information Administration	1000 Independence Ave	nue, SW			
5. Complete Mailing Address of the Headquerters of General Business Offic U. S. Department of Energy	washington, DC 20585 so of the Publisher (Not printer) 1000 Independence Ave	nue. SW			
Energy Information Administration	Washington, DC 20585				
6. Full Names and Complete Mailing Address of Publisher, Editor, and Mana	iging Editor (This item MUST NOT be blank	1)			
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U. S. Department of Energy	1000 Independence Aver	nue, SW			
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