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# SHORT-TERM ENERGY OUTLOOK

QUARTERLY PROJECTIONS

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# **Short-Term Energy Outlook**

## **Quarterly Projections**

**Third Quarter 1992**

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

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## Preface

The Energy Information Administration (EIA) prepares quarterly, short-term energy supply, demand, and price projections 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 third quarter of 1992 through the fourth quarter of 1993. Values for the second quarter of 1992, however, are preliminary EIA estimates (for example, some monthly values for petroleum supply and disposition are derived in part from weekly data reported in the *Weekly Petroleum Status Report*) or are calculated from model simulations using the latest exogenous information available (for example, electricity sales and generation are simulated using actual weather data). The historical energy data are EIA data published in the *Monthly Energy Review*, *Petroleum Supply Monthly*, and other EIA publications. Minor discrepancies between the data in these publications and the historical data in this *Outlook* are due to independent rounding.

The cases are produced using the Short-Term Integrated Forecasting System (STIFS). The STIFS model is driven principally by three 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.



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# Highlights

## ***World Oil Market Supports Higher Prices***

During 1992, world oil prices recovered steadily from winter lows and in June were \$3 to \$4 above their January levels. Oil demand increases of 0.9 percent in 1992 and an additional 1.8 percent in 1993 are expected to keep steady pressure on world supply and to significantly reduce excess inventories. Oil prices are expected to hold at about current levels (approximately \$20 per barrel for imports delivered to U.S. refiners), assuming OPEC production rises in the last half of 1992. However, the price could fall to as low as \$17 per barrel if demand proves to be weaker than expected and Iraq is allowed to export at full capacity. Alternately, prices could rise to \$22 per barrel if demand is stronger and OPEC production does not increase to meet that demand.

## ***U.S. Petroleum Demand Increases***

Total 1992 petroleum demand in the United States is expected to end up about 170,000 barrels per day above 1991 levels (a 1.0-percent increase). Distillate fuel oil is expected to be a major source of domestic petroleum growth. Gasoline demand will show small overall increases in 1992 and 1993 as automobile efficiency gains fail to offset expected growth in miles traveled.

## ***Stocks of Oxygenates Adequate***

New clean air requirements for winter oxygenated gasoline become effective in November of 1992. Aggregate domestic inventories of oxygenates (methyl tertiary butyl ether (MTBE) and ethanol) appear to be growing at a rate sufficient to assure adequate availability of winter gasoline. Of a total projected oxygenate inventory requirement for October 1, 1992, which ranges from 21 to 33 million barrels; 18.6 million barrels of MTBE and 1.9 million barrels of ethanol had been accumulated by June 30, 1992.

## ***U.S. Crude Oil Production Decline Continues***

In the first half of 1992, U.S. crude oil production declined an average of about 180,000 barrels per day compared to 1991 rates. In the second half of 1992, the average decline will be greater due to accelerated declines in Alaskan output. A further decline of about 250,000 barrels per day is expected for 1993, assuming the mid-price case of \$20 per barrel holds. This outlook represents an improvement over last quarter's crude production picture, as somewhat higher prices keep production from slipping much below 7.0 million barrels per day.

## ***Natural Gas Prices Recover***

U.S. natural gas prices staged an impressive recovery from this past winter, following an unexpected downturn in 1991 and early 1992. If normal weather patterns develop, wellhead prices in the first quarter of 1993 are expected to be 24 percent higher than in the first quarter of 1992.

## ***Electricity Demand Growth Weak Due to Weather Effects***

Electricity demand during the first six months of 1992 was about flat compared to 1991, mainly because of milder first-quarter temperatures compared to the same period in 1991. This situation is expected to continue during the summer unless unusually hot conditions grip the country. With normal weather assumed and the economy on an upward track, relatively robust growth (close to 4 percent) is seen for 1993, particularly during the first half of the year.

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 Case <sup>a</sup>	Year				Annual Percentage Change		
		1990	1991	1992	1993	1990-1991	1991-1992	1992-1993
<b>Real Gross Domestic Product (GDP)</b>								
(billion 1987 dollars) .....	Mid	<b>4885</b>	<b>4849</b>	<b>4951</b>	<b>5090</b>	<b>-0.7</b>	<b>2.1</b>	<b>2.8</b>
<b>Imported Crude Oil Price</b>								
(nominal dollars per barrel) .....	Low			17.21	17.00		<b>-8.0</b>	<b>-1.2</b>
	Mid	<b>21.76</b>	<b>18.70</b>	<b>18.81</b>	<b>20.00</b>	<b>-14.1</b>	<b>0.6</b>	<b>6.3</b>
	High			19.82	22.00		<b>6.0</b>	<b>11.0</b>
<b>Petroleum Supply</b>								
Crude Oil Production <sup>b</sup>	Low			7.11	<b>6.68</b>		<b>-4.2</b>	<b>-6.0</b>
(million barrels per day) .....	Mid	<b>7.36</b>	<b>7.42</b>	7.20	<b>6.95</b>	<b>0.8</b>	<b>-3.0</b>	<b>-3.5</b>
	High			7.27	7.15		<b>-2.0</b>	<b>-1.7</b>
Total Petroleum Net Imports (including SPR)	Low			7.17	<b>8.02</b>		<b>8.1</b>	<b>11.9</b>
(million barrels per day) .....	Mid	<b>7.16</b>	<b>6.63</b>	<b>7.03</b>	<b>7.60</b>	<b>-7.4</b>	<b>6.0</b>	<b>8.1</b>
	High			6.91	7.26		<b>4.2</b>	<b>5.1</b>
<b>Energy Demand</b>								
Petroleum (Product Supplied)	Low			16.93	17.32		<b>1.3</b>	<b>2.3</b>
(million barrels per day) .....	Mid	<b>16.99</b>	<b>16.71</b>	<b>16.88</b>	<b>17.17</b>	<b>-1.6</b>	<b>1.0</b>	<b>1.7</b>
	High			16.84	17.03		<b>0.8</b>	<b>1.1</b>
Natural Gas (Consumption)	Low			19.97	20.70		<b>2.4</b>	<b>4.2</b>
(trillion cubic feet) .....	Mid	<b>18.71</b>	<b>19.40</b>	<b>20.08</b>	<b>21.18</b>	<b>3.7</b>	<b>3.5</b>	<b>5.5</b>
	High			20.15	21.40		<b>3.9</b>	<b>6.2</b>
Coal (Consumption)	Mid	<b>895</b>	<b>888</b>	<b>897</b>	<b>925</b>	<b>-0.8</b>	<b>1.0</b>	<b>3.1</b>
(million short tons) .....								
Electricity (Utility Sales) <sup>c</sup>	Mid	<b>2713</b>	<b>2759</b>	<b>2778</b>	<b>2880</b>	<b>1.7</b>	<b>0.7</b>	<b>3.7</b>
(billion kilowatthours) .....								
Gross Energy Consumption <sup>d</sup>	Mid	<b>81.3</b>	<b>81.8</b>	<b>83.0</b>	<b>85.7</b>	<b>0.6</b>	<b>1.5</b>	<b>3.3</b>
(quadrillion Btu) .....								
Thousand Btu per 1987 Dollar of GDP	Mid	<b>16.61</b>	<b>16.83</b>	<b>16.73</b>	<b>16.78</b>	<b>1.3</b>	<b>-0.6</b>	<b>0.3</b>

<sup>a</sup>Refers to the imported cost of crude oil to U.S. refiners assumed for the scenario depicted. In all cases on this table, the mid macroeconomic case and normal weather are used.

<sup>b</sup>Includes lease condensate.

<sup>c</sup>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.

<sup>d</sup>The 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 data are printed in bold, forecasts are in italic. The forecasts were generated by the following simulations of the demand and supply subsystems of the Short-Term Integrated Forecasting System: D070792BBB13:46 and S072892BBB11:41 for the middle oil price case; D070792PSB14:21 and S072992PSB09:43 for the low oil price case; and D070792WGB15:34 and S072992WGB09:54 for the high oil price case.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(92/07); *Petroleum Supply Monthly*, DOE/EIA-0109(92/07); *Petroleum Supply Annual 1991*, DOE/EIA-0340(91)/1; *Natural Gas Monthly*, DOE/EIA-0130(92/07); *Electric Power Monthly*, DOE/EIA-0226(92/07); and *Quarterly Coal Report*, DOE/EIA-0121(92/1Q). Macroeconomic projections are based on DRI/McGraw-Hill Forecast CONTROL0792.

# Introduction

Projections in the *Short-Term Energy Outlook (Outlook)* for the United States and other major energy consuming countries and by assumptions for weather and world oil prices. The following discussion reviews key input assumptions.

## World Oil Prices

This *Outlook* focuses on three world oil price cases (Figure 1 and Table 1). The world oil price is defined as the Imported Refiner Acquisition Cost of Crude Oil, which is the weighted average of the cost of crude oil imported into the United States by U.S. refiners. Price assumptions for 1992 range from an average of about \$17 per barrel in the low-price case to nearly \$20 per barrel in the high-price case. The mid-price case assumes an average of about \$19 in 1992, close to the 1991 average. For 1993, average prices range from \$17 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

In 1992, economic growth in countries in the Organization for Economic Cooperation and Development (OECD)<sup>1</sup> is expected to strengthen to an annual rate of 1.8 percent in the mid-price case, reflecting a gradual recovery from the slowdown of 1991 (Table 2). Growth in the OECD countries is expected to accelerate to 2.8 percent in 1993.

Growth in U.S. real gross domestic product (GDP) is expected to average 2.1 percent in 1992 and 2.8 percent in 1993, after a decline of 0.7 percent in 1991. The magnitude of change in crucial economic variables is uncertain. Any uncertainty in macroeconomic growth can significantly amplify the uncertainty of the energy forecasts. The possibility of extreme weather also heightens the overall uncertainty of these forecasts. The mid-macroeconomic case and normal weather assumptions are used to generate the mid-price U.S. energy forecasts, but the high- and low-macroeconomic cases and abnormal weather cases are also considered. The range of growth in these macroeconomic cases is represented by a variation in growth in gross domestic

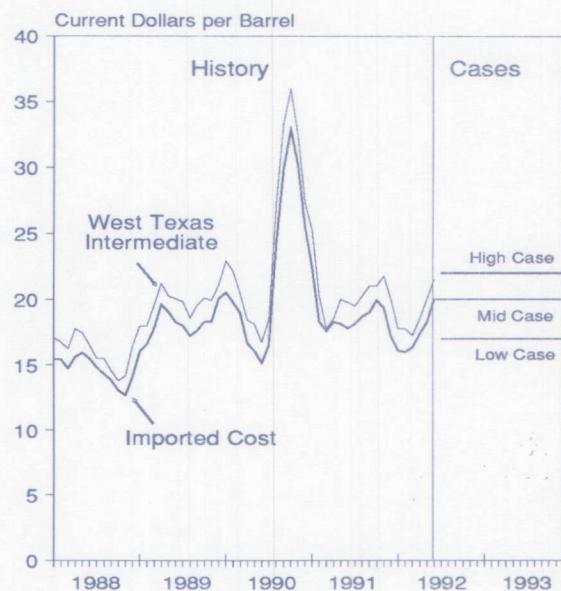


Figure 1. U.S. Crude Oil Prices

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

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

product of roughly 1 percentage point above and below the mid-case rate over the forecast period. The weather cases assume deviations above and below normal that correspond to one-half of the greatest quarterly deviation from normal for heating and cooling degree-days over the last 15 years. The section titled "Petroleum Demand and Production Sensitivities" summarizes the sensitivity of petroleum demand in the United States to variations in the economy and weather.

Average heating degree-days for the nation fell about 11 percent below normal for the first half of 1992 (using leap year normal of 2,961 for heating degree days as a comparison) implying a relatively mild first and second quarter. This caused lower use of energy than expected, particularly in the electric utility and residential sectors. Greatly increased energy use is expected in early 1993, particularly the first quarter because of the normal weather assumption.



# Outlook for Petroleum

## Demand

Demand for petroleum, as discussed in this report, is synonymous with "petroleum product supplied," which is defined as the disappearance from primary supply of petroleum products, such as motor gasoline, heating oil, and other products.<sup>2</sup>

Based on supply and demand patterns that reflect the mid-price case, a modest increase in world demand for petroleum products is expected in 1992, followed by a larger increase in 1993. World demand is expected to increase to 66.9 million barrels per day in 1992 and to 68.1 million barrels per day in 1993 (Table 3). The major factors accounting for the growth in 1992 and 1993 are an economic recovery in 1992, which accelerates modestly in 1993, and only a moderate increase in the world oil price from 1992 to 1993.

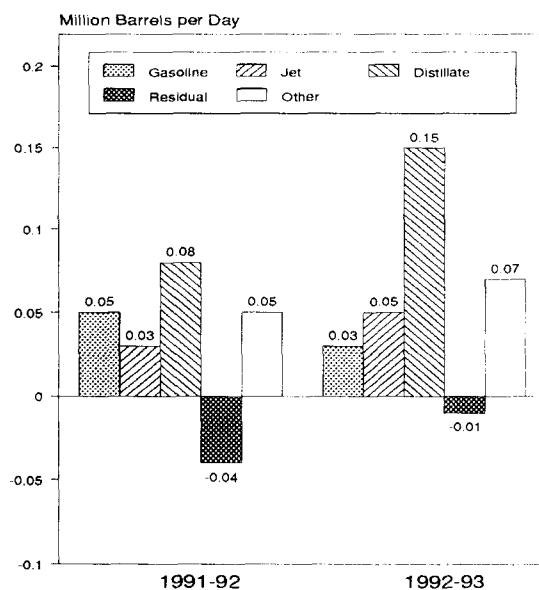
Petroleum demand is expected to increase in most regions of the world in both 1992 and 1993. The former Soviet Union is the major exception, where declines in demand are expected due to the declining economic activity as the republics struggle to shift away from centrally planned economies. In 1992, the Organization for Economic Cooperation and Development (OECD) demand for petroleum is expected to average 38.3 million barrels per day, up 360,000 barrels per day from the 1991 level. This estimate is based on the assumption that OECD economic growth will be 1.8 percent in 1992 (Table 2). About 80 percent 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 580,000 barrels per day, as Japan and Germany join the ranks of OECD countries with recovering economies.

Demand growth in non-OECD countries is expected to be constrained principally by declines in demand in the former Soviet Union of 700,000 barrels per day in 1992 and 520,000 barrels per day in 1993. Demand in all other non-OECD regions is expected to increase by 950,000 barrels per day in 1992 and about 1.15 million barrels per day in 1993, with the strongest growth expected in South Korea, China, and other newly industrialized nations in the Pacific Rim area.<sup>3</sup> Overall, non-OECD demand is expected to increase by 250,000 barrels per day in 1992, to 28.5 million barrels per day, and by 630,000 barrels per day in 1993.

Petroleum demand in the United States is expected to increase by about 170,000 barrels per day in 1992 compared to 1991 levels, or a 1.0-percent increase (Table 6). This rate of increase is approximately equal to the rate during the first half of the year, when demands for motor gasoline and other petroleum products were particularly strong compared to year-earlier levels. Demand was low in the first quarter of 1991 due to disruptions associated with Desert Storm. Gasoline demand is expected to show only a small increase in 1992 despite a strong first quarter. Preliminary second-quarter gasoline demand estimates are down slightly compared to the same period in 1991. Summer demand is not expected to be much different from last year either, at about 7.4 million barrels per day, while demand in late 1992 and into 1993 is expected to pick up modestly, as the gradual improvement in the economy begins to strengthen and as automobile efficiency gains fail to offset growth in vehicle miles traveled. Distillate fuel oil is expected to be a major source of domestic petroleum growth this year; demand increased by an estimated 90,000 barrels per day in the first 6 months. The assumption of normal weather and the continuation of economic growth later this year accounts for continued growth in distillate fuel oil (and other major products) for the rest of 1992.

In 1993, an additional 290,000 barrels per day of petroleum demand over 1992 levels is expected, as a return to normal weather and the economic recovery strengthen fuel use (Table 6). The expectation of continuing declines in real fuel prices is also expected to contribute to demand growth, and steady increases in transportation fuels are expected to lead the way in 1993. An increase of a combined 230,000 barrels per day for motor gasoline, jet fuel, and distillate fuel oil (largely diesel fuel) contributes to the 1993 growth in petroleum use (Figure 2).

In the short term, deviations from normal weather patterns can account for much of the forecasting error for petroleum demand. However, the likelihood of particular deviations occurring diminishes as more and more severe conditions are considered. For example, the probability of the first quarter being 10 percent warmer than normal is 14 percent; the probability of it being 15 percent warmer than normal is 4 percent.<sup>4</sup> Should the first quarter of 1993 be 15 percent warmer (colder) than normal (15 percent fewer (more) heating



**Figure 2. Annual Change in U.S. Petroleum Demand by Fuel**

Source: Table 6.

degree-days), total petroleum demand during the first quarter would be about 495,000 barrels per day below (above) the level expected if temperatures are normal.<sup>5</sup> Variations in economic growth also impact petroleum projections. If economic growth followed the low growth path shown in Table 2, petroleum demand in 1993 would be about 250,000 barrels per day below the mid-price case average.<sup>6</sup> When the world oil price is assumed to range from \$17 to \$22 per barrel over the forecast period, the corresponding demand variation is projected to equal 290,000 barrels per day relative to the mid-price case for 1993.<sup>7</sup>

## Supply

World oil production is expected to decrease by 90,000 barrels per day in 1992 from the 1991 level of 66.47 million barrels per day (Table 3). This minor net change in world oil supply, however, masks significant, offsetting swings in production in major producing regions. A large decline in the former Soviet Union (1.23 million barrels per day this year) is expected to more than offset significant production increases in the Organization of Petroleum Exporting Countries (OPEC). Changes in other non-OECD countries will be modest.

Increases in oil production by OPEC lead the way for significant global gains in supply in 1993. World production is expected to increase by more than 1.2 million barrels per day next year, the result of an increase of 1.9 million barrels per day by OPEC. A decline of 930,000 barrels per day in production in the former Soviet Union will more than offset increases in production from the North Sea, Mexico, and other non-OECD countries.

For the mid-price case, the outlook for domestic oil production remains bearish, with crude oil production expected to decline at an increasing rate over the forecast period. Production is projected to drop by 220,000 barrels per day to 7.20 million barrels per day in 1992 and by an additional 250,000 barrels per day to 6.95 million barrels per day in 1993. U.S. crude oil production dropped by an average of about 180,000 barrels per day in the first half of 1992 compared to the same period in 1991. In the second half of 1992, production should continue downward, largely due to accelerated declines in Alaskan output. However, this outlook represents an improvement over last quarter's crude oil production rate, as somewhat higher prices keep production from slipping much below 7.0 million barrels per day. The Point Arguello field in the Pacific Federal Outer Continental Shelf began production during the second quarter of 1991. Its contribution is assumed to be 35,000 barrels per day for the mid-price case.<sup>8</sup> The Point Arguello field could produce at several times this rate if problems involved in transporting oil to the refineries were resolved.

Production in Alaska is expected to decrease by 90,000 barrels per day in 1992 and by 140,000 barrels per day in 1993. This decline in production is primarily associated with the Prudhoe Bay oil field. The larger decline in 1993 occurs because the large Kuparuk River field is expected to decline more in 1993 than in 1992.

According to the Baker-Hughes rotary rig count, a measure of oil and gas resource development activity and an indicator of prospective well completions, the rig count for 1991 averaged 860 and was down to 796 in December 1991.<sup>9</sup> The rotary rig count continued to decline during 1992, and the average for the first 5 months was about 28 percent below the average for the same period last year. Rig activity is expected to improve during the latter part of 1992 and into 1993, but is not expected to return to 1991 levels.

Net imports of crude oil and petroleum products are expected to increase over the forecast period because of higher product demand and lower domestic crude oil production. While domestic crude oil production is

projected to decline by 470,000 barrels per day between 1991 and 1993, net imports of crude oil are expected to increase by about 860,000 barrels per day over this period (Table 6). Net imports of refined products are expected to grow by about 110,000 barrels per day between 1991 and 1993 reaching 6.2 percent of total demand in 1993.

## World Oil Prices

The world oil price is ultimately affected by supply, demand, and other factors such as 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 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. Oil consumption could drop sharply if domestic prices for oil products are finally decontrolled and allowed to move to world market levels. Oil production is more dependent on the amount of foreign investment in the oil sector. In the short-term, little can be done by domestic production associations to arrest the decline in oil production. Revenues earned by the domestic production associations are expected to continue to remain inadequate to pay for the vast quantities of oil field equipment necessary to restore currently inoperable facilities and to develop new resources.
- 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. OPEC production could also be affected by domestic political problems in Algeria and Venezuela and by the ongoing dispute between Libya and the United Nations Security Council.

The key uncertainties affecting oil demand over the forecast period are the magnitude of economic growth,

especially in the United States, Japan, and Western Europe, and the severity of winter weather.

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

- Excess production capacity.* Excess capacity is expected to increase in 1992, but it may decrease in 1993 (Figure 3). Capacity restoration in Kuwait and capacity additions in some other OPEC countries are expected to more than offset increases in actual OPEC production in 1992 but will probably fall short of such increases in 1993. Kuwait (including the Neutral Zone) will have the capacity to produce almost 2.0 million barrels per day by the end of 1993,<sup>10</sup> but Iraqi capacity will continue to be constrained by the United Nations sanctions.
- Stocks.* The market economies currently have enough stocks readily available to meet petroleum demand for 29 days (Figure 4), based on anticipated demand levels, similar to the situation at the same time in 1991. This represents usable commercial stocks only, and excludes strategic government stocks of between 850 and 890 million barrels and the minimum inventory levels that must be maintained for normal operations of about 3.1 billion barrels.<sup>11</sup>

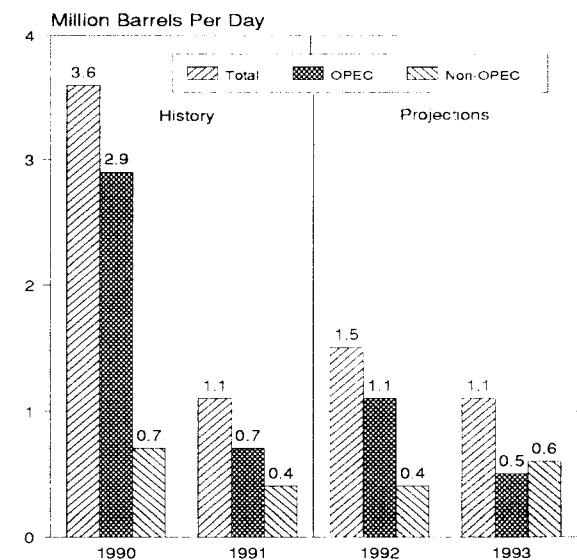


Figure 3. World Excess Oil Production Capacity

Note: Excludes any excess capacity from Iraq.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy Markets and Contingency Information Division.

During the second quarter of 1992, concerns grew regarding the possible decline of stocks in the latter half of the year. The concern was heightened by recognition that the small level of world excess production capacity (outside of Iraq) might not be employed to meet demand needs. As a result, world oil prices rose during the second quarter of 1992.

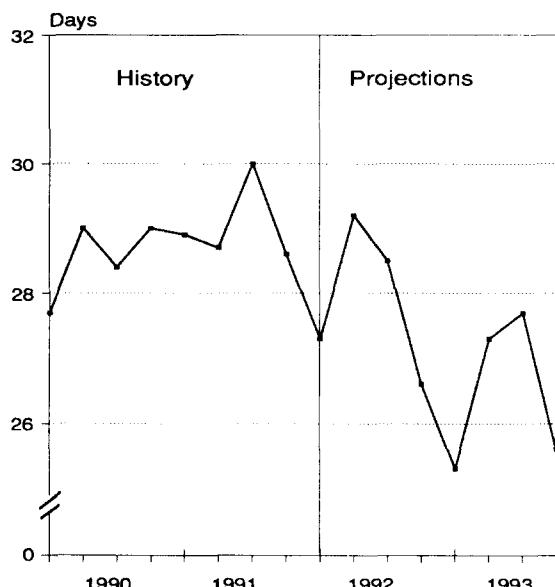
Future price developments remain uncertain, thus, three world oil price cases are developed (Figure 1 and Table 4) for analyses. These cases are used to derive a mid-price case projection and alternative projections for domestic petroleum supply and demand. The three world oil price cases are meant to represent the range over which prices could vary during the forecast period. In the low-price case, the world oil price is about \$17 per barrel in 1992 and 1993. In the mid-price case, the price is about \$19 per barrel in 1992 and \$20 per barrel in 1993. In the high-price case, the world oil price increases to almost \$20 per barrel in 1992 and to \$22 per barrel in 1993.

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

- Net oil exports from the former Soviet Union will decrease by 530,000 barrels per day in 1992, to 1.6 million barrels per day, and by another 410,000 barrels per day in 1993, as production declines continue to exceed reductions in oil consumption (Table 3).
- Iraqi production will be limited to domestic requirements plus a small volume of exports to Jordan. This assumes that 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 (including its share of the Neutral Zone) will double during 1992, from about 700,000 barrels per day in the first quarter of 1992 to about 1.4 million barrels per day in the fourth quarter. By the fourth quarter of 1993, production is expected to exceed 1.9 million barrels per day.<sup>12</sup>
- The OPEC members will agree to increase the OPEC production ceiling and will make the production capacity additions necessary for OPEC production to attain the rates projected.

The low-price case assumes that Iraq is allowed to resume exports at a rate of up to 1.5 million barrels per day (which is 1 million barrels per day more than is allowed under the current United Nations proposal) and that other OPEC members do not restrain their production to accommodate these 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 could be 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. Production from other OPEC countries is expected to be held 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.



**Figure 4. Days Supply of Market Economies Commercial Petroleum Stocks**

Note: Represents usable stocks; excludes strategic stocks and minimum operating inventory.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy Markets and Contingency Information Division.

## U.S. Petroleum Product Prices

Domestic petroleum product price variations reflect primarily a pass-through of differences in crude oil costs (Table 4). However, some price variations reflect differences in supply and demand conditions for particular product markets.

Gasoline prices are projected to be subject to additional increases during winter 1992-1993 due to higher supply costs associated with manufacturing, storing, and transporting gasoline designed to meet Federal requirements for oxygenate content. Although the supply of oxygenates appears to be adequate, the estimated price increase caused by implementation of these rules is about 3 to 5 cents per gallon in the affected regions.<sup>13</sup> This will cause national prices to increase by an average 1 to 2 cents per gallon from November through February. Diesel fuel prices are expected to increase by an average of 6 cents per gallon between the fourth quarter of 1992 and the fourth quarter of 1993. More than 80 percent of this increase is due to an expected increase of 5 cents per gallon during the last quarter of 1993 due to lower sulfur content requirements (based on industry estimates which range from 4 to 7 cents per gallon).<sup>14</sup>

The mid-price case assumes motor gasoline prices will rise 1.7 percent in 1992 reflecting State and local tax increases and the Clean Air Act oxygenate effect, as average annual crude oil prices remain close to 1991 levels (Table 4). In 1993, crude oil price increases, the continuing cost pass-throughs of the Clean Air Act, and additional expected increases in State and local taxes<sup>15</sup> should add about 6 cents per gallon to the annual average price over the 1992 average price.

Annual average residential heating oil prices are projected to fall in 1992, primarily because of the depressing effect of high inventories at the end of last year combined with exceptionally warm winter temperatures this year (Tables 4 and 6). However, rising crude oil prices and cool spring temperatures in the second quarter of 1992 kept prices from falling below the anticipated seasonal price drop. The 1993 price increase assumes higher world oil prices, normal weather, and no excess distillate inventories. The average annual price for retail residual fuel oil is expected to be down from 1991 levels in 1992, due to the warm first quarter winter weather, the downward price pressure from natural gas, and a generally sluggish economy. In 1993, a more robust economy and rising natural gas and crude oil prices, along with normal weather should cause prices to rise by about \$2.40 per barrel.

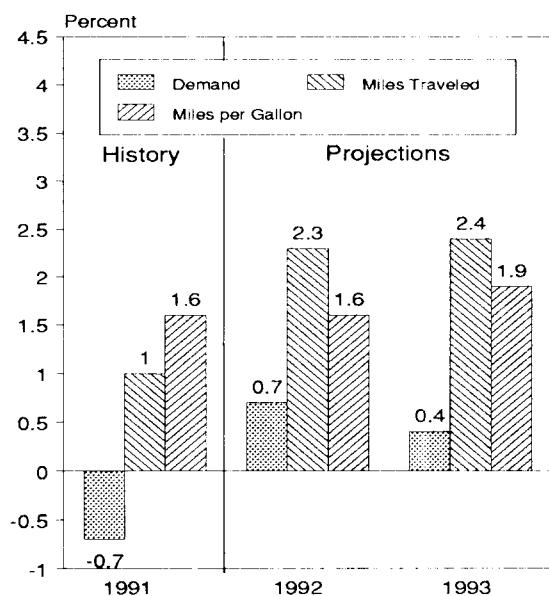
The alternative price cases in Table 4 reflect the differences in petroleum product prices resulting from high and low price assumptions for imported crude oil. The low-price case assumes crude oil prices decrease to about \$17 per barrel in 1992 and 1993. The high-price case assumes crude oil prices increase to about \$20 per barrel in 1992 and to \$22 per barrel by 1993.

## U.S. Petroleum Demand

### **Motor Gasoline**

Reversing a 3-year decline, motor gasoline demand is projected to rise by 0.7 percent in 1992 (Table 6 and Figure 5).<sup>16</sup> That growth results from a 2.3-percent increase in highway travel brought about by the economic recovery counterbalanced by only a 1.6-percent rise in fuel efficiency. In 1993, motor gasoline demand is projected to increase by 0.4 percent (despite continued growth in highway travel of 2.4 percent).

Preparations by domestic gasoline suppliers for the upcoming winter gasoline season, which will bring into effect the first phase of the oxygenated gasoline requirements for carbon monoxide non-attainment areas, appear to be on track for providing adequate supplies of oxygenates this fall.<sup>17</sup> Aggregate domestic inventories of oxygenates (methyl tertiary butyl ether (MTBE) and ethanol) appear to be growing at a rate sufficient to provide adequate availability of oxygenated



**Figure 5. Annual Change in U.S. Motor Gasoline Market Indicators**

Sources: **History:** Energy Information Administration, *Petroleum Supply Monthly* (July 1992); Federal Highway Administration, *Traffic Volume Trends*. **Projections:** Table 6 and internal calculations from the Short-Term Integrated Forecasting System.

gasoline, which is required to meet new clean air requirements for the upcoming November to March period. To meet the oxygenate shortfall during the oxygenated gasoline season, MTBE inventory of between 21 and 33 million barrels will be required by October 1, 1992.<sup>18</sup> By June 30, 1992, MTBE inventory totalled 18.6 million barrels. Ethanol inventory is also increasing with 1.9 million barrels in storage on June 30, 1992.<sup>19</sup>

The gasoline demand projections imply a moderation in fuel economy trends from those observed during the 1980's, and recent data<sup>20</sup> has resulted in a reduction in assumed near-term automobile efficiency growth from the previous *Outlook*. Three factors account for much of the general shift to lower fuel efficiency growth. First, the energy content in oxygenated fuel is lower than that for conventional gasoline, resulting in lower efficiency growth in late 1992 and 1993.<sup>21</sup> Second, the average efficiency of automobiles which are being scrapped from the fleet today is not as far below the average efficiency of the new cars replacing them as was the case several years ago. Third, the absence of fuel economy increases in new vehicles during the last few years is expected to add to the tendency of average automobile efficiency to rise more slowly than the average rate seen over the last several years.<sup>22</sup>

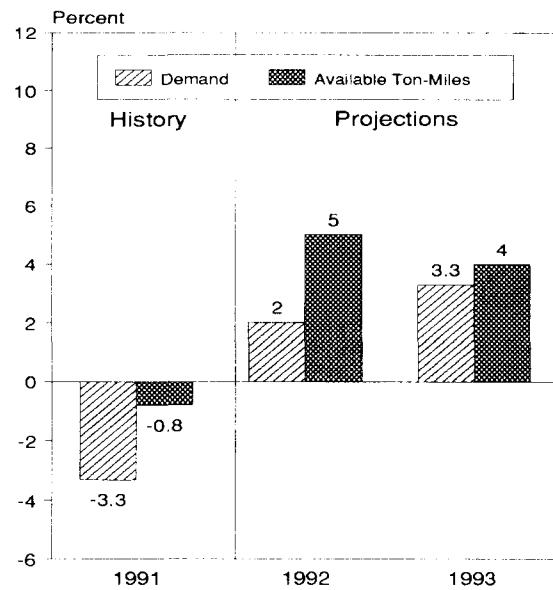
### **Jet Fuel**

Reflecting current low ticket prices and the ongoing economic recovery, jet fuel demand is projected to increase by an annual average of 2.6 percent during the forecast period, reversing the decline in 1991 (Table 6 and Figure 6). That expected growth is brought about by an average annual increase in air traffic (available ton-miles) of 4.5 percent. Expected increases in aircraft efficiency, averaging about 2 percent per year, account for the fact that the growth in air traffic is substantially larger than that of underlying jet fuel demand.

It should be noted that for the first half of 1992, jet fuel demand has been much lower than expected in view of the high level of air travel activity. That temporary weakness may have been due to the use of secondary stocks. Current market fundamentals, however, point to a steady recovery in jet fuel markets during the rest of 1992 and into 1993 consistent with underlying economic trends.

### **Distillate Fuel Oil**

Despite somewhat milder winter weather for the country as a whole, heating oil demand picked up



**Figure 6. Annual Change in U.S. Jet Fuel Market Indicators**

Sources: **History:** Federal Aviation Administration. **Projections:** Table 6 and internal calculations from the Short-Term Integrated Forecasting System.

marginally as major heating oil consuming regions (particularly the Mid Atlantic and New England Census Divisions) experienced somewhat colder weather during the first half of this year than during the same period in 1991.<sup>23</sup> For the first half of 1992, distillate fuel oil demand increased by an average of about 90,000 barrels per day over the corresponding 1991 period. Demand is expected to improve at about this rate during the second half of 1992, because of strong growth expected for the fourth quarter due to assumed colder weather and economic strength. The outlook for heating oil demand next winter is favorable, if cold winter temperatures occur as assumed in all major regions. Economic growth, while not extremely robust, was sufficient to raise the level of manufacturing output by an estimated average of more than 2 percent during the first 6 months of 1992 compared to 1991 (Table 2). Continued growth in industrial activity and the assumption of normal weather promises continued distillate demand increases in industrial fuel applications and in transportation diesel fuel demand associated with expanding industrial and commercial activity. The combination of these factors creates expected growth of 5.0 percent in 1993 for distillate demand.

## **Residual Fuel Oil**

Residual fuel oil demand is expected to continue its long-term decline with reductions of 3.4 percent and 0.9 percent in 1992 and 1993, respectively. Residual fuel oil has been declining steadily since the early 1970's, except for a few periods of modest recovery, such as in 1986 when oil prices collapsed.<sup>24</sup> Some strength in the first quarter of 1992 was evident, but this can be attributed to increases in electric utility use of oil in the face of comparatively weak availability of hydroelectric and nuclear power (Table 12). Greater availability of gas for electric power due to pipeline expansion in the New England and Mid-Atlantic regions is expected to put additional downward pressure on heavy oil demand in the coming quarters.

## **Other Petroleum Products**

In 1991, demand for other petroleum products declined by 0.1 percent.<sup>25</sup> That decline resulted from economic weakness, local budget constraints (which have tended to reduce public expenditures on petroleum-based materials for road building and construction), and mild weather during the first quarter of the year.

Sluggish economic growth is expected to constrain growth in overall demand for other petroleum products to 1.3 percent in 1992 (Table 6). In 1993, however, economic growth is expected to accelerate, boosting other petroleum products demand growth to 1.7 percent.

## **Petroleum Demand 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 mid-case forecast, Tables 8 and 9 provide a range of possible outcomes for petroleum demand and supply when alternative

macroeconomic, price, and weather assumptions are used.

The petroleum price sensitivity assumes that nonpetroleum prices remain constant. The weather sensitivities assume deviations above and below normal that correspond to one-half of the largest quarterly deviations from normal in heating and cooling degree days over the last 15 years. (See Appendix for more details). Average petroleum sensitivity factors for this forecast are summarized below:<sup>26</sup>

- A 1-percent increase in real GDP raises petroleum demand by about 120,000 barrels per day.
- A \$1-per-barrel increase in crude oil prices, assuming no price response from nonpetroleum energy sources, reduces demand by about 51,000 barrels per day.
- A \$1-per-barrel increase in crude oil prices boosts domestic oil supply (crude oil and natural gas liquids production) by 84,000 barrels per day.
- A 1-percent increase in heating degree-days increases demand by about 33,000 barrels per day; a 1-percent increase in cooling degree-days increases petroleum demand by about 9,000 barrels per day.

For 1992, projections of the rate of domestic crude oil production range from 7.11 million barrels per day in the low-price case to 7.27 million barrels per day in the high-price case (Tables 5 and 7). This range increases in 1993, with production rates of 6.68 million barrels per day in the low-price case and 7.15 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. In the fourth quarter of 1993, for example, the difference between the low- and high-price case is 540,000 barrels per day (Table 9).<sup>27</sup> About 35 percent of this range of production can be attributed to uncertainties in the preliminary estimates of current production levels and the timing of expected events. About 65 percent of this range is attributed to the impact of prices on drilling rates and well maintenance.



# Outlook for Other Major Energy Sources

## Natural Gas

Led by gains in the industrial and electric utility sectors, total consumption of natural gas in 1992 is expected to rise by 3.5 percent to 20.1 trillion cubic feet in the mid-price case (Table 10). Further growth is anticipated in 1993 largely due to weather factors. A 5.5-percent rise is projected with total consumption equaling 21.2 trillion cubic feet. These levels of consumption have not been seen since the 1979-1980 period.<sup>28</sup> Despite a succession of mild winters and the economic difficulties of the last 2 years, expansion of natural gas consumption has averaged more than 1.6 percent per year (1989 to 1991), with a solid 3.7-percent growth rate posted in 1991.<sup>29</sup>

Industrial gas consumption, which has been rising since January along with manufacturing production, and is estimated to have increased by 4.6 percent for the first 6 months of 1992 compared to the same period a year ago. This rate of increase is expected to be maintained for all of 1992.<sup>30</sup> Natural gas consumption at electric utilities has also been rising this year, with a year-to-date (through June) increase of 7.3 percent. Dry conditions in several regions of the United States have cut hydropower availability significantly. Nuclear power generation has not grown significantly through the first half of this year and is expected to be down slightly for all of 1992, because of maintenance and refueling schedules (Table 12). These developments are expected to increase electric utility demand for fossil fuels, particularly gas and coal, beyond the level that would have otherwise been expected. High availability and low wellhead prices for gas, such as those in the first quarter of this year, encouraged demand increases in the electric utility sector (and in the industrial sector). As a result, consumption of gas in the utility sector is expected to rise by 5.7 percent for all of 1992. Consumption in the residential and commercial sectors is expected to grow by only 1.3 and 1.5 percent, respectively. Slow growth in these sectors is a consequence of the mild weather during the first quarter of 1992.

In 1993, as the economy continues to grow and as gas prices remain competitive (though at levels higher than the depressed levels of late 1991 and early 1992), gas consumption is expected to rise across all sectors (Figure 7). Growth will be greatest in the residential

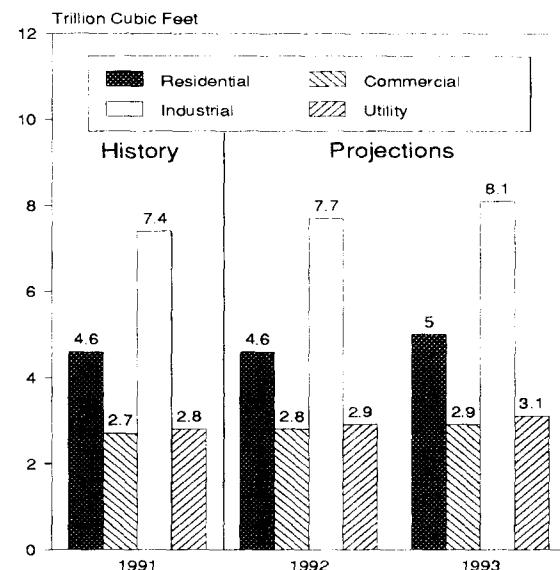


Figure 7. Natural Gas Consumption by Sector

Sources: **History:** Energy Information Administration, *Natural Gas Monthly* (July 1992). **Projections:** Table 10.

and industrial sectors, at 8.2 percent and 4.1 percent, respectively. Residential gas consumption will increase under the assumption of normal weather, as well as a gradually increasing customer base. Growth in electric utility gas consumption is expected to be less robust in 1993 than it was in 1992. This is caused primarily by the fact that hydroelectric generation is expected to increase with a return to more normal water levels, and nuclear generation is expected to increase as more units come back on line.

U.S. production of dry natural gas is expected to be up by about 0.5 trillion cubic feet (3.0 percent) in 1992, due to rising demand and higher wellhead prices during the spring and summer. Relatively cold spring weather played a role in the contra-seasonal increase in residential and commercial demand in March and April which, along with relatively low production levels for the first quarter, caused a significant drawdown in working gas inventories. The lower inventory levels are projected through 1992 and 1993 even if restocking takes place at normal rates during the rest of the year.

The substantial increase in natural gas demand expected in 1993 will lead U.S. producers to step up their production by about 0.7 trillion cubic feet (3.8 percent) from the 1992 level.

Wellhead prices for the first quarter of this year were unusually low, largely due to a combination of factors, including a weak economy and weather that was 12 percent warmer-than-normal from January through March (Figure 8).<sup>31</sup> Natural gas inventories (working gas in storage) remained relatively high as weather-sensitive sectors languished. The market response was striking: spot prices for the first quarter were about 16 percent lower than for the first quarter of last year, which was also warm.<sup>32</sup> Depressed fuel oil prices added downward pressure on gas prices through the industrial and electrical utility sectors. This unusually low first quarter price was offset by an equally unusual increase in the second quarter price induced by a cold spring and low production during the first quarter. The net result of these developments is that the average price for 1992 is expected to be close to the 1991 average. In 1993, expected large increases in natural gas demand should also be accompanied by increases in supply (production and net imports). As a result, assuming a normal winter, rising world oil prices and a strengthening of the economy, prices should rise moderately (about 10 cents per thousand cubic feet on

an annual basis), with a particularly noticeable increase of 24 percent, or 35 cents per thousand cubic feet, in the first quarter of 1993, compared to first quarter 1992 (Table 4).

## Coal

Small increases in domestic consumption, some export growth, and stock additions at electric utilities (partly in anticipation of a possible coal strike in early 1993), all contribute to an expected increase of 21 million tons in U.S. coal production in 1992 (Table 11).

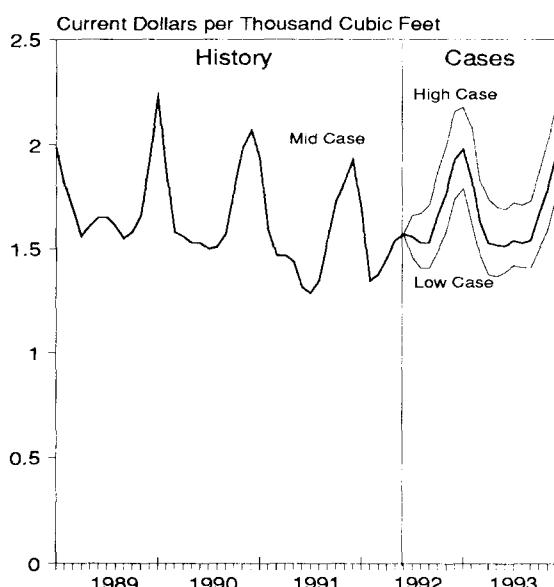
Coal is expected to meet the majority of additional generation needs at electric utilities in 1992 and 1993 (Table 12). Coal-fired electric generating capacity is expected to increase by an average of 0.2 percent in 1992 and 1993. Increased economic activity in 1992 is expected to boost the domestic production of steel and result in higher consumption of coal by coke plants.<sup>33</sup> Consumption of coal in the retail and general industry sectors is expected to increase slightly in 1992 and remain flat in 1993.

Stocks held by consumers are expected to increase in the fourth quarter of 1992 in anticipation of the expiration and renegotiation of the contract next winter between the United Mine Workers of America (UMWA) and the Bituminous Coal Operators' Association (BCOA). While a strike is not assumed, there could be some changes in the normal production and stock withdrawal patterns next winter.

In 1992, coal prices to electric utilities are projected to remain constant in nominal terms compared to 1991 (Table 4). This is the result of continuing increases in productivity and available excess coal production capacity offsetting an expected fourth quarter price rise due to an anticipated stock build. The relatively heavy stock build expected in the fourth quarter of this year should put some upward pressure on prices and a prolonged strike would have the potential of raising prices in 1993, particularly if demand for electricity is strong. Otherwise, the price of coal should not change significantly in 1993.

## Electricity

Electricity sales are expected to continue increasing over the next 2 years, although growth should be lower in 1992 than in 1993 (Table 12). Mild temperatures during the first half of this year stifled growth in the residential and commercial sectors. Third quarter sales



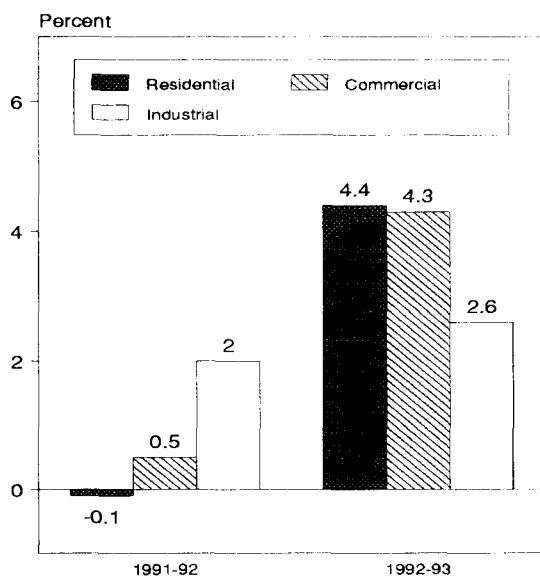
**Figure 8. Natural Gas Wellhead Prices**

Sources: History: Energy Information Administration, *Natural Gas Monthly* (July 1992). Projections: Table 4.

are expected to be lower in the residential and commercial sectors than in 1991 because normal weather is assumed, in contrast to third quarter of last year when temperatures were warmer than normal.

Sales to the commercial sector are driven primarily by changes in employment, while sales to the industrial sector are driven by manufacturing production. Both of these macroeconomic variables are expected to grow at accelerating rates through 1993 and stimulate sales in these two sectors (Figure 9). The residential sector is stimulated by upward trends in electricity use per household and by the number of new homes built with electricity as the primary fuel, as well as the weather.

Increases in electricity generation are expected to come primarily from coal in both 1992 and 1993 (Table 12). Coal capacity is expected to continue increasing (about 0.2 percent per year), while growth in hydroelectric and nuclear sources is constrained. The decline in hydroelectric generation expected for 1992 is attributed to below normal water conditions in several areas of the country.



**Figure 9. Annual Change in U.S. Electricity Sales by Sector**

Sources: Table 12.

Below normal water conditions in the Southeast have resulted in water being held for generation in the late summer. In the West, reservoir levels are less than 50 percent of normal and are expected to be drained this summer.<sup>34</sup> The Great Plains is also experiencing below normal water conditions. The Northwest, however, has led the decline in hydroelectric generation in 1992. The three States in the Northwest Region (Idaho, Washington, and Oregon), which account for 50 percent of U.S. hydroelectric generation in normal years, generated only 28 billion kilowatthours of hydroelectric power in the first 3 months of 1992.<sup>35</sup> This represents a drop of 10 billion kilowatthours from the same period in 1991. The Northwest has also been affected by changes in water management of the Columbia River due to environmental concerns; however, while seasonal shifts in production are expected, yearly production is not expected to be affected. Projections for hydroelectric generation are based on the assumption that precipitation returns to normal in the forecast period. Reservoir levels in areas with below normal water conditions could remain below normal for many months in the forecast period, even with normal precipitation, resulting in relatively low generation in the upcoming months.

Generation from nuclear power is expected to decline somewhat in 1992 due to a lower assumed capacity factor than in 1991. This projection includes the retirement of the Yankee Rowe nuclear power plant in Massachusetts. By 1993, an increase in nuclear power is expected when units come back on line after being down for maintenance and refueling; the capacity factor is assumed to rise to 71 percent from an estimated 70.5 percent in 1992.<sup>36</sup>

Gas generation should increase through 1993. The increase is somewhat lower in 1993 than in 1992 because of displacement by hydroelectric and nuclear sources in 1993. Natural gas should continue to outpace oil at electric utilities, as natural gas maintains its price advantage.

Residential electricity prices are expected to continue their slow rate of growth through 1993 (Table 4). This small price increase, averaging 1.9 percent per year between 1991 and 1993, which is expected to be about half the rate of inflation, is due to the expected continuation of low interest rates (affecting the cost of capital for expansion and maintenance) as well as relatively small projected increases in labor and fuel (particularly coal) costs.



## Appendix

# Computation of Petroleum Demand Sensitivities

Table 8 summarizes the response of forecasts for U.S. total petroleum demand to changes in assumptions for economic growth, world crude oil prices, and weather. The values in this table are computed using the Short-Term Integrated Forecasting Model (STIFS). The STIFS model is documented in EIA's *Short-Term Integrated Forecasting System: 1990 Model Documentation Report* (DOE/EIA-M009, June 1990). The purpose of the model is to generate forecasts of U.S. energy supply, demand, and prices. Key inputs include assumptions for the imported price of crude oil, the rate of U.S. economic growth, and weather (cooling and heating degree-days). Forecasts are generated for production, imports, exports, demand, and prices for refined petroleum products, natural gas, coal, and electricity.

A key relationship shown in Table 8 is that between petroleum demand and economic activity. Gross domestic product (GDP) is varied from low to high for each of the 2 projection years, and the resulting change in petroleum demand is calculated. In 1992, only the last 2 quarters are used because the first 2 quarters are considered history. For each of the 2 years, the percentage difference in GDP is computed as the difference between the low and high levels, divided by the mid-point of the range between low and high. Thus, the percentage difference in GDP for 1992 is as follows:  $(4974 - 4929) / ((4974 + 4929) / 2)$ , or 0.9 percent. For each year, the petroleum demand difference (in million barrels per day) is divided by the percentage difference in GDP. For 1992, the petroleum demand difference is 100,000 barrels per day; thus, a 1-percent change in GDP corresponds to a change in demand of  $(100,000 / 0.9)$ , or 111,000 barrels per day.

For 1993, a 4.0-percent change in GDP corresponds to a change in demand of 500,000 barrels per day; thus, a 1-percent change in GDP corresponds to a demand change of 125,000 barrels per day. The results for 1992 and 1993 are averaged (with a weight of 184 days applied to the 1992 average and a weight of 365 days applied to the 1993 average) to calculate the average

demand change corresponding to a 1-percent change in GDP (120,000 barrels per day in this case).

Table 8 also shows the differences in petroleum demand due to changes in energy prices caused by varying the world crude oil price. There are two values for the change in petroleum demand in each year, one value for the case in which coal and natural gas prices are allowed to change in response to the change in petroleum prices, and a second value for the case in which coal and natural gas prices are held constant. The industrial and electric utilities sectors have some freedom to switch between use of petroleum, coal, and natural gas. If the price of petroleum decreases while the prices of coal and natural gas remain constant, some industrial and utility users will switch from coal or natural gas to petroleum, and petroleum demand will increase. If coal and natural gas prices are reduced to meet the competition from petroleum, then there will be a smaller increase in petroleum demand. In either case, the change in petroleum demand (in million barrels per day) is divided by the change in the crude oil price (in dollars per barrel), and the result is averaged over the 2 projection years to get an estimate of the change in petroleum demand per dollar of change in the crude oil price.

The influence of weather on petroleum demand is also calculated, using the mid-case values for economic activity and imported crude oil prices. The percentage changes in heating or cooling degree-days are computed and divided by the changes in petroleum demand, and the result is averaged over the 2 projection years to get an estimate of the change in petroleum demand per 1-percent change in heating and cooling degree-days. The changes in demand due to changes in heating degree-days apply only to the heating season, roughly the first and fourth quarters of the year, while the changes in demand due to changes in cooling degree-days apply only to the cooling season, roughly the second and third quarters of the year. If annual changes are calculated, then the magnitude of the changes (in barrels per day) will be only one-half as large.



## References and Notes

1. The Organization for Economic Cooperation and Development includes the following countries: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.
2. For a detailed definition of product supplied, see the glossary to the *Petroleum Supply Monthly*, DOE/EIA-0109.
3. Based on assumptions and internal calculations of the Energy Markets and Contingency Information Division.
4. This calculation is based on 15 years of heating degree-day data (first-quarter months) using the assumption that the data are normally distributed. See page 11 and the Appendix of this report for details on the weather calculations.
5. Based on the estimated relationship between weather and petroleum demand: a 1-percent difference in heating degree-days translates into a difference of about 33,000 barrels per day in petroleum demand. A first quarter that is 15 percent warmer than normal (that is, 15 percent fewer heating degree days) implies approximately 495,000 barrels per day less petroleum demand.
6. Based on internal calculations from the Short-Term Integrated Forecasting System model. The 250,000 barrels per day corresponds to one-half the demand range for 1993 shown in Table 8 under "Economic Activity." The high growth case would result in a similar difference from the base case in 1993 in the upward direction. The 500,000 barrels per day in Table 8 for 1993 "Economic Activity" sensitivity is the sum of the differences from the mid-price case for the low and high economic growth cases. Detailed results for these high and low growth cases are not published in this report but are available on computer files of the Energy Markets and Contingency Information Division.
7. Based on internal calculations from the Short-Term Integrated Forecasting System model. In this case, prices of coal and natural gas are assumed to remain constant.
8. Energy Information Administration, Office of Oil and Gas, Reserves and Natural Gas Division.
9. Energy Information Administration. *Monthly Energy Review*. DOE/EIA-0035(92/07). (Washington, DC: July 1992). Table 5.1.
10. Based on assumptions of the Energy Markets and Contingency Information Division.
11. Based on assumptions and internal calculations of the Energy Markets and Contingency Information Division.
12. Based on assumptions and internal calculations of the Energy Markets and Contingency Information Division.
13. Energy Information Administration. *Short-Term Energy Outlook Annual Supplement*, 1992. DOE/EIA-0202(92). "Demand, Supply, and Price Outlook for Oxygenated Gasoline." Page 3.
14. Cambridge Energy Research Associates. *The U.S. Refining Industry: Facing the Challenges of the 1990's*. (January 1992). Page 54. Based on capital expenditure estimates obtained in the survey and on independent estimates made by CERA of the necessary investments, a margin of 4 to 7 cents per gallon between low-sulfur and high-sulfur diesel will be necessary to provide a reasonable return on capital expenditures. Other estimates, such as those from the Environmental Protection Agency and National Petroleum Refiners Association, are consistent with this price range.

15. Average state and local gasoline taxes have risen by about 1 cent per gallon per year since 1988. (See *Oil and Gas Journal Energy Database* and *Petroleum Marketing Monthly*, DOE/EIA-0380, various issues, Table EN1). This rate of increase is assumed to continue through the forecast period of this *Outlook*.
16. Energy Information Administration. *Monthly Energy Review*. DOE/EIA-0035(92/07). (Washington, DC: July 1992). In 1988, gasoline demand (product supplied) increased by 1.8 percent to 7.34 million barrels per day, which was the highest demand level attained since 1978.
17. Energy Information Administration. *Short-Term Energy Outlook Annual Supplement*, 1992. DOE/EIA-0202(92). "Demand, Supply, and Price Outlook for Oxygenated Gasoline." Page 3.
18. While the carbon monoxide control period and oxygenated gasoline season officially begin on November 1, 1992, a 30-day lead period is assumed for inventory pipelines and distributions system with oxygenated gasoline.
19. Energy Information Administration. *Monthly Oxygenate Report*.
20. The apparent fuel efficiency increase was 1.6 percent in 1991, compared to an average 2.7 percent in 1986-90. The year-to-year estimate for fuel efficiency growth for the first half of 1992 is 1.3 percent. These calculations are taken from the Short-Term Integrating Forecast System.
21. Energy Information Administration. *Short-Term Energy Outlook Annual Supplement*, 1992. DOE/EIA-0202(92). "Demand, Supply, and Price Outlook for Oxygenated Gasoline." Page 3. It is estimated that a typical blend of MTBE in gasoline needed to meet oxygen content requirements (15 percent MTBE by volume) reduces the Btu content of the fuel by about 2.7 percent.
22. Environmental Protection Agency. *Light-Duty Automotive Technologies and Fuel Economy Trends Through 1991*. EPA/AA/CTAB(91-04). (Ann Arbor, MI: May 1991).
23. Calculations by the Energy Markets and Contingency Information Division, based on data from the National Oceanic and Atmospheric Administration, indicate that a 6.2-percent and a 7.5-percent increase in heating degree-days occurred in the New England and Mid-Atlantic Census Divisions, respectively, for the first quarter of 1992 compared to the same period in 1991. The average for the United States as a whole was a 3.3-percent decline (see Table 2 in this report).
24. Energy Information Administration. *Monthly Energy Review*. DOE/EIA-0035(92/07). (Washington, DC: July 1992).
25. Energy Information Administration. *Petroleum Supply Monthly*. DOE/EIA-0109(92/07). (Washington, DC: July 1992).
26. The oil demand sensitivity factors were derived from internal calculations of the Demand Models of the Short-Term Integrated Forecasting System. The oil supply sensitivity was derived implicitly from Tables 5 and 7 and includes uncertainty components not strictly related to price variation.
27. Of this total, the lower 48 States had 407,000 barrels of oil per day. The uncertainty portion for the lower 48 States contains 90,000 barrels of oil per day that results from varying the low and high price case estimates by an amount equal to 1 percent of the 1992 second quarter oil rate and reducing that amount starting with the third quarter of 1992 through the end of 1993. The remaining 30,000 barrels per day is additional oil production expected from the Point Arguello field in the Pacific Federal Outer Continental Shelf. The larger portion of the difference (288,000 barrels per day) is attributable to the price impact where more drilling is expected at higher prices, as well as more frequent well maintenance and reduction of well abandonments.
28. Energy Information Administration. *Monthly Energy Review*. DOE/EIA-0035(92/07). (Washington, DC: July 1992).

29. Energy Information Administration. *Natural Gas Monthly*. DOE/EIA-0130(92/07). (Washington, DC: July 1992).
30. Energy Information Administration. *Monthly Energy Review*. DOE/EIA-0035(92/07). (Washington, DC: July 1992).
31. U.S. Department of Commerce, National Oceanic and Atmospheric Administration. *Monthly State, Regional, and National Heating/Cooling Degree Days Weighted by Population*.
32. *Natural Gas Week*. (Washington, DC: June 26, 1992).
33. Steel production forecasts are produced by the Coking Coal Demand Model of the Short-Term Integrated Forecasting System.
34. Energy Information Administration, Office of Coal, Nuclear, Electric, and Alternative Fuels, Supply Analysis Branch.
35. Energy Information Administration. *Electric Power Monthly*. DOE/EIA-0226(92/07). (Washington, DC: July 1992).
36. Energy Information Administration, Office of Coal, Nuclear, Electric, and Alternative Fuels, Supply Analysis Branch.

**Table 2. Macroeconomic and Weather Assumptions**

Assumption	Price Case	1991				1992				1993				Year		
		1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1991	1992	1993
<b>Macroeconomic<sup>a</sup></b>																
Real Gross Domestic Product (GDP) (billion 1987 dollars) . . . . .	High							5002	5064	5130	5177	5214	5251	4974	5193	
	Mid	4824	4841	4863	4868	4901	4928	4972	5004	5039	5071	5107	5143	4849	4951	5090
	Low							4942	4944	4948	4964	5000	5035		4929	4987
Percentage Change from Prior Year . . . . .	High							2.9	4.0	4.7	5.1	4.2	3.7	2.6	4.4	
	Mid	-1.2	-1.2	-0.8	0.3	1.6	1.8	2.2	2.8	2.9	2.7	2.7	2.8	-0.7	2.1	2.8
	Low							1.6	1.6	1.0	0.7	1.2	1.8		1.6	1.2
Annualized Percentage Change from Prior Quarter . . . . .	High							6.0	5.0	5.2	3.7	2.9	2.8			
	Mid	-2.6	1.4	1.8	0.4	2.7	2.2	3.6	2.6	2.8	2.5	2.8	2.8			
	Low							1.1	0.2	0.3	1.3	2.9	2.8			
GDP Implicit Price Deflator (index, 1987=1.000) . . . . .	High							1.202	1.208	1.216	1.224	1.232	1.241	1.199	1.228	
	Mid	1.159	1.168	1.174	1.179	1.188	1.197	1.204	1.212	1.223	1.232	1.240	1.249	1.170	1.200	1.236
	Low							1.207	1.217	1.230	1.240	1.248	1.257		1.202	1.244
Percentage Change from Prior Year . . . . .	High							2.4	2.5	2.4	2.3	2.5	2.7	2.5	2.4	
	Mid	4.3	4.0	3.4	3.0	2.5	2.5	2.6	2.8	2.9	2.9	3.0	3.1	3.7	2.6	3.0
	Low							2.8	3.2	3.5	3.6	3.4	3.3		2.7	3.5
Real Disposable Personal Income (billion 1987 dollars) . . . . .	High							3632	3675	3711	3749	3771	3802	3621	3758	
	Mid	3515	3537	3540	3547	3580	3596	3609	3630	3642	3668	3689	3720	3535	3604	3680
	Low							3587	3584	3573	3587	3608	3638		3587	3601
Percentage Change from Prior Year . . . . .	High							2.6	3.6	3.7	4.3	3.8	3.5	2.4	3.8	
	Mid	-0.5	-0.2	-0.2	0.5	1.8	1.7	1.9	2.3	1.7	2.0	2.2	2.5	-0.1	2.0	2.1
	Low							1.3	1.0	-0.2	-0.3	0.6	1.5		1.5	0.4
Index of Manufacturing Production (index, 1987=1.000) . . . . .	High							1.124	1.151	1.178	1.195	1.208	1.222	1.113	1.201	
	Mid	1.061	1.067	1.085	1.086	1.080	1.096	1.109	1.121	1.132	1.141	1.153	1.167	1.075	1.101	1.148
	Low							1.094	1.091	1.086	1.087	1.099	1.112		1.090	1.096
Percentage Change from Prior Year . . . . .	High							3.6	6.0	9.1	9.0	7.5	6.2	3.5	7.9	
	Mid	-2.8	-3.2	-2.4	-0.4	1.8	2.7	2.2	3.2	4.8	4.1	4.0	4.1	-2.2	2.4	4.3
	Low							0.8	0.5	0.6	-0.8	0.5	1.9		1.4	0.6
OECD Economic Growth (percent) . . . . .														0.6	1.8	2.8
<b>Weather<sup>b</sup></b>																
Heating Degree Days . . . . .		2187	420	84	1625	2114	532	88	1669	2401	536	88	1669	4316	4403	4694
Cooling Degree Days . . . . .		36	419	778	70	35	327	755	63	28	327	755	63	1303	1179	1172

<sup>a</sup>Macroeconomic projections from DRI/McGraw-Hill model forecasts are seasonally adjusted at annual rates and modified as appropriate to the mid world oil price case. These mid-case macroeconomic projections are then modified by the low and high world price cases (as shown in Table 4) and by various explicit economic assumptions, with low world oil price case applied to the high macroeconomic case, and high world oil price case applied to the low macroeconomic case.

<sup>b</sup>Population-weighted 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 data are printed in bold, forecasts are in italic.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(92/07); U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, June 1992; 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)*, June 1992. Macroeconomic projections are based on DRI/McGraw-Hill Forecast CONTROL0792.

**Table 3. International Supply and Demand of Petroleum: Mid World Oil Price Case**  
 (Million Barrels per Day, Except Closing Stocks)

	1991				1992				1993				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1991	1992	1993
<b>Demand<sup>a</sup></b>															
OECD															
U.S. (50 States) . . . . .	<b>16.49</b>	<b>16.40</b>	<b>17.00</b>	<b>16.96</b>	<b>16.89</b>	<b>16.40</b>	<b>16.90</b>	<b>17.33</b>	<b>17.41</b>	<b>16.76</b>	<b>17.00</b>	<b>17.52</b>	<b>16.71</b>	<b>16.88</b>	<b>17.17</b>
U.S. Territories . . . . .	<b>0.26</b>	<b>0.23</b>	<b>0.22</b>	<b>0.26</b>	<b>0.23</b>	<b>0.25</b>	<b>0.24</b>	<b>0.25</b>	<b>0.25</b>	<b>0.26</b>	<b>0.25</b>	<b>0.25</b>	<b>0.24</b>	<b>0.24</b>	<b>0.25</b>
Canada . . . . .	<b>1.57</b>	<b>1.60</b>	<b>1.65</b>	<b>1.62</b>	<b>1.62</b>	<b>1.57</b>	<b>1.64</b>	<b>1.72</b>	<b>1.63</b>	<b>1.61</b>	<b>1.68</b>	<b>1.76</b>	<b>1.61</b>	<b>1.64</b>	<b>1.67</b>
Europe <sup>b</sup> . . . . .	<b>13.60</b>	<b>13.03</b>	<b>12.72</b>	<b>13.98</b>	<b>13.83</b>	<b>12.81</b>	<b>13.17</b>	<b>13.96</b>	<b>13.81</b>	<b>13.01</b>	<b>13.29</b>	<b>14.09</b>	<b>13.33</b>	<b>13.44</b>	<b>13.55</b>
Japan . . . . .	<b>5.93</b>	<b>4.89</b>	<b>4.88</b>	<b>5.46</b>	<b>5.92</b>	<b>4.87</b>	<b>4.92</b>	<b>5.61</b>	<b>6.06</b>	<b>4.88</b>	<b>5.02</b>	<b>5.88</b>	<b>5.29</b>	<b>5.33</b>	<b>5.46</b>
Australia and New Zealand . . . . .	<b>0.79</b>	<b>0.80</b>	<b>0.78</b>	<b>0.82</b>	<b>0.78</b>	<b>0.81</b>	<b>0.81</b>	<b>0.83</b>	<b>0.79</b>	<b>0.83</b>	<b>0.82</b>	<b>0.84</b>	<b>0.80</b>	<b>0.81</b>	<b>0.82</b>
Total OECD . . . . .	<b>38.62</b>	<b>36.95</b>	<b>37.25</b>	<b>39.10</b>	<b>39.27</b>	<b>36.71</b>	<b>37.67</b>	<b>39.70</b>	<b>39.95</b>	<b>37.34</b>	<b>38.06</b>	<b>40.35</b>	<b>37.98</b>	<b>38.34</b>	<b>38.92</b>
Non-OECD															
Former Soviet Union . . . . .	<b>8.67</b>	<b>8.18</b>	<b>7.88</b>	<b>8.08</b>	<b>8.01</b>	<b>7.29</b>	<b>7.28</b>	<b>7.43</b>	<b>7.34</b>	<b>6.90</b>	<b>6.77</b>	<b>6.91</b>	<b>8.20</b>	<b>7.50</b>	<b>6.98</b>
China . . . . .	<b>2.44</b>	<b>2.44</b>	<b>2.44</b>	<b>2.53</b>	<b>2.61</b>	<b>2.64</b>	<b>2.67</b>	<b>2.61</b>	<b>2.80</b>	<b>2.83</b>	<b>2.85</b>	<b>2.79</b>	<b>2.46</b>	<b>2.63</b>	<b>2.82</b>
Europe . . . . .	<b>1.40</b>	<b>1.30</b>	<b>1.17</b>	<b>1.31</b>	<b>1.24</b>	<b>1.23</b>	<b>1.14</b>	<b>1.21</b>	<b>1.24</b>	<b>1.23</b>	<b>1.15</b>	<b>1.21</b>	<b>1.29</b>	<b>1.20</b>	<b>1.21</b>
Other Non-OECD . . . . .	<b>16.38</b>	<b>15.92</b>	<b>16.11</b>	<b>16.83</b>	<b>17.12</b>	<b>16.89</b>	<b>17.09</b>	<b>17.62</b>	<b>18.01</b>	<b>17.86</b>	<b>18.06</b>	<b>18.64</b>	<b>16.31</b>	<b>17.18</b>	<b>18.14</b>
Total Non-OECD . . . . .	<b>28.89</b>	<b>27.83</b>	<b>27.59</b>	<b>28.76</b>	<b>28.98</b>	<b>28.05</b>	<b>28.17</b>	<b>28.86</b>	<b>29.39</b>	<b>28.81</b>	<b>28.83</b>	<b>29.55</b>	<b>28.27</b>	<b>28.52</b>	<b>29.15</b>
Total World Demand . . . . .	<b>67.51</b>	<b>64.79</b>	<b>64.85</b>	<b>67.86</b>	<b>68.25</b>	<b>64.76</b>	<b>65.85</b>	<b>68.56</b>	<b>69.35</b>	<b>66.15</b>	<b>66.88</b>	<b>69.90</b>	<b>66.25</b>	<b>66.86</b>	<b>68.07</b>
<b>Supply<sup>c</sup></b>															
OECD															
U.S. (50 States) . . . . .	<b>10.01</b>	<b>9.84</b>	<b>9.80</b>	<b>9.89</b>	<b>9.89</b>	<b>9.73</b>	<b>9.53</b>	<b>9.67</b>	<b>9.54</b>	<b>9.37</b>	<b>9.37</b>	<b>9.47</b>	<b>9.88</b>	<b>9.70</b>	<b>9.44</b>
Canada . . . . .	<b>2.09</b>	<b>1.95</b>	<b>2.01</b>	<b>2.08</b>	<b>2.07</b>	<b>1.98</b>	<b>1.99</b>	<b>2.01</b>	<b>2.00</b>	<b>1.97</b>	<b>1.98</b>	<b>2.00</b>	<b>2.03</b>	<b>2.01</b>	<b>1.98</b>
North Sea <sup>d</sup> . . . . .	<b>4.09</b>	<b>3.65</b>	<b>3.97</b>	<b>4.41</b>	<b>4.35</b>	<b>4.02</b>	<b>4.13</b>	<b>4.41</b>	<b>4.34</b>	<b>4.21</b>	<b>4.26</b>	<b>4.72</b>	<b>4.03</b>	<b>4.23</b>	<b>4.38</b>
Other OECD . . . . .	<b>1.50</b>	<b>1.45</b>	<b>1.48</b>	<b>1.49</b>	<b>1.48</b>	<b>1.44</b>	<b>1.44</b>	<b>1.44</b>	<b>1.43</b>	<b>1.43</b>	<b>1.43</b>	<b>1.43</b>	<b>1.48</b>	<b>1.45</b>	<b>1.43</b>
Total OECD . . . . .	<b>17.68</b>	<b>16.89</b>	<b>17.26</b>	<b>17.86</b>	<b>17.78</b>	<b>17.16</b>	<b>17.08</b>	<b>17.53</b>	<b>17.31</b>	<b>16.98</b>	<b>17.04</b>	<b>17.62</b>	<b>17.42</b>	<b>17.39</b>	<b>17.24</b>
Non-OECD															
OPEC . . . . .	<b>24.94</b>	<b>24.46</b>	<b>25.57</b>	<b>26.05</b>	<b>26.19</b>	<b>25.79</b>	<b>26.25</b>	<b>27.44</b>	<b>27.94</b>	<b>28.18</b>	<b>28.48</b>	<b>28.69</b>	<b>25.26</b>	<b>26.42</b>	<b>28.32</b>
Former Soviet Union . . . . .	<b>10.73</b>	<b>10.52</b>	<b>10.12</b>	<b>9.83</b>	<b>9.41</b>	<b>9.30</b>	<b>8.95</b>	<b>8.62</b>	<b>8.42</b>	<b>8.23</b>	<b>8.05</b>	<b>7.87</b>	<b>10.30</b>	<b>9.07</b>	<b>8.14</b>
China . . . . .	<b>2.79</b>	<b>2.80</b>													
Mexico . . . . .	<b>3.15</b>	<b>3.17</b>	<b>3.16</b>	<b>3.14</b>	<b>3.16</b>	<b>3.16</b>	<b>3.16</b>	<b>3.16</b>	<b>3.17</b>	<b>3.17</b>	<b>3.17</b>	<b>3.17</b>	<b>3.15</b>	<b>3.16</b>	<b>3.17</b>
Other Non-OECD . . . . .	<b>7.58</b>	<b>7.54</b>	<b>7.46</b>	<b>7.58</b>	<b>7.71</b>	<b>7.66</b>	<b>7.72</b>	<b>7.79</b>	<b>7.89</b>	<b>7.99</b>	<b>8.19</b>	<b>8.29</b>	<b>7.54</b>	<b>7.72</b>	<b>8.09</b>
Total Non-OECD . . . . .	<b>49.19</b>	<b>48.48</b>	<b>49.11</b>	<b>49.40</b>	<b>49.26</b>	<b>48.72</b>	<b>48.88</b>	<b>49.80</b>	<b>50.22</b>	<b>50.37</b>	<b>50.69</b>	<b>50.82</b>	<b>49.04</b>	<b>49.17</b>	<b>50.53</b>
Total World Supply . . . . .	<b>66.87</b>	<b>65.36</b>	<b>66.37</b>	<b>67.26</b>	<b>67.04</b>	<b>65.88</b>	<b>65.97</b>	<b>67.33</b>	<b>67.53</b>	<b>67.36</b>	<b>67.73</b>	<b>68.44</b>	<b>66.47</b>	<b>66.56</b>	<b>67.77</b>
<b>Stock Changes and Statistical Discrepancy</b>															
Net Stock Withdrawals or Additions (-)															
U.S. (50 States including SPR) . . . . .	<b>0.70</b>	<b>-0.83</b>	<b>-0.32</b>	<b>0.50</b>	<b>0.52</b>	<b>-0.54</b>	<b>-0.38</b>	<b>0.11</b>	<b>0.61</b>	<b>-0.36</b>	<b>-0.43</b>	<b>0.12</b>	<b>0.01</b>	<b>-0.07</b>	<b>-0.02</b>
Other . . . . .	<b>0.26</b>	<b>0.81</b>	<b>-1.37</b>	<b>0.13</b>	<b>1.02</b>	<b>-1.04</b>	<b>-0.10</b>	<b>0.92</b>	<b>0.85</b>	<b>-1.14</b>	<b>-0.71</b>	<b>1.07</b>	<b>-0.05</b>	<b>0.20</b>	<b>0.02</b>
Total Stock Withdrawals . . . . .	<b>0.96</b>	<b>-0.03</b>	<b>-1.69</b>	<b>0.63</b>	<b>1.54</b>	<b>-1.59</b>	<b>-0.43</b>	<b>0.94</b>	<b>1.52</b>	<b>-1.51</b>	<b>-1.14</b>	<b>1.16</b>	<b>-0.04</b>	<b>0.12</b>	<b>0.00</b>
Statistical Discrepancy . . . . .	<b>-0.32</b>	<b>-0.55</b>	<b>0.17</b>	<b>-0.03</b>	<b>-0.34</b>	<b>0.47</b>	<b>0.31</b>	<b>0.30</b>	<b>0.30</b>	<b>0.30</b>	<b>0.30</b>	<b>0.30</b>	<b>-0.18</b>	<b>0.19</b>	<b>0.30</b>
<b>Closing Stocks (billion barrels)<sup>e</sup></b>															
Non-OPEC Supply . . . . .	<b>41.93</b>	<b>40.90</b>	<b>40.80</b>	<b>41.22</b>	<b>40.86</b>	<b>40.09</b>	<b>39.72</b>	<b>39.89</b>	<b>39.60</b>	<b>39.18</b>	<b>39.25</b>	<b>39.76</b>	<b>41.21</b>	<b>40.14</b>	<b>39.45</b>
Net Exports from Former Soviet Union . . . . .	<b>2.06</b>	<b>2.34</b>	<b>2.24</b>	<b>1.75</b>	<b>1.40</b>	<b>2.01</b>	<b>1.67</b>	<b>1.18</b>	<b>1.08</b>	<b>1.34</b>	<b>1.28</b>	<b>0.96</b>	<b>2.10</b>	<b>1.57</b>	<b>1.16</b>

<sup>a</sup>Demand for petroleum by the OECD countries is synonymous with petroleum product supplied which is defined in the glossary of the EIA *Petroleum Supply Monthly*, DOE/EIA-0109. Demand for petroleum by non-OECD countries is apparent consumption which includes internal consumption, refinery fuel and loss, and bunkering.

<sup>b</sup>OECD Europe includes eastern Germany.

<sup>c</sup>Includes 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.

<sup>d</sup>Includes offshore supply from Denmark, Germany, the Netherlands, Norway, and the United Kingdom.

<sup>e</sup>Excludes stocks held in the Former CPEs.

OECD: Organization for Economic Cooperation and Development: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.

OPEC: Organization of Petroleum Exporting Countries

SPR: Strategic Petroleum Reserve

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

Notes: Minor discrepancies with other published EIA historical data are due to rounding. Historical data are printed in bold, forecasts are in italic. The forecasts were generated by the following simulations of the demand and supply subsystems of the Short-Term Integrated Forecasting System: D070792BBB13:46 and S072892BBB11:41 for the middle oil price case.

Sources: Energy Information Administration, *International Petroleum Statistics Report*, DOE/EIA-0520(92/06); and *International Energy Annual 1990*, DOE/EIA-0219(90); Organization for Economic Cooperation and Development, Annual and Monthly Oil Statistics Database through March 1992.

**Table 4. Energy Prices  
(Nominal Dollars)**

Product	Price Case	1991				1992				1993				Year			
		1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1991	1992	1993	
<b>Imported Crude Oil<sup>a</sup></b> (dollars per barrel) . . . . .	Low					17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.21	17.00		
	Mid	<b>19.40</b>	<b>18.06</b>	<b>18.62</b>	<b>18.82</b>	<b>16.16</b>	<b>18.61</b>	20.00	20.00	20.00	20.00	20.00	20.00	<b>18.70</b>	<b>18.81</b>	20.00	
	High					22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	19.82	22.00		
<b>Natural Gas Wellhead</b> (dollars per thousand cubic feet) . . . . .	Low					1.43	1.61	1.64	1.38	1.41	1.62			1.51	1.52		
	Mid	<b>1.67</b>	<b>1.43</b>	<b>1.40</b>	<b>1.83</b>	<b>1.47</b>	<b>1.52</b>	1.54	1.79	1.82	1.52	1.54	1.81	<b>1.59</b>	<b>1.59</b>	1.68	
	High					1.68	2.01	2.03	1.71	1.72	2.03			1.67	1.67	1.88	
<b>Petroleum Products</b>																	
<b>Gasoline, Retail<sup>b</sup></b> (dollars per gallon) . . . . .	Low					1.22	1.22	1.17	1.20	1.24	1.25			1.19	1.21		
	Mid	<b>1.21</b>	<b>1.19</b>	<b>1.19</b>	<b>1.19</b>	<b>1.12</b>	<b>1.19</b>	1.27	1.28	1.23	1.27	1.31	1.32	<b>1.20</b>	<b>1.22</b>	1.28	
	High					1.30	1.32	1.28	1.31	1.35	1.36			1.23	1.33		
<b>No. 2 Diesel Oil, Retail</b> (dollars per gallon) . . . . .	Low					1.07	1.13	1.11	1.09	1.10	1.19			1.09	1.12		
	Mid	<b>1.20</b>	<b>1.08</b>	<b>1.10</b>	<b>1.15</b>	<b>1.06</b>	<b>1.10</b>	1.14	1.20	1.18	1.16	1.16	1.26	<b>1.13</b>	<b>1.13</b>	1.19	
	High					1.19	1.24	1.23	1.20	1.21	1.31			1.15	1.24		
<b>No. 2 Heating Oil, Wholesale</b> (dollars per gallon) . . . . .	Low					0.54	0.57	0.55	0.52	0.53	0.57			0.56	0.54		
	Mid	<b>0.69</b>	<b>0.56</b>	<b>0.60</b>	<b>0.62</b>	<b>0.53</b>	<b>0.57</b>	0.61	0.65	0.62	0.59	0.60	0.64	<b>0.62</b>	<b>0.59</b>	0.62	
	High					0.66	0.69	0.67	0.64	0.65	0.69			0.61	0.66		
<b>No. 2 Heating Oil, Retail</b> (dollars per gallon) . . . . .	Low					0.89	0.96	0.96	0.91	0.89	0.97			0.94	0.95		
	Mid	<b>1.11</b>	<b>0.94</b>	<b>0.88</b>	<b>0.96</b>	<b>0.94</b>	<b>0.93</b>	0.96	1.03	1.03	0.98	0.96	1.04	<b>1.02</b>	<b>0.97</b>	1.02	
	High					1.00	1.08	1.08	1.03	1.01	1.09			0.99	1.07		
<b>No. 6 Residual Fuel Oil, Retail<sup>c</sup></b> (dollars per barrel) . . . . .	Low					12.55	14.85	14.65	13.03	13.68	15.79			13.14	14.40		
	Mid	<b>17.50</b>	<b>12.68</b>	<b>13.01</b>	<b>14.07</b>	<b>11.91</b>	<b>12.73</b>	14.68	16.95	16.80	15.14	15.75	17.92	<b>14.29</b>	<b>14.09</b>	16.46	
	High					16.01	18.32	18.24	16.42	17.11	19.29			14.67	17.85		
<b>Electric Utility Fuels</b>																	
<b>Coal</b> (dollars per million Btu) . . . . .	Low					1.43	1.44	1.41	1.45	1.43	1.42			1.44	1.43		
	Mid	<b>1.46</b>	<b>1.48</b>	<b>1.43</b>	<b>1.42</b>	<b>1.42</b>	<b>1.47</b>	1.45	1.47	1.44	1.48	1.46	1.45	<b>1.45</b>	<b>1.45</b>	1.46	
	High					1.48	1.49	1.47	1.51	1.49	1.48			1.47	1.49		
<b>Heavy Oil<sup>d</sup></b> (dollars per million Btu) . . . . .	Low					2.20	2.57	2.52	2.27	2.37	2.72			2.31	2.48		
	Mid	<b>2.91</b>	<b>2.29</b>	<b>2.31</b>	<b>2.49</b>	<b>2.14</b>	<b>2.22</b>	2.53	2.91	2.86	2.61	2.70	3.06	<b>2.48</b>	<b>2.44</b>	2.80	
	High					2.75	3.12	3.09	2.81	2.92	3.27			2.52	3.03		
<b>Natural Gas</b> (dollars per million Btu) . . . . .	Low					2.06	2.33	2.37	2.04	2.09	2.35			2.13	2.18		
	Mid	<b>2.40</b>	<b>1.98</b>	<b>1.96</b>	<b>2.42</b>	<b>2.14</b>	<b>2.06</b>	2.14	2.44	2.46	2.13	2.16	2.46	<b>2.15</b>	<b>2.19</b>	2.28	
	High					2.25	2.62	2.63	2.28	2.30	2.65			2.26	2.44		
<b>Other Residential</b>																	
<b>Natural Gas</b> (dollars per thousand cubic feet) . . . . .	Low					7.08	5.73	5.56	6.11	7.17	5.83			5.77	5.85		
	Mid	<b>5.56</b>	<b>6.22</b>	<b>7.16</b>	<b>5.62</b>	<b>5.52</b>	<b>6.11</b>	7.25	5.90	5.74	6.28	7.36	6.00	<b>5.82</b>	<b>5.88</b>	6.03	
	High					7.41	6.07	5.91	6.46	7.54	6.18			5.93	6.22		
<b>Electricity</b> (cents per kilowatthour) . . . . .	Low					8.4	7.9	7.8	8.3	8.6	8.2			8.1	8.2		
	Mid	<b>7.6</b>	<b>8.2</b>	<b>8.4</b>	<b>8.0</b>	<b>7.8</b>	<b>8.2</b>	8.5	8.0	8.5	8.7	8.3	<b>8.1</b>	<b>8.2</b>	<b>8.4</b>		
	High					8.7	8.3	8.2	8.7	8.9	8.5			8.3	8.6		

<sup>a</sup>Cost of imported crude oil to U.S. refiners.

<sup>b</sup>Average for all grades and services.

<sup>c</sup>Average for all sulfur contents.

<sup>d</sup>Includes fuel oils No. 4, No. 5, and No. 6 and topped crude fuel oil prices.

Notes: Data are estimated for the second quarter of 1992. Prices exclude taxes, except prices for gasoline, residential natural gas, and diesel. Price cases are derived by simulating all energy product price models under the assumptions of the three world oil price cases using the mid macroeconomic case and normal weather assumptions for all simulations. Historical data are printed in bold, forecasts are in italic. The forecasts were generated by the following simulations of the demand and supply subsystems of the Short-Term Integrated Forecasting System: D070792BBB13:46 and S072892BBB11:41 for the middle oil price case; D070792HLL19:56 and S072992HLL10:24 for the low oil price case; and D070792LHS20:13 and S072992LHS10:07 for the high oil price case.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(92/07); and *Petroleum Marketing Monthly*, DOE/EIA-0380(92/07).

**Table 5. U.S. Petroleum Supply and Demand: Low World Oil Price Case**  
 (Million Barrels per Day, Except Closing Stocks)

Supply and Disposition	1991				1992				1993				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1991	1992	1993
<b>Supply</b>															
Crude Oil Supply															
Domestic Production <sup>a</sup>	7.56	7.41	7.34	7.35	7.35	7.26	6.92	6.93	6.83	6.69	6.59	6.60	7.42	7.11	6.68
Alaska	1.88	1.77	1.76	1.78	1.79	1.76	1.58	1.63	1.55	1.50	1.46	1.50	1.80	1.69	1.50
Lower 48	5.68	5.64	5.58	5.58	5.56	5.50	5.34	5.30	5.28	5.19	5.13	5.11	5.62	5.42	5.18
Net Imports (including SPR) <sup>b</sup>	5.20	5.94	6.04	5.48	5.34	5.94	6.72	6.41	6.62	6.82	7.03	6.94	5.67	6.10	6.86
Gross Imports (excluding SPR)	5.31	6.08	6.14	5.59	5.42	6.02	6.77	6.52	6.70	6.92	7.09	7.05	5.78	6.18	6.94
SPR Imports	0.00	0.00	0.00	0.00	0.01	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.00	0.02	0.03
Exports	0.11	0.14	0.10	0.12	0.08	0.09	0.09	0.13	0.11	0.12	0.09	0.13	0.12	0.10	0.11
SPR Stock Withdrawn or Added (-)	0.19	0.00	0.00	0.00	0.00	-0.01	-0.06	-0.03	-0.03	-0.03	-0.03	-0.03	0.05	-0.02	-0.03
Other Stock Withdrawn or Added (-)	-0.16	-0.11	0.07	0.17	-0.15	0.08	-0.10	-0.02	0.01	0.02	0.00	-0.01	-0.01	-0.05	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 Oil	0.10	0.27	0.30	0.12	0.32	0.32	0.16	0.15	0.15	0.15	0.15	0.20	0.24	0.15	
Total Crude Oil Supply	12.87	13.50	13.73	13.10	12.84	13.58	13.63	13.42	13.56	13.64	13.73	13.64	13.30	13.37	13.64
Other Supply															
NGL Production	1.67	1.65	1.62	1.69	1.69	1.68	1.61	1.64	1.65	1.62	1.61	1.65	1.66	1.66	1.63
Other Hydrocarbon and Alcohol Inputs	0.09	0.09	0.09	0.10	0.12	0.09	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	0.02
Processing Gain	0.68	0.68	0.74	0.75	0.73	0.70	0.70	0.70	0.67	0.69	0.71	0.71	0.71	0.71	0.69
Net Product Imports <sup>c</sup>	0.49	1.18	1.18	0.98	0.83	0.95	1.07	1.41	0.80	1.18	1.32	1.34	0.96	1.07	1.16
Gross Product Imports <sup>c</sup>	1.56	1.99	1.95	1.88	1.72	1.79	1.74	2.19	1.55	1.86	1.99	2.12	1.84	1.86	1.88
Product Exports	1.07	0.80	0.76	0.90	0.89	0.84	0.67	0.78	0.75	0.68	0.67	0.78	0.88	0.79	0.72
Product Stock Withdrawn or Added (-) <sup>d</sup>	0.87	-0.72	-0.39	0.32	0.68	-0.62	-0.18	0.05	0.68	-0.35	-0.39	0.10	-0.03	-0.02	0.01
Total Supply	16.49	16.40	17.00	16.96	16.90	16.40	16.99	17.45	17.54	16.90	17.16	17.67	16.71	16.93	17.32
<b>Demand (Product Supplied)</b>															
Motor Gasoline	6.83	7.34	7.39	7.17	7.01	7.33	7.40	7.27	7.05	7.38	7.45	7.32	7.19	7.25	7.30
Jet Fuel	1.51	1.38	1.52	1.48	1.41	1.39	1.57	1.61	1.57	1.47	1.56	1.62	1.47	1.50	1.55
Distillate Fuel Oil	3.11	2.79	2.76	3.02	3.21	2.87	2.72	3.24	3.58	2.99	2.82	3.35	2.92	3.01	3.18
Residual Fuel Oil	1.19	1.14	1.14	1.16	1.26	0.98	1.09	1.21	1.31	1.11	1.06	1.21	1.16	1.14	1.17
Other Oils <sup>e</sup>	3.84	3.75	4.18	4.12	3.99	3.83	4.20	4.11	4.04	3.96	4.27	4.17	3.98	4.03	4.11
Total Product Supplied	16.49	16.40	17.00	16.96	16.89	16.40	16.99	17.45	17.54	16.90	17.16	17.67	16.71	16.93	17.32
Total Petroleum Net Imports	5.69	7.13	7.22	6.45	6.16	6.89	7.79	7.82	7.42	8.00	8.35	8.28	6.63	7.17	8.02
<b>Closing Stocks (million barrels)</b>															
Crude Oil (excluding SPR) <sup>f</sup>	337	347	341	325	339	331	340	342	341	339	340	340	325	342	340
Total Motor Gasoline	210	214	216	219	220	225	221	226	231	219	221	227	219	226	227
Finished Motor Gasoline	171	177	178	182	181	189	179	183	187	180	180	185	182	183	185
Blending Components	38	37	39	37	39	37	42	42	44	40	41	43	37	42	43
Jet Fuel	44	48	50	49	44	46	46	47	45	46	46	46	49	47	46
Distillate Fuel Oil	98	114	140	144	98	106	127	133	101	105	128	135	144	133	135
Residual Fuel Oil	43	44	48	50	40	43	47	46	44	46	45	49	50	46	49
Other Oils <sup>g</sup>	257	298	300	263	260	298	294	278	249	285	298	271	263	278	271
Total Stocks (excluding SPR)	989	1065	1094	1048	1001	1049	1075	1073	1010	1041	1077	1068	1048	1073	1068
Crude Oil in SPR	568	568	569	569	569	570	575	577	580	582	584	586	569	577	586
Total Stocks (including SPR)	1558	1634	1663	1617	1569	1619	1650	1650	1590	1622	1661	1655	1617	1650	1655

<sup>a</sup>Includes lease condensate.

<sup>b</sup>Net imports equals gross imports plus SPR imports minus exports.

<sup>c</sup>Includes finished petroleum products, unfinished oils, gasoline blending components, and natural gas plant liquids for processing.

<sup>d</sup>Includes an estimate of minor product stock change based on monthly data.

<sup>e</sup>Includes crude oil product supplied, natural gas liquids, liquefied refinery gas, other liquids, and all finished petroleum products except motor gasoline, jet fuel, distillate, and residual fuel oil.

<sup>f</sup>Includes crude oil in transit to refineries.

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

SPR: Strategic Petroleum Reserve

NGL: Natural Gas Liquids

Notes: Minor discrepancies with other EIA published historical data are due to rounding. Historical data are printed in bold, forecasts in are italic. The forecasts were generated by the following simulations of the demand and supply subsystems of the Short-Term Integrated Forecasting System: D070792PSB14:21 and S072992PSB09:43 for the low oil price case.

Sources: Historical data: Energy Information Administration, *Petroleum Supply Annual 1991*, DOE/EIA-0340(91)/1; *Petroleum Supply Monthly*, DOE/EIA-0109(91/01-92/07); and *Weekly Petroleum Status Report*, DOE/EIA-0208(various issues).

**Table 6. U.S. Petroleum Supply and Demand: Mid World Oil Price Case**  
 (Million Barrels per Day, Except Closing Stocks)

Supply and Disposition	1991				1992				1993				Year			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1991	1992	1993	
<b>Supply</b>																
Crude Oil Supply																
Domestic Production <sup>a</sup>	<b>7.56</b>	<b>7.41</b>	<b>7.34</b>	<b>7.35</b>	<b>7.35</b>	<b>7.26</b>	<b>7.07</b>	<b>7.12</b>	<b>7.06</b>	<b>6.94</b>	<b>6.88</b>	<b>6.91</b>	<b>7.42</b>	<b>7.20</b>	<b>6.95</b>	
Alaska	<b>1.88</b>	<b>1.77</b>	<b>1.76</b>	<b>1.78</b>	<b>1.79</b>	<b>1.76</b>	<b>1.62</b>	<b>1.67</b>	<b>1.60</b>	<b>1.56</b>	<b>1.54</b>	<b>1.58</b>	<b>1.80</b>	<b>1.71</b>	<b>1.57</b>	
Lower 48	<b>5.68</b>	<b>5.64</b>	<b>5.58</b>	<b>5.58</b>	<b>5.56</b>	<b>5.50</b>	<b>5.45</b>	<b>5.45</b>	<b>5.45</b>	<b>5.38</b>	<b>5.34</b>	<b>5.33</b>	<b>5.62</b>	<b>5.49</b>	<b>5.38</b>	
Net Imports (including SPR) <sup>b</sup>	<b>5.20</b>	<b>5.94</b>	<b>6.04</b>	<b>5.48</b>	<b>5.34</b>	<b>5.94</b>	<b>6.56</b>	<b>6.16</b>	<b>6.32</b>	<b>6.49</b>	<b>6.75</b>	<b>6.55</b>	<b>5.67</b>	<b>6.00</b>	<b>6.53</b>	
Gross Imports (excluding SPR)	<b>5.31</b>	<b>6.08</b>	<b>6.14</b>	<b>5.59</b>	<b>5.42</b>	<b>6.02</b>	<b>6.61</b>	<b>6.26</b>	<b>6.40</b>	<b>6.59</b>	<b>6.81</b>	<b>6.66</b>	<b>5.78</b>	<b>6.08</b>	<b>6.62</b>	
SPR Imports	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>	<b>0.04</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.00</b>	<b>0.02</b>	<b>0.03</b>	
Exports	<b>0.11</b>	<b>0.14</b>	<b>0.10</b>	<b>0.12</b>	<b>0.08</b>	<b>0.09</b>	<b>0.09</b>	<b>0.13</b>	<b>0.11</b>	<b>0.12</b>	<b>0.09</b>	<b>0.13</b>	<b>0.12</b>	<b>0.10</b>	<b>0.11</b>	
SPR Stock Withdrawn or Added (-)	<b>0.19</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>-0.01</b>	<b>-0.06</b>	<b>-0.03</b>	<b>-0.03</b>	<b>-0.03</b>	<b>-0.03</b>	<b>-0.03</b>	<b>-0.03</b>	<b>0.05</b>	<b>-0.02</b>	<b>-0.03</b>
Other Stock Withdrawn or Added (-)	<b>-0.16</b>	<b>-0.11</b>	<b>0.07</b>	<b>0.17</b>	<b>-0.15</b>	<b>0.08</b>	<b>-0.10</b>	<b>-0.02</b>	<b>0.01</b>	<b>0.02</b>	<b>0.00</b>	<b>-0.01</b>	<b>-0.01</b>	<b>-0.05</b>	<b>0.01</b>	
Product Supplied and Losses	<b>-0.02</b>	<b>-0.02</b>	<b>-0.01</b>	<b>-0.02</b>												
Unaccounted-for Crude Oil	<b>0.10</b>	<b>0.27</b>	<b>0.30</b>	<b>0.12</b>	<b>0.32</b>	<b>0.32</b>	<b>0.16</b>	<b>0.15</b>	<b>0.15</b>	<b>0.15</b>	<b>0.15</b>	<b>0.15</b>	<b>0.20</b>	<b>0.24</b>	<b>0.15</b>	
Total Crude Oil Supply	<b>12.87</b>	<b>13.50</b>	<b>13.73</b>	<b>13.10</b>	<b>12.84</b>	<b>13.58</b>	<b>13.61</b>	<b>13.36</b>	<b>13.49</b>	<b>13.56</b>	<b>13.73</b>	<b>13.56</b>	<b>13.30</b>	<b>13.35</b>	<b>13.58</b>	
Other Supply																
NGL Production	<b>1.67</b>	<b>1.65</b>	<b>1.62</b>	<b>1.69</b>	<b>1.69</b>	<b>1.68</b>	<b>1.62</b>	<b>1.65</b>	<b>1.66</b>	<b>1.63</b>	<b>1.62</b>	<b>1.65</b>	<b>1.66</b>	<b>1.66</b>	<b>1.64</b>	
Other Hydrocarbon and Alcohol Inputs	<b>0.09</b>	<b>0.09</b>	<b>0.09</b>	<b>0.10</b>	<b>0.12</b>	<b>0.09</b>	<b>0.15</b>	<b>0.20</b>	<b>0.16</b>	<b>0.11</b>	<b>0.16</b>	<b>0.21</b>	<b>0.09</b>	<b>0.14</b>	<b>0.16</b>	
Crude Oil Product Supplied	<b>0.02</b>	<b>0.02</b>	<b>0.01</b>	<b>0.02</b>												
Processing Gain	<b>0.68</b>	<b>0.68</b>	<b>0.74</b>	<b>0.75</b>	<b>0.73</b>	<b>0.70</b>	<b>0.69</b>	<b>0.70</b>	<b>0.66</b>	<b>0.69</b>	<b>0.70</b>	<b>0.70</b>	<b>0.71</b>	<b>0.71</b>	<b>0.69</b>	
Net Product Imports <sup>c</sup>	<b>0.49</b>	<b>1.18</b>	<b>1.18</b>	<b>0.98</b>	<b>0.83</b>	<b>0.95</b>	<b>0.98</b>	<b>1.34</b>	<b>0.73</b>	<b>1.12</b>	<b>1.17</b>	<b>1.27</b>	<b>0.96</b>	<b>1.03</b>	<b>1.07</b>	
Gross Product Imports <sup>c</sup>	<b>1.56</b>	<b>1.99</b>	<b>1.95</b>	<b>1.88</b>	<b>1.72</b>	<b>1.79</b>	<b>1.64</b>	<b>2.12</b>	<b>1.48</b>	<b>1.80</b>	<b>1.83</b>	<b>2.04</b>	<b>1.84</b>	<b>1.82</b>	<b>1.79</b>	
Product Exports	<b>1.07</b>	<b>0.80</b>	<b>0.76</b>	<b>0.90</b>	<b>0.89</b>	<b>0.84</b>	<b>0.67</b>	<b>0.78</b>	<b>0.75</b>	<b>0.68</b>	<b>0.67</b>	<b>0.78</b>	<b>0.88</b>	<b>0.79</b>	<b>0.72</b>	
Product Stock Withdrawn or Added (-) <sup>d</sup>	<b>0.67</b>	<b>-0.72</b>	<b>-0.39</b>	<b>0.32</b>	<b>0.68</b>	<b>-0.62</b>	<b>-0.17</b>	<b>0.07</b>	<b>0.69</b>	<b>-0.36</b>	<b>-0.40</b>	<b>0.11</b>	<b>-0.03</b>	<b>-0.01</b>	<b>0.01</b>	
Total Supply	<b>16.49</b>	<b>16.40</b>	<b>17.00</b>	<b>16.96</b>	<b>16.90</b>	<b>16.40</b>	<b>16.90</b>	<b>17.33</b>	<b>17.41</b>	<b>16.76</b>	<b>17.00</b>	<b>17.52</b>	<b>16.71</b>	<b>16.88</b>	<b>17.17</b>	
<b>Demand (Product Supplied)</b>																
Motor Gasoline	<b>6.83</b>	<b>7.34</b>	<b>7.39</b>	<b>7.17</b>	<b>7.01</b>	<b>7.33</b>	<b>7.37</b>	<b>7.24</b>	<b>7.02</b>	<b>7.35</b>	<b>7.42</b>	<b>7.29</b>	<b>7.19</b>	<b>7.24</b>	<b>7.27</b>	
Jet Fuel	<b>1.51</b>	<b>1.38</b>	<b>1.52</b>	<b>1.48</b>	<b>1.41</b>	<b>1.39</b>	<b>1.57</b>	<b>1.61</b>	<b>1.56</b>	<b>1.46</b>	<b>1.55</b>	<b>1.61</b>	<b>1.47</b>	<b>1.50</b>	<b>1.55</b>	
Distillate Fuel Oil	<b>3.11</b>	<b>2.79</b>	<b>2.76</b>	<b>3.02</b>	<b>3.21</b>	<b>2.87</b>	<b>2.70</b>	<b>3.22</b>	<b>3.55</b>	<b>2.96</b>	<b>2.79</b>	<b>3.31</b>	<b>2.92</b>	<b>3.00</b>	<b>3.15</b>	
Residual Fuel Oil	<b>1.19</b>	<b>1.14</b>	<b>1.14</b>	<b>1.16</b>	<b>1.26</b>	<b>0.98</b>	<b>1.06</b>	<b>1.17</b>	<b>1.26</b>	<b>1.05</b>	<b>0.99</b>	<b>1.15</b>	<b>1.16</b>	<b>1.12</b>	<b>1.11</b>	
Other Oils <sup>e</sup>	<b>3.84</b>	<b>3.75</b>	<b>4.18</b>	<b>4.12</b>	<b>3.99</b>	<b>3.83</b>	<b>4.20</b>	<b>4.10</b>	<b>4.03</b>	<b>3.94</b>	<b>4.25</b>	<b>4.16</b>	<b>3.98</b>	<b>4.03</b>	<b>4.10</b>	
Total Demand	<b>16.49</b>	<b>16.40</b>	<b>17.00</b>	<b>16.96</b>	<b>16.89</b>	<b>16.40</b>	<b>16.90</b>	<b>17.33</b>	<b>17.41</b>	<b>16.76</b>	<b>17.00</b>	<b>17.52</b>	<b>16.71</b>	<b>16.88</b>	<b>17.17</b>	
Total Petroleum Net Imports	<b>5.69</b>	<b>7.13</b>	<b>7.22</b>	<b>6.45</b>	<b>6.16</b>	<b>6.89</b>	<b>7.54</b>	<b>7.50</b>	<b>7.05</b>	<b>7.61</b>	<b>7.92</b>	<b>7.82</b>	<b>6.63</b>	<b>7.03</b>	<b>7.60</b>	
<b>Closing Stocks (million barrels)</b>																
Crude Oil (excluding SPR) <sup>f</sup>	<b>337</b>	<b>347</b>	<b>341</b>	<b>325</b>	<b>339</b>	<b>331</b>	<b>340</b>	<b>342</b>	<b>342</b>	<b>340</b>	<b>340</b>	<b>340</b>	<b>325</b>	<b>342</b>	<b>340</b>	
Total Motor Gasoline	<b>210</b>	<b>214</b>	<b>216</b>	<b>219</b>	<b>220</b>	<b>225</b>	<b>221</b>	<b>224</b>	<b>230</b>	<b>218</b>	<b>221</b>	<b>226</b>	<b>219</b>	<b>224</b>	<b>226</b>	
Finished Motor Gasoline	<b>171</b>	<b>177</b>	<b>178</b>	<b>182</b>	<b>181</b>	<b>189</b>	<b>179</b>	<b>182</b>	<b>186</b>	<b>179</b>	<b>184</b>	<b>182</b>	<b>184</b>	<b>182</b>	<b>184</b>	
Blending Components	<b>38</b>	<b>37</b>	<b>39</b>	<b>37</b>	<b>39</b>	<b>37</b>	<b>42</b>	<b>42</b>	<b>44</b>	<b>40</b>	<b>42</b>	<b>43</b>	<b>37</b>	<b>42</b>	<b>43</b>	
Jet Fuel	<b>44</b>	<b>48</b>	<b>50</b>	<b>49</b>	<b>44</b>	<b>46</b>	<b>46</b>	<b>47</b>	<b>44</b>	<b>46</b>	<b>46</b>	<b>45</b>	<b>49</b>	<b>47</b>	<b>45</b>	
Distillate Fuel Oil	<b>98</b>	<b>114</b>	<b>140</b>	<b>144</b>	<b>98</b>	<b>106</b>	<b>127</b>	<b>132</b>	<b>100</b>	<b>104</b>	<b>127</b>	<b>134</b>	<b>144</b>	<b>132</b>	<b>134</b>	
Residual Fuel Oil	<b>43</b>	<b>44</b>	<b>48</b>	<b>50</b>	<b>40</b>	<b>43</b>	<b>45</b>	<b>45</b>	<b>43</b>	<b>45</b>	<b>44</b>	<b>47</b>	<b>50</b>	<b>45</b>	<b>47</b>	
Other Oils <sup>g</sup>	<b>257</b>	<b>298</b>	<b>300</b>	<b>263</b>	<b>260</b>	<b>298</b>	<b>295</b>	<b>278</b>	<b>248</b>	<b>285</b>	<b>299</b>	<b>271</b>	<b>263</b>	<b>278</b>	<b>271</b>	
Total Stocks (excluding SPR)	<b>989</b>	<b>1065</b>	<b>1094</b>	<b>1048</b>	<b>1001</b>	<b>1049</b>	<b>1074</b>	<b>1070</b>	<b>1007</b>	<b>1038</b>	<b>1076</b>	<b>1066</b>	<b>1048</b>	<b>1070</b>	<b>1066</b>	
Crude Oil in SPR	<b>568</b>	<b>568</b>	<b>569</b>	<b>569</b>	<b>569</b>	<b>570</b>	<b>575</b>	<b>577</b>	<b>580</b>	<b>582</b>	<b>584</b>	<b>586</b>	<b>569</b>	<b>577</b>	<b>586</b>	
Total Stocks (including SPR)	<b>1558</b>	<b>1634</b>	<b>1663</b>	<b>1617</b>	<b>1569</b>	<b>1619</b>	<b>1649</b>	<b>1647</b>	<b>1587</b>	<b>1620</b>	<b>1660</b>	<b>1652</b>	<b>1617</b>	<b>1647</b>	<b>1652</b>	

<sup>a</sup>Includes lease condensate.

<sup>b</sup>Net imports equals gross imports plus SPR imports minus exports.

<sup>c</sup>Includes finished petroleum products, unfinished oils, gasoline blending components, and natural gas plant liquids for processing.

<sup>d</sup>Includes an estimate of minor product stock change based on monthly data.

<sup>e</sup>Includes crude oil product supplied, natural gas liquids, liquefied refinery gas, other liquids, and all finished petroleum products except motor gasoline, jet fuel, distillate, and residual fuel oil.

<sup>f</sup>Includes crude oil in transit to refineries.

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

SPR: Strategic Petroleum Reserve

NGL: Natural Gas Liquids

Notes: Minor discrepancies with other EIA published historical data are due to rounding. Historical data are printed in bold, forecasts are in italic. The forecasts were generated by the following simulations of the demand and supply subsystems of the Short-Term Integrated Forecasting System: D070792BBB13:46 and S072892BBB11:41 for the middle oil price case.

Sources: Historical data: Energy Information Administration, *Petroleum Supply Annual 1991*, DOE/EIA-0340(91)/1; *Petroleum Supply Monthly*, DOE/EIA-0109(91/01-92/07); and *Weekly Petroleum Status Report*, DOE/EIA-0208(various issues).

**Table 7. U.S. Petroleum Supply and Demand: High World Oil Price Case**  
 (Million Barrels per Day, Except Closing Stocks)

Supply and Disposition	1991				1992				1993				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1991	1992	1993
<b>Supply</b>															
Crude Oil Supply															
Domestic Production <sup>a</sup>	<b>7.56</b>	<b>7.41</b>	<b>7.34</b>	<b>7.35</b>	<b>7.35</b>	<b>7.26</b>	<b>7.19</b>	<b>7.28</b>	<b>7.24</b>	<b>7.14</b>	<b>7.09</b>	<b>7.14</b>	<b>7.42</b>	<b>7.27</b>	<b>7.15</b>
Alaska	1.88	1.77	1.76	1.78	1.79	1.76	1.64	1.70	1.64	1.60	1.58	1.63	1.80	1.72	1.61
Lower 48	5.68	5.64	5.58	5.58	5.56	5.50	5.55	5.58	5.60	5.54	5.51	5.51	5.62	5.55	5.54
Net Imports (including SPR) <sup>b</sup>	<b>5.20</b>	<b>5.94</b>	<b>6.04</b>	<b>5.48</b>	<b>5.34</b>	<b>5.94</b>	<b>6.44</b>	<b>5.95</b>	<b>6.01</b>	<b>6.21</b>	<b>6.51</b>	<b>6.25</b>	<b>5.67</b>	<b>5.92</b>	<b>6.25</b>
Gross Imports (excluding SPR)	5.31	6.08	6.14	5.59	5.42	6.02	6.49	6.06	6.09	6.31	6.57	6.36	5.78	6.00	6.33
SPR Imports	0.00	0.00	0.00	0.00	0.00	0.01	0.04	0.03	0.03	0.03	0.03	0.03	0.00	0.02	0.03
Exports	0.11	0.14	0.10	0.12	0.08	0.09	0.09	0.13	0.11	0.12	0.09	0.13	0.12	0.10	0.11
SPR Stock Withdrawn or Added (-)	0.19	0.00	0.00	0.00	0.00	-0.01	-0.06	-0.03	-0.03	-0.03	-0.03	-0.03	0.05	-0.02	-0.03
Other Stock Withdrawn or Added (-)	-0.16	-0.11	0.07	0.17	-0.15	0.08	-0.10	-0.02	0.01	0.02	0.00	-0.01	-0.01	-0.05	0.00
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 Oil	0.10	0.27	0.30	0.12	0.32	0.32	0.16	0.15	0.15	0.15	0.15	0.15	0.20	0.24	0.15
Total Crude Oil Supply	<b>12.87</b>	<b>13.50</b>	<b>13.73</b>	<b>13.10</b>	<b>12.84</b>	<b>13.58</b>	<b>13.61</b>	<b>13.32</b>	<b>13.36</b>	<b>13.48</b>	<b>13.70</b>	<b>13.49</b>	<b>13.30</b>	<b>13.34</b>	<b>13.51</b>
Other Supply															
NGL Production	1.67	1.65	1.62	1.69	1.69	1.68	1.62	1.65	1.66	1.64	1.63	1.66	1.66	1.66	1.65
Other Hydrocarbon and Alcohol Inputs	0.09	0.09	0.09	0.10	0.12	0.09	0.15	0.20	0.16	0.21	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	0.02
Processing Gain	0.68	0.68	0.74	0.75	0.73	0.70	0.69	0.70	0.66	0.68	0.70	0.69	0.71	0.70	0.68
Net Product Imports <sup>c</sup>	0.49	1.18	1.18	0.98	0.83	0.95	0.90	1.28	0.71	1.08	1.06	1.19	0.96	0.99	1.01
Gross Product Imports <sup>c</sup>	1.56	1.99	1.95	1.88	1.72	1.79	1.57	2.06	1.48	1.76	1.72	1.96	1.84	1.78	1.73
Product Exports	1.07	0.80	0.76	0.90	0.89	0.84	0.67	0.78	0.75	0.68	0.67	0.78	0.88	0.79	0.72
Product Stock Withdrawn or Added (-) <sup>d</sup>	0.67	-0.72	-0.39	0.32	0.68	-0.62	-0.16	0.08	0.72	-0.38	-0.41	0.12	-0.03	0.00	0.01
Total Supply	<b>16.49</b>	<b>16.40</b>	<b>17.00</b>	<b>16.96</b>	<b>16.90</b>	<b>16.40</b>	<b>16.84</b>	<b>17.25</b>	<b>17.29</b>	<b>16.62</b>	<b>16.85</b>	<b>17.37</b>	<b>16.71</b>	<b>16.85</b>	<b>17.03</b>
<b>Demand (Product Supplied)</b>															
Motor Gasoline	<b>6.83</b>	<b>7.34</b>	<b>7.39</b>	<b>7.17</b>	<b>7.01</b>	<b>7.33</b>	<b>7.35</b>	<b>7.21</b>	<b>6.99</b>	<b>7.32</b>	<b>7.39</b>	<b>7.26</b>	<b>7.19</b>	<b>7.23</b>	<b>7.24</b>
Jet Fuel	1.51	1.38	1.52	1.48	1.41	1.39	1.56	1.60	1.55	1.45	1.55	1.60	1.47	1.49	1.54
Distillate Fuel Oil	3.11	2.79	2.76	3.02	3.21	2.87	2.68	3.18	3.49	2.90	2.73	3.25	2.92	2.98	3.09
Residual Fuel Oil	1.19	1.14	1.14	1.16	1.26	0.98	1.04	1.14	1.23	1.00	0.94	1.11	1.16	1.11	1.07
Other Oils <sup>e</sup>	3.84	3.75	4.18	4.12	3.99	3.83	4.20	4.10	4.02	3.94	4.24	4.15	3.98	4.03	4.09
Total Product Supplied	<b>16.49</b>	<b>16.40</b>	<b>17.00</b>	<b>16.96</b>	<b>16.89</b>	<b>16.40</b>	<b>16.84</b>	<b>17.25</b>	<b>17.29</b>	<b>16.62</b>	<b>16.85</b>	<b>17.37</b>	<b>16.71</b>	<b>16.84</b>	<b>17.03</b>
Total Petroleum Net Imports	<b>5.69</b>	<b>7.13</b>	<b>7.22</b>	<b>6.45</b>	<b>6.16</b>	<b>6.89</b>	<b>7.35</b>	<b>7.24</b>	<b>6.72</b>	<b>7.29</b>	<b>7.56</b>	<b>7.44</b>	<b>6.63</b>	<b>6.91</b>	<b>7.26</b>
<b>Closing Stocks (million barrels)</b>															
Crude Oil (excluding SPR) <sup>f</sup>	<b>337</b>	<b>347</b>	<b>341</b>	<b>325</b>	<b>339</b>	<b>331</b>	<b>340</b>	<b>342</b>	<b>342</b>	<b>340</b>	<b>340</b>	<b>341</b>	<b>325</b>	<b>342</b>	<b>341</b>
Total Motor Gasoline	<b>210</b>	<b>214</b>	<b>216</b>	<b>219</b>	<b>220</b>	<b>225</b>	<b>221</b>	<b>224</b>	<b>228</b>	<b>218</b>	<b>221</b>	<b>226</b>	<b>219</b>	<b>224</b>	<b>226</b>
Finished Motor Gasoline	171	177	178	182	181	189	178	181	185	178	178	183	182	181	183
Blending Components	38	37	39	37	39	37	42	42	44	40	42	43	37	42	43
Jet Fuel	44	48	50	49	44	46	46	47	44	46	46	45	49	47	45
Distillate Fuel Oil	98	114	140	144	98	106	126	131	98	103	124	132	144	131	132
Residual Fuel Oil	43	44	48	50	40	43	45	45	42	44	43	47	50	45	47
Other Oils <sup>g</sup>	257	298	300	263	260	298	295	278	248	285	299	272	263	278	272
Total Stocks (excluding SPR)	<b>989</b>	<b>1065</b>	<b>1094</b>	<b>1048</b>	<b>1001</b>	<b>1049</b>	<b>1073</b>	<b>1068</b>	<b>1002</b>	<b>1035</b>	<b>1073</b>	<b>1062</b>	<b>1048</b>	<b>1068</b>	<b>1062</b>
Crude Oil in SPR	<b>568</b>	<b>568</b>	<b>569</b>	<b>569</b>	<b>569</b>	<b>570</b>	<b>575</b>	<b>577</b>	<b>580</b>	<b>582</b>	<b>584</b>	<b>586</b>	<b>569</b>	<b>577</b>	<b>586</b>
Total Stocks (including SPR)	<b>1558</b>	<b>1634</b>	<b>1663</b>	<b>1617</b>	<b>1569</b>	<b>1619</b>	<b>1648</b>	<b>1645</b>	<b>1582</b>	<b>1617</b>	<b>1649</b>	<b>1617</b>	<b>1645</b>	<b>1649</b>	<b>1649</b>

<sup>a</sup>Includes lease condensate.

<sup>b</sup>Net imports equals gross imports plus SPR imports minus exports.

<sup>c</sup>Includes finished petroleum products, unfinished oils, gasoline blending components, and natural gas plant liquids for processing.

<sup>d</sup>Includes an estimate of minor product stock change based on monthly data.

<sup>e</sup>Includes crude oil product supplied, natural gas liquids, liquefied refinery gas, other liquids, and all finished petroleum products except motor gasoline, jet fuel, distillate, and residual fuel oil.

<sup>f</sup>Includes crude oil in transit to refineries.

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

SPR: Strategic Petroleum Reserve

NGL: Natural Gas Liquids

Notes: Minor discrepancies with other EIA published historical data are due to rounding. Historical data are printed in bold, forecasts in are italic. The forecasts were generated by the following simulations of the demand and supply subsystems of the Short-Term Integrated Forecasting System: D070792WGB15:34 and S072992WGB09:54 for the low oil price case.

Sources: Historical data: Energy Information Administration, *Petroleum Supply Annual 1991*, DOE/EIA-0340(91)/1; *Petroleum Supply Monthly*, DOE/EIA-0109(91/01-92/07); and *Weekly Petroleum Status Report*, DOE/EIA-0208(various issues).

**Table 8. U.S. Petroleum Demand Sensitivities**

Determinant	1992	1993
	Four Quarters <sup>a</sup>	Four Quarters <sup>a</sup>
<b>Economic Activity</b>		
Gross Domestic Product (billion 1987 dollars) .....	4,929 - 4,974	4,987 - 5,193
Resulting Change in Petroleum Demand (million barrels per day) <sup>b</sup> .....	0.10	0.50
<b>Energy Prices</b>		
Imported Crude Oil (nominal dollars per barrel) <sup>c</sup> .....	\$17.21 - \$19.82	\$17 - \$22
Resulting Change in Petroleum Demand (million barrels per day) <sup>b</sup>		
Due to Changes in All Energy Prices .....	0.08	0.22
Due to Changes in the Crude Oil Price .....	0.10	0.29
<b>Weather</b>		
Heating Degree Days <sup>d</sup> .....	1,539 - 1,875	3,758 - 4,450
Resulting Change in Petroleum Demand Supplied (million barrels per day) .....	0.54	0.60
Cooling Degree Days <sup>d</sup> .....	699 - 834	991 - 1,184
Resulting Change in Petroleum Demand Supplied (million barrels per day) <sup>b</sup> .....	0.05	0.21

<sup>a</sup>In the case of weather, calculations apply to certain quarters only, as follows: for heating degree days, the average of first and fourth quarters only are used; for cooling degree days, the average of second and third quarters only are used.

<sup>b</sup>Ranges of petroleum product supplied associated with varying each determinant (or determinants), holding other things equal.

<sup>c</sup>Cost of imported crude oil to U.S. refiners.

<sup>d</sup>Heating and cooling degree days are U.S. 1980 population-weighted.

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

**Table 9. Forecast Components for U.S. Crude Oil Production  
(Million Barrels per Day)**

	High Price Case	Low Price Case	Difference		
			Total	Uncertainty	Price Impact
United States .....	7.14	6.60	.54	.19	.35
Lower 48 States .....	5.51	5.11	.41	.12	.29
Alaska .....	1.63	1.50	.13	.07	.07

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.

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

Supply and Disposition	1991				1992				1993				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1991	1992	1993
<b>Supply</b>															
Total Dry Gas Production <sup>a</sup>	<b>4.57</b>	<b>4.37</b>	<b>4.32</b>	<b>4.68</b>	<b>4.60</b>	<b>4.41</b>	<b>4.57</b>	<b>4.90</b>	<b>4.95</b>	<b>4.67</b>	<b>4.59</b>	<b>4.95</b>	<b>17.93</b>	<b>18.47</b>	<b>19.16</b>
Net Imports	<b>0.41</b>	<b>0.39</b>	<b>0.36</b>	<b>0.47</b>	<b>0.46</b>	<b>0.42</b>	<b>0.40</b>	<b>0.52</b>	<b>0.55</b>	<b>0.49</b>	<b>0.45</b>	<b>0.53</b>	<b>1.62</b>	<b>1.80</b>	<b>2.02</b>
Supplemental Gaseous Fuels	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.02</b>	<b>0.02</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.02</b>	<b>0.03</b>	<b>0.12</b>	<b>0.11</b>	<b>0.11</b>
Total New Supply	<b>5.01</b>	<b>4.79</b>	<b>4.71</b>	<b>5.17</b>	<b>5.09</b>	<b>4.85</b>	<b>4.99</b>	<b>5.45</b>	<b>5.53</b>	<b>5.19</b>	<b>5.06</b>	<b>5.51</b>	<b>19.67</b>	<b>20.38</b>	<b>21.30</b>
Underground Working Gas Storage															
Opening	<b>3.07</b>	<b>1.92</b>	<b>2.56</b>	<b>3.20</b>	<b>2.82</b>	<b>1.54</b>	<b>2.23</b>	<b>3.09</b>	<b>2.80</b>	<b>1.50</b>	<b>2.12</b>	<b>2.97</b>	<b>3.07</b>	<b>2.82</b>	<b>2.80</b>
Closing	<b>1.92</b>	<b>2.56</b>	<b>3.20</b>	<b>2.82</b>	<b>1.54</b>	<b>2.23</b>	<b>3.09</b>	<b>2.80</b>	<b>1.50</b>	<b>2.12</b>	<b>2.97</b>	<b>2.57</b>	<b>2.82</b>	<b>2.80</b>	<b>2.57</b>
Net Withdrawals <sup>b</sup>	<b>1.05</b>	<b>-0.70</b>	<b>-0.65</b>	<b>0.38</b>	<b>1.19</b>	<b>-0.57</b>	<b>-0.86</b>	<b>0.29</b>	<b>1.30</b>	<b>-0.62</b>	<b>-0.85</b>	<b>0.40</b>	<b>0.08</b>	<b>0.05</b>	<b>0.23</b>
Total Supply <sup>a</sup>	<b>6.06</b>	<b>4.09</b>	<b>4.05</b>	<b>5.55</b>	<b>6.29</b>	<b>4.28</b>	<b>4.13</b>	<b>5.74</b>	<b>6.83</b>	<b>4.57</b>	<b>4.21</b>	<b>5.91</b>	<b>19.75</b>	<b>20.43</b>	<b>21.52</b>
Balancing Item <sup>c</sup>	<b>0.09</b>	<b>0.08</b>	<b>-0.18</b>	<b>-0.35</b>	<b>-0.04</b>	<b>0.15</b>	<b>-0.10</b>	<b>-0.36</b>	<b>0.07</b>	<b>0.07</b>	<b>-0.10</b>	<b>-0.39</b>	<b>-0.35</b>	<b>-0.35</b>	<b>-0.35</b>
Total Primary Supply <sup>a</sup>	<b>6.15</b>	<b>4.17</b>	<b>3.87</b>	<b>5.21</b>	<b>6.25</b>	<b>4.43</b>	<b>4.02</b>	<b>5.38</b>	<b>6.90</b>	<b>4.64</b>	<b>4.12</b>	<b>5.52</b>	<b>19.40</b>	<b>20.08</b>	<b>21.18</b>
<b>Consumption</b>															
Lease and Plant Fuel	<b>0.32</b>	<b>0.30</b>	<b>0.30</b>	<b>0.33</b>	<b>0.32</b>	<b>0.29</b>	<b>0.31</b>	<b>0.35</b>	<b>0.36</b>	<b>0.32</b>	<b>0.32</b>	<b>0.35</b>	<b>1.25</b>	<b>1.26</b>	<b>1.35</b>
Pipeline Use	<b>0.22</b>	<b>0.15</b>	<b>0.14</b>	<b>0.18</b>	<b>0.22</b>	<b>0.17</b>	<b>0.15</b>	<b>0.17</b>	<b>0.20</b>	<b>0.18</b>	<b>0.18</b>	<b>0.20</b>	<b>0.69</b>	<b>0.71</b>	<b>0.75</b>
Residential	<b>2.09</b>	<b>0.75</b>	<b>0.38</b>	<b>1.35</b>	<b>2.06</b>	<b>0.83</b>	<b>0.38</b>	<b>1.36</b>	<b>2.37</b>	<b>0.88</b>	<b>0.38</b>	<b>1.39</b>	<b>4.57</b>	<b>4.63</b>	<b>5.01</b>
Commercial	<b>1.10</b>	<b>0.50</b>	<b>0.36</b>	<b>0.77</b>	<b>1.09</b>	<b>0.54</b>	<b>0.36</b>	<b>0.77</b>	<b>1.22</b>	<b>0.56</b>	<b>0.37</b>	<b>0.79</b>	<b>2.73</b>	<b>2.77</b>	<b>2.94</b>
Industrial	<b>1.91</b>	<b>1.75</b>	<b>1.77</b>	<b>1.95</b>	<b>2.01</b>	<b>1.82</b>	<b>1.85</b>	<b>2.07</b>	<b>2.15</b>	<b>1.90</b>	<b>1.89</b>	<b>2.12</b>	<b>7.38</b>	<b>7.75</b>	<b>8.07</b>
Electric Utilities	<b>0.51</b>	<b>0.73</b>	<b>0.92</b>	<b>0.63</b>	<b>0.55</b>	<b>0.78</b>	<b>0.97</b>	<b>0.65</b>	<b>0.59</b>	<b>0.81</b>	<b>0.99</b>	<b>0.67</b>	<b>2.79</b>	<b>2.95</b>	<b>3.06</b>
Total Consumption	<b>6.15</b>	<b>4.17</b>	<b>3.87</b>	<b>5.21</b>	<b>6.25</b>	<b>4.43</b>	<b>4.02</b>	<b>5.38</b>	<b>6.90</b>	<b>4.64</b>	<b>4.12</b>	<b>5.52</b>	<b>19.40</b>	<b>20.08</b>	<b>21.18</b>

<sup>a</sup>Excludes nonhydrocarbon gases removed.

<sup>b</sup>Net withdrawals may vary from the difference between opening and closing stocks of gas in working gas storage due to book transfers between base and working gas categories, and other storage operator revisions of working gas inventories.

<sup>c</sup>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 data are printed in bold, forecasts are in italic. The forecasts were generated by the following simulations of the demand and supply subsystems of the Short-Term Integrated Forecasting System: D070792BBB13:46 and S072892BBB11:41 for the middle oil price case.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(92/07); *Natural Gas Monthly*, DOE/EIA-0130(92/07); and *Electric Power Monthly*, DOE/EIA-0226(92/07).

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

Supply and Disposition	1991				1992				1993				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1991	1992	1993
<b>Supply</b>															
Production .....	254	237	251	252	257	243	254	261	259	249	258	265	994	1015	1031
Primary Stock Levels <sup>a</sup>															
Opening .....	33	42	41	34	33	40	36	32	30	34	35	32	33	33	30
Closing .....	42	41	34	33	40	36	32	30	34	35	32	31	33	30	31
Net Withdrawals .....	-9	1	7	1	-7	4	4	2	-4	-1	3	1	0	3	-1
Imports .....	1	1	1	1	1	1	1	1	1	1	1	1	3	3	3
Exports .....	22	26	31	29	25	28	31	28	24	30	29	29	109	112	113
Total Net Domestic Supply .....	224	212	228	224	226	219	228	236	232	218	233	238	889	909	920
Secondary Stock Levels <sup>b</sup>															
Opening .....	168	169	172	164	168	169	178	167	175	174	177	166	168	168	175
Closing .....	169	172	164	168	169	178	167	175	174	177	166	171	168	175	171
Net Withdrawals .....	-1	-3	8	-4	-1	-9	11	-9	2	-4	11	-4	0	-8	5
Total Supply .....	223	210	236	220	225	211	238	228	233	215	243	233	889	901	925
<b>Consumption</b>															
Coke Plants .....	8	8	9	9	8	9	9	9	9	9	9	10	34	35	37
Electric Utilities .....	189	182	208	192	191	182	210	196	202	186	215	201	772	780	805
Retail and General Industry <sup>c</sup> .....	22	18	19	22	21	19	19	22	22	19	19	22	81	82	82
Total Consumption .....	219	209	236	224	221	211	238	228	233	215	243	233	888	897	925
Discrepancy <sup>d</sup> .....	4	1	0	-3	4	0	0	0	0	0	0	0	2	4	0

<sup>a</sup>Primary stocks are held at the mines, preparation plants, and distribution points.

<sup>b</sup>Secondary stocks are held by users. Most of the secondary stocks are held by electric utilities.

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

<sup>d</sup>Historical 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 data are printed in bold, forecasts are in italic. The forecasts were generated by the following simulations of the demand and supply subsystems of the Short-Term Integrated Forecasting System: D070792BBBB13:46 and S072892BBBB11:41 for the middle oil price case.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(92/07); and *Quarterly Coal Report*, DOE/EIA-0221(92/1Q).

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

Supply and Disposition	1991				1992				1993				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1991	1992	1993
<b>Net Utility Generation</b>															
Coal .....	<b>377.8</b>	<b>367.9</b>	<b>416.7</b>	<b>386.8</b>	<b>386.6</b>	<b>367.9</b>	<b>421.1</b>	<b>394.9</b>	<b>406.2</b>	<b>373.0</b>	<b>430.1</b>	<b>404.7</b>	<b>1549.2</b>	<b>1570.5</b>	<b>1614.0</b>
Petroleum .....	<b>26.7</b>	<b>30.2</b>	<b>31.5</b>	<b>23.0</b>	<b>27.3</b>	<b>24.5</b>	<b>27.1</b>	<b>24.0</b>	<b>26.6</b>	<b>27.3</b>	<b>27.6</b>	<b>24.8</b>	<b>111.4</b>	<b>102.9</b>	<b>106.4</b>
Natural Gas .....	<b>48.5</b>	<b>68.4</b>	<b>87.1</b>	<b>60.2</b>	<b>52.2</b>	<b>74.7</b>	<b>91.7</b>	<b>61.8</b>	<b>56.0</b>	<b>76.3</b>	<b>93.1</b>	<b>63.2</b>	<b>264.1</b>	<b>280.5</b>	<b>288.7</b>
Nuclear .....	<b>151.4</b>	<b>142.6</b>	<b>171.1</b>	<b>147.5</b>	<b>158.5</b>	<b>139.1</b>	<b>165.8</b>	<b>147.1</b>	<b>162.1</b>	<b>141.1</b>	<b>167.0</b>	<b>149.1</b>	<b>612.6</b>	<b>608.5</b>	<b>619.3</b>
Hydroelectric .....	<b>73.4</b>	<b>80.0</b>	<b>64.4</b>	<b>57.7</b>	<b>61.0</b>	<b>68.9</b>	<b>63.0</b>	<b>67.2</b>	<b>73.6</b>	<b>79.7</b>	<b>66.6</b>	<b>68.9</b>	<b>275.5</b>	<b>260.1</b>	<b>288.7</b>
Geothermal and Other <sup>a</sup> .....	<b>2.5</b>	<b>2.4</b>	<b>2.5</b>	<b>2.6</b>	<b>2.6</b>	<b>2.8</b>	<b>3.1</b>	<b>3.1</b>	<b>3.1</b>	<b>3.2</b>	<b>3.2</b>	<b>10.1</b>	<b>11.6</b>	<b>12.8</b>	
Total Net Generation .....	<b>680.3</b>	<b>691.4</b>	<b>773.3</b>	<b>678.0</b>	<b>686.3</b>	<b>678.0</b>	<b>771.8</b>	<b>698.1</b>	<b>727.7</b>	<b>700.6</b>	<b>787.6</b>	<b>714.1</b>	<b>2823.0</b>	<b>2834.1</b>	<b>2930.0</b>
Net Utility Imports .....	<b>2.4</b>	<b>3.5</b>	<b>7.2</b>	<b>6.5</b>	<b>4.7</b>	<b>5.5</b>	<b>7.0</b>	<b>4.9</b>	<b>6.1</b>	<b>6.8</b>	<b>8.6</b>	<b>6.2</b>	<b>19.6</b>	<b>22.1</b>	<b>27.7</b>
Utility Purchases from Nonutilities <sup>b</sup> .....	<b>29.3</b>	<b>31.9</b>	<b>35.0</b>	<b>29.8</b>	<b>33.4</b>	<b>36.4</b>	<b>39.8</b>	<b>34.0</b>	<b>36.8</b>	<b>40.1</b>	<b>44.0</b>	<b>37.5</b>	<b>126.0</b>	<b>143.5</b>	<b>158.4</b>
Total Utility Supply .....	<b>711.9</b>	<b>726.8</b>	<b>815.5</b>	<b>714.3</b>	<b>724.3</b>	<b>719.8</b>	<b>818.6</b>	<b>737.0</b>	<b>770.6</b>	<b>747.5</b>	<b>840.2</b>	<b>757.8</b>	<b>2968.6</b>	<b>2999.7</b>	<b>3116.1</b>
Losses and Unaccounted <sup>c</sup> .....	<b>37.9</b>	<b>65.9</b>	<b>56.6</b>	<b>49.0</b>	<b>41.8</b>	<b>62.7</b>	<b>61.0</b>	<b>56.6</b>	<b>47.0</b>	<b>68.3</b>	<b>62.8</b>	<b>58.1</b>	<b>209.3</b>	<b>222.0</b>	<b>236.2</b>
<b>Utility Sales</b>															
Residential .....	<b>247.7</b>	<b>214.5</b>	<b>272.4</b>	<b>222.4</b>	<b>246.8</b>	<b>210.8</b>	<b>269.6</b>	<b>228.4</b>	<b>269.9</b>	<b>218.4</b>	<b>275.3</b>	<b>233.8</b>	<b>957.0</b>	<b>955.6</b>	<b>997.4</b>
Commercial .....	<b>179.9</b>	<b>186.4</b>	<b>213.6</b>	<b>185.0</b>	<b>181.8</b>	<b>183.8</b>	<b>214.9</b>	<b>188.4</b>	<b>192.7</b>	<b>191.6</b>	<b>222.1</b>	<b>195.3</b>	<b>784.9</b>	<b>768.9</b>	<b>801.8</b>
Industrial .....	<b>223.6</b>	<b>235.6</b>	<b>246.5</b>	<b>235.0</b>	<b>231.2</b>	<b>239.8</b>	<b>248.5</b>	<b>240.4</b>	<b>237.2</b>	<b>246.1</b>	<b>254.9</b>	<b>247.0</b>	<b>940.7</b>	<b>959.9</b>	<b>985.1</b>
Other .....	<b>22.9</b>	<b>24.5</b>	<b>26.4</b>	<b>22.9</b>	<b>22.8</b>	<b>22.7</b>	<b>24.7</b>	<b>23.2</b>	<b>23.7</b>	<b>23.1</b>	<b>25.1</b>	<b>23.6</b>	<b>96.6</b>	<b>93.3</b>	<b>95.5</b>
Total Sales .....	<b>674.1</b>	<b>661.0</b>	<b>758.9</b>	<b>665.3</b>	<b>682.5</b>	<b>657.1</b>	<b>757.6</b>	<b>680.4</b>	<b>723.6</b>	<b>679.2</b>	<b>777.4</b>	<b>699.6</b>	<b>2759.3</b>	<b>2777.7</b>	<b>2879.9</b>

<sup>a</sup>Other includes generation from wind, wood, waste, and solar sources.

<sup>b</sup>Electricity received from nonutility sources, including cogenerators and small power producers.

<sup>c</sup>Balancing item, mainly transmission and distribution losses.

Notes: Data for utility purchases from nonutilities, net utility imports, and losses and unaccounted are estimated for 1991 and for the first quarter 1992. Minor discrepancies with other EIA published historical data are due to rounding. Historical data are printed in bold, forecasts are in italic. The forecasts were generated by the following simulations of the demand and supply subsystems of the Short-Term Integrated Forecasting System: D070792BBB13:46 and S072892BBB11:41 for the middle oil price case.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(92/07); and *Electric Power Monthly*, DOE/EIA-0226(92/07).



# **Selected Energy Statistics Available on EIA's Electronic Publishing System (EPUB)**

EPUB is an electronic publishing system maintained by the Energy Information Administration (EIA) of the U.S. Department of Energy. EPUB allows the general public to electronically access selected energy data from many of EIA's statistical reports. The system is a menu-driven, bulletin-board-type system with extensive online help capabilities that can be accessed free of charge 24 hours a day by using a terminal or PC with an asynchronous modem. (EPUB is taken down briefly at midnight for backup.)

PC users must provide the following information to their communications software in order to successfully access the EPUB system:

## **Communications Parameters**

Baud Rate: 300-2400 bps

Data Bits: 8

Stop Bits: 1

Parity: None

Duplex: Full

Terminal Type: ANSI, ANSI-BBS, VT100, etc.

Once communications software and/or hardware have been configured, EPUB can be accessed by dialing (202) 586-2557. When a connection to the system has been made, some users may find that the menu-driven instructions and the online help capabilities will provide enough information to effectively use EPUB. More detailed information is in the *EPUB Users Guide*, available online from the EPUB system or from:

National Energy Information Center, EI-231

Energy Information Administration

Forrestal Building, Room 1F-048

Washington, DC 20585

(202) 586-8800

Telecommunications device for the

hearing-impaired only: (202)586-1181

Hours: 9 a.m. to 5 p.m., M-F, eastern time

For communications or technical assistance, call (202) 586-8959, 8 a.m. to 5 p.m., eastern time, Monday through Friday. For questions about the content of EPUB reports and data, call the National Energy Information Center on (202) 586-8800.

EPUB provides statistical information, as well as data from selected EIA publications:

*Heating fuel data*

Updated the 2nd week of the month.

*Oxygenate data*

Updated approximately the 25th of the month.

*Weekly Petroleum Status Report*

Updated on Wednesdays (Thursdays in the event of a holiday) at 5 p.m.

*Petroleum Supply Monthly*

Updated on the 20th of the month.

*Petroleum Marketing Monthly*

Updated on the 20th of the month.

*Natural Gas Monthly*

Updated on the 20th of the month.

*Weekly Coal Production*

Updated on Fridays at 5 p.m.

*Quarterly Coal Report*

Updated 60 days after the end of the quarter.

*Electric Power Monthly*

Updated on the 1st of the month.

*Monthly Energy Review*

Updated the last week of the month.

*Short-Term Energy Outlook*

Updated 60 days after the end of the quarter.

*Winter Fuels Report* (October through April)

Updated every Thursday at 5 p.m.

**Notice:** By mid-1992, a second *Monthly Energy Review* (MER) file will be available to EPUB users with PostScript-compatible printers, from which they will be able to download and print an exact replica of the entire printed MER (except covers), including all text, tables, and graphics. This will mark the first time that EIA offers a "print-on-demand" service.

**NOTICE:  
ANALYSTS AND POLICYMAKERS  
GOVERNMENT AND INDUSTRY**

**NEMS-- National Energy Modeling System, a new energy analytic model for the 1990's, is under development by the Energy Information Administration.**

**NEMS will be used for midterm and long-term energy forecasting, i.e., to show what could happen in the United States in the future under various energy policies with certain assumptions.**

**During the designing and implementation stages, it is vital for the Energy Information Administration to know the potential users' needs and suggestions.**

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**PLAN NOW TO ATTEND  
THE NEMS USERS' CONFERENCE**

**February 1 and 2, 1993  
Crystal Gateway Marriott Hotel  
Arlington, Virginia**

**Watch for registration information and a complete agenda in future issues of this publication.**

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**A booklet entitled, *NEMS: A Preview*, and detailed component design reports are available from the Energy Information Administration's National Energy Information Center:**

**National Energy Information Center, EI-231  
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For the hearing impaired: (202) 586-1181**

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