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QUARTERLY PROJECTIONS

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May 1991

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Contacts

The *Short-Term Energy Outlook* is prepared by the Energy Information Administration (EIA), Office of Energy Markets and End Use (EMEU). General questions concerning the content of the report may be addressed to W. Calvin Kilgore (202/586-1617), Director of EMEU; John D. Pearson (202/586-6160), Director of the Energy Analysis and Forecasting Division; Edward Flynn (202/586-5748), Chief of the Demand Analysis and Forecasting Branch; or Gerald Peabody (202/586-1458), Chief of the Supply Analysis and Integration Branch.

Detailed questions may be addressed to David Costello (202/586-1468) or the following analysts, who can be reached at the Energy Analysis and Forecasting Division (202/586-5382):

World Oil Prices/International Petroleum	Michael Grillot
Macroeconomic	Kay A. Smith
Energy Product Prices	Neil Gamson
Petroleum Demands	Michael Morris
	Susan Decker
	Evelyn Amerchih
Petroleum Supply	Paul Kondis
Natural Gas	Karen E. Elwell
Coal	Elias Johnson
Electricity	Karen E. Elwell
Integration	Paul Kondis

Domestic crude oil production figures are provided by the EIA Dallas Field Office, under the supervision of John H. Wood. Nuclear electricity generation is provided by Roger Diedrich; hydroelectric generation, electricity imports, and electricity purchases from nonutilities are provided by Patricia Toner; and coal production, imports, and exports are provided by Frederick Freme—all of the EIA Office of Coal, Nuclear, Electric and Alternate Fuels. World petroleum values are prepared by the International and Contingency Information Division, Mark Rodekohr, Director. The article on "Natural Gas Prices" was prepared by Neil Gamson and the article on "Summer Outlook for Motor Gasoline" was prepared by Michael Morris, both of the EIA Office of Energy Markets and End Use.

Preface

The Energy Information Administration (EIA) presents future cases of quarterly short-term energy supply, demand, and prices for publication in February, May, August, and November in the *Short-Term Energy Outlook (Outlook)*. An annual supplement analyzes previous estimate errors, 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 case period for this issue of the *Outlook* extends from the second quarter of 1991 through the fourth quarter of 1992. Some data for the first quarter of 1991 are preliminary EIA estimates (for example, some petroleum estimates are based on statistics from the *Weekly Petroleum Status Report*) or are derived from internal model simulations using the latest exogenous information available (for example, some electricity demand estimates are based on recent weather data).

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

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

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Highlights

Oil Prices Remain Low in War Aftermath

World oil prices posted a fifth straight monthly decline in March 1991, from the pre-war peak of about $33 per barrel in October. The monthly average cost to U.S. refiners of imported crude oil was an estimated $17 per barrel in March, and is expected to remain in the $15- to $22-per-barrel range through the near term. Sharply declining U.S. demand, due to the recession and mild weather at home, has compounded the effects of excess worldwide stockpiles of crude oil and some products. These high stocks reflected concerns that the Persian Gulf conflict would be more extended than it was. The potential for both a faster-than-expected recovery in demand and significant restraint among major foreign oil suppliers in reducing excess stocks suggests consideration of an imported oil price as high as $22 per barrel. However, market fundamentals appear to favor a lower price.

Oil Demand Down

Despite the outlook for relatively low oil prices, U.S. petroleum demand could lose significant ground in 1991 for the second consecutive year. The economic recession accounts for most of the 200,000- to 400,000-barrel-per-day decline in demand. Ongoing efficiency improvements (particularly in the transportation sector) combined with high availability of competitive prices of natural gas in power generation and industrial applications in the first half of 1991 account for the rest of the weakness.

Gasoline Demand Slips in 1991, but Improved Summer Supplies Anticipated

Total demand for motor gasoline in the mid oil price case is expected to be about 100,000 barrels per day lower this summer (May through August) than during the summer of 1990. Recession-induced weakening of highway travel growth and continued gains in overall vehicle efficiency should keep gasoline requirements fairly weak. Primary stockpiles in early spring were well below normal ranges, however, and substantial increases in refinery output and net imports are anticipated and will be needed to meet expected demand.

U.S. Oil Production Decline Eases in 1991; Sharp Declines Seen for 1992

Enhancements to U.S. oil production capability, particularly in Alaska, resulted in some significant improvements in production performance in the fourth quarter 1990. The effects of these efforts are believed to have spilled over into early 1991, so that the overall decline in U.S. oil production this year may be relatively small (about 110,000 barrels per day). With relatively low oil prices expected for the near future, however, sharp production declines are likely later this year and into 1992.

Oil Imports May Drop Again This Year, but Head Up in 1992

Total petroleum net imports were down 110,000 barrels per day in 1990 from 1989 levels, the result of declining demand. This year could bring a similar or greater decline if oil prices average $18 per barrel or more, representing a second consecutive annual reduction. Net imports are expected to increase by about 700,000 barrels per day or more in 1992, as demand recovers and domestic production falls.

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

Natural Gas Still Abundant; Overall Market Should Weather Economic Slump

The weak economy and low oil prices have combined to hold down natural gas prices. However, competitive natural gas prices and ample supplies have helped to maintain or improve its market share in the electric utility and industrial sectors. Natural gas use in 1991 is expected to be affected less than other fuels by the economic slowdown, especially in markets where oil-to-gas substitution is occurring. By late 1991 and early 1992, a diminishing excess supply of gas should contribute to higher gas prices and reduced incentives for switching away from oil in the industrial and utility sectors.

Growth in Electricity Demand Slows in 1991, but Rebounds in 1992

Warm temperatures in the first quarter of 1991 and the economic recession are expected to slow electricity demand growth this year. Growth rates for total electricity sales are over 1 percent for 1991 and over 4 percent for 1992. Normal weather assumptions combined with an expected recovery in the economy should boost electricity demand across all end-use sectors in 1992.

Electric Utilities Sustain Coal Demand Growth

Total coal demand will continue to grow in 1991, as anticipated increases in electric utility sector consumption offset the effects of the weak economy on other sectors. Coal will grow robustly in 1992, with increased consumption in both the utility and nonutility sectors.

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

	Price Range[a]	Year				Annual Percentage Change		
		1989	1990	1991	1992	1989-1990	1990-1991	1991-1992
Real Gross National Product (billion 1982 dollars)	Mid	**4118**	**4156**	*4166*	*4296*	**0.9**	*0.2*	*3.1*
Imported Crude Oil Price (nominal dollars per barrel)	Low			*15.87*	*15.00*		*-27.1*	*-5.5*
	Mid	**18.09**	**21.78**	*18.24*	*20.00*	**20.4**	*-16.3*	*9.6*
	High			*21.33*	*22.00*		*-2.1*	*3.1*
Petroleum Supply								
Crude Oil Production[b] (million barrels per day)	Low			*7.06*	*6.58*		*-3.3*	*-6.8*
	Mid	**7.61**	**7.30**	*7.19*	*6.85*	**-4.1**	*-1.5*	*-4.7*
	High			*7.29*	*7.00*		*-0.1*	*-4.0*
Net Petroleum Imports, Including SPR (million barrels per day)	Low			*7.19*	*8.20*		*1.4*	*14.0*
	Mid	**7.20**	**7.09**	*6.98*	*7.72*	**-1.5**	*-1.6*	*10.6*
	High			*6.75*	*7.43*		*-4.8*	*10.1*
Energy Demand								
Total Petroleum Product Supplied (million barrels per day)	Low			*16.73*	*17.26*		*-1.1*	*3.2*
	Mid	**17.33**	**16.92**	*16.67*	*17.05*	**-2.4**	*-1.5*	*2.3*
	High			*16.54*	*16.90*		*-2.2*	*2.2*
Natural Gas Consumption (trillion cubic feet)	Low			*18.43*	*18.84*		*-2.2*	*2.2*
	Mid	**18.80**	**18.84**	*18.64*	*19.39*	**0.2**	*-1.1*	*4.0*
	High			*18.90*	*19.68*		*0.3*	*4.1*
Coal Consumption (million short tons)	Mid	**891**	**894**	*899*	*936*	**0.3**	*0.6*	*4.1*
Electricity Sales[c] (billion kilowatthours)	Mid	**2647**	**2705**	*2745*	*2866*	**2.2**	*1.5*	*4.4*
Gross Energy Consumption[d] (quadrillion Btu)	Mid	**81.3**	**81.5**	*81.3*	*83.8*	**0.2**	*-0.2*	*3.1*
Thousand Btu/1982 Dollar of GNP	Mid	**19.74**	**19.61**	*19.52*	*19.51*	**-0.7**	*-0.5*	*-0.1*

[a]"Price Range" refers to the imported refiners' acquisition cost of crude oil assumed for the scenario depicted. In all cases for this table, the mid-case macroeconomic outlook is assumed, and weather is assumed to be normal.

[b]Includes lease condensate.

[c]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.

[d]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 values are printed in **boldface**, forecasts in *italics*.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(91/04); *International Petroleum Statistics Report*, DOE/EIA-0520(91/03); *International Energy Annual 1989*, DOE/EIA-0219(89); *Petroleum Marketing Monthly*, DOE/EIA-0380(91/04); *Petroleum Supply Monthly*, DOE/EIA-0190(91/04); *Petroleum Supply Annual 1989*, DOE/EIA-0340(89)/1; *Natural Gas Monthly*, DOE/EIA-0130(91/04); *Electric Power Monthly*, DOE/EIA-0226(91/04); and *Quarterly Coal Report*, DOE/EIA-0121(90/4Q); Organization for Economic Cooperation and Development, Annual and Monthly Oil Statistics Database through September 1990. Macroeconomic projections are based on DRI/McGraw-Hill Forecast CONTROL0491.

Assumptions

World Oil Prices

One of the most uncertain factors affecting the domestic short-term energy outlook is the world oil price, defined here as the nominal price of imported crude oil delivered to U.S. refiners. Because of this uncertainty, three different world oil price cases are employed (Figure 1). These cases are used to develop a mid oil price case projection and alternative projections for domestic petroleum supply and demand.

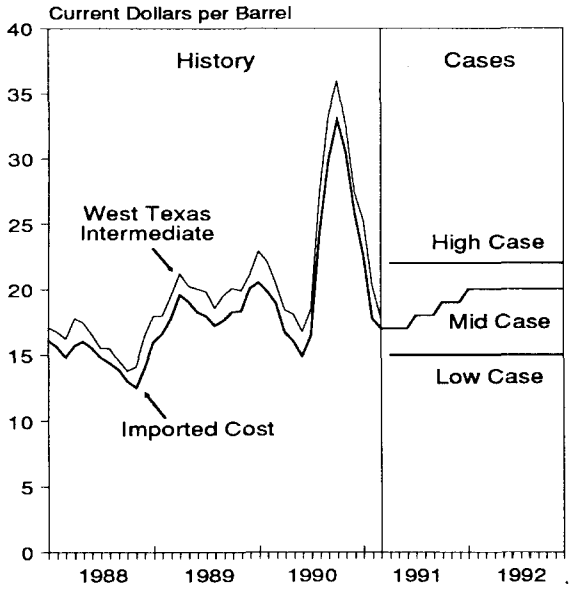

Figure 1. Crude Oil Prices

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

Sources: **History**: Energy Information Administration, *Monthly Energy Review* (Washington, DC) and *Oil and Gas Journal* Energy Database (Tulsa, OK). **Cases**: Table 5.

Although there are many factors that affect the world oil price, at least two are subject to substantial uncertainty over the next 19 months. These two factors are the level of OPEC oil production and the level of net oil exports from the Soviet Union. OPEC oil production during the forecast period will be affected both by OPEC production capacity and by the willingness of OPEC member countries to restrain their production. These factors will, in turn, be affected by the speed with which Iraq and Kuwait are able to restore oil exports and by the willingness of other OPEC members to reduce their production to make room for these exports. Net oil exports from the Soviet Union will be determined by the relative decline rates of both Soviet oil production and consumption, both of which are highly uncertain at this time. In addition to these two factors, another uncertain factor that will strongly affect the world oil price is the rate of economic growth, through its effect on petroleum demand.

In the mid oil price case, the world oil price decreases from about $19 per barrel in the first quarter of 1991 to $17 in the second quarter and then increases to $18 in the third quarter, to $19 in the fourth quarter, and to $20 in the first quarter of 1992. Prices remain at $20 per barrel throughout 1992. This case is based on the assumption that the OPEC member nations exert enough production restraint throughout the forecast period to bring petroleum stocks back into a normal relationship with petroleum demand (as measured by days of forward consumption) by the end of 1992. It also assumes that lower production by other OPEC countries will largely offset restored production from Iraq and Kuwait. An additional assumption is that there will not be a precipitous decline in net exports from the Centrally Planned Economies to the Market Economies.[1] (The international petroleum forecast for the mid oil price case is discussed in detail on page 6.)

In the low oil price case, the world oil price decreases to $15 per barrel in the second quarter of 1991 and remains at this level throughout the forecast period. In this case, it is assumed that production restraint by OPEC member countries is weak and is only sufficient to prevent a complete price collapse. Also, it is assumed that production declines by other OPEC member countries do not fully offset restored production from Iraq and Kuwait.

In the high oil price case, the world oil price increases to $22 per barrel in the second quarter of 1991 and remains at this level throughout the forecast period. In this case, it is assumed that OPEC production behavior will be at least as restrictive as in the mid oil price case. At the same time, other factors are assumed to contribute to greater upward pressure on the world oil price. These could include larger declines in net exports from the Centrally Planned Economies to the

Market Economies than assumed in the mid oil price case, and longer maintenance shutdowns on North Sea oil platforms.

Macroeconomic Activity

The success of the allied troops abroad has restored both business and consumer confidence at home, leading to a slightly improved forecast of economic growth over the next 2 years. The annual growth rate for real gross national product (GNP) is expected to be 0.2 percent in 1991, then accelerate to 3.1 percent in 1992 (Table 2).[2] These growth rates are based on an economic recovery beginning in the second quarter of 1991.

In 1991, an increase in government expenditures and improvement in the trade balance are the main reasons for the slight increase in GNP. The trade balance improvement is primarily due to decreased imports, rather than increased exports. Annual consumption remains flat during the year, while both residential and business fixed investment decline. However, interest rates are also expected to fall, setting the stage for the 1992 recovery in GNP. Both consumption and investment improve in 1992 because of recovery in real disposable income and manufacturing production.

There is debate about whether the current recession will actually end in second quarter 1991. Several economic forecasting groups agree that it will, while recent reports of economic indicators have not conclusively signalled the end.[3] The U.S. Commerce Department reported that consumer spending and home sales significantly increased in February and March, raising hopes that the economy is turning around.[4] On the other hand, Commerce also reported personal income increases that were modest during the same period, reflecting the growing unemployment rate. Additionally, the University of Michigan's index of consumer confidence jumped in March, only to fall again in April.[5] Therefore, it is too soon to conclude whether an upward trend in the economy is emerging or whether the end of the war caused a short-lived spurt in consumer activity.

International Petroleum

The international petroleum forecast uses supply and demand patterns that reflect the mid oil price case. The demand for petroleum products by the Market Economies is expected to increase to an average of 53.6 million barrels per day in 1991, up 650,000 barrels per day, or 1.2 percent, from the 1990 rate (Table 3). In 1992, demand is expected to increase by almost 1.4 million barrels per day, or 2.6 percent.

Petroleum demand by the countries that compose the Organization for Economic Cooperation and Development (OECD) is expected to average 37.7 million barrels per day in 1991, up about 175,000 barrels per day, or 0.5 percent, from the 1990 rate. This level of demand is based on the assumption that the OECD economies will grow at a rate of only 1.3 percent in 1991 (Table 4). Declining petroleum demand in the United States in 1991 is expected to largely offset the growth in all other OECD regions. In 1992, a sharp rebound in the economies of all OECD regions is expected to result in OECD economic growth of 3.1 percent. This, in turn, will contribute to an increase in OECD petroleum demand of 850,000 barrels per day, or 2.3 percent. The United States is expected to account for more than two-fifths of this increase, while Japan and OECD Europe will account for about one-fourth and one-fifth, respectively.

Petroleum demand in the Other Market Economies is expected to increase to an average of almost 15.9 million barrels per day in 1991, an increase of about 500,000 barrels per day, or 3.2 percent, from the 1990 rate. Part of this increase is due to fuel supplied by the Persian Gulf allies to the Coalition forces before, during, and after Operation Desert Storm. In 1992, petroleum demand by the Other Market Economies is expected to increase by almost 525,000 barrels per day, or 3.3 percent.

In 1991, it is assumed that OPEC oil production (including crude oil, natural gas liquids, and refinery gain) will average almost 24.8 million barrels per day, or 150,000 barrels per day below the 1990 rate. In 1992, OPEC oil production is assumed to increase by 900,000 barrels per day.

Total liquids production from the non-OPEC Market Economies is expected to increase by almost 450,000 barrels per day in 1991 and by about 200,000 barrels per day in 1992.[6] In 1991, significant production increases from Norway (180,000 barrels per day), Mexico (145,000 barrels per day), and Syria (70,000 barrels per day) will more than offset decreases from the United States (80,000 barrels per day) and the United Kingdom (75,000 barrels per day). In 1992, production increases from the United Kingdom (205,000 barrels per day), Norway (75,000 barrels per day), Brazil (55,000 barrels per day), and Yemen (50,000 barrels per day) will offset a projected decline in total liquids production from the United States of 320,000 barrels per day. (These

comparisons refer to Table 3, which uses a different definition of production than Table 7; see footnote "a" in Table 3.)

Net oil exports from the Centrally Planned Economies to the Market Economies are expected to average 1.6 million barrels per day in 1991, down by almost 275,000 barrels per day from the 1990 rate. In 1992, an additional decline of about 200,000 barrels per day to just over 1.4 million barrels per day is expected. These declines will occur primarily because oil production from the Soviet Union is expected to decline more rapidly than Soviet oil consumption, while aggregate oil production and consumption from other Centrally Planned Economies remain relatively unchanged.[7] In 1991, Soviet oil production is expected to decrease to an average of about 10.6 million barrels per day, 870,000 barrels per day lower than the 1990 rate. In 1992, production is expected to decline by an additional 670,000 barrels per day. Soviet petroleum demand is expected to decrease by 530,000 barrels per day (to an average of 7.7 million barrels per day) in 1991 and by 500,000 barrels per day in 1992.

Energy Product Prices

Current Situation

Spot prices for West Texas Intermediate crude oil have fallen by more than $8 per barrel since the beginning of the year, due largely to the end of the war in the Persian Gulf.[8] Spot market prices for distillate fuel and residual fuel oil have also fallen, with almost all of the price drop attributed to lower crude oil prices.

Spot prices for motor gasoline, on the other hand, have been more volatile since the beginning of 1991 starting to rise from a February low, in anticipation of the start of the driving season. Lower than average stocks since December 1990 have put upward pressure on prices, while lower than average demand has put downward pressure on prices. These two opposing forces may account for the price volatility.

On the retail market, gasoline prices fell steadily from their November 1990 peak of $1.43 per gallon to about $1.14 in the beginning of spring. This price includes the 5-cents-per-gallon Federal excise tax enacted on December 1, 1990, as well as State and local tax increases that went into effect in the beginning of this year. Retail margins (the difference between retail and wholesale prices, including taxes) fell between December and March of this year. Up until March, it appears that dealers had, on average, absorbed some of this tax increase because of retail level competition. With current tight supply conditions, however, it is expected that retailers will gradually increase their margins, especially if demand for motor gasoline picks up.

Residual fuel oil prices remained considerably below crude oil prices since the beginning of the Gulf crisis. In September 1990, residual fuel oil prices were nearly $9 per barrel less than crude oil prices.[9] In addition, residual fuel oil prices remained below oil crude prices during the winter. Low natural gas prices, high stock levels, mild winter weather, and a sluggish economy have each contributed to the low residual fuel prices.

Price Outlook

Iraq's invasion of Kuwait, the threat to oil fields in Saudi Arabia and neighboring countries, the allied response, and finally the resulting war, led to a wide range of uncertainty for world oil price paths. Now that the war has ended, the three price cases are more focused, the price paths lower, and the range of uncertainty narrower. The following discussion provides energy product price projections given the three crude oil price cases: a $15 oil price case, a case averaging $18.30 in 1991 and $20 in 1992 (mid case), and a $22 per barrel case. Most of the variation in the petroleum product price cases stems from the differences in the crude oil price cases.

$15 Oil Price Case. If the price of crude oil were to drop to $15 per barrel in the second quarter of this year and remain there throughout the forecast period, all petroleum product prices would decline from their average 1990 levels. The $15 price represents an average fall of nearly $6 per barrel from 1990 to 1991 and an additional decrease of about $1 per barrel in 1992. To end-users, tax increases for motor gasoline and diesel fuel, and inflation of approximately 4 percent per year would offset some of the drop in crude oil prices.

Price declines (relative to 1991) should average about 4 to 6 cents per gallon per year for the relatively high-taxed motor fuels through 1992 and more for the generally untaxed heating oil and residual fuel oils.

The average wellhead price for natural gas should decline slightly in 1991 due to the build up in natural gas supplies as end-use markets face competitive pressure from lower oil prices. During this period, residential gas prices would be expected to remain relatively flat. Assuming normal weather, average

annual natural gas prices to electric utilities are also expected to be the same in 1991 as in 1990. In 1992, natural gas wellhead prices are expected to increase at the rate of inflation, even though petroleum product prices could continue to stay depressed. Higher natural gas prices are expected because of anticipated increases in natural gas demand in 1992 due to economic and weather-related factors.

Residential electricity prices are expected to increase by an average of 2.2 percent per year, in current dollars, from 1990 to 1992, as declines in weighted average fuel costs are offset by inflation in operating costs. Delivered utility coal prices would decline in 1991 as the cost of diesel fuel used in mining operations and transportation decreases.

Mid Oil Price Case. This case assumes that crude oil prices will be $17 per barrel in the second quarter 1991, increase by $1 per barrel per quarter through the first quarter 1992 and remain at $20 per barrel through 1992. In this case, most petroleum product prices would decline in 1991 compared with last year, mainly because the 1991 average annual crude oil prices would be about $3.50 per barrel lower than 1990 prices (Table 5 and Figure 2). In 1992, prices are expected to rebound, due to higher crude oil prices. Furthermore, for the motor fuels, tax increases at the State and local level are expected. The forecasted price of gasoline is expected to peak at $1.27 per gallon in the third quarter of 1992, while heating oil reaches $1.06 per gallon in the first quarter of 1992.

The natural gas wellhead price is projected to remain flat (on an annual average basis) in 1991 largely because of low first quarter prices (the result of a mild winter) being offset by price increases later this year as demand picks up. In 1992, the wellhead price is projected to rise considerably with normal weather and the economic rebound. Because of relatively low wellhead prices over the past year, there are likely to be fewer additions to gas production capacity which could diminish the quantity of excess gas available and thus put upward pressure on prices. (See "Natural Gas Prices," page 10.) Expected increases in gas consumption in 1992 would lead to increased gas prices. These gas price increases would be passed on to end-user prices. Therefore, in this case, the price difference between natural gas and heavy oil to electric utilities will narrow in the latter part of 1992, due to peak seasonal demands for natural gas and to higher wellhead prices (Figure 3).

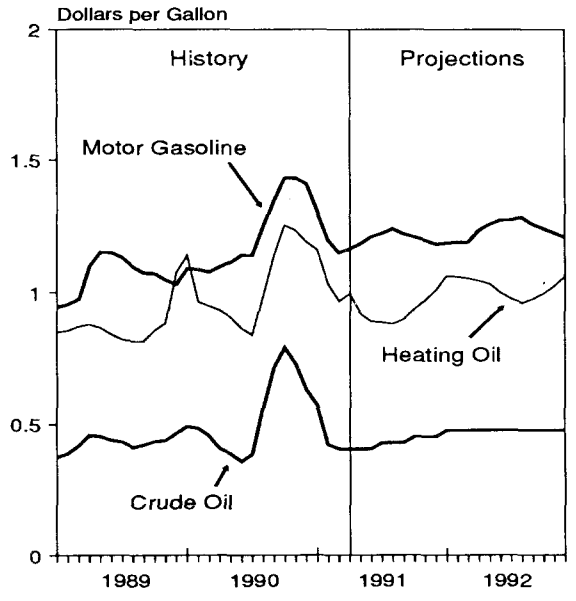

Figure 2. Petroleum Crude and Product Prices

Sources: **History**: Energy Information Administration, *Monthly Energy Review* (Washington, DC). **Projections**: Table 5.

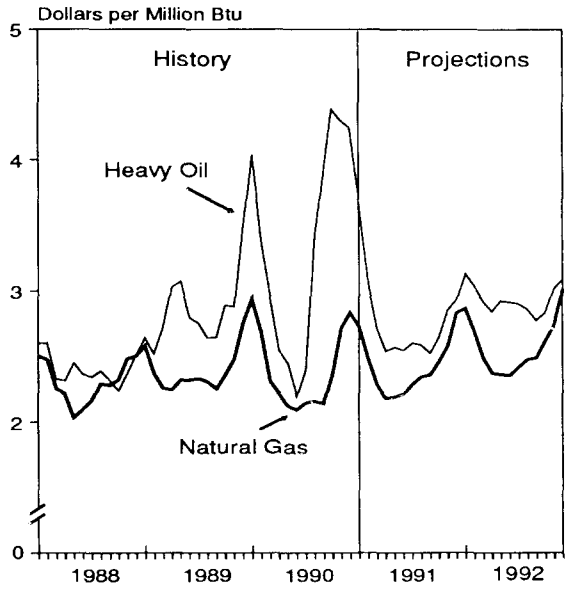

Figure 3. Utility Oil and Natural Gas Prices

Sources: **History**: Energy Information Administration, *Monthly Energy Review* (Washington, DC). **Projections**: Table 5.

Residential electricity prices are projected to increase at a rate of about two-thirds of inflation in 1991 due to lower fuel costs that will offset increases in operating costs. In 1992, as fuel costs rise, electricity prices are expected to increase at a rate of about 80 percent of inflation.

$22 Oil Price Case. In the $22 case, world crude oil prices would be approximately equal to the 1990 average annual price. However, energy product prices are expected to be higher than the 1990 levels because of tax increases, inflation in non-fuel costs, and higher demand-induced price increases that result from an improved economy and an assumption of normal weather. Compared with the mid oil price case, the $22 oil price case would lead to an additional 5 to 6 cents per gallon for most petroleum product prices. With additional natural gas consumption, gas prices would rise. Delivered utility coal prices would rise as transportation and mining operation costs increase. Higher delivered fossil fuel prices in turn, would be passed on to residential electricity prices.

Natural Gas Prices

Natural gas wellhead prices, on an annual average, have been depressed over the last 2 years and are expected to remain low for 1991. The main reason was that natural gas demand was well below the supply capability. Even high oil prices did not help. In 1992, projected higher demand and tighter supplies are likely to raise prices.

Wellhead spot prices have been considerably lower for the first quarter of this year compared with the first quarter of last year. Two separate surveys show prices declining (Figure 4). However, the price of crude oil (in this case, the West Texas Intermediate spot price) for the first quarter 1991 is nearly the same as it was in the first quarter 1990 (Table 2). One reason for the disparity in

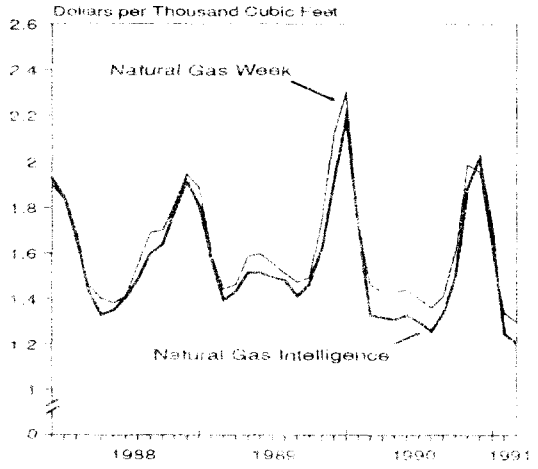

Figure 4. Natural Gas Spot Wellhead Prices

Sources: Intelligence Press Inc., *Natural Gas Intelligence* (Washington, DC), various issues, average of Southwest regions. Oil Daily Co., *Natural Gas Week* (Washington, DC), various issues, volume-weighted average.

price movement between the two fuels is that more than 90 percent of the natural gas consumed comes from domestic sources; therefore, its price is somewhat insulated from world events. Another major reason for the low gas wellhead prices in the beginning of this year was the very mild winter that occurred on the East Coast in the first 2 months of this year. Heating degree-days for both the Mid-Atlantic and New England regions were about 7 percent and 18 percent lower than normal in January and February 1991, respectively.[10] A sluggish economy for much of 1990 and the beginning of 1991 also led to lower-than-normal fuel demand, particularly in the industrial sector, further reducing any upward pressure on prices. As a result of the low demand, natural gas prices were largely unresponsive to changes in oil prices.

By the second half of 1991, these relatively low wellhead prices are expected to begin to recover due to higher demand spurred by a return to normal weather and an improving economy (Figure 5). In 1992, the annual average natural gas wellhead price is projected to increase by nearly 11 percent over the 1991 price (Table 5). Continuing economic recovery and normal first quarter winter weather are some of the reasons for the projected higher prices. Furthermore, tighter supplies will put upward pressure on prices. Low wellhead prices have led to declines in gas-related drilling, diminishing the likelihood of a supply surplus. According to a recent Energy Information Administration report, "beyond 1991, as the capacity of currently producing wells declines, a sufficient number of wells must be added each year in order to ensure adequate supply."[11] According to the report, the large excess supply of gas available since the early 1980's has begun to dissipate. However, anticipated higher wellhead prices toward the end of 1992, should lead to greater drilling activity, thus providing the potential for increases in supply in subsequent periods.

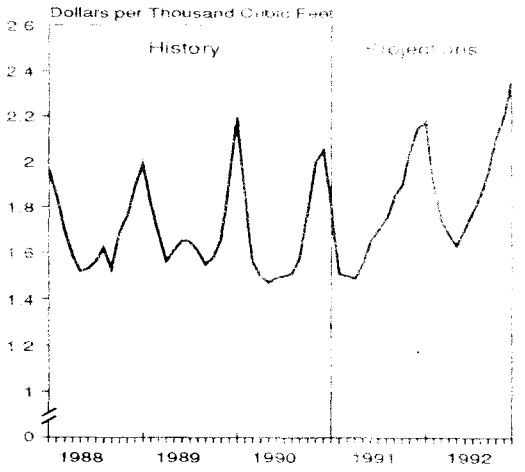

Figure 5. Natural Gas Wellhead Prices

Sources: **History**: Energy Information Administration, *Monthly Energy Review* (Washington, DC). **Projections**: Table 5.

Of particular concern are potential delivery problems in peak periods of demand such as the severe cold spell that occurred in the East in December 1989. Factors that could constrain deliveries under these conditions include inadequate pipeline capacity, gas well freeze-ups, and regulatory constraints such as State-imposed ceilings on production. Thus, a prolonged cold spell resulting in very high demand and inadequate supply could cause a sharp short-term jump in gas prices to levels significantly above those shown for the mid oil price case in Table 5.

U.S. Petroleum Outlook

Petroleum Demand

Domestic oil consumption fell to 16.9 million barrels per day in 1990, and a further decline of at least 200,000 barrels per day is anticipated for 1991. Demand is expected to return to the 1990 level or higher in 1992, assuming the economy swings out of the recession and the weather is normal (Table 1). The assumption that weather conditions will return to normal seasonal temperatures is a positive factor for demand when compared with the mild weather of 1990 and early 1991. The economy is assumed to begin a recovery in the second quarter of 1991 that extends through 1992.

In 1990, the average daily consumption of oil of 16.9 million barrels per day represented a 2.4-percent decline from 1989. The drop in demand was due to the onset of the current economic recession, mild weather in the winter months, and high crude oil prices compared with 1989. Uncertainty surrounding the Gulf crisis contributed to the higher crude oil prices in 1990, further weakening demand. Demand for all petroleum products fell, except jet fuel which remained virtually unchanged, despite increased consumption in the latter part of the year associated with the Persian Gulf crisis.

Domestic petroleum demand is expected to decline by between 200,000 and 400,000 barrels per day in 1991, depending on the average prices of crude oil. Demand is projected to increase in 1992 if the recovery materializes as expected (Table 7). Next year's increase is expected to be in the 360,000 to 530,000 barrel per day range depending on price conditions. These forecasts reflect the assumptions of real gross national product (GNP) growth rates of 0.2 percent in 1991 and 3.1 percent in 1992, and normal weather, as measured in number of heating degree-days. By also incorporating low and high values for GNP growth rates and heating degree-days, the band of possible outcomes for oil demand in 1991 and 1992 is much wider than that based on oil prices alone (Figure 6).[12]

The low-demand case reflected in Figure 6 is based on crude oil prices averaging $22 per barrel (i.e., the high oil price case), real GNP falling 1.0 percent in 1991 and rising 2.2 percent in 1992, and weather conditions corresponding to a 15-year low in terms of heating degree-days (Table 2). Oil demand in this low case is

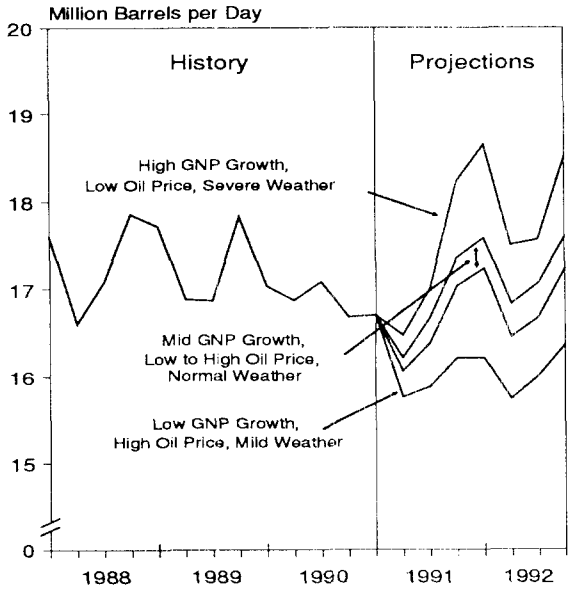

Figure 6. Total Petroleum Demand

Sources: **History**: Energy Information Administration, *Petroleum Supply Monthly* (Washington, DC). **Projections**: Tables 6, 7, and 8 and internal model calculations from the Short-Term Integrated Forecasting System.

expected to be around 16.1 million barrels per day in both 1991 and 1992. The high-demand case reflects an average crude oil price of $15 per barrel, a real GNP growth rate of 1.4 percent in 1991 and 4.1 percent in 1992, and weather conditions corresponding to a 15-year high in terms of heating degree-days. Oil demand in this high-demand case is expected to be about 17 million barrels per day in 1991 and to reach 18 million barrels in 1992.

Petroleum Demand Sensitivities

The petroleum demand outlook is based on normal temperatures and a particular set of macroeconomic assumptions. In order to widen the usefulness of the basic projections provided in the Outlook, Table 9 summarizes the range of possible outcomes and sensitivities when alternative macroeconomic, price, and weather assumptions are used. The petroleum price sensitivity assumes that non-petroleum prices remain constant.

Weather sensitivities are based on assumed deviations from normal temperatures which correspond to the greatest quarterly variances in weather observed during the past 15 years. Based on the information in Tables 2 and 7 for the mid oil price case, the results from Table 9 are summarized below:[13]

- A 1-percent increase in real GNP raises petroleum demand by about 147,000 barrels per day;
- A $1 increase in crude oil prices, assuming no price response from non-oil energy sources, reduces oil consumption by about 53,000 barrels per day;
- A 1-percent increase in cooling degree-days increases oil demand by about 14,000 barrels per day; a 1-percent increase in heating degree-days increases petroleum demand by about 34,000 barrels per day.

Petroleum Supply

High oil prices, war-related uncertainty about oil supplies, and initiation of expanded production facilities in Alaska's Prudhoe Bay field in late 1990 resulted in an expansion of U.S. oil production that temporarily slowed the overall decline. However, as the price of crude oil fell to $17 per barrel in March 1991 from its October 1990 peak of $33 per barrel, the incentives for domestic crude oil production also fell. The average 1991 decline in U.S. production is expected to be 110,000 barrels per day in the mid oil price case. At the lower price path for crude oil, domestic production is likely to resume a sharp downward slide through 1992 (Table 6 and Figure 7). A $15 oil price would likely generate declines in total domestic output in 1991 and 1992 of nearly one-quarter million and one-half million barrels per day, respectively.

Alaskan crude oil production is expected to be higher in 1991 than in 1990, but lower in 1992 because of expected production declines from the Prudhoe Bay field throughout the forecast period. In the Lower 48 States, the Point Arguello field in the Pacific Federal Offshore Region is expected to start production in June 1991 at 20,000 barrels per day, and remain at that level throughout the forecast period for the low and mid oil price cases (Tables 6 and 7). In the high oil price case, production from this field is expected to increase to 40,000 barrels per day in June 1992. The high price path also includes additional Alaskan production as the Niakuk field is assumed to start producing in late 1992 (Table 8).

Crude oil production estimates for the low and high oil price cases contain an element of uncertainty related to the decline rates of existing fields and the timing of expected events, such as the onset of production from

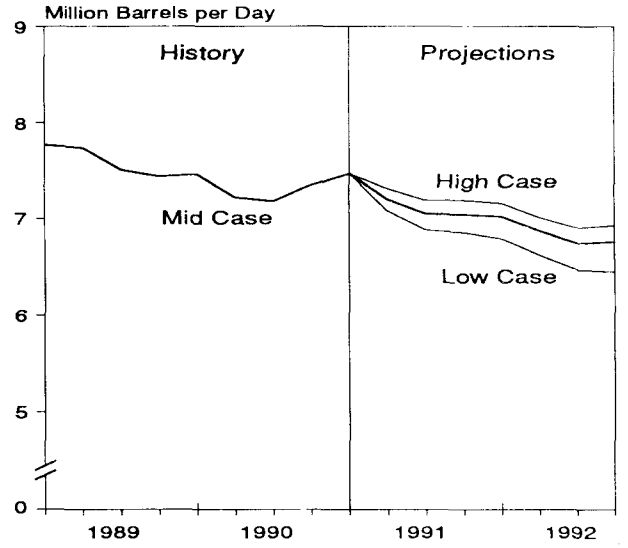

Figure 7. U.S. Crude Oil Production

Sources: **History**: Energy Information Administration, *Petroleum Supply Annual, Petroleum Supply Monthly, and Weekly Petroleum Status Report* (Washington, DC). **Projections**: Tables 6, 7, and 8.

a new field. However, most of the differences in estimates of production levels between the low and high oil price cases is attributable to the price impacts on drilling and well maintenance. More drilling is expected at higher prices, as well as more frequent well maintenance and a reduction of well abandonments.

Crude oil refinery inputs are expected to follow the pattern set by domestic consumption, falling in 1991 and rebounding in 1992. Between the fourth quarter of 1990 and the first quarter of 1991, crude runs have averaged slightly more than 12.8 million barrels per day, allowing refiners to perform maintenance on refineries that had been run at over 85-percent utilization since mid-1989.

Total petroleum net imports dip slightly in 1991 and then rise in 1992 to a level much higher than in 1990 (Figure 8). While net product imports drop in 1991 to roughly 1.2 million barrels per day, crude oil imports stay relatively constant in the mid oil price case. In 1992, net product imports increase somewhat, but crude oil imports surge sharply as demand picks up and production lags.

Petroleum product stocks have been drawn down from the high level that existed in the third quarter of 1990. Total primary petroleum stocks (excluding SPR) are estimated to end the first quarter of 1991 below 1 billion barrels. This is a rare occurrence, but it occurs at a time when distillate fuel oil and liquefied petroleum gases are at their seasonal low points, and when motor gasoline, the major summer product, is

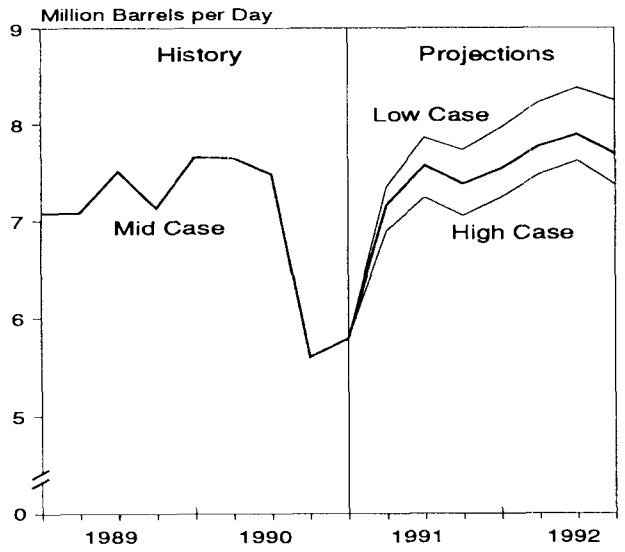

Figure 8. Total Net Petroleum Imports

Note: Crude oil production includes lease condensate.
Sources: **History**: Energy Information Administration, *Petroleum Supply Annual, Petroleum Supply Monthly, Weekly Petroleum Status Report* (Washington, DC). **Projections**: Tables 6, 7, and 8.

expected to exhibit weaker demand than in recent history. (See "Summer Outlook for Motor Gasoline," page 14.) Stocks are expected to follow their normal seasonal patterns throughout the forecast period.

Motor Gasoline

Following a 1.6-percent decline in 1990, demand for motor gasoline in the mid oil price case is projected to decline by a further 0.7 percent in 1991 before increasing by 0.3 percent in 1992 (Table 7). Although the retail gasoline price increases brought about by Iraq's invasion of Kuwait contributed to the softening of demand in 1990, the first half of that year also witnessed consumption declines that reflected a slowdown in economic growth. Vehicle-miles traveled increased by 2.0 percent for the year, but that was less than half the growth in 1989, and the smallest increase in 8 years. In addition, apparent fuel efficiency increased by 3.6 percent, more than offsetting the impact of the growth in highway travel on gasoline consumption. Gasoline shipments for 1990, however, may have been depressed by an apparent drawdown in secondary stocks. As a result, that data may have understated actual consumption and overestimated actual fuel efficiency gains for the year as a whole.

In 1991, the ongoing contraction in economic activity as well as continued fuel economy gains are expected to bring about a third consecutive annual decline in gasoline demand. Vehicle-miles traveled are projected to increase by only 1.1 percent. Fuel efficiency increases are expected to register a modest 1.9-percent increase. The decline in secondary stocks, following apparently large drawdowns during the previous 2 years, is expected to moderate, bringing gasoline shipments more in line with actual consumption patterns. In 1992, motor gasoline shipments are projected to increase slightly, reflecting the anticipated economic upturn. Growth in economic activity, which is projected to bring about a 2.6-percent increase in highway travel activity, is expected to offset the impact of a projected 2.3-percent increase in fuel efficiency for that year.

The recent decline in motor gasoline prices to pre-Gulf crisis levels has brought about a partial reversal of the previous shift in market shares by gasoline grade (Figure 9). Unleaded regular gasoline's share of the market, which had reached a record 71-percent share of the market in October 1990, declined slightly to 70 percent by January 1991, the most recent month for which data are available. Premium grade gasoline's share of the market, which had declined sharply to 15 percent by October, managed to stage a modest recovery, reaching 17 percent by January. Midgrade gasoline's share of the market has remained stable at just under 10 percent, while leaded gasoline's share has continued to decline, dropping to 3.5 percent of the market.[14]

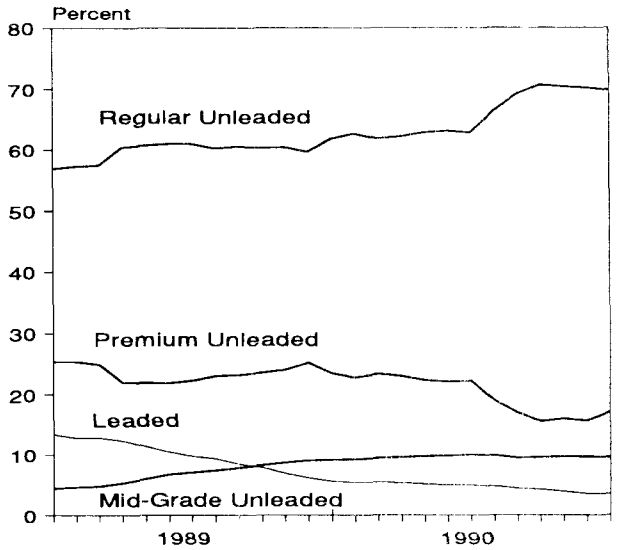

Figure 9. Motor Gasoline Market Shares

Note: The last data point is January 1991.
Sources: **History**: Energy Information Administration, *Petroleum Marketing Monthly* (Washington, DC).

Summer Outlook for Motor Gasoline

As of early spring 1991, stocks of motor gasoline in primary storage locations were well below normal ranges for that time of year, raising some concerns regarding the adequacy of supply for the summer driving season.[15] Low refinery production and import levels during the winter months, when gasoline stocks are usually built up, resulted in unusually heavy reliance on stocks to meet domestic demand, particularly in March. While gasoline demand is expected to be somewhat below last summer's level for the 1991 driving season, it is clear that meeting domestic gasoline requirements this summer will entail considerably higher rates of net imports and refinery output of gasoline than those seen in the 6-month period ending March 1991. Nevertheless, it is believed that, barring any major unanticipated disruptions in domestic refinery operations, demand can be met without pressing primary inventories significantly below minimum operating inventory levels (205 million barrels for the entire United States). This is true even if a very high gasoline demand case materializes, so long as reasonably normal levels of imported product remain available.

For the 1991 driving season, defined as the period May through August, motor gasoline product supplied is projected to average 7.39 million barrels per day in the mid oil price case. This represents a 1.4-percent decline in demand from the same period last year. Although highway travel activity is projected to rise by 1.3 percent from last summer despite economic weakness, the fuel efficiency of the gasoline-powered vehicle stock is expected to increase at a rate that will result in a net decline in gasoline use.

Despite recent concerns about gasoline availability for the summer season brought about by lower-than-expected refinery production, low levels of imports, and substantial declines in inventories, these sources of motor gasoline should be sufficient to meet the lower gasoline demand this year without major adjustments to normal supply patterns. Domestic refinery production is expected to average 7.13 million barrels per day compared with 7.06 million barrels per day during the summer of 1990. The lower-than-expected gasoline output during the first quarter of this year was brought about by two unusual conditions. First, several refineries were undergoing heavy maintenance schedules that had been deferred by increases in output during the early stages of the Persian Gulf conflict as a precaution against possible shortages. Second, refineries advanced their retooling and maintenance schedules from spring to late winter, because these facilities experienced low refinery margins resulting from declining product demand.[16] In early April, however, refinery runs were beginning to recover as maintenance work was being completed.[17] In addition, upstream and gasoline-related downstream production capacities added during 1990 have increased gasoline production capability slightly and are expected to continue to increase further during this year.[18] Therefore, refinery production of gasoline should be expected to increase substantially from winter levels before the beginning of the summer season as these turnaround procedures are phased out. These projections assume that weather- or accident-related disruptions of refinery operations will not be a factor during the summer months and that maintenance efforts will be completed before the peak driving season.

Net imports of motor gasoline are expected to average 292,000 barrels per day compared with 347,000 barrels per day during the summer of 1990, down considerably from the record 432,000 barrels per day in 1988. This net import level is up considerably from the estimated 135,000 barrel-per-day average for the first quarter 1991, but seems to be a very attainable figure compared with historical averages. The reported settlement of a refinery workers strike in Brazil in early April, the expected completion of maintenance work in Venezuela, and the recent resumption of large volumes of gasoline shipments to the United States from European refineries are all expected to boost imports during the summer season from the low levels of late 1990 and early 1991.[19]

Reflecting the weakness in demand and increases in refinery production, finished motor gasoline inventories are projected to increase 32,000 barrels per day, in contrast to a normal seasonal decline. Total primary inventories, which include blending components, are also expected to rise from low spring levels to end the driving season in the 220 million barrel range (about the normal level), given the net import and refinery output expectations. These inventories are therefore expected to remain above the 205-million-barrel threshold defined by the National Petroleum Council as the minimum level of total primary stocks required to avoid spot shortages arising from unanticipated demand fluctuations.

The summer outlook contains a degree of uncertainty in the projections of both highway travel activity and fuel efficiencies, the two components that define gasoline demand. An earlier, more robust, economic recovery, for example, could raise gasoline demand and heighten concerns about availability. If, for example, gasoline demand were to increase by 1 percent to 7.57 million barrels per day for the summer, that would require an additional 180,000 barrels per day of supply from the three sources compared with the mid oil price forecast. Refineries could produce 7.24 million barrels per day, assuming a 90-percent capacity utilization rate. (Refineries have operated at even higher rates during the summer months). Net imports need to average 328,000 barrels per day—somewhat less than during the previous summer—to keep inventory levels constant. Even better availability of net imports would ease pressure on refining capacity as would some additional reliance on inventories during peak driving periods. It would be critical that imports be available to avoid some periods of operable refinery utilization in excess of 90 percent and to ensure a clear margin of comfort in terms of inventories, if a high-demand case were to develop at the beginning of the driving season. It is very likely that a high-demand case such as the one described above would include pressure for gasoline prices to be noticeably higher than the levels shown for the mid oil price case results.

Jet Fuel

In 1990, jet fuel demand remained unchanged from that of the previous year. Reflecting the economic cycle, demand in 1991 is expected to decline by 0.7 percent, but increase by 1.4 percent in 1992 in the mid oil price case (Table 7).

Non-military use of jet fuel in 1990 declined as a result of the slowing economy. In addition, total jet fuel consumption during the fourth quarter was down 2.7 percent from the previous year despite the additional Persian Gulf-related consumption of fuel. Airline revenue ton-miles for that quarter actually rose 3.4 percent, but that was the smallest increase in several years. Air activity, which slowed during the course of the year as a result of increases in ticket prices and a weakening economy, actually registered year-to-year declines during the first quarter of 1991.

The decline in economic activity in 1991 is expected to bring about the first decline in jet fuel demand in 10 years. Revenue ton-miles are projected to decline by 0.4 percent, also the first such decrease over a similar period. Air carriers, constrained by the costs associated with adjustments to travel schedules in view of a possible faster-than-expected upturn, are expected to increase their capacity, but by only 0.4 percent. Continued increases in fleet fuel efficiency, as well as the early cessation of hostilities in the Persian Gulf, are expected to contribute to the decline in total jet fuel consumption for the year.

The economic recovery is expected to increase revenue-ton miles by 5 percent in 1992. Available capacity is expected to respond with a 4-percent increase, more than twice the increase in fuel efficiency, resulting in a substantial increase in jet fuel consumption for the year. Reflecting earlier air travel activity patterns, international travel growth is expected to outpace increases in domestic travel activity.

Distillate Fuel Oil

The demand for distillate fuel oil fell by over 4 percent in 1990, averaging 3.02 million barrels per day compared with to 3.16 million barrels per day in 1989. Additional declines in demand are projected for 1991 in the high and mid oil price cases, but not in the low oil price case (Tables 6, 7, and 8). During 1992, increases in demand are expected to occur for all three price cases. Average demand in 1992 will actually exceed the 1989 level unless the crude oil price reaches or exceeds $22 per barrel.

The decrease in demand during 1990 was due to high oil prices, warm weather, and a sluggish economy in the second half of the year. Because of the atypical warm weather in 1990, the normal weather assumption for the rest of 1991 boosts demand in the low price case, but not enough in the other price cases to offset the impact of the economic recession and competitively priced natural gas. However, in 1992, renewed growth in the economy, coupled with the normal weather assumption and rising natural gas prices, increases the demand for distillate under all price cases.

Electric utility demand for distillate is expected to be virtually flat from 1990 to 1992 in all three price cases. Thus, the fluctuations in demand for distillate largely reflect the trend in nonutility demand. The nonutility sector consuming the most distillate is transportation, but demand in this sector is not expected to vary significantly among the three price cases (Figure 10). The transportation sector primarily consists of users of diesel and bunker fuels. The industrial and residential/commercial sectors are dependent on distillate heating oil, and are expected to increase their demand for distillate in both 1991 and 1992 under the low and mid oil price cases.

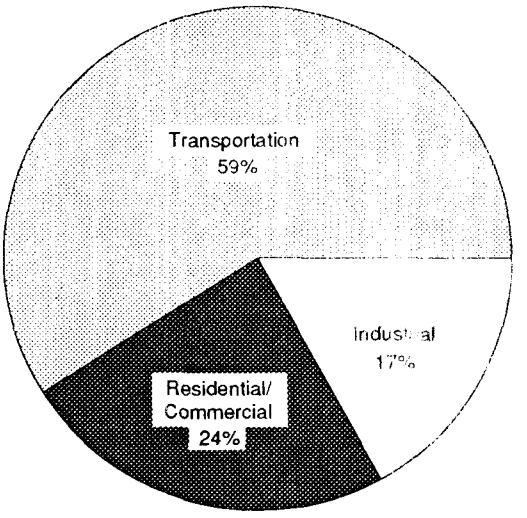

Figure 10. Nonutility Distillate Demand by Sector

Source: Calculations based on Energy Information Administration, *Petroleum Supply Annual, 1989* (Washington, DC).

In the residential/commercial sector, it is assumed that a small amount of switching from distillate to natural gas will occur in the heating market at crude oil prices of $22 a barrel. The fuel switching as well as greater conservation cause the drop in demand in 1992 under the $22 price case. If this switching does not occur, demand may be slightly higher than projected in both 1991 and 1992 by no more than 1 percent.[20] Additionally, if the weather is colder than normal, or economic activity rebounds faster than assumed, demand in all segments could be stronger.

Residual Fuel Oil

The demand for residual fuel oil in 1990 was 1.23 million barrels per day, a 10.2-percent drop from 1989. The decline occurred in both the utility and nonutility sectors, and was partly the result of the economic slowdown and warmer than normal temperatures during the heating season. Weak prices for natural gas were also a factor, because gas can be readily burned instead of residual fuel by electric utilities and industrial boilers.

Demand is expected to drop further in 1991, and then increase in 1992 for all three price cases (Tables 6, 7, and 8). However, the growth in 1992 is expected to fall short of the 1990 level of 1.23 million barrels per day. Demand for residual fuel oil may be stronger if natural gas prices rebound, or if gas supplies are lower than projected.

Other Petroleum Products

Demand for minor petroleum products declined by 0.3 percent in 1990.[21] Increases in petrochemical feedstock and miscellaneous products were offset by declines in liquefied petroleum gas (LPG) consumption. LPG demand fell a substantial 7.2 percent as a result of mild weather and price-related shifts within olefins markets when oil prices declined during the first half of the year. Oil-based petrochemical feedstocks rose 15.2 percent. Miscellaneous products demand increased by 2.2 percent as a result of continued growth in economic activity.

In 1991, demand for other petroleum products is projected to remain unchanged in the mid oil price case despite the depth of the current economic downturn (Table 7). Oil-based feedstocks demand is projected to contract by 1.9 percent, reflecting decreases in petrochemical activity. Miscellaneous products demand is projected to decline by 1.6 percent for the year, also reflecting the downturn in industrial activity. LPG demand, however, is projected to increase by 1.9 percent, offsetting much of the decline in the other products. That growth reflects a recovery from the previous year's weather-related decline in propane consumption, as well as the continuing favorable relative prices that moderate the decline in the use of these products as petrochemical feedstocks.

The assumption of normal weather patterns as well as a robust recovery in both manufacturing and petrochemical output are expected to result in increased consumption of minor products in 1992 by 2.3 percent in the mid oil price case. LPG demand, however, is projected to rise only 1.9 percent as a result of a shift in relative prices that favors oil-based feedstocks, which are expected to increase 3.8 percent. Miscellaneous products are projected to increase 2.7 percent, reflecting the recovery in industrial activity for the year.

Outlook for Other Major Energy Sources

Natural Gas

Total domestic natural gas consumption is expected to exhibit a decline on an annual basis in 1991. Total gas demand remained about flat in 1990, largely because of weak residential and commercial demand. The residential and commercial sectors are affected significantly by weather. Mild temperatures dominated the first and fourth quarters of 1990, while record cold temperatures occurred in the fourth quarter 1989. Very mild temperatures appeared again in the first quarter of this year. Even if normal weather occurs for the remainder of 1991, total gas demand will probably fall again this year, perhaps by as much as 1 percent (Table 10). This result is based on mid oil price case assumptions. The impact of the recession more than offsets any positive effects of currently low gas prices in the industrial sector. A worsening slump in oil prices to below the mid oil price case could further weaken the industrial gas market and worsen the decline in total gas demand for the year. If weather factors are held constant between 1990 and 1991 (that is, if the estimated effects of weather conditions being different from normal are removed from the historical data), total gas demand would decline by about 3 percent (Figure 11).

In 1992, an assumed recovery in industrial and commercial activity is expected to lead to significant growth in all major sectors of the domestic natural gas market, except the electric utility sector. The assumption of normal weather leads to lower gas availability in the electric utility and industrial sectors in the first quarter of 1992 relative to the situation prevailing in early 1991. Utility prices for residual fuel oil are expected to remain competitive with natural gas prices and discourage growth in utility gas use. Growth in the residential and commercial sectors is likely to be particularly strong between first quarter 1991 and first quarter 1992 because of weather factors. Because normal weather is assumed for all of 1992, higher gas demand for space heating would result in the first quarter of 1992 compared with the first quarter 1991, when temperatures were much warmer than normal.

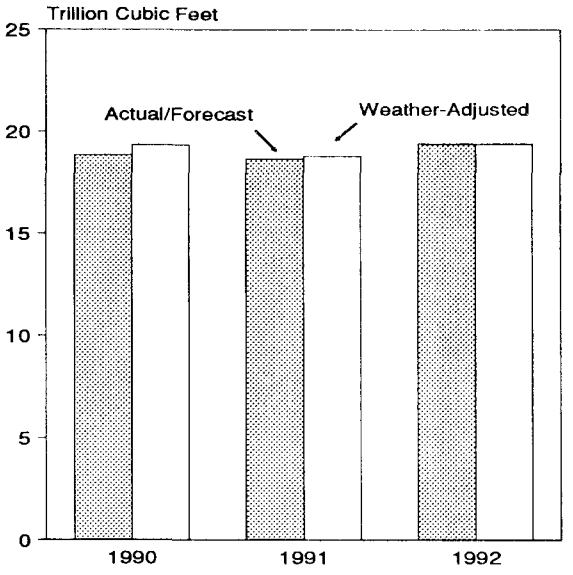

Figure 11. Natural Gas Demand

Note: Projections begin in the first quarter of 1991.
Sources: **History**: Energy Information Administration, *Monthly Energy Review* (Washington, DC). **Projections**: Table 10 and internal model calculations from the Short-Term Integrated Forecasting System.

Coal

Coal demand is expected to grow by 0.6 percent in 1991 (Table 11). Nonutility demand will decrease, though, because of the current economic recession, which is expected to last through the second quarter of 1991. A forecast of positive economic growth in 1992 will stimulate growth in both the utility and nonutility sectors, causing total consumption to increase by 4.1 percent in 1992.

Coal consumption at electric utilities is projected to grow slowly in 1991, increasing by 1.6 percent for the year (Figure 12). The impact of the economic recession will be offset by normal weather and decreases in nuclear and petroleum-fired generation. In 1992, a stronger economy, and continuing sluggish nuclear generation will cause electric utility coal demand to increase by 4.0 percent.

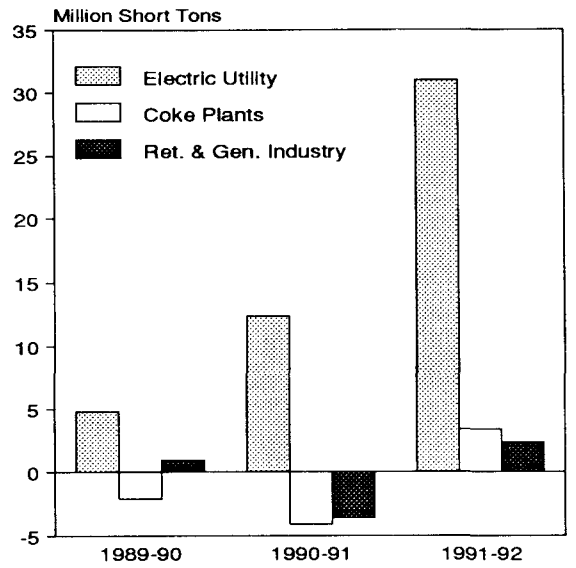

Figure 12. Annual Change in Coal Consumption

Sources: **History**: Energy Information Administration, *Quarterly Coal Report* (Washington, DC). **Projections**: Table 11.

Continued weakness in economic activity will cause a significant decline in the production of raw steel in 1991, and result in a sharp reduction in the demand for coking coal.[22] The expected decrease in coal consumption at coke plants is 10.3 percent in 1991. Strong economic growth in 1992, including a 9.8-percent increase in raw steel production, will cause coal consumption at coke plants to increase by 11.4 percent.

Coal consumption in the retail and general industry sectors is also expected to decrease as a result of the poor macroeconomic conditions in the first half of 1991. The resulting decline in coal consumption for 1991 is 3.6 percent in this sector. Decreased production output in key coal consuming industries, most notably stone, clay, and glass, causes industrial coal demand to fall by 3.7 percent in 1991.

The economic rebound forecast for 1992 will cause demand to increase by 2.5 percent in the combined retail and general industry sectors. Industrial coal demand is projected to increase by 3.0 percent, and residential/commercial sector demand is projected to increase by 1.5 percent.

Electricity

Demand

Total electricity sales are expected to continue increasing in 1991, despite the economic recession (Table 12). The pace will be slower than in 1990 because of an anticipated lack of growth in real gross national product for the year as a whole and mild temperatures during the first quarter (Table 2). The slowdown in the economy is expected to result in lower commercial and industrial sector activity. Abnormally warm winter temperatures during the first quarter of 1991 reduced demand for space heating in the residential sector and, to a lesser degree, in the commercial sector. The expected rate of growth in total electricity sales for 1991 is between 1 and 2 percent, but if weather-factors are held constant between 1990 and 1991, this rate is close to 1 percent.[23]

Sales of electricity to all end-use sectors are expected to increase at a faster pace in 1992 than in 1991. This is caused by an anticipated boost in the economy and assumed normal, hence colder, winter weather next year. All sectors are expected to show significant growth from 1991 to 1992, ranging from 3 to almost 5 percent. The largest annual improvement should be in the industrial sector; industrial sales are expected to increase by 4 percent in 1992 after declining by over 1 percent in 1991. This stems from an increase in manufacturing output of 6 percent in 1992 and a decrease of 2 percent in 1991 (Table 2). Total sales are expected to increase by between 4 and 5 percent in 1992, or by 4 percent when weather factors are held constant.

Supply

Nonutility electricity supply is expected to increase steadily and at a fairly quick pace through 1992 (Table 12). There are several announced orders for nonutility generators expected to come online over the next few years. Furthermore, the 1990 estimates of nonutility generation were higher than expected. Net imports of electricity are also expected to increase substantially in 1991 and 1992 because of new contracts for power from Canada and improved water and weather conditions in Canada, and several new nuclear units coming online in Ontario.

Coal-fired generation is expected to continue increasing, with most of the growth occurring in 1992. Coal should pick up most of the growth in total generation, as nuclear power is expected to remain essentially flat in 1991 and decline slightly in 1992.

In 1991, hydroelectric generation is expected to be slightly below normal, as areas of the Nation continue to recover from the recent dry years. Water conditions have improved dramatically in many areas of the country, with some areas experiencing above normal wetness—in particular, parts of the East and the Pacific Northwest. However, this improvement has been somewhat offset by the continued drought in California and dryness in the North Central States. Hydroelectric power is expected to return to normal levels in 1992.

Nuclear power is expected to remain relatively constant in 1991 and decline in 1992 (Table 12). No new nuclear units are expected to come online over the forecast period, while some units will be shut down for major maintenance. The average annual capacity factor for nuclear plants is assumed to be about 66 percent in 1991 and 65 percent in 1992. The 1990 capacity factor was 66 percent, the highest in the history of the U.S. nuclear industry.

Combined generation from oil and natural gas sources is expected to decline in 1991, as total generation requirements are not expected to increase enough to encourage use of these more expensive alternatives. By 1992, however, the economic and weather boost to electricity demand is expected to require a higher level of oil and natural gas generation. Within this fossil fuel category, natural gas-fired generation is expected to decline by less than 1 percent in 1991 and then increase by a similar percentage in 1992 (Figure 13). Oil-fired generation, on the other hand, is expected to fall by 12 percent in 1991 and rise by 22 percent in 1992. The increase in oil use in 1992 is due to a reduction in the price differential between oil and gas, from a spread of $0.91 per million Btu in 1990 to a difference of $0.40 in 1992 (Table 5). Furthermore, normal weather expectations for the first quarter of 1992 should cause higher consumption of oil at utilities than in the first quarter of 1991 when temperatures were mild. During peak winter demand, natural gas is often not available to electric utilities, because limited supply is directed first to residential customers.

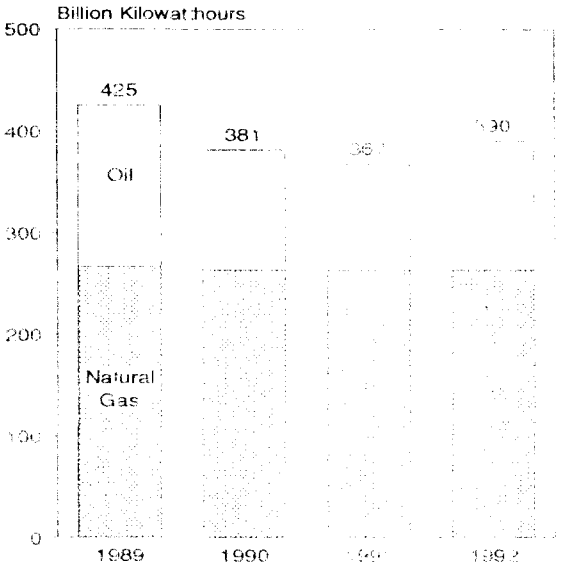

Figure 13. Oil and Natural Gas Electricity Generation

Sources: **History**: Energy Information Administration, *Electric Power Monthly* (Washington, DC). **Projections**: Table 12.

References and Notes

1. For purposes of this discussion, the Centrally Planned Economies include Albania, Bulgaria, Cambodia, China, Cuba, Czechoslovakia, East Germany, Hungary, Laos, Mongolia, North Korea, Poland, Romania, the Soviet Union, Vietnam, and Yugoslavia. Although this term no longer applies to some of these countries, it is being used here to allow comparison with previous issues of this report. Beginning with the next issue of this report, the international petroleum balance will present oil supply and demand on a truly global basis. The German eastern states will be included as East Germany until data for unified Germany are received by the International Energy Agency.

2. The macroeconomic projections were derived from a simulation of the DRI/McGraw-Hill quarterly model of the U.S. Economy in which DRI's April macroeconomic forecast (CONTROL0491) was solved using EIA's assumptions about basic energy prices in the mid price case. The mid price case is based on a world oil price that reaches $20 per barrel in 1992. The results from this simulation were used to forecast demand in all three oil price scenarios (Tables 6, 7, and 8). This was done for convenience and to provide oil price cases that would not be obscured by the effects of possible macroeconomic feedbacks relating to higher or lower oil prices.

3. A recession is formally defined as a period of at least two consecutive quarters of negative growth in real gross national product. The forecasts published in April 1991 from both DRI/McGraw-Hill and WEFA show negative growth in real gross national product for fourth quarter 1990 and first quarter of 1991, with positive growth thereafter. According to a survey by *Blue Chip Economic Indicators*, 70 percent of the Nation's leading economists agree the economic recovery will begin second quarter 1991 (see *Washington Post*, Business Section, April 10, 1991).

4. P. Duke Jr., "Spending, Sales of New Homes Rose in March", *Wall Street Journal* (April 30, 1991).

5. J. Hyatt and P. Duke, Jr., "Consumer Optimism Soared Following End of Gulf War", *Wall Street Journal* (March 27, 1991). "Consumer Confidence Fell In April, Survey Indicates", *Wall Street Journal* (April 30, 1991).

6. Total liquids production includes production of crude oil and natural gas liquids, other hydrogen and hydrocarbons for refinery feedstock, refinery gains, alcohol, and liquids produced from coal and other sources. The non-U.S. production changes are based on internal calculations by the International and Contingency Information Division of the Office of Energy Markets and End Use.

7. The changes in oil consumption and production for the Centrally Planned Economies are based on internal calculations by the International and Contingency Information Division of the Office of Energy Markets and End Use.

8. "Cash Prices", New York Mercantile Exchange Listing, *New York Times* (January 3, 1991 and March 29, 1991).

9. Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(90/12).

10. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, *Monthly State, Regional, and National Heating Cooling Degree-Days Weighted by Population.*

11. Energy Information Administration, *Natural Gas Productive Capacity for the Lower 48 States 1980 through 1991*, DOE/EIA-0542 (January 1991).

12. The petroleum sensitivities relating to macroeconomic and weather variations summarized in Figure 6 and Table 9 are based on calculations of the Demand Models of the Short-Term Integrated Forecasting System. The assumption of high economic growth combined with severe weather and low world oil prices produces projected

petroleum demands far above any of the cases which consider only a mid-economic growth case, normal weather, and a range of world oil prices.

13. These factors were derived from internal calculations of the Demand Models of the Short-Term Integrated Forecasting System.

14. Energy Information Administration, *Petroleum Marketing Monthly*, DOE/EIA-0380(91/04).

15. For the week ending April 5, 1991, total primary motor gasoline stocks stood at about 208 million barrels, only 3 million barrels above the minimum operating inventory estimated by the National Petroleum Council to be required to avoid spot shortages during unanticipated demand increases. The level was also nearly 20 million barrels below year-earlier levels. See Energy Information Administration, *Weekly Petroleum Status Report*, DOE/EIA-0208(91-16).

16. "Attractive Margins Cause Refiners to Postpone Scheduled Turnarounds," *The Oil Daily* (Washington, DC, March 27, 1991).

17. Petroleum Intelligence Weekly (New York, NY, April 8, 1991), p. 10.

18. L. R. Aalund, "U.S. Refining Industry Has Powerful Configuration," *Oil and Gas Journal* (Tulsa, OK, March 18, 1991).

19. *Petroleum Market Intelligence* (New York, NY, April 5, 1991), p. 5.

20. Sectoral detail on nonutility distillate fuel consumption is based on calculations from the Distillate Demand Model of the Short-Term Integrated Forecasting System.

21. Internal calculations from "Other Petroleum" demand model of the Short-Term Integrated Forecasting System.

22. Steel production forecasts are produced by using the Coking Coal Demand Model of the Short-Term Integrated Forecasting System.

23. Based on internal calculations from the Electricity Demand Model of the Short-Term Integrated Forecasting System.

Table 2. Macroeconomic, Oil Price, and Weather Assumptions

Assumption	1990 1st	1990 2nd	1990 3rd	1990 4th	1991 1st	Case	1991 2nd	1991 3rd	1991 4th	1992 1st	1992 2nd	1992 3rd	1992 4th	Year 1990	Year 1991	Year 1992
Macroeconomic[a]																
Real Gross National Product (billion 1982 dollars)	**4151**	**4155**	**4170**	**4153**	*4129*	High	*4169*	*4256*	*4305*	*4341*	*4379*	*4404*	*4421*		*4215*	*4386*
						Mid	*4136*	*4181*	*4217*	*4252*	*4289*	*4313*	*4330*	**4157**	*4166*	*4296*
						Low	*4103*	*4106*	*4128*	*4163*	*4199*	*4223*	*4239*		*4117*	*4206*
Percentage Change from Prior Year	**1.4**	**1.0**	**1.0**	**0.5**	*-0.5*	High	*0.3*	*2.1*	*3.7*	*5.1*	*5.0*	*3.5*	*2.7*		*1.4*	*4.1*
						Mid	*-0.5*	*0.3*	*1.7*	*3.0*	*3.7*	*3.2*	*2.7*	**1.0**	*0.2*	*3.1*
						Low	*-1.3*	*-1.5*	*-0.6*	*0.8*	*2.3*	*2.9*	*2.7*		*-1.0*	*2.2*
GNP Implicit Price Deflator (index, 1982=1.000)	**1.295**	**1.310**	**1.322**	**1.331**	*1.342*	High	*1.349*	*1.354*	*1.363*	*1.375*	*1.386*	*1.397*	*1.408*		*1.352*	*1.392*
						Mid	*1.352*	*1.361*	*1.372*	*1.384*	*1.395*	*1.406*	*1.417*	**1.314**	*1.357*	*1.401*
						Low	*1.355*	*1.369*	*1.381*	*1.393*	*1.405*	*1.415*	*1.426*		*1.362*	*1.410*
Percentage Change from Prior Year	**3.9**	**4.1**	**4.2**	**4.0**	*3.6*	High	*2.9*	*2.4*	*2.4*	*2.5*	*2.8*	*3.2*	*3.3*		*2.8*	*2.9*
						Mid	*3.2*	*3.0*	*3.1*	*3.1*	*3.2*	*3.3*	*3.3*	**4.0**	*3.3*	*3.2*
						Low	*3.5*	*3.6*	*3.8*	*3.8*	*3.6*	*3.4*	*3.3*		*3.6*	*3.5*
Real Disposable Personal Income[b] (billion 1982 dollars)	**2901**	**2903**	**2898**	**2872**	*2867*	High	*2905*	*2949*	*2972*	*2995*	*3014*	*3027*	*3039*		*2923*	*3019*
						Mid	*2881*	*2894*	*2907*	*2930*	*2949*	*2962*	*2974*	**2893**	*2887*	*2954*
						Low	*2857*	*2839*	*2843*	*2866*	*2883*	*2896*	*2908*		*2852*	*2888*
Percentage Change from Prior Year	**1.3**	**1.7**	**0.8**	**-0.4**	*-1.2*	High	*0.1*	*1.8*	*3.5*	*4.5*	*3.7*	*2.6*	*2.3*		*1.0*	*3.3*
						Mid	*-0.8*	*-0.1*	*1.2*	*2.2*	*2.4*	*2.3*	*2.3*	**0.8**	*-0.2*	*2.3*
						Low	*-1.6*	*-2.0*	*-1.0*	*0.0*	*0.9*	*2.0*	*2.3*		*-1.5*	*1.3*
Index of Industrial Production (Mfg.) (index, 1987=1.000)	**1.092**	**1.102**	**1.111**	**1.090**	*1.061*	High	*1.074*	*1.125*	*1.159*	*1.177*	*1.192*	*1.201*	*1.206*		*1.105*	*1.194*
						Mid	*1.055*	*1.082*	*1.106*	*1.124*	*1.139*	*1.147*	*1.151*	**1.099**	*1.076*	*1.140*
						Low	*1.036*	*1.038*	*1.054*	*1.071*	*1.085*	*1.093*	*1.097*		*1.047*	*1.087*
Percentage Change from Prior Year	**0.5**	**0.8**	**2.0**	**0.3**	*-2.8*	High	*-2.6*	*1.3*	*6.3*	*10.9*	*11.1*	*6.7*	*4.1*		*0.5*	*8.2*
						Mid	*-4.3*	*-2.6*	*1.5*	*5.9*	*8.0*	*6.0*	*4.1*	**0.9**	*-2.1*	*5.9*
						Low	*-6.0*	*-6.6*	*-3.3*	*0.9*	*4.8*	*5.3*	*4.1*		*-4.7*	*3.8*
Oil Price																
Imported Crude Oil Price[c] (U.S. dollars/barrel)	**19.76**	**15.85**	**23.16**	**29.71**	*19.06*	Low	*15.00*	*15.00*	*15.00*	*15.00*	*15.00*	*15.00*	*15.00*		*15.87*	*15.00*
						Mid	*17.00*	*18.00*	*19.00*	*20.00*	*20.00*	*20.00*	*20.00*	**21.78**	*18.24*	*20.00*
						High	*22.00*	*22.00*	*22.00*	*22.00*	*22.00*	*22.00*	*22.00*		*21.33*	*22.00*
Weather[d]																
Heating Degree Days	**1970**	**546**	**89**	**1559**	*2257*		*536*	*88*	*1669*	*2425*	*536*	*88*	*1669*	**4164**	*4551*	*4719*
Cooling Degree Days	**47**	**332**	**782**	**89**	*37*		*327*	*755*	*63*	*28*	*327*	*755*	*63*	**1250**	*1181*	*1172*

[a]Macroeconomic projections from the Data Resources, Inc., model forecasts are seasonally adjusted at annual rates and modified as appropriate to the mid world oil price case. The mid macroeconomic projections are then modified by the $15 and $22 world price cases and by various explicit economic assumptions, with $15 world oil prices applied to the high macroeconomic case, and $22 world oil prices applied to the low macroeconomic case.

[b]Seasonally adjusted at annual rates.

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

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

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

Source: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(91/04); U.S. Department of Commerce, Bureau of Economic Analysis, Survey of Current Business, September 1990; 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)* September 1990. Macroeconomic projections are based on DRI/McGraw-Hill Forecast CONTROL0491.

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

	1990				1991				1992				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1990	1991	1992
Supply[a]															
Production															
U.S. (50 States)	**9.74**	**9.42**	**9.45**	**9.78**	*9.88*	*9.49*	*9.34*	*9.38*	*9.34*	*9.19*	*9.10*	*9.19*	**9.60**	*9.52*	*9.20*
OPEC	**25.28**	**25.48**	**23.89**	**25.02**	*24.91*	*24.46*	*24.46*	*25.20*	*25.30*	*25.40*	*25.60*	*26.35*	**24.91**	*24.76*	*25.66*
Other Non-OPEC	**17.21**	**17.18**	**16.91**	**17.63**	*17.61*	*17.43*	*17.78*	*18.18*	*18.12*	*18.14*	*18.31*	*18.48*	**17.23**	*17.75*	*18.26*
Total Market Economies	**52.23**	**52.07**	**50.25**	**52.43**	*52.39*	*51.38*	*51.57*	*52.76*	*52.76*	*52.72*	*53.01*	*54.02*	**51.74**	*52.03*	*53.13*
Net Centrally Planned Economies Exports	**1.48**	**2.11**	**2.12**	**1.77**	*1.31*	*1.66*	*1.89*	*1.54*	*1.13*	*1.46*	*1.68*	*1.35*	**1.87**	*1.60*	*1.41*
Total Supply	**53.71**	**54.18**	**52.37**	**54.19**	*53.71*	*53.04*	*53.46*	*54.30*	*53.89*	*54.19*	*54.69*	*55.37*	**53.61**	*53.63*	*54.54*
Net Stock Withdrawals or Additions (-)															
U.S. (50 States Excluding SPR)	**-0.66**	**-0.39**	**-0.16**	**0.80**	*0.61*	*-0.63*	*-0.48*	*0.31*	*0.37*	*-0.51*	*-0.31*	*0.34*	**-0.10**	*-0.05*	*-0.03*
U.S. SPR	**-0.03**	**-0.05**	**-0.03**	**0.04**	*0.19*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	**-0.02**	*0.05*	*0.00*
Other Market Economies	**-0.20**	**-1.01**	**0.41**	**-1.25**	*-0.01*	*-1.01*	*-0.60*	*0.63*	*1.32*	*-0.80*	*-0.73*	*0.85*	**-0.51**	*-0.24*	*0.16*
Total Stock Withdrawals	**-0.89**	**-1.45**	**0.22**	**-0.40**	*0.80*	*-1.64*	*-1.07*	*0.93*	*1.70*	*-1.31*	*-1.04*	*1.19*	**-0.63**	*-0.25*	*0.14*
Product Supplied															
U.S. (50 States)	**17.03**	**16.87**	**17.08**	**16.68**	*16.70*	*16.17*	*16.58*	*17.22*	*17.40*	*16.59*	*16.81*	*17.37*	**16.92**	*16.67*	*17.05*
U.S. Territories	**0.20**	**0.17**	**0.20**	**0.22**	*0.19*	*0.21*	*0.20*	*0.18*	*0.19*	*0.22*	*0.20*	*0.19*	**0.20**	*0.19*	*0.20*
Canada	**1.75**	**1.68**	**1.81**	**1.67**	*1.76*	*1.75*	*1.82*	*1.91*	*1.80*	*1.78*	*1.86*	*1.95*	**1.73**	*1.81*	*1.85*
Japan	**5.71**	**4.64**	**5.18**	**5.41**	*5.92*	*4.73*	*4.91*	*5.81*	*6.17*	*4.93*	*5.12*	*6.06*	**5.23**	*5.34*	*5.57*
Australia and New Zealand	**0.80**	**0.82**	**0.82**	**0.79**	*0.79*	*0.83*	*0.82*	*0.84*	*0.81*	*0.84*	*0.84*	*0.86*	**0.81**	*0.82*	*0.83*
OECD Europe	**12.93**	**12.40**	**12.70**	**12.64**	*13.20*	*12.32*	*12.60*	*13.40*	*13.34*	*12.52*	*12.80*	*13.61*	**12.67**	*12.88*	*13.07*
Total OECD	**38.41**	**36.58**	**37.80**	**37.40**	*38.56*	*36.01*	*36.92*	*39.36*	*39.70*	*36.88*	*37.62*	*40.03*	**37.54**	*37.71*	*38.56*
Other Market Economies	**15.35**	**15.04**	**15.48**	**15.73**	*15.95*	*15.69*	*15.76*	*16.17*	*16.19*	*16.30*	*16.32*	*16.84*	**15.40**	*15.89*	*16.41*
Total Market Economies	**53.76**	**51.62**	**53.28**	**53.13**	*54.51*	*51.69*	*52.68*	*55.53*	*55.89*	*53.18*	*53.94*	*56.86*	**52.95**	*53.60*	*54.97*
Statistical Discrepancy	**0.94**	**-1.11**	**0.69**	**-0.67**	*0.00*	*0.29*	*0.29*	*0.30*	*0.30*	*0.30*	*0.29*	*0.29*	**-0.04**	*0.22*	*0.30*
Closing Stocks (billion barrels)															
Total Market Economies	**5.41**	**5.54**	**5.53**	**5.56**	*5.49*	*5.64*	*5.74*	*5.65*	*5.50*	*5.62*	*5.71*	*5.60*	**5.56**	*5.65*	*5.60*

[a]Includes production of crude oil and natural gas liquids, other hydrogen and hydrocarbons for refinery feedstock, refinery gains, alcohol, liquids produced from coal and other sources, and net exports from Centrally Planned Economies.

SPR: Strategic Petroleum Reserve.

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

Sources: Energy Information Administration, *International Petroleum Statistics Report*, DOE/EIA-0520(91/03); and *International Energy Annual 1989*, DOE/EIA-0219(89); Organization for Economic Cooperation and Development, Annual and Monthly Oil Statistics Database through September 1990.

Table 4. International Economic Growth
(Percent Change from Previous Period)

Region	Annual Average 1979-1989	*1990*	*1991*	*1992*
OECD Total[a]	*2.7*	*2.4*	*1.3*	*3.1*
United States[b]	*2.6*	*1.0*	*0.2*	*3.1*
Western Europe	*2.2*	*2.7*	*1.7*	*2.8*
Japan	*4.1*	*5.6*	*3.0*	*3.8*
Other OECD[c]	*3.1*	*0.9*	*0.4*	*2.9*

[a]Weighted average of growth in gross national product for the United States and growth in gross domestic product for the other countries of the Organization for Economic Cooperation and Development (OECD).
[b]Gross national product.
[c]Canada, Australia, and New Zealand.
Note: Historical values are printed in **boldface**, forecasts in *italics*.
Source: U.S. historical data and forecasts: DRI/McGraw-Hill Forecast CONTROL0491; Non-U.S. historical data: The WEFA Group, *World Economic Service: Historical Data, April 1990*, and *World Economic Outlook: Developed Economies Volume, January 1991*.

Table 5. Energy Prices (Nominal Dollars)

Product	1990 1st	1990 2nd	1990 3rd	1990 4th	1991 1st	Price Range	1991 2nd	1991 3rd	1991 4th	1992 1st	1992 2nd	1992 3rd	1992 4th	Year 1990	Year 1991	Year 1992
Imported Crude Oil Price[a] (dollars per barrel)	**19.76**	**15.85**	**23.16**	**29.71**	*19.06*	Low	*15.00*	*15.00*	*15.00*	*15.00*	*15.00*	*15.00*	*15.00*		*15.87*	*15.00*
						Mid	*17.00*	*18.00*	*19.00*	*20.00*	*20.00*	*20.00*	*20.00*	**21.78**	*18.24*	*20.00*
						High	*22.00*	*22.00*	*22.00*	*22.00*	*22.00*	*22.00*	*22.00*		*21.33*	*22.00*
Natural Gas Wellhead Price (dollars per thousand cubic feet)	**1.88**	**1.49**	**1.53**	**1.95**	*1.60*	Low	*1.50*	*1.69*	*1.90*	*1.75*	*1.55*	*1.65*	*2.00*		*1.67*	*1.74*
						Mid	*1.56*	*1.76*	*2.04*	*1.94*	*1.67*	*1.86*	*2.22*	**1.72**	*1.74*	*1.93*
						High	*1.66*	*1.84*	*2.19*	*2.05*	*1.80*	*1.92*	*2.33*		*1.82*	*2.03*
Petroleum Products																
Gasoline[b] (dollars per gallon)	**1.08**	**1.12**	**1.24**	**1.42**	*1.21*	Low	*1.15*	*1.12*	*1.07*	*1.06*	*1.12*	*1.13*	*1.09*		*1.14*	*1.10*
						Mid	*1.19*	*1.23*	*1.20*	*1.19*	*1.26*	*1.27*	*1.22*	**1.22**	*1.21*	*1.24*
						High	*1.20*	*1.27*	*1.25*	*1.24*	*1.31*	*1.33*	*1.28*		*1.23*	*1.29*
No. 2 Diesel Oil, Retail (dollars per gallon)	**1.10**	**1.01**	**1.10**	**1.42**	*1.18*	Low	*1.08*	*1.06*	*1.08*	*1.09*	*1.08*	*1.07*	*1.09*		*1.10*	*1.08*
						Mid	*1.12*	*1.12*	*1.18*	*1.22*	*1.21*	*1.20*	*1.23*	**1.15**	*1.15*	*1.21*
						High	*1.24*	*1.22*	*1.25*	*1.26*	*1.25*	*1.23*	*1.26*		*1.22*	*1.25*
No. 2 Heating Oil, Wholesale (dollars per gallon)	**0.63**	**0.54**	**0.72**	**0.88**	*0.67*	Low	*0.56*	*0.53*	*0.57*	*0.58*	*0.56*	*0.54*	*0.58*		*0.59*	*0.57*
						Mid	*0.60*	*0.60*	*0.67*	*0.70*	*0.68*	*0.66*	*0.71*	**0.70**	*0.65*	*0.69*
						High	*0.72*	*0.70*	*0.75*	*0.75*	*0.73*	*0.71*	*0.76*		*0.71*	*0.74*
No. 2 Heating Oil, Retail (dollars per gallon)	**1.02**	**0.90**	**1.01**	**1.22**	*1.06*	Low	*0.87*	*0.81*	*0.86*	*0.90*	*0.87*	*0.82*	*0.87*		*0.91*	*0.87*
						Mid	*0.92*	*0.89*	*0.98*	*1.06*	*1.03*	*0.97*	*1.03*	**1.05**	*0.97*	*1.03*
						High	*1.04*	*1.01*	*1.08*	*1.13*	*1.09*	*1.03*	*1.09*		*1.05*	*1.10*
No. 6 Residual Fuel Oil[c] (dollars per barrel)	**19.24**	**13.94**	**17.39**	**24.34**	*19.66*	Low	*15.15*	*14.38*	*14.75*	*15.07*	*14.75*	*14.47*	*14.87*		*15.98*	*14.81*
						Mid	*16.32*	*16.40*	*17.61*	*18.73*	*18.51*	*18.16*	*18.66*	**18.61**	*17.56*	*18.53*
						High	*19.24*	*19.46*	*20.05*	*20.48*	*20.03*	*19.64*	*20.17*		*19.63*	*20.11*
Electric Utility Fuels																
Coal (dollars per million Btu)	**1.46**	**1.47**	**1.44**	**1.44**	*1.42*	Low	*1.43*	*1.42*	*1.42*	*1.42*	*1.44*	*1.44*	*1.44*		*1.42*	*1.43*
						Mid	*1.44*	*1.44*	*1.45*	*1.45*	*1.49*	*1.49*	*1.50*	**1.45**	*1.44*	*1.48*
						High	*1.45*	*1.45*	*1.47*	*1.48*	*1.52*	*1.53*	*1.55*		*1.45*	*1.52*
Heavy Oil[d] (dollars per million Btu)	**3.49**	**2.38**	**3.12**	**4.31**	*3.20*	Low	*2.37*	*2.26*	*2.37*	*2.44*	*2.31*	*2.27*	*2.39*		*2.52*	*2.36*
						Mid	*2.55*	*2.58*	*2.83*	*3.04*	*2.90*	*2.85*	*2.99*	**3.23**	*2.79*	*2.95*
						High	*3.02*	*3.06*	*3.22*	*3.32*	*3.13*	*3.09*	*3.24*		*3.13*	*3.20*
Natural Gas (dollars per million Btu)	**2.62**	**2.14**	**2.15**	**2.60**	*2.50*	Low	*2.16*	*2.28*	*2.54*	*2.57*	*2.26*	*2.35*	*2.65*		*2.35*	*2.44*
						Mid	*2.20*	*2.33*	*2.61*	*2.69*	*2.36*	*2.46*	*2.77*	**2.32**	*2.40*	*2.55*
						High	*2.27*	*2.43*	*2.71*	*2.78*	*2.44*	*2.54*	*2.85*		*2.47*	*2.63*
Other Residential																
Natural Gas (dollars per thousand cubic feet)	**5.53**	**5.91**	**6.96**	**5.70**	*5.55*	Low	*5.80*	*6.96*	*5.81*	*5.70*	*6.14*	*7.33*	*6.14*		*5.77*	*6.02*
						Mid	*5.96*	*7.23*	*6.06*	*5.96*	*6.44*	*7.70*	*6.45*	**5.77**	*5.90*	*6.31*
						High	*6.08*	*7.42*	*6.24*	*6.14*	*6.65*	*7.96*	*6.66*		*6.01*	*6.52*
Electricity (cents per kilowatthour)	**7.41**	**7.94**	**8.23**	**7.82**	*7.53*	Low	*8.12*	*8.46*	*8.06*	*7.67*	*8.31*	*8.65*	*8.23*		*8.04*	*8.21*
						Mid	*8.14*	*8.50*	*8.11*	*7.75*	*8.41*	*8.77*	*8.36*	**7.86**	*8.07*	*8.32*
						High	*8.19*	*8.57*	*8.20*	*7.82*	*8.50*	*8.88*	*8.48*		*8.12*	*8.42*

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

Notes: First quarter 1991 is estimated. Prices exclude taxes, except gasoline, residential natural gas, and diesel prices. Price ranges are derived by simulating all energy product price models in STIFS under the assumptions of: $15 world oil prices (low price), $20 world oil prices (mid price), and $22 world oil prices (high price), with macroeconomic and weather assumptions kept as in the mid case for all cases. Historical values are printed in **boldface**, forecasts in *italics*.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(91/04); and *Petroleum Marketing Monthly*, DOE/EIA-0380(91/04).

Table 6. Supply and Disposition of Petroleum: $15 World Oil Price Case
(Million Barrels per Day, Except Closing Stocks)

Supply and Disposition	1990				1991				1992				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1990	1991	1992
Supply															
Crude Oil Supply															
Domestic Production[a]	**7.46**	**7.22**	**7.18**	**7.35**	*7.47*	*7.08*	*6.88*	*6.85*	*6.79*	*6.62*	*6.47*	*6.45*	**7.30**	*7.06*	*6.58*
Alaska	**1.84**	**1.73**	**1.71**	**1.82**	*1.89*	*1.84*	*1.77*	*1.79*	*1.78*	*1.70*	*1.63*	*1.65*	**1.77**	*1.82*	*1.69*
Lower 48	**5.62**	**5.50**	**5.47**	**5.52**	*5.58*	*5.24*	*5.11*	*5.06*	*5.02*	*4.92*	*4.84*	*4.80*	**5.53**	*5.24*	*4.89*
Net Imports (Including SPR)[b]	**5.95**	**6.10**	**6.23**	**4.77**	*5.23*	*5.83*	*6.50*	*6.33*	*6.51*	*6.84*	*7.04*	*6.94*	**5.76**	*5.98*	*6.83*
Gross Imports (Excluding SPR)	**6.04**	**6.15**	**6.27**	**4.93**	*5.35*	*5.96*	*6.59*	*6.49*	*6.63*	*6.97*	*7.12*	*7.10*	**5.85**	*6.10*	*6.95*
SPR Imports	**0.03**	**0.05**	**0.03**	**0.00**	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	**0.03**	*0.00*	*0.00*
Exports	**0.12**	**0.10**	**0.07**	**0.16**	*0.12*	*0.13*	*0.08*	*0.15*	*0.12*	*0.13*	*0.08*	*0.15*	**0.12**	*0.12*	*0.12*
SPR Stock Withdrawn or Added (-)	**-0.03**	**-0.05**	**-0.03**	**0.04**	*0.19*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	**-0.02**	*0.05*	*0.00*
Other Stock Withdrawn or Added (-)	**-0.36**	**-0.12**	**0.45**	**0.22**	*-0.23*	*0.03*	*0.03*	*-0.01*	*-0.08*	*-0.04*	*0.07*	*0.03*	**0.05**	*-0.04*	*0.00*
Product Supplied and Losses	**-0.03**	**-0.03**	**-0.02**	**-0.01**	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	**-0.02**	*-0.02*	*-0.02*
Unaccounted-for Crude	**0.30**	**0.25**	**0.35**	**0.46**	*0.22*	*0.14*	*0.14*	*0.15*	*0.15*	*0.15*	*0.14*	*0.14*	**0.34**	*0.16*	*0.15*
Crude Oil Input to Refineries	**13.28**	**13.38**	**14.15**	**12.83**	*12.85*	*13.06*	*13.54*	*13.30*	*13.36*	*13.55*	*13.70*	*13.56*	**13.41**	*13.19*	*13.54*
Other Supply															
NGL Production	**1.53**	**1.48**	**1.54**	**1.65**	*1.63*	*1.55*	*1.53*	*1.56*	*1.57*	*1.55*	*1.53*	*1.56*	**1.55**	*1.57*	*1.55*
Other Hydrocarbon and Alcohol Inputs	**0.07**	**0.07**	**0.07**	**0.08**	*0.09*	*0.08*	*0.08*	*0.11*	*0.10*	*0.10*	*0.15*	*0.20*	**0.07**	*0.09*	*0.14*
Crude Oil Product Supplied	**0.03**	**0.03**	**0.02**	**0.01**	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	**0.02**	*0.02*	*0.02*
Processing Gain	**0.68**	**0.64**	**0.66**	**0.70**	*0.70*	*0.66*	*0.67*	*0.66*	*0.65*	*0.67*	*0.68*	*0.67*	**0.67**	*0.67*	*0.67*
Net Product Imports[c]	**1.71**	**1.55**	**1.24**	**0.82**	*0.56*	*1.52*	*1.36*	*1.40*	*1.45*	*1.39*	*1.34*	*1.31*	**1.33**	*1.21*	*1.37*
Gross Product Imports[c]	**2.39**	**2.20**	**1.97**	**1.76**	*1.54*	*2.17*	*2.02*	*2.15*	*2.11*	*2.04*	*1.99*	*2.07*	**2.08**	*1.97*	*2.05*
Product Exports	**0.68**	**0.65**	**0.72**	**0.94**	*0.98*	*0.65*	*0.66*	*0.76*	*0.66*	*0.65*	*0.66*	*0.76*	**0.75**	*0.76*	*0.68*
Product Stock Withdrawn or Added (-)[d]	**-0.30**	**-0.28**	**-0.61**	**0.58**	*0.85*	*-0.68*	*-0.53*	*0.30*	*0.43*	*-0.46*	*-0.36*	*0.27*	**-0.15**	*-0.02*	*-0.03*
Total Product Supplied, Domestic Use	**17.01**	**16.87**	**17.08**	**16.68**	*16.70*	*16.21*	*16.67*	*17.35*	*17.58*	*16.83*	*17.06*	*17.59*	**16.91**	*16.73*	*17.26*
Disposition															
Motor Gasoline	**7.04**	**7.30**	**7.37**	**7.14**	*6.83*	*7.27*	*7.35*	*7.28*	*6.99*	*7.34*	*7.38*	*7.30*	**7.21**	*7.18*	*7.25*
Jet Fuel	**1.48**	**1.47**	**1.46**	**1.54**	*1.51*	*1.43*	*1.46*	*1.51*	*1.50*	*1.45*	*1.50*	*1.56*	**1.49**	*1.48*	*1.50*
Distillate Fuel Oil	**3.23**	**2.97**	**2.92**	**2.96**	*3.20*	*2.84*	*2.77*	*3.33*	*3.68*	*3.04*	*2.90*	*3.42*	**3.02**	*3.04*	*3.26*
Residual Fuel Oil	**1.40**	**1.24**	**1.18**	**1.10**	*1.18*	*0.94*	*1.01*	*1.20*	*1.37*	*1.11*	*1.10*	*1.21*	**1.23**	*1.08*	*1.20*
Other Oils Supplied[e]	**3.88**	**3.90**	**4.16**	**3.94**	*3.98*	*3.73*	*4.09*	*4.03*	*4.03*	*3.88*	*4.19*	*4.09*	**3.97**	*3.96*	*4.05*
Total Product Supplied	**17.03**	**16.87**	**17.08**	**16.68**	*16.70*	*16.21*	*16.67*	*17.35*	*17.58*	*16.83*	*17.06*	*17.59*	**16.92**	*16.73*	*17.26*
Total Petroleum Net Imports	**7.66**	**7.65**	**7.48**	**5.60**	*5.79*	*7.35*	*7.86*	*7.73*	*7.96*	*8.23*	*8.38*	*8.25*	**7.09**	*7.19*	*8.20*
Closing Stocks (million barrels)															
Crude Oil (Excluding SPR)[f]	**374**	**384**	**343**	**323**	*344*	*341*	*338*	*339*	*346*	*350*	*343*	*340*	**323**	*339*	*340*
Total Motor Gasoline	**228**	**213**	**230**	**221**	*210*	*212*	*227*	*227*	*231*	*225*	*233*	*232*	**221**	*227*	*232*
Finished Motor Gasoline	**186**	**176**	**189**	**182**	*171*	*175*	*186*	*189*	*190*	*186*	*191*	*192*	**182**	*189*	*192*
Blending Components	**42**	**38**	**41**	**39**	*39*	*38*	*41*	*38*	*40*	*38*	*42*	*39*	**39**	*38*	*39*
Jet Fuel	**49**	**47**	**50**	**52**	*44*	*49*	*50*	*48*	*47*	*49*	*50*	*48*	**52**	*48*	*48*
Distillate Fuel Oil	**100**	**109**	**136**	**132**	*97*	*109*	*127*	*134*	*106*	*114*	*128*	*136*	**132**	*134*	*136*
Residual Fuel Oil	**46**	**47**	**50**	**49**	*45*	*45*	*45*	*44*	*44*	*46*	*46*	*45*	**49**	*44*	*45*
Other Oils[g]	**265**	**296**	**303**	**261**	*242*	*286*	*299*	*268*	*255*	*291*	*300*	*271*	**261**	*268*	*271*
Total Stocks (Excluding SPR)	**1061**	**1097**	**1112**	**1038**	*983*	*1042*	*1087*	*1061*	*1029*	*1074*	*1100*	*1073*	**1038**	*1061*	*1073*
Crude Oil in SPR	**582**	**587**	**590**	**586**	*568*	*568*	*568*	*568*	*568*	*568*	*568*	*568*	**586**	*568*	*568*
Total Stocks (Including SPR)	**1643**	**1684**	**1701**	**1624**	*1551*	*1610*	*1656*	*1629*	*1597*	*1642*	*1669*	*1641*	**1624**	*1629*	*1641*

[a]Includes lease condensate.
[b]Net imports equals gross imports plus SPR imports minus exports.
[c]Includes finished petroleum products, unfinished oils, gasoline blending components, and natural gas plant liquids for processing.
[d]Includes an estimate of minor product stock change based on monthly data.
[e]Includes crude oil product supplied, natural gas liquids, liquefied refinery gas, other liquids, and all finished petroleum products except motor gasoline, jet fuel, distillate, and residual fuel oil.
[f]Includes crude oil in transit to refineries.
[g]Includes stocks of all other oils such as aviation gasoline, kerosene, natural gas liquids (including ethane), aviation gasoline blending components, naphtha and other oils for petrochemical feedstock use, special naphthas, lube oils, wax, coke, asphalt, road oil, and miscellaneous oils.

SPR: Strategic Petroleum Reserve
NGL: Natural Gas Liquids
Notes: Minor discrepancies with other EIA published historical data are due to rounding. Historical values are printed in **boldface**, forecasts in *italics*.
Sources: Historical data: Energy Information Administration, *Petroleum Supply Annual 1989*, DOE/EIA-0340(89)/1; *Petroleum Supply Monthly*, DOE/EIA-0109, Jan. 1990 to Jan. 1991; *Weekly Petroleum Status Report*, DOE/EIA-0208(91-11,16).

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

Supply and Disposition	1990				1991				1992				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1990	1991	1992
Supply															
Crude Oil Supply															
Domestic Production[a]	**7.46**	**7.22**	**7.18**	**7.35**	*7.47*	*7.20*	*7.05*	*7.04*	*7.02*	*6.87*	*6.74*	*6.76*	**7.30**	*7.19*	*6.85*
Alaska	**1.84**	**1.73**	**1.71**	**1.82**	*1.89*	*1.85*	*1.78*	*1.81*	*1.79*	*1.72*	*1.66*	*1.70*	**1.77**	*1.83*	*1.72*
Lower 48	**5.62**	**5.50**	**5.47**	**5.52**	*5.58*	*5.35*	*5.27*	*5.24*	*5.23*	*5.15*	*5.09*	*5.06*	**5.53**	*5.36*	*5.13*
Net Imports (Including SPR)[b]	**5.95**	**6.10**	**6.23**	**4.77**	*5.23*	*5.67*	*6.28*	*6.03*	*6.14*	*6.46*	*6.74*	*6.45*	**5.76**	*5.81*	*6.45*
Gross Imports (Excluding SPR)	**6.04**	**6.15**	**6.27**	**4.93**	*5.35*	*5.80*	*6.36*	*6.19*	*6.27*	*6.59*	*6.82*	*6.61*	**5.85**	*5.93*	*6.57*
SPR Imports	**0.03**	**0.05**	**0.03**	**0.00**	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	**0.03**	*0.00*	*0.00*
Exports	**0.12**	**0.10**	**0.07**	**0.16**	*0.12*	*0.13*	*0.08*	*0.15*	*0.12*	*0.13*	*0.08*	*0.15*	**0.12**	*0.12*	*0.12*
SPR Stock Withdrawn or Added (-)	**-0.03**	**-0.05**	**-0.03**	**0.04**	*0.19*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	**-0.02**	*0.05*	*0.00*
Other Stock Withdrawn or Added (-)	**-0.36**	**-0.12**	**0.45**	**0.22**	*-0.23*	*0.04*	*0.04*	*-0.01*	*-0.07*	*-0.03*	*0.07*	*0.03*	**0.05**	*-0.04*	*0.00*
Product Supplied and Losses	**-0.03**	**-0.03**	**-0.02**	**-0.01**	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	**-0.02**	*-0.02*	*-0.02*
Unaccounted-for Crude	**0.30**	**0.25**	**0.35**	**0.46**	*0.22*	*0.14*	*0.14*	*0.15*	*0.15*	*0.15*	*0.14*	*0.14*	**0.34**	*0.16*	*0.15*
Crude Oil Input to Refineries	**13.28**	**13.38**	**14.15**	**12.83**	*12.85*	*13.03*	*13.49*	*13.20*	*13.23*	*13.43*	*13.67*	*13.36*	**13.41**	*13.15*	*13.42*
Other Supply															
NGL Production	**1.53**	**1.48**	**1.54**	**1.65**	*1.63*	*1.55*	*1.53*	*1.56*	*1.57*	*1.56*	*1.54*	*1.57*	**1.55**	*1.57*	*1.56*
Other Hydrocarbon and Alcohol Inputs	**0.07**	**0.07**	**0.07**	**0.08**	*0.09*	*0.08*	*0.08*	*0.11*	*0.10*	*0.10*	*0.15*	*0.20*	**0.07**	*0.09*	*0.14*
Crude Oil Product Supplied	**0.03**	**0.03**	**0.02**	**0.01**	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	**0.02**	*0.02*	*0.02*
Processing Gain	**0.68**	**0.64**	**0.66**	**0.70**	*0.70*	*0.65*	*0.67*	*0.66*	*0.64*	*0.66*	*0.67*	*0.66*	**0.67**	*0.67*	*0.66*
Net Product Imports[c]	**1.71**	**1.55**	**1.24**	**0.82**	*0.56*	*1.49*	*1.30*	*1.35*	*1.39*	*1.31*	*1.15*	*1.24*	**1.33**	*1.18*	*1.27*
Gross Product Imports[c]	**2.39**	**2.20**	**1.97**	**1.76**	*1.54*	*2.14*	*1.95*	*2.11*	*2.06*	*1.96*	*1.80*	*2.00*	**2.08**	*1.94*	*1.96*
Product Exports	**0.68**	**0.65**	**0.72**	**0.94**	*0.98*	*0.65*	*0.66*	*0.76*	*0.66*	*0.65*	*0.66*	*0.76*	**0.75**	*0.76*	*0.68*
Product Stock Withdrawn or Added (-)[d]	**-0.30**	**-0.28**	**-0.61**	**0.58**	*0.85*	*-0.66*	*-0.51*	*0.31*	*0.45*	*-0.48*	*-0.38*	*0.32*	**-0.15**	*-0.01*	*-0.02*
Total Product Supplied, Domestic Use	**17.01**	**16.87**	**17.08**	**16.68**	*16.70*	*16.17*	*16.58*	*17.22*	*17.40*	*16.59*	*16.81*	*17.37*	**16.91**	*16.67*	*17.05*
Disposition															
Motor Gasoline	**7.04**	**7.30**	**7.37**	**7.14**	*6.83*	*7.26*	*7.32*	*7.23*	*6.93*	*7.27*	*7.30*	*7.22*	**7.21**	*7.16*	*7.18*
Jet Fuel	**1.48**	**1.47**	**1.46**	**1.54**	*1.51*	*1.42*	*1.45*	*1.51*	*1.50*	*1.44*	*1.49*	*1.56*	**1.49**	*1.48*	*1.50*
Distillate Fuel Oil	**3.23**	**2.97**	**2.92**	**2.96**	*3.20*	*2.81*	*2.73*	*3.28*	*3.61*	*2.96*	*2.82*	*3.36*	**3.02**	*3.01*	*3.19*
Residual Fuel Oil	**1.40**	**1.24**	**1.18**	**1.10**	*1.18*	*0.93*	*0.98*	*1.15*	*1.31*	*1.04*	*1.01*	*1.14*	**1.23**	*1.06*	*1.12*
Other Oils Supplied[e]	**3.88**	**3.90**	**4.16**	**3.94**	*3.98*	*3.74*	*4.10*	*4.05*	*4.04*	*3.88*	*4.19*	*4.10*	**3.97**	*3.97*	*4.06*
Total Product Supplied	**17.03**	**16.87**	**17.08**	**16.68**	*16.70*	*16.17*	*16.58*	*17.22*	*17.40*	*16.59*	*16.81*	*17.37*	**16.92**	*16.67*	*17.05*
Total Petroleum Net Imports	**7.66**	**7.65**	**7.48**	**5.60**	*5.79*	*7.16*	*7.57*	*7.38*	*7.54*	*7.77*	*7.89*	*7.69*	**7.09**	*6.98*	*7.72*
Closing Stocks (million barrels)															
Crude Oil (Excluding SPR)[f]	**374**	**384**	**343**	**323**	*344*	*341*	*337*	*338*	*344*	*347*	*340*	*338*	**323**	*338*	*338*
Total Motor Gasoline	**228**	**213**	**230**	**221**	*210*	*212*	*226*	*225*	*228*	*223*	*231*	*228*	**221**	*225*	*228*
Finished Motor Gasoline	**186**	**176**	**189**	**182**	*171*	*175*	*184*	*187*	*187*	*184*	*189*	*189*	**182**	*187*	*189*
Blending Components	**42**	**38**	**41**	**39**	*39*	*37*	*42*	*39*	*41*	*39*	*43*	*40*	**39**	*39*	*40*
Jet Fuel	**49**	**47**	**50**	**52**	*44*	*48*	*50*	*48*	*47*	*49*	*50*	*48*	**52**	*48*	*48*
Distillate Fuel Oil	**100**	**109**	**136**	**132**	*97*	*108*	*125*	*132*	*104*	*111*	*125*	*134*	**132**	*132*	*134*
Residual Fuel Oil	**46**	**47**	**50**	**49**	*45*	*44*	*45*	*44*	*43*	*46*	*46*	*45*	**49**	*44*	*45*
Other Oils[g]	**265**	**296**	**303**	**261**	*242*	*286*	*300*	*269*	*255*	*292*	*303*	*272*	**261**	*269*	*272*
Total Stocks (Excluding SPR)	**1061**	**1097**	**1112**	**1038**	*983*	*1040*	*1083*	*1055*	*1021*	*1068*	*1096*	*1065*	**1038**	*1055*	*1065*
Crude Oil in SPR	**582**	**587**	**590**	**586**	*568*	*568*	*568*	*568*	*568*	*568*	*568*	*568*	**586**	*568*	*568*
Total Stocks (Including SPR)	**1643**	**1684**	**1701**	**1624**	*1551*	*1608*	*1652*	*1624*	*1590*	*1636*	*1665*	*1633*	**1624**	*1624*	*1633*

[a]Includes lease condensate.
[b]Net imports equals gross imports plus SPR imports minus exports.
[c]Includes finished petroleum products, unfinished oils, gasoline blending components, and natural gas plant liquids for processing.
[d]Includes an estimate of minor product stock change based on monthly data.
[e]Includes crude oil product supplied, natural gas liquids, liquefied refinery gas, other liquids, and all finished petroleum products except motor gasoline, jet fuel, distillate, and residual fuel oil.
[f]Includes crude oil in transit to refineries.
[g]Includes stocks of all other oils such as aviation gasoline, kerosene, natural gas liquids (including ethane), aviation gasoline blending components, naphtha and other oils for petrochemical feedstock use, special naphthas, lube oils, wax, coke, asphalt, road oil, and miscellaneous oils.

SPR: Strategic Petroleum Reserve
NGL: Natural Gas Liquids

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

Sources: Historical data: Energy Information Administration, *Petroleum Supply Annual 1989*, DOE/EIA-0340(89)/1; *Petroleum Supply Monthly*, DOE/EIA-0109, Jan. 1990 to Jan. 1991; *Weekly Petroleum Status Report*, DOE/EIA-0208(91-11,16).

Table 8. Supply and Disposition of Petroleum: $22 World Oil Price Case
(Million Barrels per Day, Except Closing Stocks)

Supply and Disposition	1990				1991				1992				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1990	1991	1992
Supply															
Crude Oil Supply															
Domestic Production[a]	**7.46**	**7.22**	**7.18**	**7.35**	*7.47*	*7.31*	*7.19*	*7.19*	*7.16*	*7.01*	*6.90*	*6.93*	**7.30**	*7.29*	*7.00*
Alaska	**1.84**	**1.73**	**1.71**	**1.82**	*1.89*	*1.87*	*1.80*	*1.83*	*1.82*	*1.75*	*1.69*	*1.74*	**1.77**	*1.85*	*1.75*
Lower 48	**5.62**	**5.50**	**5.47**	**5.52**	*5.58*	*5.44*	*5.39*	*5.36*	*5.34*	*5.26*	*5.21*	*5.19*	**5.53**	*5.44*	*5.25*
Net Imports (Including SPR)[b]	**5.95**	**6.10**	**6.23**	**4.77**	*5.23*	*5.49*	*6.01*	*5.73*	*5.85*	*6.18*	*6.53*	*6.17*	**5.76**	*5.62*	*6.18*
Gross Imports (Excluding SPR)	**6.04**	**6.15**	**6.27**	**4.93**	*5.35*	*5.62*	*6.09*	*5.89*	*5.97*	*6.31*	*6.61*	*6.32*	**5.85**	*5.74*	*6.30*
SPR Imports	**0.03**	**0.05**	**0.03**	**0.00**	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	**0.03**	*0.00*	*0.00*
Exports	**0.12**	**0.10**	**0.07**	**0.16**	*0.12*	*0.13*	*0.08*	*0.15*	*0.12*	*0.13*	*0.08*	*0.15*	**0.12**	*0.12*	*0.12*
SPR Stock Withdrawn or Added (-)	**-0.03**	**-0.05**	**-0.03**	**0.04**	*0.19*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	**-0.02**	*0.05*	*0.00*
Other Stock Withdrawn or Added (-)	**-0.36**	**-0.12**	**0.45**	**0.22**	*-0.23*	*0.05*	*0.05*	*-0.01*	*-0.07*	*-0.03*	*0.07*	*0.03*	**0.05**	*-0.03*	*0.00*
Product Supplied and Losses	**-0.03**	**-0.03**	**-0.02**	**-0.01**	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	**-0.02**	*-0.02*	*-0.02*
Unaccounted-for Crude	**0.30**	**0.25**	**0.35**	**0.46**	*0.22*	*0.14*	*0.14*	*0.15*	*0.15*	*0.15*	*0.14*	*0.14*	**0.34**	*0.16*	*0.15*
Crude Oil Input to Refineries	**13.28**	**13.38**	**14.15**	**12.83**	*12.85*	*12.97*	*13.37*	*13.04*	*13.07*	*13.29*	*13.62*	*13.25*	**13.41**	*13.06*	*13.31*
Other Supply															
NGL Production	**1.53**	**1.48**	**1.54**	**1.65**	*1.63*	*1.56*	*1.54*	*1.57*	*1.57*	*1.56*	*1.54*	*1.57*	**1.55**	*1.57*	*1.56*
Other Hydrocarbon and Alcohol Inputs	**0.07**	**0.07**	**0.07**	**0.08**	*0.09*	*0.08*	*0.08*	*0.11*	*0.10*	*0.10*	*0.15*	*0.20*	**0.07**	*0.09*	*0.14*
Crude Oil Product Supplied	**0.03**	**0.03**	**0.02**	**0.01**	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	**0.02**	*0.02*	*0.02*
Processing Gain	**0.68**	**0.64**	**0.66**	**0.70**	*0.70*	*0.65*	*0.66*	*0.65*	*0.64*	*0.66*	*0.67*	*0.66*	**0.67**	*0.67*	*0.66*
Net Product Imports[c]	**1.71**	**1.55**	**1.24**	**0.82**	*0.56*	*1.41*	*1.23*	*1.32*	*1.39*	*1.30*	*1.09*	*1.20*	**1.33**	*1.13*	*1.25*
Gross Product Imports[c]	**2.39**	**2.20**	**1.97**	**1.76**	*1.54*	*2.05*	*1.89*	*2.08*	*2.05*	*1.95*	*1.75*	*1.96*	**2.08**	*1.89*	*1.93*
Product Exports	**0.68**	**0.65**	**0.72**	**0.94**	*0.98*	*0.65*	*0.66*	*0.76*	*0.66*	*0.65*	*0.66*	*0.76*	**0.75**	*0.76*	*0.68*
Product Stock Withdrawn or Added (-)[d]	**-0.30**	**-0.28**	**-0.61**	**0.58**	*0.85*	*-0.61*	*-0.52*	*0.31*	*0.44*	*-0.48*	*-0.41*	*0.34*	**-0.15**	*0.01*	*-0.03*
Total Product Supplied, Domestic Use	**17.01**	**16.87**	**17.08**	**16.68**	*16.70*	*16.06*	*16.38*	*17.03*	*17.23*	*16.45*	*16.67*	*17.23*	**16.91**	*16.54*	*16.90*
Disposition															
Motor Gasoline	**7.04**	**7.30**	**7.37**	**7.14**	*6.83*	*7.25*	*7.26*	*7.17*	*6.88*	*7.23*	*7.27*	*7.19*	**7.21**	*7.13*	*7.14*
Jet Fuel	**1.48**	**1.47**	**1.46**	**1.54**	*1.51*	*1.42*	*1.45*	*1.51*	*1.50*	*1.44*	*1.49*	*1.55*	**1.49**	*1.47*	*1.50*
Distillate Fuel Oil	**3.23**	**2.97**	**2.92**	**2.96**	*3.20*	*2.74*	*2.65*	*3.20*	*3.53*	*2.89*	*2.76*	*3.28*	**3.02**	*2.95*	*3.12*
Residual Fuel Oil	**1.40**	**1.24**	**1.18**	**1.10**	*1.18*	*0.89*	*0.92*	*1.10*	*1.27*	*1.00*	*0.97*	*1.11*	**1.23**	*1.02*	*1.08*
Other Oils Supplied[e]	**3.88**	**3.90**	**4.16**	**3.94**	*3.98*	*3.76*	*4.10*	*4.05*	*4.05*	*3.88*	*4.19*	*4.10*	**3.97**	*3.97*	*4.06*
Total Product Supplied	**17.03**	**16.87**	**17.08**	**16.68**	*16.70*	*16.06*	*16.38*	*17.03*	*17.23*	*16.45*	*16.67*	*17.23*	**16.92**	*16.54*	*16.90*
Total Petroleum Net Imports	**7.66**	**7.65**	**7.48**	**5.60**	*5.79*	*6.89*	*7.24*	*7.05*	*7.24*	*7.48*	*7.62*	*7.37*	**7.09**	*6.75*	*7.43*
Closing Stocks (million barrels)															
Crude Oil (Excluding SPR)[f]	**374**	**384**	**343**	**323**	*344*	*339*	*335*	*336*	*342*	*345*	*339*	*336*	**323**	*336*	*336*
Total Motor Gasoline	**228**	**213**	**230**	**221**	*210*	*211*	*226*	*225*	*228*	*223*	*233*	*229*	**221**	*225*	*229*
Finished Motor Gasoline	**186**	**176**	**189**	**182**	*171*	*173*	*184*	*186*	*187*	*184*	*190*	*189*	**182**	*186*	*189*
Blending Components	**42**	**38**	**41**	**39**	*39*	*37*	*42*	*38*	*41*	*39*	*43*	*40*	**39**	*38*	*40*
Jet Fuel	**49**	**47**	**50**	**52**	*44*	*48*	*50*	*48*	*47*	*49*	*50*	*48*	**52**	*48*	*48*
Distillate Fuel Oil	**100**	**109**	**136**	**132**	*97*	*104*	*122*	*129*	*102*	*108*	*123*	*131*	**132**	*129*	*131*
Residual Fuel Oil	**46**	**47**	**50**	**49**	*45*	*44*	*44*	*43*	*43*	*45*	*45*	*44*	**49**	*43*	*44*
Other Oils[g]	**265**	**296**	**303**	**261**	*242*	*287*	*300*	*268*	*254*	*292*	*303*	*271*	**261**	*268*	*271*
Total Stocks (Excluding SPR)	**1061**	**1097**	**1112**	**1038**	*983*	*1034*	*1077*	*1048*	*1015*	*1062*	*1093*	*1060*	**1038**	*1048*	*1060*
Crude Oil in SPR	**582**	**587**	**590**	**586**	*568*	*568*	*568*	*568*	*568*	*568*	*568*	*568*	**586**	*568*	*568*
Total Stocks (Including SPR)	**1643**	**1684**	**1701**	**1624**	*1551*	*1602*	*1645*	*1617*	*1584*	*1630*	*1661*	*1628*	**1624**	*1617*	*1628*

[a]Includes lease condensate.
[b]Net imports equals gross imports plus SPR imports minus exports.
[c]Includes finished petroleum products, unfinished oils, gasoline blending components, and natural gas plant liquids for processing.
[d]Includes an estimate of minor product stock change based on monthly data.
[e]Includes crude oil product supplied, natural gas liquids, liquefied refinery gas, other liquids, and all finished petroleum products except motor gasoline, jet fuel, distillate, and residual fuel oil.
[f]Includes crude oil in transit to refineries.
[g]Includes stocks of all other oils such as aviation gasoline, kerosene, natural gas liquids (including ethane), aviation gasoline blending components, naphtha and other oils for petrochemical feedstock use, special naphthas, lube oils, wax, coke, asphalt, road oil, and miscellaneous oils.

SPR: Strategic Petroleum Reserve
NGL: Natural Gas Liquids

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

Sources: Historical data: Energy Information Administration, *Petroleum Supply Annual 1989*, DOE/EIA-0340(89)/1; *Petroleum Supply Monthly*, DOE/EIA-0109, Jan. 1990 to Jan. 1991; *Weekly Petroleum Status Report*, DOE/EIA-0208(91-11,16).

Table 9. Petroleum Demand Sensitivities

Demand Determinant	1991 Three Quarters	1992 Four Quarters
Economic Activity		
Level of GNP[a]	*4,112 - 4,244*	*4,206 - 4,386*
Resulting Petroleum Demand Difference[b]	*0.42*	*0.62*
Oil Prices		
Crude Oil[c]	*$15 - $22*	*$15 - $22*
Resulting Petroleum Demand Difference[b]	*.17*	*.36*
Weather		
Heating Degree Days[d]	*1,873 - 2,828*	*3,969 - 5,645*
Cooling Degree Days[d]	*965 - 1,374*	*991 - 1,411*
Resulting Petroleum Demand Difference[b]	*.46*	*.79*

[a]Real gross national product, in billion 1982 dollar per year.
[b]Petroleum demand ranges associated with varying each demand determinant (or set of demand determinants), holding other things equal, in million barrels per day.
[c]Refiners' acquisition cost of import oil, in current dollars per barrel.
[d]Heating and cooling degree days shown are national population-weighted.
Source: Energy Information Administration, Office of Energy Markets and End Use, Demand Analysis and Forecasting Branch.

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

Supply and Disposition	1990				1991				1992				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1990	1991	1992
Supply															
Total Dry Gas Production[a]	**4.54**	**4.28**	**4.17**	**4.52**	*4.58*	*4.31*	*4.10*	*4.52*	*4.60*	*4.40*	*4.16*	*4.55*	**17.51**	*17.51*	*17.71*
Net Imports	**0.36**	**0.32**	**0.33**	**0.40**	*0.41*	*0.37*	*0.34*	*0.39*	*0.45*	*0.39*	*0.37*	*0.41*	**1.41**	*1.51*	*1.62*
Supplemental Gaseous Fuels	**0.03**	**0.02**	**0.02**	**0.03**	*0.03*	*0.02*	*0.02*	*0.03*	*0.03*	*0.02*	*0.02*	*0.03*	**0.11**	*0.10*	*0.10*
Total New Supply	**4.93**	**4.62**	**4.52**	**4.94**	*5.02*	*4.71*	*4.47*	*4.93*	*5.08*	*4.82*	*4.55*	*4.98*	**19.02**	*19.12*	*19.43*
Underground Working Gas Storage															
Opening	**2.51**	**1.88**	**2.45**	**3.27**	*3.01*	*1.98*	*2.58*	*3.42*	*3.04*	*1.94*	*2.54*	*3.38*	**2.51**	*3.01*	*3.04*
Closing	**1.88**	**2.45**	**3.27**	**3.01**	*1.98*	*2.58*	*3.42*	*3.04*	*1.94*	*2.54*	*3.38*	*3.00*	**3.01**	*3.04*	*3.00*
Net Withdrawals[b]	**0.63**	**-0.57**	**-0.83**	**0.25**	*1.03*	*-0.60*	*-0.84*	*0.38*	*1.09*	*-0.60*	*-0.84*	*0.38*	**-0.52**	*-0.03*	*0.04*
Total Primary Supply[a]	**5.56**	**4.05**	**3.69**	**5.19**	*6.05*	*4.11*	*3.63*	*5.31*	*6.17*	*4.22*	*3.71*	*5.36*	**18.50**	*19.10*	*19.46*
Consumption															
Lease and Plant Fuel	**0.32**	**0.30**	**0.29**	**0.31**	*0.27*	*0.30*	*0.26*	*0.31*	*0.30*	*0.32*	*0.28*	*0.31*	**1.22**	*1.14*	*1.22*
Pipeline Use	**0.15**	**0.14**	**0.15**	**0.16**	*0.16*	*0.14*	*0.13*	*0.15*	*0.14*	*0.16*	*0.14*	*0.15*	**0.59**	*0.58*	*0.59*
Residential	**1.97**	**0.81**	**0.39**	**1.24**	*2.12*	*0.85*	*0.37*	*1.29*	*2.28*	*0.86*	*0.37*	*1.31*	**4.41**	*4.63*	*4.82*
Commercial	**1.05**	**0.53**	**0.37**	**0.72**	*1.10*	*0.54*	*0.33*	*0.73*	*1.18*	*0.55*	*0.33*	*0.74*	**2.67**	*2.70*	*2.80*
Industrial	**1.75**	**1.78**	**1.74**	**1.91**	*1.70*	*1.76*	*1.56*	*1.81*	*1.75*	*1.90*	*1.67*	*1.86*	**7.18**	*6.83*	*7.18*
Electric Utilities	**0.46**	**0.74**	**0.97**	**0.62**	*0.56*	*0.67*	*0.90*	*0.64*	*0.56*	*0.70*	*0.90*	*0.64*	**2.79**	*2.77*	*2.80*
Subtotal	**5.69**	**4.29**	**3.90**	**4.96**	*5.90*	*4.27*	*3.55*	*4.92*	*6.21*	*4.49*	*3.69*	*5.00*	**18.84**	*18.64*	*19.39*
Total Disposition	**5.56**	**4.05**	**3.69**	**5.19**	*6.05*	*4.11*	*3.63*	*5.31*	*6.17*	*4.22*	*3.71*	*5.36*	**18.50**	*19.10*	*19.46*
Unaccounted for	**-0.13**	**-0.24**	**-0.21**	**0.23**	*0.15*	*-0.16*	*0.08*	*0.39*	*-0.04*	*-0.27*	*0.01*	*0.36*	**-0.34**	*0.46*	*0.07*

[a]Excludes nonhydrocarbon gases removed.

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

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

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(91/04); *Natural Gas Monthly*, DOE/EIA-0130(91/04); and *Electric Power Monthly*, DOE/EIA-0226(91/04).

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

Supply and Disposition	1990				1991				1992				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1990	1991	1992
Supply															
Production	**264**	**254**	**255**	**256**	*255*	*250*	*245*	*251*	*253*	*263*	*257*	*263*	**1029**	*1000*	*1036*
Primary Stock Levels[a]															
Opening	**29**	**35**	**37**	**34**	*33*	*31*	*31*	*31*	*31*	*31*	*31*	*31*	**29**	*33*	*31*
Closing	**35**	**37**	**34**	**33**	*31*	*31*	*31*	*31*	*31*	*31*	*31*	*31*	**33**	*31*	*31*
Net Withdrawals	**-6**	**-2**	**3**	**0**	*2*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	**-4**	*2*	*0*
Imports	**1**	**1**	**1**	**1**	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	**3**	*3*	*3*
Exports	**22**	**28**	**29**	**26**	*20*	*28*	*28*	*27*	*23*	*27*	*28*	*27*	**106**	*103*	*105*
Total Net Domestic Supply	**237**	**225**	**229**	**231**	*238*	*223*	*218*	*224*	*231*	*236*	*230*	*236*	**922**	*903*	*933*
Secondary Stock Levels[b]															
Opening	**146**	**160**	**172**	**161**	*167*	*183*	*197*	*174*	*171*	*168*	*184*	*164*	**146**	*167*	*171*
Closing	**160**	**172**	**161**	**167**	*183*	*197*	*174*	*171*	*168*	*184*	*164*	*169*	**167**	*171*	*169*
Net Withdrawals	**-14**	**-12**	**11**	**-6**	*-16*	*-14*	*24*	*3*	*3*	*-16*	*19*	*-4*	**-21**	*-4*	*2*
Total Indicated Consumption	**223**	**214**	**240**	**224**	*222*	*209*	*242*	*227*	*234*	*220*	*249*	*232*	**900**	*899*	*936*
Consumption															
Coke Plants	**10**	**10**	**10**	**10**	*9*	*9*	*9*	*9*	*10*	*10*	*10*	*10*	**39**	*35*	*39*
Electric Utilities	**185**	**182**	**211**	**194**	*192*	*181*	*215*	*196*	*203*	*191*	*221*	*200*	**772**	*784*	*815*
Retail and General Industry[c]	**22**	**19**	**20**	**23**	*21*	*18*	*19*	*22*	*22*	*19*	*19*	*22*	**83**	*80*	*82*
Subtotal	**216**	**211**	**241**	**226**	*222*	*209*	*242*	*227*	*234*	*220*	*249*	*232*	**894**	*899*	*936*
Total Disposition	**223**	**214**	**240**	**224**	*222*	*209*	*242*	*227*	*234*	*220*	*249*	*232*	**900**	*899*	*936*
Discrepancy[d]	**6**	**3**	**-1**	**-2**	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	**6**	*0*	*0*

[a]Primary stocks are held at the mines, preparation plants, and distribution points.
[b]Secondary stocks are held by users. Most of the secondary stocks are held by electric utilities.
[c]Synfuels plant consumption in 1990 was 1.7 million tons per quarter, and is assumed to remain at that level in 1991 and 1992.
[d]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 values are printed in **boldface**, forecasts in *italics*.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(91/04); and *Quarterly Coal Report*, DOE/EIA-0221(90/4Q).

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

Supply and Disposition	1990				1991				1992				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1990	1991	1992
Net Utility Generation															
Coal	**371.5**	**369.5**	**426.7**	**390.7**	*386.2*	*368.0*	*432.8*	*396.8*	*411.4*	*388.9*	*445.3*	*405.8*	**1558.5**	*1583.8*	*1651.3*
Petroleum	**31.1**	**32.9**	**31.8**	**21.3**	*23.7*	*20.4*	*29.4*	*30.1*	*35.7*	*27.2*	*32.0*	*31.0*	**117.2**	*103.6*	*125.9*
Natural Gas	**43.8**	**70.1**	**91.8**	**58.4**	*53.4*	*63.9*	*85.1*	*60.5*	*53.4*	*65.9*	*84.8*	*60.5*	**264.1**	*262.9*	*264.5*
Nuclear	**151.2**	**127.8**	**157.9**	**140.0**	*147.9*	*141.7*	*150.5*	*137.3*	*145.2*	*132.8*	*153.5*	*140.6*	**576.9**	*577.4*	*572.1*
Hydroelectric	**75.6**	**80.0**	**61.7**	**62.5**	*75.0*	*79.3*	*67.7*	*68.7*	*76.1*	*82.0*	*70.0*	*71.1*	**279.8**	*290.7*	*299.2*
Geothermal and Other[a]	**2.7**	**2.5**	**2.7**	**2.7**	*3.0*	*3.1*	*3.2*	*3.2*	*3.2*	*3.2*	*3.3*	*3.3*	**10.7**	*12.4*	*13.1*
Total Utility Generation	**675.9**	**682.9**	**772.6**	**675.6**	*689.2*	*676.3*	*768.6*	*696.8*	*724.9*	*699.4*	*789.0*	*712.3*	**2807.1**	*2830.8*	*2925.6*
Net Imports	**-2.6**	**-1.7**	**2.8**	**3.2**	*3.7*	*4.5*	*6.3*	*6.3*	*5.2*	*6.4*	*9.0*	*8.9*	**1.8**	*20.7*	*29.5*
Purchase from Nonutilities[b]	**27.7**	**28.0**	**31.7**	**27.7**	*31.6*	*31.9*	*36.1*	*31.6*	*37.1*	*37.4*	*42.4*	*37.1*	**115.2**	*131.1*	*153.9*
Total Supply	**701.0**	**709.3**	**807.1**	**706.6**	*724.4*	*712.7*	*811.0*	*734.6*	*767.2*	*743.2*	*840.3*	*758.3*	**2924.0**	*2982.7*	*3109.0*
Losses and Unaccounted For[c]	**34.3**	**71.5**	**61.2**	**51.6**	*47.6*	*69.1*	*62.2*	*59.1*	*47.3*	*71.5*	*64.0*	*60.5*	**218.5**	*238.1*	*243.3*
Sales															
Residential	**241.2**	**201.3**	**264.5**	**214.5**	*250.2*	*209.4*	*270.2*	*226.5*	*270.0*	*217.8*	*280.4*	*235.2*	**921.6**	*956.3*	*1003.3*
Commercial	**177.9**	**180.3**	**211.6**	**182.8**	*183.2*	*184.9*	*213.8*	*188.2*	*194.3*	*192.7*	*221.5*	*195.3*	**752.6**	*770.1*	*803.7*
Industrial	**224.6**	**233.3**	**244.7**	**235.2**	*221.1*	*226.8*	*240.5*	*237.5*	*231.5*	*238.2*	*249.7*	*243.6*	**937.8**	*925.8*	*963.1*
Other	**23.1**	**22.9**	**25.1**	**22.5**	*22.8*	*22.5*	*24.3*	*23.3*	*24.1*	*23.1*	*24.7*	*23.6*	**93.5**	*92.9*	*95.5*
Total	**666.7**	**637.8**	**745.9**	**655.0**	*676.8*	*643.6*	*748.7*	*675.5*	*719.9*	*671.8*	*776.3*	*697.8*	**2705.5**	*2744.6*	*2865.7*

[a]Other includes generation from wind, wood, waste, and solar sources.
[b]Electricity received from nonutility sources, including cogenerators and small power producers.
[c]Balancing item, mainly transmission and distribution losses.

Notes: Values for purchases from nonutilities and losses and unaccounted for are estimated for 1990. Minor discrepancies with other EIA published historical data are due to rounding. Historical values are printed in **boldface**, forecasts in *italics*.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(91/04); and *Electric Power Monthly*, DOE/EIA-0226(91/04).

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(Billion Kilowatthours)

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Geothermal and Other[a]	**2.7**	**2.5**	**2.7**	**2.7**	*3.0*	*3.1*	*3.2*	*3.2*	*3.2*	*3.2*	*3.3*	*3.3*	**10.7**	*12.4*	*13.1*
Total Utility Generation	**675.9**	**682.9**	**772.6**	**675.6**	*689.2*	*676.3*	*768.6*	*696.8*	*724.9*	*699.4*	*789.0*	*712.3*	**2807.1**	*2830.8*	*2925.6*
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Total Supply	**701.0**	**709.3**	**807.1**	**706.6**	*724.4*	*712.7*	*811.0*	*734.6*	*767.2*	*743.2*	*840.3*	*758.3*	**2924.0**	*2982.7*	*3109.0*
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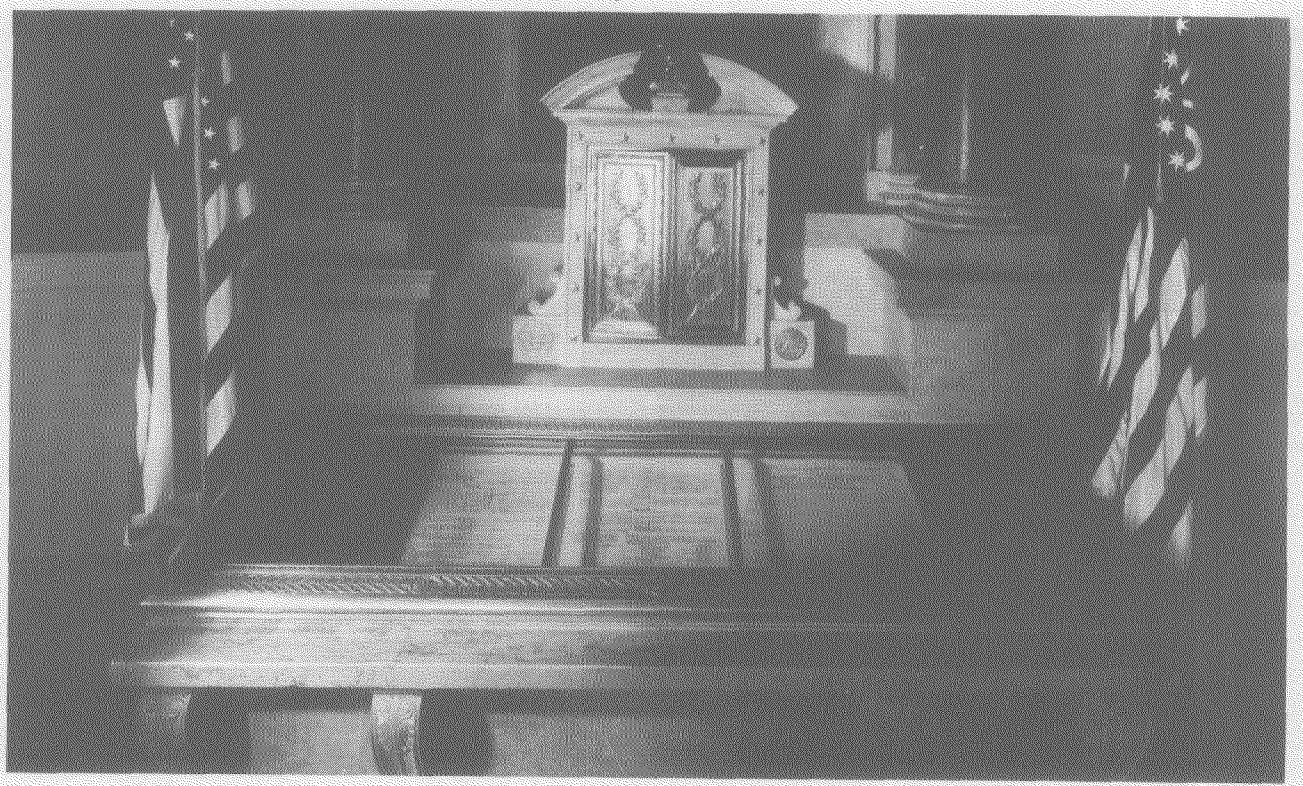

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