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Short-Term Energy Outlook

Quarterly Projections

Special Issue

September 1990

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

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Preface

The Energy Information Administration (EIA) quarterly estimates of short-term energy supply, demand, and prices are revised in January, April, July, and October for publication in the *Short-Term Energy Outlook (Outlook)*. This issue of the *Outlook* is a substitute for the third-quarter 1990 issue of the *Outlook* and incorporates the latest effects on world oil markets from the events in the Persian Gulf. The principal users of the *Outlook* are managers and energy analysts in private industry and government. The projections in this volume extend through the fourth quarter of 1991.

The scenarios 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, a particular set of 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 estimates 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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Introduction

The aftermath of Iraq's invasion of Kuwait has changed the near-term outlook for energy markets. Petroleum product prices have increased markedly and prices of other energy sources are expected to begin increasing gradually. After an initial period of stock adjustment, energy demands can be expected to decrease in reaction to higher prices and less favorable macroeconomic conditions.

This report is a special issue of the *Short-Term Energy Outlook (Outlook)*, condensed to facilitate the timely update of projections that reflect alternative estimates of world oil market conditions. The analysis uses three world oil price cases, with assumed prices of \$20, \$25, and \$30 per barrel. The discussion focuses on the middle price case for convenience only. This edition intentionally omits the *Outlook's* usual International section.

Table 1 provides a summary of energy projections under one set of oil price assumptions and under the macroeconomic projections provided in Table 2. Energy price projections under the various oil price assumptions are given in Table 3. Tables 4 through 7 provide detailed demand, supply and sensitivity information for domestic petroleum under the various oil prices assumed. Other energy projections are provided in Tables 8 through 10, featuring results from the \$25 oil price case.

Recent Developments

During the first half of 1990, crude oil prices declined sharply from a post-1985 high of more than \$20 per barrel to \$13 per barrel, a drop of more than one-third.¹ Prices, which had been buoyed by the unusually harsh winter, fell precipitously in the early months of the year as the weather turned unusually mild and production from the Organization of Petroleum Exporting Countries (OPEC) remained high. Moreover, the U.S. economy was experiencing a slowdown in growth,

resulting in declining demand and a sizable buildup of crude oil stocks.

Between June and late July of this year, oil prices had begun to recover as OPEC agreed to enforce production quotas more aggressively. The Iraqi invasion of Kuwait on August 2, 1990, resulted in further immediate and large price hikes as trade sanctions were introduced. The immediate impact has been increasing crude oil prices in the range of \$25 to \$30 per barrel and a loss of combined Iraqi and Kuwaiti production of 4.3 million barrels per day.²

Because of the current instability of crude oil markets, EIA has examined three supply and demand scenarios resulting from differing crude oil prices. The scenarios each include the assumption of constant nominal crude oil prices beginning in September 1990, with values of \$20, \$25, and \$30 per barrel. These prices reflect substantial uncertainty about energy markets over the next several months.

Scenario Summary

With higher oil prices and a sluggish economy (Table 2),³ petroleum demand is expected to decline. The second-quarter 1990 *Outlook* (which assumed the world oil price would be in the range of \$18 to \$20 per barrel in 1990 and 1991 and assumed much stronger macroeconomic growth) projected petroleum demand to be 17.4 million barrels per day in 1991 in the middle case. At a world oil price of \$25 per barrel, the demand for all petroleum products in 1991 is now expected to be 16.7 million barrels per day, a 2.3-percent decline from projected 1990 levels (Table 1). On the supply side, a world oil price of \$25 per barrel is expected to slow, but not reverse, the rate of decline in domestic crude oil production in 1990 and 1991. Growth in crude oil imports is expected to reverse from an increase of 7.4 percent for 1990 to a 2.2-percent decline for 1991, largely as a result of reduced demand. In 1991, total net petroleum imports are projected to decline for the first time since 1985. In the \$30 case, production could post an increase in 1991. The \$20 oil price case would likely yield continued sharp declines in 1990 and 1991 oil production relative to the 1989 level of 7.61 million barrels per day. A basic assumption for the \$25 and \$30 cases considered in this analysis is that the oil industry will perceive that the higher prices will be permanent enough to justify significant investment in drilling and development.

Energy Product Prices

Petroleum product prices have been dramatically affected by the events in the Middle East (Table 3). Spot prices for motor gasoline and other petroleum products rose almost immediately in response to uncertainty about the future price and availability of crude oil. These increases paralleled the rise in crude prices, which began in June, and were quickly passed on to consumers. The following discussion, drawing from the information in Table 3, provides projections for energy product prices, given the various assumed oil price cases, but does not reflect a judgment that one of the cases is more likely than any other.

In the \$25 oil price case, crude oil prices are assumed to increase by nearly \$9 per barrel (21 cents per gallon) from the second quarter to the fourth quarter of 1990. Most petroleum product prices would increase by about 20 cents per gallon during this period, indicating that refiner margins would change little from second-quarter levels. Crude oil prices would remain at \$25 per barrel throughout 1991. The average crude oil price for 1991 is assumed to be \$4 per barrel or 10 cents per gallon higher than the 1990 average. It is expected that most of this price increase would be reflected in the prices of gasoline, heating oil, diesel fuel, and residual fuel oil. Unrelated to events in the Persian Gulf, retail motor gasoline prices are expected to be 2 cents per gallon higher than a year ago, as State and local excise tax increases enacted in mid- to late 1990 take effect fully and as general inflation raises production costs.

Natural gas prices have been relatively low in all sectors for most of 1990 due to weak overall demand caused by mild weather and slow economic growth. The sluggish macroeconomic conditions are assumed to continue through the remainder of the year. As a result, natural gas price increases for the second half of 1990 should be relatively modest at the wellhead and in the end-use sectors despite rising oil prices (under all scenarios). Unlike the petroleum markets, both the spot and futures market for natural gas have shown only limited price volatility.⁴ During the summer, electric utilities that are capable of using natural gas typically switch away from oil to meet generation requirements. This pattern has been reinforced this year by the relatively low natural gas prices. As winter approaches, however, utilities capable of fuel switching will routinely switch to oil as gas is diverted for space heating purposes. The normal availability of gas in underground storage should restrain any large gas

price increases, assuming that very severe weather conditions are avoided.

In 1991, a sustained crude oil price of \$25 per barrel may cause an increase in wellhead gas prices, at about one-half the rate of the rise in crude oil prices. In the electric utility and industrial sectors, the percentage price increases for natural gas should be smaller than those for fuel oil. The expected low economic growth will keep industrial and electric utility gas demand weak and relieve pressure for price increases. Sustained severe cold weather could change this situation considerably in the Northeast, however, if deliverability becomes a problem.

Coal prices to electric utilities, in the short-term, are expected to be largely unaffected by the increase in crude oil prices. Relatively weak economic growth should offset any expected increase in pressure on coal prices induced by higher diesel freight charges.

Residential electricity rates are expected to increase by nearly 5 percent in 1991 under a \$25 oil price case. The increase would be partly the result of higher fuel oil prices and partly the result of inflation.

The \$20 world oil price scenario should result in correspondingly lower prices for the energy products, compared with the \$25 case. At electric utilities, prices for residual fuel oil should increase only slightly in 1991, and would be outpaced by natural gas prices. This could result in some switching to oil under the \$20 world oil price case. Coal prices, already held down by continuing increases in productivity in coal production and low transportation costs, should continue on a gradual downward trend that began in 1984. As a result of the relatively flat fuel prices under a \$20 oil price scenario, residential electricity rate increases should be small in 1991 and are likely to be well below inflation.

The \$30 oil price case for 1991 represents an increase in crude oil prices of about 18 cents per gallon over 1990 prices. This increase would be reflected in petroleum product prices. High oil prices should cause higher natural gas prices and encourage more associated gas production. But for the same reasons as stated in the \$25 case, gas prices would not rise as rapidly as oil prices. In 1991, higher fuel costs passed on to consumers by electric utilities could result in the first price increase that exceeds the rate of inflation since 1984.

Petroleum Demand

Based on the \$25 price scenario, sharply higher oil prices are expected to contribute to the downward trend in petroleum demand for 1990, which began with the onset of extremely mild weather in the first quarter. A slowing economy, including sluggish growth in industrial production and flat real income growth, is expected to hold down energy use. Petroleum demand is expected to decline by an average of about 60,000 barrels per day in the second half of 1990 compared with the second half of 1989 and average about 17.1 million barrels per day for 1990 as a whole (Table 4). More significant declines are expected in 1991 due to continued high oil prices and slow economic growth. Table 5 presents petroleum demand sensitivities to various assumptions about oil prices, macroeconomic conditions, and weather.

In the \$25 oil price scenario, demands for most petroleum products are expected to decline in 1990 and 1991. In the transportation sector, slow economic growth and higher prices for fuel are expected to dampen travel demand. Growth in motor vehicle-miles traveled is expected to be more than offset by continued improvements in vehicle efficiency, yielding declining use of motor gasoline. Higher fuel costs are expected to result in higher airline ticket prices, which in turn should keep commercial jet fuel demand weak in 1990 and 1991. Total jet fuel demand will probably increase in 1990 because of a surge in demand during the third quarter supporting military airlift operations.

A rapid rise in petroleum product prices in the second half of 1990 is expected to induce some switching from residual fuel oil to natural gas in the industrial and electric utility sectors. However, there may be little room for increasing gas use in these sectors beyond what has already been achieved with the very low gas prices seen since last winter.

Distillate fuel oil demand is expected to show the largest decline of any petroleum product in 1990 as a result of the milder-than-normal temperatures in the first quarter of 1990. A return to normal weather in 1991 should be enough to boost distillate demand despite weakness in the transportation and industrial sectors. Demand for other petroleum products is expected to remain fairly flat.

In the \$20 oil price scenario, petroleum demand in 1991 remains close to the 1990 level, or 190,000 barrels per day above the \$25 oil price scenario (Table 6).

In the \$30 oil price scenario, petroleum demand drops to 16.6 million barrels per day in 1991, or about 160,000 barrels per day under the \$25 scenario (Table 7). Although all the major petroleum products post lower demands in the \$30 case compared with the \$25 case, much of the difference between the scenarios can be attributed to switching from residual fuel to natural gas in the industrial and electric utility sectors.

Petroleum Production and Supply

Higher energy prices are expected to have important effects on domestic production, particularly in 1991. This will be particularly true if oil and gas producers perceive that the higher prices will persist beyond the next few months. The projections for domestic oil production presented here for the various price scenarios are intended to represent paths for domestic output if the alternative price cases actually develop. Because of the volatile nature of the current world oil market, expectations of continued high prices may not be widely shared, and increased domestic supply may not be forthcoming in the near term. Thus, even if higher prices do persist, the improved production outlook presented here (for the \$25 and the \$30 cases) may be too optimistic, at least for the next several months. Alternatively, it is possible that short-term production can exceed expected levels if, for example, operators are very successful in increasing Alaskan production through the installation of new equipment, and if the regulatory difficulties preventing production from the Point Arguello field can be immediately resolved.

In the \$25 oil price scenario, domestic crude oil output is projected to decline in 1990 by 360,000 barrels per day from 1989 levels. This compares to an average decline of 530,000 barrels per day in 1989 (Table 4). Higher oil prices are expected to further slow the rate of decline in domestic crude oil production by 1991. Total domestic production could decline by as little as 100,000 barrels per day. Alaskan production might register a slight gain of 10,000 barrels per day next year, the first production increase since 1988. The projected decrease of 120,000 barrels per day in Lower-48 production would be approximately one-half of the rate of decline for 1990.

In the \$25 oil price case, net imports of crude oil would be expected to increase by 420,000 barrels per day to 6.12 million barrels per day in 1990 compared to an increase of 750,000 barrels per day in 1989. The

expected 1990 increase is largely reflective of the very high import rates during the first half of the year (particularly in the first quarter) compared with the same period in 1989. In 1991, net imports of crude oil would be expected to decrease by 130,000 barrels per day; product imports could decline by about 310,000 barrels per day, resulting in the first decline in total petroleum net imports since 1985. The decline in product imports in 1991 reflects a general decline in demand for petroleum products. Refinery utilization would also decline between 1990 and 1991, as reduced demands are expected to lead to lower requirements from all supply sources.

In the \$25 oil price case, end-of-year crude oil inventories are projected to remain almost unchanged in both 1990 and 1991. The sizable stock draw during the second half of 1990, brought about by the

disruption of normal supply patterns, is projected to offset the unusual buildup of stocks during the first half of the year. Product inventories, however, are expected to increase by about 180,000 barrels per day in 1990.

In the \$20 oil price scenario, domestic crude oil production would be expected to continue on a downward trend, showing reductions in both Alaska and the Lower-48 States (Table 6). In the \$30 case, domestic crude oil production could increase by 30,000 barrels per day in 1991, the first increase since 1985 (Table 7). This production level is 160,000 barrels per day higher than in the \$25 case. One important assumption in the \$30 oil price case is that production begins in the Point Arguello oil field in 1991, as local government and private environmental concerns are overcome.

At the time this special issue was prepared, the Administration was preparing a series of both short-term and mid-term initiatives to increase the supply of oil and to reduce demand through conservation. The successful implementation of these initiatives would result in lower levels of oil consumption and higher levels of oil production, which in turn would reduce oil import projections in this report. To the extent these initiatives lower world crude oil prices, economic growth will be positively impacted.

References

1. Energy Information Administration, *Weekly Petroleum Status Report*, DOE/EIA-0208, Figure 9, various issues.
2. Energy Information Administration, "Energy Situation Analysis Report: Persian Gulf" (August 30, 1990). This estimate does not reflect increased production by other oil producing countries.
3. The macroeconomic forecast was developed using the August 1990 DRI/McGraw-Hill quarterly model of the U.S. economy. For the forecast period, real gross national product (GNP) will exhibit slower growth than in recent years. The annual growth rate is expected to be 1.1 percent in both 1990 and 1991, compared with 4.5 percent in 1988 and 2.5 percent in 1989.
4. The combination of high gas inventories following a mild first quarter and slow industrial demand in a weakened economy has had the effect of holding down spot gas prices despite the rise in oil prices. See *Barron's Financial Weekly* (August 11, 1990) and *Oil Market Listener*, "Natural Gas Seen Making Few Inroads into U.S. Oil Markets from Mideast Crisis" (August 29, 1990).

Table 1. Summary Table: \$25 World Oil Price Case

Assumptions and Projections	Year				Annual Percentage Change		
	1988	1989	1990	1991	1988-1989	1989-1990	1990-1991
Macroeconomic Indicators							
Real Gross National Product (billion 1982 dollars)	4,017	4,118	<i>4,163</i>	<i>4,209</i>	2.5	<i>1.1</i>	<i>1.1</i>
Index of Industrial Production (Mfg.) (index, 1977=1.000)	1.058	1.089	<i>1.102</i>	<i>1.112</i>	2.9	<i>1.2</i>	<i>.9</i>
Imported Crude Oil Price (nominal dollars per barrel)	14.56	18.08	<i>20.80</i>	<i>25.00</i>	24.2	<i>15.0</i>	<i>20.2</i>
Retail Prices (nominal) ^a							
Motor Gasoline ^b (dollars per gallon)96	1.06	<i>1.20</i>	<i>1.32</i>	10.4	<i>13.2</i>	<i>10.0</i>
No. 2 Heating Oil (dollars per gallon)80	.88	<i>.99</i>	<i>1.10</i>	10.0	<i>12.5</i>	<i>11.1</i>
Residential Natural Gas (dollars per thousand cubic feet)	5.47	5.63	<i>5.87</i>	<i>6.23</i>	2.9	<i>4.3</i>	<i>6.1</i>
Residential Electricity (cents per kilowatthour)	7.49	7.64	<i>7.90</i>	<i>8.30</i>	2.0	<i>3.4</i>	<i>5.1</i>
Petroleum Supply							
Crude Oil Production ^c (million barrels per day)	8.14	7.61	<i>7.25</i>	<i>7.15</i>	-6.5	<i>-4.7</i>	<i>-1.4</i>
Net Petroleum Imports, Including SPR (million barrels per day)	6.59	7.20	<i>7.63</i>	<i>7.20</i>	9.3	<i>6.0</i>	<i>-5.6</i>
Energy Demands							
Total U.S. Petroleum Consumption (million barrels per day)	17.28	17.33	<i>17.12</i>	<i>16.72</i>	.3	<i>-1.2</i>	<i>-2.3</i>
Motor Gasoline	7.34	7.33	<i>7.29</i>	<i>7.17</i>	-.1	<i>-.5</i>	<i>-1.6</i>
Jet Fuel	1.45	1.49	<i>1.54</i>	<i>1.50</i>	2.8	<i>3.4</i>	<i>-2.6</i>
Distillate Fuel Oil	3.12	3.16	<i>3.06</i>	<i>3.10</i>	1.3	<i>-3.2</i>	<i>1.3</i>
Residual Fuel Oil	1.38	1.37	<i>1.26</i>	<i>1.01</i>	-7	<i>-8.0</i>	<i>-19.8</i>
Other Petroleum ^d	4.00	3.98	<i>3.98</i>	<i>3.94</i>	-5	<i>.0</i>	<i>-1.0</i>
Natural Gas Consumption (trillion cubic feet)	18.03	18.81	<i>18.42</i>	<i>19.35</i>	4.3	<i>-2.1</i>	<i>5.0</i>
Coal Consumption (million short tons)	884	889	<i>892</i>	<i>928</i>	.6	<i>.3</i>	<i>4.0</i>
Electricity Sales ^e (billion kilowatthours)	2,567.9	2,633.8	<i>2,701.0</i>	<i>2,784.6</i>	2.6	<i>2.6</i>	<i>3.1</i>
Gross Energy Consumption ^f (quadrillion Btu)	80.20	81.29	<i>81.25</i>	<i>81.95</i>	1.4	<i>.0</i>	<i>.9</i>
Thousand Btu/1982 Dollar of GNP	19.97	19.74	<i>19.52</i>	<i>19.47</i>	-1.2	<i>-1.1</i>	<i>-.3</i>

^a All prices include taxes, except prices for No. 2 heating oil and residential electricity.

^b Average for all grades and services.

^c Includes lease condensate.

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

^e 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.

^f 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(90/05); *International Petroleum Statistics Report*, DOE/EIA-0520(90/06); *International Energy Annual 1988*, DOE/EIA-0219(88); *Petroleum Marketing Monthly*, DOE/EIA-0380(90/05); *Petroleum Supply Monthly*, DOE/EIA-0109(90/06); *Petroleum Supply Annual 1989*, DOE/EIA-0340(89)/1; *Natural Gas Monthly*, DOE/EIA-0130(90/05); *Electric Power Monthly*, DOE/EIA-0226(90/05); and *Quarterly Coal Report*, DOE/EIA-0121(90/1Q); Organization for Economic Cooperation and Development, *Monthly Oil Statistics Database* through December 1989. Macroeconomic projections are based on DRI/McGraw-Hill Forecast CONTROL0890.

**Table 2. Macroeconomic, Oil Price, and Weather Assumptions:
\$25 World Oil Price Case**

Assumption	1989				1990				1991				Year			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1989	1990	1991	
Macroeconomic ^a																
Real Gross National Product (billion 1982 dollars)	4,096	4,112	4,130	4,133	4,151	<i>4,163</i>	<i>4,169</i>	<i>4,170</i>	<i>4,176</i>	<i>4,195</i>	<i>4,223</i>	<i>4,242</i>	4,118	<i>4,163</i>	<i>4,209</i>	
Percentage Change from Prior Year	3.2	2.6	2.4	1.8	1.3	<i>1.2</i>	<i>.9</i>	<i>.9</i>	<i>.6</i>	<i>.8</i>	<i>1.3</i>	<i>1.7</i>	2.5	<i>1.1</i>	<i>1.1</i>	
GNP Implicit Price Deflator (index, 1982=1.000)	1.246	1.258	1.268	1.280	1.295	<i>1.309</i>	<i>1.320</i>	<i>1.334</i>	<i>1.346</i>	<i>1.307</i>	<i>1.374</i>	<i>1.389</i>	1.263	<i>1.314</i>	<i>1.367</i>	
Percentage Change from Prior Year	4.4	4.3	3.9	3.7	3.9	<i>4.1</i>	<i>4.1</i>	<i>4.2</i>	<i>3.9</i>	<i>-2</i>	<i>4.1</i>	<i>4.1</i>	4.1	<i>4.0</i>	<i>4.0</i>	
Real Disposable Personal Income ^b (billion 1982 dollars)	2,863	2,855	2,874	2,883	2,901	<i>2,904</i>	<i>2,904</i>	<i>2,890</i>	<i>2,902</i>	<i>2,897</i>	<i>2,900</i>	<i>2,910</i>	2,869	<i>2,900</i>	<i>2,902</i>	
Percentage Change from Prior Year	3.5	2.6	2.0	1.7	1.3	<i>1.7</i>	<i>1.0</i>	<i>.2</i>	<i>.0</i>	<i>-2</i>	<i>-1</i>	<i>.7</i>	2.4	<i>1.1</i>	<i>.1</i>	
Index of Industrial Production (Mfg.) (index, 1977=1.000)	1.086	1.093	1.089	1.087	1.092	<i>1.099</i>	<i>1.108</i>	<i>1.108</i>	<i>1.101</i>	<i>1.106</i>	<i>1.116</i>	<i>1.124</i>	1.089	<i>1.102</i>	<i>1.112</i>	
Percentage Change from Prior Year	4.7	4.0	2.1	.9	.6	<i>.5</i>	<i>1.7</i>	<i>1.9</i>	<i>.8</i>	<i>.6</i>	<i>.7</i>	<i>1.4</i>	2.9	<i>1.2</i>	<i>.9</i>	
Oil Price																
Imported Crude Oil Price ^c (U.S. dollars/barrel)	16.76	18.97	17.60	18.85	19.76	<i>16.09</i>	<i>22.50</i>	<i>25.00</i>	<i>25.00</i>	<i>25.00</i>	<i>25.00</i>	<i>25.00</i>	<i>25.00</i>	18.08	<i>20.80</i>	<i>25.00</i>
Weather ^d																
Heating Degree Days	2,289	560	96	1,930	1,943	<i>544</i>	<i>94</i>	<i>1,669</i>	<i>2,401</i>	<i>536</i>	<i>88</i>	<i>1,669</i>	4,875	<i>4,250</i>	<i>4,694</i>	
Cooling Degree Days	39	317	700	60	71	<i>348</i>	<i>753</i>	<i>63</i>	<i>28</i>	<i>327</i>	<i>755</i>	<i>63</i>	1,116	<i>1,235</i>	<i>1,172</i>	

^a Macroeconomic projections from the Data Resources, Inc., model forecasts are seasonally adjusted at annual rates and modified as appropriate to the base world oil price case. The base macroeconomic projections are then modified by the low and high world oil price cases and by various explicit economic assumptions. Low world oil prices are applied to the high macroeconomic case, and high world oil prices are 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, revised December 1981. A degree day indicates the temperature variation from 65 degrees Fahrenheit (calculated as the simple average of the daily minimum and maximum temperatures) weighted by 1980 population.

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

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(90/05); U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, June 1988; U.S. Department of Commerce, National Oceanic and Atmospheric Administration, *Monthly State, Regional, and National Heating/Cooling Degree Days Weighted by Population*; Federal Reserve System, *Statistical Release G.17(419)* June 1990. Macroeconomic projections are based on DRI/McGraw-Hill Forecast CONTROL0890.

**Table 3. Energy Product Prices
(Nominal Dollars)**

Product	1989				1990		Price Range	1990		1991				Year		
	1st	2nd	3rd	4th	1st	2nd		3rd	4th	1st	2nd	3rd	4th	1989	1990	1991
Imported Crude Oil Price ^a (dollars per barrel)	16.76	18.97	17.60	18.85	19.76	<i>16.09</i>	Low	20.40	20.00	20.00	20.00	20.00	20.00		19.10	20.00
							Mid	22.50	25.00	25.00	25.00	25.00	25.00	18.08	20.80	25.00
							High	24.00	30.00	30.00	30.00	30.00	30.00		22.40	30.00
Natural Gas Wellhead Price (dollars per thousand cubic feet)	1.84	1.61	1.62	1.76	1.93	<i>1.59</i>	Low	1.70	1.91	1.95	1.65	1.77	1.99		1.79	1.84
							Mid	1.70	2.01	2.07	1.70	1.91	2.31	1.71	1.81	2.00
							High	1.70	2.23	2.27	1.90	2.11	2.51		1.87	2.20
Petroleum Products																
Gasoline ^b (dollars per gallon)96	1.13	1.10	1.05	1.08	<i>1.12</i>	Low	1.25	1.29	1.17	1.25	1.28	1.18		1.19	1.22
							Mid	1.25	1.33	1.26	1.35	1.39	1.29	1.06	1.20	1.32
							High	1.25	1.39	1.38	1.49	1.54	1.43		1.21	1.46
No. 2 Diesel Oil, Retail (dollars per gallon)95	.99	.96	1.05	1.10	<i>1.01</i>	Low	1.06	1.11	1.11	1.12	1.11	1.11		1.07	1.11
							Mid	1.08	1.18	1.19	1.19	1.18	1.19	.99	1.09	1.19
							High	1.12	1.29	1.33	1.33	1.32	1.32		1.13	1.32
No. 2 Heating Oil, Wholesale (dollars per gallon)53	.53	.53	.65	.63	<i>.54</i>	Low	.61	.63	.63	.61	.60	.63		.61	.62
							Mid	.65	.76	.76	.74	.72	.76	.57	.65	.75
							High	.68	.89	.89	.86	.85	.90		.69	.88
No. 2 Heating Oil, Retail (dollars per gallon)86	.86	.82	.96	1.02	<i>.89</i>	Low	.91	.97	1.01	.98	.93	.97		.96	.98
							Mid	.93	1.07	1.13	1.10	1.05	1.09	.88	.99	1.10
							High	.95	1.19	1.29	1.25	1.19	1.24		1.03	1.25
No. 6 Residual Fuel Oil ^c (dollars per barrel)	15.12	17.10	15.87	17.88	19.24	<i>14.34</i>	Low	18.13	18.81	19.35	19.05	18.96	18.81		17.69	19.05
							Mid	19.01	23.21	24.04	23.65	23.53	23.35	16.47	19.00	23.66
							High	19.89	27.62	28.73	28.25	28.11	27.89		20.27	28.26
Electric Utility Fuels																
Coal (dollars per million Btu)	1.44	1.45	1.45	1.44	1.46	<i>1.44</i>	Low	1.42	1.41	1.41	1.43	1.41	1.39		1.43	1.41
							Mid	1.44	1.45	1.47	1.49	1.48	1.48	1.44	1.45	1.48
							High	1.45	1.50	1.53	1.57	1.57	1.58		1.46	1.56
Heavy Oil ^d (dollars per million Btu)	2.62	2.96	2.69	3.20	3.49	<i>2.26</i>	Low	2.90	3.02	3.08	3.01	3.01	3.02		2.91	3.03
							Mid	3.06	3.72	3.82	3.74	3.74	3.75	2.86	3.13	3.76
							High	3.22	4.43	4.56	4.47	4.46	4.48		3.35	4.50
Natural Gas (dollars per million Btu)	2.38	2.30	2.30	2.49	2.62	<i>2.08</i>	Low	2.26	2.59	2.74	2.37	2.49	2.83		2.34	2.58
							Mid	2.29	2.75	2.93	2.55	2.68	3.02	2.36	2.39	2.77
							High	2.31	2.91	3.14	2.74	2.86	3.22		2.43	2.96
Other Residential																
Natural Gas (dollars per thousand cubic feet)	5.41	5.85	6.91	5.49	5.53	<i>5.99</i>	Low	7.02	5.78	5.70	6.19	7.38	6.16		5.81	6.04
							Mid	7.14	5.94	5.88	6.39	7.62	6.35	5.63	5.87	6.23
							High	7.27	6.10	6.05	6.59	7.86	6.55		5.92	6.42
Electricity (cents per kilowatthour)	7.19	7.77	8.07	7.53	7.40	<i>7.95</i>	Low	8.27	7.92	7.70	8.21	8.52	8.13		7.89	8.14
							Mid	8.27	7.96	7.78	8.34	8.71	8.36	7.64	7.90	8.30
							High	8.27	8.00	7.86	8.46	8.91	8.61		7.91	8.46

^a Cost of imported crude oil to U.S. refiners.

^b Average retail for all grades and services.

^c Retail residual fuel oil--average, all sulfur contents.

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

Notes: Second quarter 1990 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: low world oil prices (low price), base world oil prices (base price), and high world oil prices (high price), with macroeconomic and weather assumptions kept as in the base case for all price cases. Historical values are printed in **boldface**, forecasts in *italics*.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(90/05); and *Petroleum Marketing Monthly*, DOE/EIA-0380(90/05).

Table 4. Supply and Disposition of Petroleum: \$25 World Oil Price Case
(Million Barrels per Day, Except Stocks)

Supply and Disposition	1989				1990				1991				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1989	1990	1991
Supply															
Crude Oil Supply															
Domestic Production ^a	7.77	7.74	7.51	7.44	7.46	7.22	7.12	7.21	7.29	7.17	7.09	7.07	7.61	7.25	7.15
Alaska	1.87	1.91	1.82	1.90	1.84	1.73	1.68	1.74	1.79	1.77	1.75	1.73	1.87	1.75	1.76
Lower 48	5.90	5.83	5.69	5.54	5.62	5.50	5.44	5.47	5.49	5.40	5.34	5.35	5.74	5.51	5.39
Net Imports (Including SPR) ^b	5.17	5.65	6.18	5.80	5.95	6.10	6.48	5.94	5.26	6.47	6.26	5.97	5.70	6.12	5.99
Gross Imports (Excluding SPR)	5.26	5.75	6.22	5.91	6.04	6.15	6.55	6.10	5.44	6.64	6.40	6.13	5.79	6.21	6.15
SPR Imports ^c	.07	.06	.06	.03	.03	.05	.03	.00	.00	.00	.00	.00	.06	.03	.00
Exports	.17	.17	.09	.14	.12	.10	.10	.16	.17	.17	.15	.16	.14	.12	.16
SPR Stock Withdrawn or Added (-) ^c	-.07	-.06	-.06	-.03	-.03	-.05	-.03	.00	.00	.00	.00	.00	-.06	-.03	.00
Other Stock Withdrawn or Added (-)	.04	-.05	-.04	-.07	-.36	-.12	.34	.07	.00	-.05	.06	.01	-.03	-.02	.00
Products Supplied and Losses	-.05	-.02	-.02	-.03	-.03	-.03	-.02	-.02	-.02	-.02	-.02	-.02	-.03	-.02	-.02
Unaccounted-for Crude	.17	.17	.25	.20	.30	.25	.22	.09	.06	.07	.04	.05	.20	.21	.06
Crude Oil Input to Refineries	13.03	13.42	13.83	13.31	13.28	13.38	14.11	13.30	12.59	13.64	13.42	13.09	13.40	13.52	13.19
Other Supply															
NGL Production	1.64	1.60	1.51	1.43	1.53	1.48	1.50	1.54	1.58	1.54	1.52	1.54	1.55	1.51	1.54
Other Hydrocarbon and Alcohol Inputs	.06	.06	.06	.06	.07	.07	.07	.07	.06	.06	.07	.07	.06	.07	.07
Crude Oil Product Supplied	.05	.02	.02	.03	.03	.03	.02	.02	.02	.02	.02	.02	.03	.03	.02
Processing Gain	.68	.67	.67	.63	.68	.64	.66	.65	.65	.69	.68	.69	.66	.66	.68
Net Product Imports ^d	1.91	1.44	1.33	1.33	1.71	1.55	1.45	1.35	1.40	1.05	.98	1.42	1.50	1.52	1.21
Gross Product Imports ^d	2.58	2.13	2.04	2.13	2.39	2.20	2.13	1.96	1.99	1.61	1.51	2.03	2.22	2.17	1.78
Product Exports	.66	.69	.71	.80	.68	.65	.68	.61	.59	.56	.53	.61	.72	.65	.57
Product Stock Withdrawn or Added (-) ^e	.35	-.32	-.55	1.03	-.30	-.28	-.44	.31	.73	-.64	-.29	.29	.13	-.18	.02
Total Product Supplied, Domestic Use	17.72	16.89	16.87	17.83	17.01	16.87	17.36	17.23	17.02	16.35	16.39	17.11	17.33	17.12	16.72
Disposition															
Motor Gasoline	7.09	7.44	7.42	7.35	7.04	7.30	7.57	7.23	6.91	7.33	7.29	7.15	7.33	7.29	7.17
Jet Fuel	1.51	1.39	1.47	1.58	1.48	1.47	1.64	1.55	1.48	1.50	1.47	1.57	1.49	1.54	1.50
Distillate Fuel Oil	3.38	2.98	2.82	3.45	3.23	2.97	2.86	3.18	3.51	2.86	2.78	3.25	3.16	3.06	3.10
Residual Fuel Oil	1.63	1.25	1.14	1.47	1.40	1.24	1.15	1.27	1.20	.86	.82	1.14	1.37	1.26	1.01
Other Oils Supplied ^f	4.10	3.83	4.02	3.97	3.88	3.90	4.14	4.00	3.92	3.79	4.03	4.00	3.98	3.98	3.94
Total Product Supplied	17.72	16.89	16.87	17.83	17.03	16.87	17.36	17.23	17.02	16.35	16.39	17.11	17.33	17.12	16.72
Total Petroleum Net Imports	7.08	7.08	7.51	7.13	7.66	7.65	7.93	7.29	6.66	7.52	7.23	7.39	7.20	7.63	7.20
Closing Stocks (million barrels)															
Crude Oil (Excluding SPR) ^g	327	331	335	341	374	384	353	347	347	352	347	346	341	347	346
Total Motor Gasoline	230	216	227	213	228	213	217	226	230	222	227	226	213	226	226
Finished Motor Gasoline	189	178	186	177	186	176	176	188	193	182	186	190	177	188	190
Blending Components	41	38	41	36	42	38	42	38	37	39	41	36	36	38	36
Jet Fuel	43	45	48	41	49	47	43	47	45	50	51	48	41	47	48
Distillate Fuel Oil	97	100	123	106	100	109	129	125	89	103	120	125	106	125	125
Residual Fuel Oil	42	44	49	44	46	47	53	44	40	44	47	46	44	44	46
Other Oils ^h	264	300	308	256	265	296	311	283	255	298	300	274	256	283	274
Total Stocks (Excluding SPR)	1002	1036	1090	1002	1061	1097	1107	1072	1007	1070	1092	1064	1002	1072	1064
Crude Oil in SPR ^c	566	572	577	580	582	587	590	590	590	590	590	590	580	590	590
Total Stocks (Including SPR)	1568	1608	1667	1581	1643	1684	1696	1662	1596	1660	1681	1654	1581	1662	1654

^a Includes lease condensate.
^b Net imports equals gross imports plus SPR imports minus exports.
^c The fill rate for the Strategic Petroleum Reserve is assumed to be 0; no prediction is available at this time.
^d Includes finished petroleum products, unfinished oils, gasoline blending components, and natural gas plant liquids for processing.
^e Includes an estimate of minor product stock change based on monthly data.
^f 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.
^g Includes crude oil in transit to refineries.
^h 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 June 1990; *Weekly Petroleum Status Report*, DOE/EIA-0208(90-33).

Table 5. Petroleum Demand Sensitivities

Demand Determinant	1990	1991
	Fourth Qtr Only	Four Quarters
Economic Activity		
Level of GNP ^a	4,100 - 4,239	4,122 - 4,297
Resulting Petroleum Demand Difference ^b	0.57	0.71
Energy Prices		
Crude Oil ^c	\$20 - \$30	\$20 - \$30
Resulting Petroleum Demand Difference ^b19	.35
Weather		
Heating Degree-Days ^d	1,371 - 2,043	3,949 - 5,614
Cooling Degree-Days ^d	49 - 87	991 - 1,411
Resulting Petroleum Demand Difference ^b72	.49

^a Real gross national product, in billions of 1982 dollars per year.

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

^c Refiners' acquisition cost of imported 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 6. Supply and Disposition of Petroleum: \$20 World Oil Price Case
(Million Barrels per Day, Except Stocks)

Supply and Disposition	1989				1990				1991				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1989	1990	1991
Supply															
Crude Oil Supply															
Domestic Production ^a	7.77	7.74	7.51	7.44	7.46	7.22	7.08	7.07	7.08	6.95	6.85	6.79	7.61	7.21	6.92
Alaska	1.87	1.91	1.82	1.90	1.84	1.73	1.68	1.73	1.75	1.72	1.68	1.65	1.87	1.74	1.70
Lower 48	5.90	5.83	5.69	5.54	5.62	5.50	5.40	5.34	5.33	5.23	5.17	5.14	5.74	5.46	5.21
Net Imports (Including SPR) ^b	5.17	5.65	6.18	5.80	5.95	6.10	6.49	6.22	5.65	6.85	6.69	6.43	5.70	6.19	6.41
Gross Imports (Excluding SPR)	5.26	5.75	6.22	5.91	6.04	6.15	6.57	6.38	5.77	6.96	6.79	6.54	5.79	6.29	6.52
SPR Imports	.07	.06	.06	.03	.03	.05	.03	.00	.05	.05	.05	.05	.06	.03	.05
Exports	.17	.17	.09	.14	.12	.10	.10	.16	.17	.17	.15	.16	.14	.12	.16
SPR Stock Withdrawn or Added (-)	-.07	-.06	-.06	-.03	-.03	-.05	-.03	.00	-.05	-.05	-.05	-.05	-.06	-.03	-.05
Other Stock Withdrawn or Added (-)	.04	-.05	-.04	-.07	-.36	-.12	.36	-.02	-.06	-.05	.03	.02	-.03	-.03	-.01
Products Supplied and Losses	-.05	-.02	-.02	-.03	-.03	-.03	-.02	-.02	-.02	-.02	-.02	-.02	-.03	-.02	-.02
Unaccounted-for Crude	.17	.17	.25	.20	.30	.25	.22	.12	.09	.09	.07	.08	.20	.22	.08
Crude Oil Input to Refineries	13.03	13.42	13.83	13.31	13.28	13.38	14.10	13.37	12.69	13.77	13.57	13.24	13.40	13.53	13.32
Other Supply															
NGL Production	1.64	1.60	1.51	1.43	1.53	1.48	1.51	1.53	1.57	1.54	1.51	1.54	1.55	1.51	1.54
Other Hydrocarbon and Alcohol Inputs	.06	.06	.06	.06	.07	.07	.07	.07	.06	.06	.07	.07	.06	.07	.06
Crude Oil Product Supplied	.05	.02	.02	.03	.03	.03	.02	.02	.02	.02	.02	.02	.03	.03	.02
Processing Gain	.68	.67	.67	.63	.68	.64	.69	.65	.63	.67	.66	.67	.66	.67	.66
Net Product Imports ^c	1.91	1.44	1.33	1.33	1.71	1.55	1.42	1.51	1.47	1.12	1.04	1.54	1.50	1.55	1.29
Gross Product Imports ^c	2.58	2.13	2.04	2.13	2.39	2.20	2.10	2.12	2.07	1.68	1.58	2.15	2.22	2.20	1.87
Product Exports	.66	.69	.71	.80	.68	.65	.68	.61	.59	.56	.53	.61	.72	.65	.57
Product Stock Withdrawn or Added (-) ^d	.35	-.32	-.55	1.03	-.30	-.28	-.45	.18	.73	-.64	-.28	.24	.13	-.21	.01
Total Product Supplied, Domestic Use	17.72	16.89	16.87	17.83	17.01	16.87	17.36	17.33	17.18	16.54	16.59	17.32	17.33	17.15	16.91
Disposition															
Motor Gasoline	7.09	7.44	7.42	7.35	7.04	7.30	7.57	7.23	6.91	7.35	7.32	7.19	7.33	7.29	7.19
Jet Fuel	1.51	1.39	1.47	1.58	1.48	1.47	1.64	1.56	1.49	1.51	1.48	1.58	1.49	1.54	1.51
Distillate Fuel Oil	3.38	2.98	2.82	3.45	3.23	2.97	2.86	3.24	3.57	2.94	2.85	3.32	3.16	3.07	3.17
Residual Fuel Oil	1.63	1.25	1.14	1.47	1.40	1.24	1.15	1.33	1.29	.95	.91	1.24	1.37	1.28	1.10
Other Oils Supplied ^e	4.10	3.83	4.02	3.97	3.88	3.90	4.14	3.98	3.91	3.80	4.03	3.99	3.98	3.97	3.93
Total Product Supplied	17.72	16.89	16.87	17.83	17.03	16.87	17.36	17.33	17.18	16.54	16.59	17.32	17.33	17.15	16.91
Total Petroleum Net Imports	7.08	7.08	7.51	7.13	7.66	7.65	7.91	7.73	7.12	7.97	7.73	7.97	7.20	7.74	7.70
Closing Stocks (million barrels)															
Crude Oil (Excluding SPR) ^f	327	331	335	341	374	384	351	353	358	362	359	357	341	353	357
Total Motor Gasoline	230	216	227	213	228	213	218	230	237	234	238	235	213	230	235
Finished Motor Gasoline	189	178	186	177	186	176	176	190	196	191	193	196	177	190	196
Blending Components	41	38	41	36	42	38	42	41	41	43	45	39	36	41	39
Jet Fuel	43	45	48	41	49	47	43	48	45	51	51	48	41	48	48
Distillate Fuel Oil	97	100	123	106	100	109	129	128	94	104	121	132	106	128	132
Residual Fuel Oil	42	44	49	44	46	47	53	48	38	42	45	45	44	48	45
Other Oils ^g	264	300	308	256	265	296	311	283	258	299	301	274	256	283	274
Total Stocks (Excluding SPR)	1002	1036	1090	1002	1061	1097	1106	1090	1029	1092	1115	1091	1002	1090	1091
Crude Oil in SPR	566	572	577	580	582	587	590	590	594	599	603	608	580	590	608
Total Stocks (Including SPR)	1568	1608	1667	1581	1643	1684	1695	1680	1624	1691	1718	1699	1581	1680	1699

^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 June 1990; *Weekly Petroleum Status Report*, DOE/EIA-0208(90-33).

Table 7. Supply and Disposition of Petroleum: \$30 World Oil Price Case
(Million Barrels per Day, Except Stocks)

Supply and Disposition	1989				1990				1991				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1989	1990	1991
Supply															
Crude Oil Supply															
Domestic Production ^a	7.77	7.74	7.51	7.44	7.46	7.22	7.14	7.29	7.37	7.28	7.29	7.31	7.61	7.28	7.31
Alaska	1.87	1.91	1.82	1.90	1.84	1.73	1.68	1.75	1.81	1.79	1.78	1.76	1.87	1.75	1.79
Lower 48	5.90	5.83	5.69	5.54	5.62	5.50	5.46	5.54	5.55	5.49	5.51	5.55	5.74	5.53	5.53
Net Imports (Including SPR) ^b	5.17	5.65	6.18	5.80	5.95	6.10	6.47	5.73	5.05	6.24	5.91	5.59	5.70	6.06	5.70
Gross Imports (Excluding SPR)	5.26	5.75	6.22	5.91	6.04	6.15	6.54	5.90	5.23	6.40	6.05	5.75	5.79	6.16	5.86
SPR Imports ^c	.07	.06	.06	.03	.03	.05	.03	.00	.00	.00	.00	.00	.06	.03	.00
Exports	.17	.17	.09	.14	.12	.10	.10	.16	.17	.17	.15	.16	.14	.12	.16
SPR Stock Withdrawn or Added (-) ^c	-.07	-.06	-.06	-.03	-.03	-.05	-.03	.00	.00	.00	.00	.00	-.06	-.03	.00
Other Stock Withdrawn or Added (-)	.04	-.05	-.04	-.07	-.36	-.12	.33	.14	.03	-.05	.06	.00	-.03	.00	.01
Products Supplied and Losses	-.05	-.02	-.02	-.03	-.03	-.03	-.02	-.02	-.02	-.02	-.02	-.02	-.03	-.02	-.02
Unaccounted-for Crude	.17	.17	.25	.20	.30	.25	.22	.10	.08	.08	.06	.07	.20	.21	.07
Crude Oil Input to Refineries	13.03	13.42	13.83	13.31	13.28	13.38	14.11	13.24	12.51	13.53	13.30	12.96	13.40	13.50	13.08
Other Supply															
NGL Production	1.64	1.60	1.51	1.43	1.53	1.48	1.51	1.54	1.58	1.54	1.52	1.54	1.55	1.52	1.55
Other Hydrocarbon and Alcohol Inputs	.06	.06	.06	.06	.07	.07	.07	.07	.06	.06	.07	.07	.06	.07	.07
Crude Oil Product Supplied	.05	.02	.02	.03	.03	.03	.02	.02	.02	.02	.02	.02	.03	.03	.02
Processing Gain	.68	.67	.67	.63	.68	.64	.69	.65	.62	.66	.66	.66	.66	.67	.65
Net Product Imports ^d	1.91	1.44	1.33	1.33	1.71	1.55	1.42	1.30	1.30	.96	.95	1.45	1.50	1.49	1.17
Gross Product Imports ^d	2.58	2.13	2.04	2.13	2.39	2.20	2.10	1.91	1.90	1.52	1.49	2.06	2.22	2.15	1.74
Product Exports	.66	.69	.71	.80	.68	.65	.68	.61	.59	.56	.53	.61	.72	.65	.57
Product Stock Withdrawn or Added (-) ^e	.35	-.32	-.55	1.03	-.30	-.28	-.45	.34	.81	-.60	-.29	.24	.13	-.17	.04
Total Product Supplied, Domestic Use	17.72	16.89	16.87	17.83	17.01	16.87	17.36	17.14	16.90	16.19	16.22	16.94	17.33	17.10	16.56
Disposition															
Motor Gasoline	7.09	7.44	7.42	7.35	7.04	7.30	7.57	7.22	6.90	7.31	7.25	7.11	7.33	7.29	7.14
Jet Fuel	1.51	1.39	1.47	1.58	1.48	1.47	1.64	1.55	1.47	1.49	1.46	1.56	1.49	1.53	1.49
Distillate Fuel Oil	3.38	2.98	2.82	3.45	3.23	2.97	2.86	3.11	3.43	2.77	2.69	3.17	3.16	3.04	3.01
Residual Fuel Oil	1.63	1.25	1.14	1.47	1.40	1.24	1.15	1.24	1.17	.83	.79	1.10	1.37	1.26	.97
Other Oils Supplied ^f	4.10	3.83	4.02	3.97	3.88	3.90	4.14	4.03	3.93	3.79	4.03	4.01	3.98	3.99	3.94
Total Product Supplied	17.72	16.89	16.87	17.83	17.03	16.87	17.36	17.14	16.90	16.19	16.22	16.94	17.33	17.10	16.56
Total Petroleum Net Imports	7.08	7.08	7.51	7.13	7.66	7.65	7.88	7.03	6.36	7.20	6.86	7.04	7.20	7.56	6.87
Closing Stocks (million barrels)															
Crude Oil (Excluding SPR) ^g	327	331	335	341	374	384	354	341	339	343	337	337	341	341	337
Total Motor Gasoline	230	216	227	213	228	213	218	223	227	217	222	222	213	223	222
Finished Motor Gasoline	189	178	186	177	186	176	176	188	192	181	184	188	177	188	188
Blending Components	41	38	41	36	42	38	42	36	35	36	38	33	36	36	33
Jet Fuel	43	45	48	41	49	47	43	47	44	49	51	47	41	47	47
Distillate Fuel Oil	97	100	123	106	100	109	129	123	88	100	116	124	106	123	124
Residual Fuel Oil	42	44	49	44	46	47	53	48	38	42	45	44	44	48	44
Other Oils ^h	264	300	308	256	265	296	311	282	254	296	299	273	256	282	273
Total Stocks (Excluding SPR)	1002	1036	1090	1002	1061	1097	1109	1065	990	1049	1070	1048	1002	1065	1048
Crude Oil in SPR ^c	566	572	577	580	582	587	590	590	590	590	590	590	580	590	590
Total Stocks (Including SPR)	1568	1608	1667	1581	1643	1684	1698	1654	1579	1638	1660	1637	1581	1654	1637

^a Includes lease condensate.

^b Net imports equals gross imports plus SPR imports minus exports.

^c The fill rate for the Strategic Petroleum Reserve is assumed to be 0; no prediction is available at this time.

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

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

^f 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.

^g Includes crude oil in transit to refineries.

^h 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 June 1990; *Weekly Petroleum Status Report*, DOE/EIA-0208(90-33).

Table 8. Supply and Disposition of Natural Gas: \$25 World Oil Price Case
(Trillion Cubic Feet)

Supply and Disposition	1989				1990				1991				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1989	1990	1991
Supply															
Total Dry Gas Production ^a	4.40	4.22	4.10	4.40	4.49	<i>4.21</i>	<i>4.15</i>	<i>4.50</i>	<i>4.61</i>	<i>4.35</i>	<i>4.19</i>	<i>4.52</i>	17.12	<i>17.34</i>	<i>17.68</i>
Net Imports33	.31	.31	.37	.37	<i>.33</i>	<i>.31</i>	<i>.36</i>	<i>.43</i>	<i>.37</i>	<i>.34</i>	<i>.39</i>	1.31	<i>1.37</i>	<i>1.53</i>
Supplemental Gaseous Fuels05	.04	.03	.04	.04	<i>.04</i>	<i>.04</i>	<i>.05</i>	<i>.05</i>	<i>.04</i>	<i>.04</i>	<i>.05</i>	.16	<i>.17</i>	<i>.17</i>
Total New Supply	4.77	4.57	4.44	4.81	4.90	<i>4.58</i>	<i>4.49</i>	<i>4.91</i>	<i>5.08</i>	<i>4.77</i>	<i>4.57</i>	<i>4.95</i>	18.58	<i>18.88</i>	<i>19.38</i>
Underground Working Gas Storage															
Opening	2.85	1.78	2.37	3.18	2.50	<i>1.87</i>	<i>2.40</i>	<i>3.08</i>	<i>2.71</i>	<i>1.66</i>	<i>2.24</i>	<i>3.07</i>	2.85	<i>2.50</i>	<i>2.71</i>
Closing	1.78	2.37	3.18	2.50	1.87	<i>2.40</i>	<i>3.08</i>	<i>2.71</i>	<i>1.66</i>	<i>2.24</i>	<i>3.07</i>	<i>2.70</i>	2.50	<i>2.71</i>	<i>2.70</i>
Net Withdrawals ^b	1.09	-.58	-.84	.68	.62	<i>-.60</i>	<i>-.68</i>	<i>.37</i>	<i>1.05</i>	<i>-.58</i>	<i>-.83</i>	<i>.37</i>	.35	<i>-.28</i>	<i>.01</i>
Total Primary Supply ^a	5.86	3.99	3.60	5.49	5.52	<i>3.98</i>	<i>3.81</i>	<i>5.28</i>	<i>6.13</i>	<i>4.19</i>	<i>3.74</i>	<i>5.33</i>	18.93	<i>18.60</i>	<i>19.39</i>
Consumption															
Lease and Plant Fuel31	.29	.29	.31	.31	<i>.28</i>	<i>.29</i>	<i>.32</i>	<i>.32</i>	<i>.31</i>	<i>.29</i>	<i>.32</i>	1.19	<i>1.20</i>	<i>1.24</i>
Pipeline Use15	.14	.13	.15	.15	<i>.14</i>	<i>.14</i>	<i>.16</i>	<i>.16</i>	<i>.15</i>	<i>.14</i>	<i>.16</i>	.57	<i>.59</i>	<i>.61</i>
Residential	2.13	.82	.39	1.41	1.98	<i>.81</i>	<i>.37</i>	<i>1.26</i>	<i>2.24</i>	<i>.84</i>	<i>.36</i>	<i>1.28</i>	4.75	<i>4.41</i>	<i>4.72</i>
Commercial	1.09	.51	.33	.77	1.03	<i>.51</i>	<i>.31</i>	<i>.71</i>	<i>1.15</i>	<i>.53</i>	<i>.32</i>	<i>.72</i>	2.70	<i>2.56</i>	<i>2.71</i>
Industrial	1.79	1.67	1.61	1.79	1.80	<i>1.69</i>	<i>1.65</i>	<i>1.85</i>	<i>1.82</i>	<i>1.79</i>	<i>1.68</i>	<i>1.84</i>	6.84	<i>6.98</i>	<i>7.13</i>
Electric Utilities53	.74	.89	.61	.46	<i>.73</i>	<i>.91</i>	<i>.58</i>	<i>.57</i>	<i>.76</i>	<i>.98</i>	<i>.63</i>	2.77	<i>2.68</i>	<i>2.94</i>
Subtotal	5.99	4.16	3.63	5.03	5.73	<i>4.15</i>	<i>3.66</i>	<i>4.88</i>	<i>6.25</i>	<i>4.38</i>	<i>3.78</i>	<i>4.94</i>	18.81	<i>18.42</i>	<i>19.35</i>
Total Disposition	5.86	3.99	3.60	5.49	5.52	<i>3.98</i>	<i>3.81</i>	<i>5.28</i>	<i>6.13</i>	<i>4.19</i>	<i>3.74</i>	<i>5.33</i>	18.93	<i>18.60</i>	<i>19.39</i>
Unaccounted for	-.13	-.17	-.03	.46	-.20	<i>-.17</i>	<i>.15</i>	<i>.40</i>	<i>-.12</i>	<i>-.19</i>	<i>-.03</i>	<i>.38</i>	.12	<i>.18</i>	<i>.04</i>

^a Excludes nonhydrocarbon gases removed.

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

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

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(90/05); *Natural Gas Monthly*, DOE/EIA-0130(90/05); and *Electric Power Monthly*, DOE/EIA-0226(90/05).

Table 9. Supply and Disposition of Coal: \$25 World Oil Price Case
(Million Short Tons)

Supply and Disposition	1989				1990				1991				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1989	1990	1991
Supply															
Production	247	239	243	251	264	<i>256</i>	<i>253</i>	<i>249</i>	<i>251</i>	<i>259</i>	<i>257</i>	<i>268</i>	980	<i>1022</i>	<i>1035</i>
Primary Stock Levels ^a															
Opening	30	35	30	29	29	<i>35</i>	<i>36</i>	<i>34</i>	<i>31</i>	<i>31</i>	<i>31</i>	<i>31</i>	30	<i>29</i>	<i>31</i>
Closing	35	30	29	29	35	<i>36</i>	<i>34</i>	<i>31</i>	<i>31</i>	<i>31</i>	<i>31</i>	<i>31</i>	29	<i>31</i>	<i>31</i>
Net Withdrawals	-5	5	2	0	-6	<i>-1</i>	<i>2</i>	<i>3</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	1	<i>-2</i>	<i>0</i>
Imports	1	1	1	1	1	<i>1</i>	3	<i>3</i>	<i>3</i>						
Exports	21	28	24	27	22	<i>28</i>	<i>24</i>	<i>26</i>	<i>21</i>	<i>26</i>	<i>27</i>	<i>27</i>	101	<i>100</i>	<i>101</i>
Total New Domestic Supply	221	216	221	225	237	<i>227</i>	<i>232</i>	<i>227</i>	<i>231</i>	<i>234</i>	<i>230</i>	<i>241</i>	883	<i>923</i>	<i>937</i>
Secondary Stock Levels ^b															
Opening	158	149	159	147	146	<i>161</i>	<i>178</i>	<i>169</i>	<i>171</i>	<i>174</i>	<i>189</i>	<i>171</i>	158	<i>146</i>	<i>171</i>
Closing	149	159	147	146	161	<i>178</i>	<i>169</i>	<i>171</i>	<i>174</i>	<i>189</i>	<i>171</i>	<i>180</i>	146	<i>171</i>	<i>180</i>
Net Withdrawals	9	-10	12	1	-15	<i>-17</i>	<i>9</i>	<i>-2</i>	<i>-2</i>	<i>-15</i>	<i>18</i>	<i>-9</i>	12	<i>-25</i>	<i>-9</i>
Total Indicated Consumption	230	206	233	226	221	<i>211</i>	<i>240</i>	<i>225</i>	<i>228</i>	<i>219</i>	<i>248</i>	<i>232</i>	895	<i>898</i>	<i>928</i>
Consumption															
Coke Plants	11	11	10	10	10	<i>10</i>	<i>9</i>	<i>9</i>	<i>10</i>	<i>10</i>	<i>10</i>	<i>10</i>	41	<i>38</i>	<i>39</i>
Electric Utilities	191	178	203	194	185	<i>182</i>	<i>213</i>	<i>194</i>	<i>197</i>	<i>190</i>	<i>220</i>	<i>200</i>	766	<i>773</i>	<i>808</i>
Retail and General Industry ^c	22	19	19	22	22	<i>19</i>	<i>19</i>	<i>22</i>	<i>21</i>	<i>19</i>	<i>19</i>	<i>22</i>	82	<i>81</i>	<i>80</i>
Subtotal	223	208	232	226	216	<i>211</i>	<i>240</i>	<i>225</i>	<i>228</i>	<i>219</i>	<i>248</i>	<i>232</i>	889	<i>892</i>	<i>928</i>
Total Disposition	230	206	233	226	221	<i>211</i>	<i>240</i>	<i>225</i>	<i>228</i>	<i>219</i>	<i>248</i>	<i>232</i>	895	<i>898</i>	<i>928</i>
Discrepancy ^d	7	-2	1	0	5	<i>0</i>	6	<i>5</i>	<i>0</i>						

^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 1989 was 1.7 million tons per quarter, and is assumed to remain at that level in 1990 and 1991.

^d Historical period discrepancy reflects an unaccounted 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(90/05); and *Quarterly Coal Report*, DOE/EIA-0121(90/1Q).

Table 10. Supply and Disposition of Electricity: \$25 World Oil Price Case
(Billion Kilowatthours)

Supply and Disposition	1989				1990				1991				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1989	1990	1991
Net Utility Generation															
Coal	388.9	362.7	406.9	393.4	371.4	<i>369.2</i>	<i>429.5</i>	<i>393.3</i>	<i>401.1</i>	<i>386.4</i>	<i>445.5</i>	<i>406.2</i>	1551.9	<i>1563.4</i>	<i>1639.1</i>
Petroleum	49.7	34.1	33.1	41.3	31.1	<i>32.8</i>	<i>28.8</i>	<i>33.0</i>	<i>29.4</i>	<i>20.7</i>	<i>25.6</i>	<i>29.5</i>	158.2	<i>125.8</i>	<i>105.2</i>
Natural Gas	50.4	70.6	85.1	58.9	43.5	<i>69.9</i>	<i>86.9</i>	<i>55.9</i>	<i>54.4</i>	<i>72.2</i>	<i>93.8</i>	<i>60.6</i>	265.0	<i>256.2</i>	<i>281.0</i>
Nuclear	124.7	114.8	152.1	137.7	151.2	<i>127.8</i>	<i>152.7</i>	<i>134.9</i>	<i>143.3</i>	<i>126.0</i>	<i>145.2</i>	<i>135.6</i>	529.4	<i>566.6</i>	<i>550.0</i>
Hydroelectric	62.2	78.0	61.8	63.1	75.6	<i>80.0</i>	<i>67.4</i>	<i>68.5</i>	<i>78.8</i>	<i>82.2</i>	<i>68.1</i>	<i>68.7</i>	265.1	<i>291.6</i>	<i>297.9</i>
Geothermal and Other ^a	2.8	2.8	2.8	2.9	2.7	<i>2.5</i>	<i>3.2</i>	<i>3.2</i>	<i>3.1</i>	<i>3.1</i>	<i>3.3</i>	<i>3.3</i>	11.3	<i>11.6</i>	<i>12.8</i>
Total Utility Generation	678.7	663.0	741.9	697.2	675.5	<i>682.3</i>	<i>768.5</i>	<i>688.8</i>	<i>710.1</i>	<i>690.6</i>	<i>781.4</i>	<i>703.8</i>	2780.8	<i>2815.1</i>	<i>2886.0</i>
Net Imports	4.4	5.0	5.0	-2.1	-2.6	<i>4.5</i>	<i>7.0</i>	<i>6.5</i>	<i>6.5</i>	<i>6.7</i>	<i>8.5</i>	<i>8.0</i>	12.2	<i>15.4</i>	<i>29.7</i>
Purchases from Nonutilities ^b	<i>19.4</i>	<i>19.0</i>	<i>21.3</i>	<i>20.0</i>	<i>22.4</i>	<i>22.0</i>	<i>24.6</i>	<i>23.1</i>	<i>25.4</i>	<i>24.9</i>	<i>27.9</i>	<i>26.2</i>	<i>79.8</i>	<i>92.1</i>	<i>104.3</i>
Total Supply	<i>702.5</i>	<i>687.0</i>	<i>768.2</i>	<i>715.1</i>	<i>695.3</i>	<i>708.7</i>	<i>800.1</i>	<i>718.4</i>	<i>742.1</i>	<i>722.1</i>	<i>817.8</i>	<i>737.9</i>	<i>2872.8</i>	<i>2922.6</i>	<i>3020.0</i>
Losses and Unaccounted For ^c	48.5	65.6	56.9	68.1	28.9	<i>73.3</i>	<i>59.9</i>	<i>59.4</i>	<i>44.6</i>	<i>66.6</i>	<i>62.7</i>	<i>61.4</i>	239.0	<i>221.5</i>	<i>235.3</i>
Sales															
Residential	241.1	197.2	250.7	215.5	241.2	<i>202.0</i>	<i>267.1</i>	<i>217.6</i>	<i>261.6</i>	<i>213.1</i>	<i>273.4</i>	<i>225.1</i>	904.5	<i>927.9</i>	<i>973.1</i>
Commercial	175.4	173.3	199.8	175.4	176.4	<i>179.8</i>	<i>209.9</i>	<i>182.1</i>	<i>185.5</i>	<i>187.5</i>	<i>217.2</i>	<i>189.9</i>	723.8	<i>748.2</i>	<i>780.1</i>
Industrial	215.4	228.9	237.0	233.5	225.8	<i>231.3</i>	<i>239.4</i>	<i>236.2</i>	<i>226.9</i>	<i>232.4</i>	<i>240.5</i>	<i>238.1</i>	914.8	<i>932.7</i>	<i>937.9</i>
Other	22.1	22.1	23.9	22.6	23.1	<i>22.3</i>	<i>23.8</i>	<i>23.1</i>	<i>23.6</i>	<i>22.5</i>	<i>24.1</i>	<i>23.4</i>	90.7	<i>92.2</i>	<i>93.6</i>
Total	654.0	621.4	711.3	647.0	666.4	<i>635.4</i>	<i>740.2</i>	<i>659.0</i>	<i>697.5</i>	<i>655.5</i>	<i>755.1</i>	<i>678.5</i>	2633.8	<i>2701.0</i>	<i>2784.6</i>

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

^b Electricity received from nonutility sources, including cogenerators and small power producers.

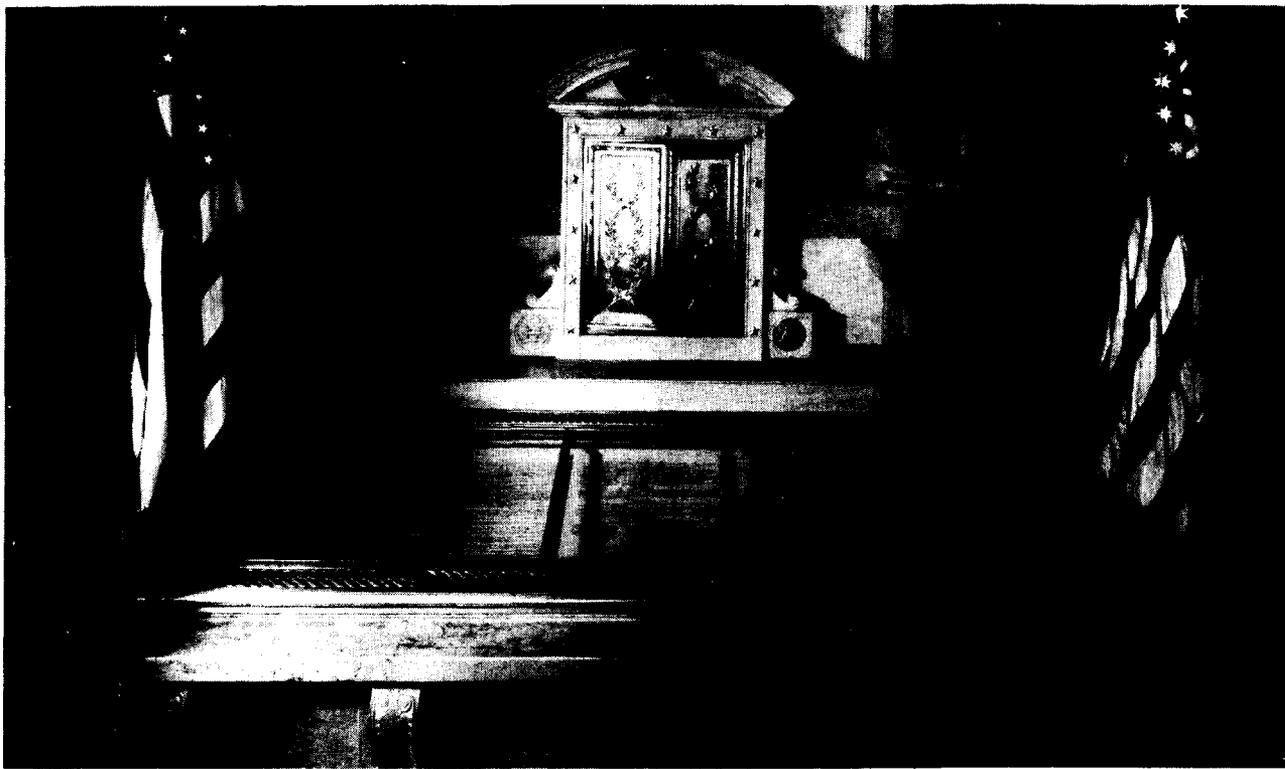
^c Balancing item, mainly transmission and distribution losses.

Notes: Values for purchases from nonutilities and losses and unaccounted for are estimated for 1989. 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(90/05); and *Electric Power Monthly*, DOE/EIA-0226(90/05).

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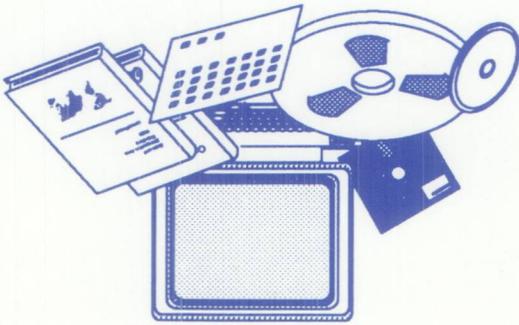
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