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U.S. Department of Energy
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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 referred to W. Calvin Kilgore (202-586-1617), Director of EMEU; Arthur Andersen (202-586-1441), Director of Energy Markets and Contingency Information Division; or Derriel Cato (202-586-6574), Chief of the Short-Term Forecasting and Contingency Branch.

Detailed questions may be addressed to David Costello (202-586-1468) or the following analysts:

The Commonwealth of Independent States—One Year Later	Lowell Feld (202-586-9503)
Summer Outlook for Motor Gasoline	Michael Morris (202-586-1199)
Demand and Price Outlook for Low Sulfur Diesel Fuel	Tancred Lidderdale (202-586-7321)
World Oil Prices/International Petroleum	Michael Grillot (202-586-6577)
Macroeconomic	Kay A. Smith (202-586-1455)
Energy Product Prices	Neil Gamson (202-586-2418)
Petroleum Demands	Michael Morris (202-586-1199)
Petroleum Supply/Integration	Elias Johnson (202-586-7277)
	Tancred Lidderdale (202-586-7321)
Natural Gas	Evelyn Amerchih (202-586-8760)
Coal	Elias Johnson (202-586-7277)
Electricity	Evelyn Amerchih (202-586-8760)

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 Kenneth Wade (202-254-5514); hydroelectric generation, electricity imports, and utility electricity purchases from nonutilities are provided by Robin Reichenbach (202-254-5353); and coal production, imports, and exports are provided by Byung Doo Hong (202-254-5365)—all of the EIA Office of, Coal, Nuclear, Electric and Alternate Fuels.

Preface

The Energy Information Administration (EIA) prepares quarterly, short-term energy supply, demand, and price projections for publication in February, May, August, and November in the *Short-Term Energy Outlook (Outlook)*. An annual supplement analyzes the performance of previous forecasts, compares recent cases with those of other forecasting services, and discusses current topics related to the short-term energy markets. (See *Short-Term Energy Outlook Annual Supplement*, DOE/EIA-0202.)

The forecast period for this issue of the *Outlook* extends from the second quarter of 1993 through the fourth quarter of 1994. Values for the first quarter of 1993, however, are preliminary EIA estimates (for example, some monthly values for petroleum supply and disposition are derived in part from weekly data reported in the *Weekly Petroleum Status Report*) or are calculated from model simulations using the latest exogenous information available (for example, electricity sales and generation are simulated using actual weather data). The historical energy data are EIA data published in the *Monthly Energy Review, Petroleum Supply Monthly*, and other EIA publications. Minor discrepancies between the data in these publications and the historical data in this *Outlook* are due to independent rounding.

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

Treatment of Petroleum Supply Monthly Reporting Change

The Energy Information Administration began reporting the series "Motor Gasoline Product Supplied" (equated in this report with gasoline demand) on a new basis for monthly data for January 1993 forward. These new-basis data were not available in time for inclusion in this issue of the *Outlook*. The reporting changes reflect data relating to fuel ethanol blended into gasoline as well as certain changes in product classification affecting reported motor gasoline quantities. A summary of the changes is reprinted in Appendix B and they will be included in the next issue of the *Outlook*.

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Highlights

World Oil Prices Remain Weak; Short-Run Excess Capacity Remains

World oil prices are expected to remain relatively weak through 1993, as excess world production capacity climbs by over 1 million barrels per day this year. World oil stocks, in terms of days of forward supply from usable commercial inventories, are expected to be above 1992 levels at the beginning of April, indicating little support for near-term price recovery. Under mid-price assumptions, the average price of oil imported into the United States is expected to stay at about $19 per barrel through the remainder of 1993, not climbing to $20 until mid 1994.

Economic Expansion Promises Continued U.S. Petroleum Demand Growth, but also Surging Imports

The U.S. economy may well grow by 3 percent or more in 1993 and 1994, which is better than any annual performance over the last several years. This growth would push overall energy consumption to new record levels and petroleum demand back toward the high levels of the late 1970's. From 1992 to 1994, under base case assumptions, net imports of petroleum would climb nearly 19 percent to 8.19 million barrels per day. This annual net import rate would be the highest rate since 1977 and the second highest in history, both in absolute terms and as a percent of total petroleum demand.

U.S. Crude Oil Production May Average Below 7.0 Million Barrels per Day in 1993

With the focus of oil and gas exploration and development firmly shifted away from the United States in recent years, currently reflected in the lowest U.S. drilling rates in more than 40 years, domestic crude oil production is expected to continue its long-term decline, dropping by nearly 500,000 barrels per day between 1992 and 1994. In 1993, U.S. crude oil production is expected to slip below the 7 million barrels-per-day mark, only 4 years after production passed under the 8 million barrels-per-day mark.

Tight Supplies, Strong Demand Mean Continued Natural Gas Price Strengthening

Despite the promise of new drilling techniques in maximizing natural gas resource recovery, the low domestic drilling rates of recent years are taking a toll in terms of reduced overall productive capacity, which is estimated to have fallen by 15 percent between 1986 and 1992. Over the next two years, capacity is expected to continue falling. Meanwhile, the daily demand rate is seen expanding on average by 1.35 trillion cubic feet between 1992 and 1994. The domestic gas market is working on a relatively thin margin now, and average wellhead prices are expected to rise 8.1 percent this year and 9.5 percent in 1994.

Electricity Demand Expected to Rebound from 1992 Slowdown

Total demand for electricity is expected to increase by 3.4 percent in 1993, with particularly strong spring and summer demand growth likely. This development is in contrast to the weak showing in 1992 and is partly weather-related. Cooling degree-days for the nation as a whole would be up an average of 16 percent for the months of the second and third quarters if normal weather conditions hold. Even assuming no additional weather-related boost next year, demand growth should still continue through 1994, as domestic industrial output and employment improve.

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

Special Assumptions for Environmental, Tax and Other Energy-Related Policies

This section summarizes the estimated impacts of current legislative actions on the short-term energy forecasts for the United States and shows how these impacts are incorporated in this *Outlook*. This legislation encompasses the Clean Air Act and Energy Policy Act. The impacts are anticipated direct effects on energy prices, consumption, or production.

Commencement Date	Description	Impact on Forecast
November 1992	Oxygenated gasoline required to be sold in carbon monoxide nonattainment areas during November through February.	Motor gasoline prices expected to rise 3 to 5 cents per gallon in the nonattainment areas, raising national prices by an average of 1 to 2 cents per gallon from November through February.[3]
December 1992	Expiration of Section 29 tax credits for coalbed methane and tight sands formations drilling.	Natural gas drilling declines in 1993 due to a last minute drilling increase in 1992 before expiration of Section 29 credit.[4]
January 1993	Alternative Minimum Tax exemption for independent oil and natural gas producers.	Possible increase of 50,000 barrels per day in U.S. oil production.[5]
May 1993	Stage II Gasoline Vapor Recovery System implemented.	Estimates not yet available.
Autumn 1993	FERC Order 636-A issued.	Estimates not yet available.
October 1993	Removal of sulfur from diesel fuel for on-highway use.	Diesel fuel prices expected to rise by 3 to 4 cents per gallon from the last quarter of 1993 through the fourth quarter of 1994.[6]
January 1994	Reduced tailpipe emissions of hydrocarbons, carbon monoxide, and nitrogen oxides.	Estimates not yet available.
July 1994	President's Btu tax proposal.	Not incorporated pending legislative approval.
January 1995	Phase I reformulated gasoline in 9 smoggiest cities (plus opt-in areas).	Estimates not yet available.
January 1995	Phase I reduction in sulfur dioxide emissions from electric utility steam generation units fired by fossil fuels by a system of tradable allowances.	Coal prices will be about 1 to 2 cents per million Btu higher in the latter part of 1994.[7]

[3]Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(92/08), "Demand, Supply, and Price Outlook for Oxygenated Gasoline, Winter 1992-1993" (Washington, DC, August 1992), pp. 5 and 9.

[4]Energy Information Administration, Office of Oil and Gas, Reserves and Natural Gas Division.

[5]Oil production impacts are estimates from the Energy Information Administration, Office of Oil and Gas, Reserves and Natural Gas Division.

[6]Energy Information Administration, Office of Energy Markets and End Use, Energy Markets and Contingency Information Division.

[7]Based on internal EIA calculations. It was estimated that compliance with Phase I of the Clean Air Act requiring low-sulfur coal will cost about $5.00 per ton of coal or about a 17-percent price increase for the approximately 2.5 percent of coal burned at electric utilities that will be affected by Phase I. In order to meet the January 1, 1995 date of compliance, those utilities will be stockpiling coal by the second half of 1994.

The Commonwealth of Independent States—One Year Later

Introduction[8]

The Commonwealth of Independent States (CIS), which includes ten of the fifteen republics of the former Soviet Union, is now slightly more than 1 year old. Following the breakup of the Soviet Union, Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan joined together in the CIS, a loose confederation of independent states. (Azerbaijan has since withdrawn, joining Georgia and the Baltic states as nonmembers.) Since its creation on December 8, 1991, economic and political developments have unfolded rapidly, with great impact on the energy sectors of CIS members. At the same time, CIS energy sectors have themselves played, and will continue to play, a central role in determining the success or failure of market reforms and democratization. Accordingly, an overview of the energy sectors of the CIS states is presented below.

Overall, former Soviet oil production has fallen rapidly in the past year—from 10.4 million barrels per day in 1991 to 8.9 million barrels per day in 1992—and is projected to continue falling in 1993 (to 7.8 million barrels per day) (Figure 2). Nearly all of this decline comes from Russia, with other republics (as a group) holding relatively steady. At the same time, former Soviet oil consumption has fallen almost as quickly—from 8.2 million barrels per day in 1991, to 6.8 million barrels per day in 1992—and is also expected to continue falling in 1993 (to 6.0 million barrels per day). Although Russian consumption accounts for much of this decline, other former republics have experienced drastic reductions. The net result of these trends has been an overall reduction in former Soviet net oil exports (from 2.2 million barrels per day in 1991 to an expected 1.8 million barrels per day in 1993). In order to maintain oil exports to the West—from which Russia earns much of its hard currency—Russia has cut back on deliveries to fellow CIS members, and has announced further cutbacks for 1993. This has exacerbated already difficult economic conditions in many of these states.

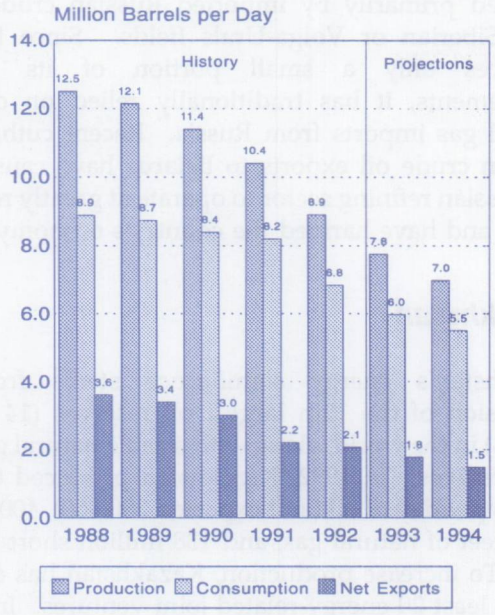

Figure 2. Former Soviet Union Oil Production and Net Oil Exports

Sources: Projections: Tables 2 and 3. **History**: Office of Energy Markets and End Use.

Armenia

Armenia has been hard-hit by a longstanding economic blockade by neighboring Azerbaijan, through which much of Armenia's energy imports must pass. Since Armenia produces no oil, natural gas, or coal, the country is totally dependent on these imports for its fossil fuel needs. With most of these imports cut off, Armenian industry has been severely curtailed, prompting President Ter-Petrosyan to issue an appeal to Russia and Georgia for help. Desperate for electric power, Armenia reportedly also has decided to restart the Yerevan nuclear plant, closed in 1989 because it was located in a region in which an earthquake occurred in 1988.[9]

[8]The principal source of external information cited in this article is *PlanEcon Energy Report, January 1993.*

[9]For an excellent discussion of nuclear power in the CIS, see *World Nuclear Capacity and Fuel Cycle Requirements, 1992*, DOE/EIA-0436(92).

Belarus

The Belarussian economy has traditionally focused on chemicals, machine building, and light industry, all of which are energy (and raw material) intensive. Belarus also has 800,000 barrels per day of crude oil refining capacity at Novopolotsk and Mozyr, both of which are supplied primarily by imported Russian crude from West Siberian or Volga-Urals fields. Since Belarus produces only a small portion of its energy requirements, it has traditionally relied on oil and natural gas imports from Russia. Recent cutbacks in Russian crude oil exports to Belarus have caused the Belarussian refining sector to operate at greatly reduced levels, and have harmed the country's economy.

Kazakhstan

Kazakhstan's energy significance stems from its possession of the 12th largest oil reserves (14 billion barrels) in the world, along with sizable natural gas and coal reserves. In 1992, Kazakhstan produced 600,000 barrels per day of oil (and exported 200,000), 400 billion cubic feet of natural gas, and 138 million short tons of coal. To increase production, Kazakhstan has entered into at least 20 energy-related joint ventures. In terms of oil development, the North Caspian Basin has been the center of much interest recently, culminating in a $20 billion joint venture with Chevron to develop the Tengiz and Korolev fields (estimated reserves: 6 to 9 billion barrels). Oil exports from these fields are expected to rise from 65,000 barrels per day currently to 200,000 barrels per day by 1996 or 1997, and 700,000 barrels per day by 2010. To export this oil, Kazakhstan in July 1992 joined the Caspian Pipeline Consortium with Russia, Azerbaijan, and Oman to construct a pipeline to transport oil from Tengiz and other fields to world markets. Kazakhstan has also signed deals to develop its natural gas resources, especially at the Karachaganak field in the northwestern part of the country. British Gas and Agip recently won a $6 to $7 billion contract to further develop the field, thought to contain 20 trillion cubic feet (Tcf) of reserves.

Kyrgyzstan

Kyrgyzstan produces and consumes relatively small amounts of energy, mainly hydroelectricity and coal. Kyrgyzstan's economy is largely focused on agriculture, and is relatively non-intensive in its energy use.

Moldova

Like Kyrgyzstan, Moldova is largely agricultural and relatively non-intensive in its energy use. Moldova produces little energy and is almost totally dependent on imports from Russia and Ukraine for its energy needs. Recent reductions in quantity and increases in price for these imports have therefore created severe problems for Moldova's economy. Moldova also has been harmed by its conflict with the breakaway Dniester region, which accounts for one-third of Moldova's industrial production.

Russia

Over the past year, Russia has experienced a major decline in its economy and standard of living. Russia is a country rich in natural resources, particularly energy. By itself, Russia produced nearly 8 million barrels per day of oil (second in the world), 23 trillion cubic feet of natural gas (first), and around 350 million short tons of coal (third) in 1992.[10] This compares to 1990 production levels of 10 million barrels per day of oil (down 2 million barrels per day), 23 trillion cubic feet of natural gas (no change), and 400 million short tons of coal (down 50 million short tons). President Yeltsin's efforts at reversing the decline in Russian energy production have included the appointments of Viktor Chernomyrdin (former head of the Soviet natural gas industry) as Prime Minister, and Yuri Shafranik (former governor of the oil-rich Tyumen region), as Russian Fuel and Energy Minister. In addition, President Yeltsin has moved sporadically to privatize the Russian oil sector, as well as to free prices. At the same time, financial support for the oil industry has been increased. In general, the Russian government has made the energy sector a top priority, particularly given its importance as a source of hard currency. An energy policy approved in September 1992 encompasses new energy legislation; re-equipping of the industry; a fiscal structure approximating market conditions; and state regulation of finances, industry development and environmental protection. Existing oil-producing associations are to be reorganized into joint-stock, integrated oil companies under a newly created holding

[10]Data from: Matthew J. Sagers, *Post-Soviet Geography*, (April 1992); *Petroleum Intelligence Weekly*, February 8, 1993; *PlanEcon Energy Report*, January 1993; and internal estimates of EIA's Office of Energy Markets and End Use.

company outside the Fuel and Energy Ministry. Progress regarding foreign energy joint ventures has been slow due to uncertainty regarding ownership of natural resources and the general legal climate for conducting business.

Tajikistan

Tajikistan is mainly agricultural, producing and consuming relatively small amounts of energy, except for hydroelectricity. Recently, the Tajik economy has been ravaged by a civil war which has disrupted aluminum production and cotton harvesting—the country's two main industries.

Turkmenistan

Through the third quarter of 1993, Turkmenistan was producing at an annual rate of around 2 trillion cubic feet of natural gas—a 30 percent decline from 1991.[11] This decline resulted from Turkmenistan's decision to price its natural gas significantly higher than its chief competitor, Russia. Turkmenistan also produced more than 100,000 barrels per day of oil. Overall, the country ranks second in natural gas production within the CIS, and exports significant amounts to fellow CIS members, particularly Ukraine. Relations with Ukraine were strained in 1992 when Turkmenistan raised the price of its natural gas exports, and Ukraine retaliated by increasing the price for transport and by withholding food shipments to Turkmenistan. Turkmenistan hopes to expand the list of customers for its natural gas beyond the CIS, and has sought assistance to build a natural gas pipeline to Turkey and Europe.

Ukraine

Although Ukraine ranks second only to Russia in CIS energy production, the country's primary energy significance comes from its role in transporting oil and natural gas between Russia and Europe. Almost all Russian natural gas exports pass through Ukraine, along with 30 percent of Russian crude oil exports to countries outside the CIS. Over the past year, Ukraine has been confronted with many challenges relating to its independence, including economic crisis, and disputes over trade and transport of Russian energy through Ukraine to Europe. In terms of the economy, the current government of Prime Minister Leonid Kuchma has—since its replacement of the previous conservative government in October 1992—attempted to carry out market reforms, including privatization and formation of joint stock companies, elimination of price controls on many industrial and agricultural products, and adoption of a separate Ukrainian currency (the Karbovenets). In terms of energy, Ukraine has signed trade agreements with Kazakhstan (for Kazakh oil), the Kuzbass region of Russia (for Kuzbass), and Iran (for long-term oil and natural gas deliveries, and for construction of a $12 billion natural gas pipeline from Iran to Ukraine and Western Europe).

Uzbekistan

Uzbekistan is the third largest natural gas producer within the CIS and also produces some oil and coal. In 1991, the country produced around 1.5 trillion cubic feet of natural gas, while consuming slightly more.[12] Overall, due to its relatively large population and industrial base, Uzbekistan is a net importer of energy.

Conclusion

One year after the formation of the CIS, the former Soviet republics making up the Commonwealth are struggling through difficult times. Despite some early efforts at achieving economic independence, the economies and energy sectors of these states remain heavily tied to Russia. Progress towards achieving market reforms has been slow and sporadic, and in some countries almost non-existent. Ethnic strife is common in many of these new states, reducing the chances for economic advancement. Finally, joint ventures with western companies have been slow in coming, with little tangible progress after more than 1 year of independence (with the possibly significant exception of Kazakhstan's Tengiz joint venture with Chevron).

[11]Data from *PlanEcon Energy Report, January 1993* and internal estimates of EIA's Office of Energy Markets and End Use.

[12]See: Organization for Economic Cooperation and Development, International Energy Agency, Committee on Non-Member Countries, "Energy Supply Balances for the 15 Former Soviet Republics," June 22, 1992; and Matthew J. Sagers, *Post-Soviet Geography*, (April 1992).

Summer Outlook for Motor Gasoline

Overview

For the 1993 peak summer driving season (May through August), motor gasoline demand is expected to be about 100,000 barrels per day (1.3 percent) higher than the peak 1992 season, as general economic factors and relatively weak prices continue to increase highway travel. Total vehicle-miles traveled this summer is expected to be up by about 2.3 percent from 1992, as personal income and employment continue to expand at a moderate pace. Average fleet automobile efficiency is expected to increase, but only by about 1 percent. Currently, no significant problems in meeting summer demand are anticipated, despite much uncertainty as to likely demand levels. However, the possibility of higher-than-expected demand this summer may be of particular interest to market observers.

High Demand Case

The adjacent table provides a summary of the base case for summer gasoline demand and supply as well as a range of possible supply outcomes in a hypothetical scenario in which demand is higher than the mid-price case by one standard forecast error.[13]

An increase in gasoline demand for all summer months to one standard error above the base case would result in an additional 150,000 barrels per day of demand. This higher demand would have to be met through a combination of greater refinery production, net imports, and stock withdrawal.

Assuming that inventories are kept at base case levels in the high demand case, in the extremes, either net imports would have to increase to 420,000 barrels per day on average for the summer, or refinery output would need to rise to 7.34 million barrels per day. Some more moderate combination of net import and refinery output increases is of course possible, with the exact combination depending in part on the supply situation for gasoline outside the United States.

	1992	1993 Base	High Demand/Alternative Supply		
			Case 1[a]	Case 2[b]	Case 3[c]
	(million barrels per day)				
Production	7.08	7.20	7.20	7.34	7.20
Net Imports	0.23	0.27	0.37	0.27	0.42
Stock Draw	0.13	0.08	0.13	0.08	0.08
Demand	7.44	7.54	7.69	7.69	7.69
Travel[d]	6,542	6,690	--	--	--
MPG[e]	20.9	21.1	--	--	--
Price[f]	122.4	124.5	--	--	--

[a]Maximum use of stock withdrawals.
[b]Maximum required increase in refinery output.
[c]Maximum required increase in imports.
[d]Million miles per day.
[e]Miles per gallon.
[f]Nominal retail gasoline price, cents per gallon.
Source: Short-Term Integrated Forecasting System database.

Even if net imports rose in the extreme to 420,000 barrels per day, (an 83-percent increase from the 1992 level), it would not be a record for the summer. Summer net imports averaged slightly more than 420,000 barrels per day in 1988, and monthly net imports averaged 560,000 barrels per day in May of 1990.[14] Furthermore, Europe will probably be able to provide substantially more gasoline for export than last summer because of continuing high refinery production rates during a period of economic recession, which has led to sizable increases in inventories. In addition, Caribbean-area export refineries are currently upgrading as much as 100,000 barrels per day of catalytic cracking capacity.[15]

For the case in which the incremental demand in the high demand case is met entirely by increased refinery

[13]The methodology used to calculate forecast standard errors is that documented in *Short-Term Energy Outlook Annual Supplement, 1990*, "Getting Forecast Standard Errors of Motor Gasoline Demand with Stochastic Simulation."
[14]See *Historical Monthly Energy Review*, DOE/EIA-0035(77-88), Table 3.4, and *Monthly Energy Review*, DOE/EIA-0035(93/03), Table 3.4.
[15]*Petroleum Intelligence Weekly*, March 29, 1993.

output, the upper bound on gasoline output would be 260,000 barrels per day (3.7 percent) above 1992 levels. This kind of output increase would probably not result in a monthly peak exceeding the peak month average of last fall.[16] Moreover, domestic refineries have been undertaking debottlenecking and upgrading projects to add as much as 150,000 barrels per day to downstream production capacity this summer.[17]

For the case in which maximum use of inventories is met by incremental demand above base case levels, it is estimated that additional imports plus refinery output totaling 100,000 barrels per day on average would be required for the 4-month period. The highest level of net imports in this case would be 370,000 barrels per day for the summer months, about the same level as 1990.[18] Also in this case, total gasoline inventories would be assumed to be drawn down to the minimum operating inventory (MOI) (designated by the National Petroleum Council as the minimum required to avoid spot shortages arising from unanticipated demand fluctuations). However, even in this maximum inventory draw case the MOI would probably not be reached until sometime in August.

Uncertainty Analysis

Although the above analysis focuses on the conditions surrounding a high gasoline demand case, significant uncertainty about gasoline demand exists in both the upward and downward direction. Furthermore, because of the inherently uncertain nature of crude oil prices, a significant amount of uncertainty surrounding gasoline prices exists above that caused by other market factors. In order to evaluate the overall uncertainty of the gasoline market forecasts in this *Outlook* in a systematic way, standard statistical procedures were employed to provide forecast error bands for the summer outlook for gasoline demand, vehicle-miles traveled, vehicle-miles per gallon, and retail gasoline prices.

The summary table below indicates the maximum deviations around the base case associated with these one-standard-error forecast ranges, averaged over May through August. Within one standard forecast error of the base case, gasoline demand is expected to range between 7.40 and 7.69 million barrels per day. Thus, demand could range between 0.5 percent below to 3.4 percent above 1992 summer levels, if one considers a one-standard-error forecast range. Vehicle travel should lie within the 6.59 to 6.79 billion miles per day range, while vehicle efficiency (mpg) is expected to range between 20.8 and 21.5 miles per gallon this summer. Meanwhile, retail gasoline prices are expected to fall within the $1.15 to $1.34 per gallon range in the May to August period. The gasoline price uncertainty, although significant in percentage terms because of the large uncertainty of crude oil prices, has only a small impact on short-term gasoline demand because of the small short-term price elasticity of demand for motor gasoline.

	Low[a]	Base	High[b]
Demand[c]	7.40	7.54	7.69
Travel[d]	6,589	6,690	6,791
MPG[e]	20.8	21.1	21.5
Price[f]	114.5	124.5	134.4

[a]One standard error below base.
[b]One standard error above base.
[c]Million barrels per day.
[d]Million miles per day.
[e]Miles per gallon.
[f]Nominal retail gasoline price, cents per gallon.

[16]Refinery output of gasoline averaged more than 7.36 million barrels per day during the last 2 months of 1992. See *Petroleum Supply Monthly*, DOE/EIA-0109(93/03), Table S4.
[17]*Petroleum Intelligence Weekly*, March 29, 1993.
[18]Summer net imports averaged slightly over 360,000 barrels per day in 1990, Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(93/03), Table 3.4.

Demand and Price Outlook for Low-Sulfur Diesel Fuel

The Clean Air Act Amendments of 1990 (CAAA90) require that starting on October 1, 1993, refiners must reduce the sulfur content of on-highway diesel fuel from current average levels of approximately 0.30 percent by weight to levels not exceeding 0.05 percent by weight. The regulations also require that on-highway diesel fuel have a minimum cetane index of 40 or meet a maximum aromatic content of 35 volume percent.[19] Home heating oil, a distillate product similar to diesel fuel, is not required to meet the new specifications. Off-highway diesel fuel and heating oil not meeting the new on-highway fuel standards must be visibly dyed in order to distinguish it from on-highway diesel fuel. The new diesel fuel standard applies to the entire Nation and affects about 46 percent of the total domestic demand for distillate fuel oil (or, about 8.2 percent of total U.S. petroleum product demand).

CAAA90 grants sulfur dioxide (SO_2) allowances to small refiners who are complying with the on-highway diesel fuel regulations.[20] Small refiners may sell their sulfur dioxide allowances to other sources affected by the CAAA90 (e.g., electric utilities which burn high-sulfur coal) to cover emissions or they may bank their earned allowances for future use. CAAA90 defines small refiners as those companies with total crude oil or feedstock capacity of 137,500 barrels per calendar day or less, and stipulates that the crude oil or feedstock capacity of individual qualifying refineries be 50,000 barrels per calendar day or less. Based on refining capacity reported on January 1, 1992, 76 refineries which represent about 9 percent of total operable refining capacity may qualify for allowances.[21]

The short-term forecast of distillate fuel demand represents the sum of estimated distillate fuel demand in four sectors of the economy: industrial, residential and commercial, electric utility, and transportation. Distillate demand in the transportation sector includes vessel bunkering, military use, railroad use, and on-highway diesel fuel. On-highway diesel fuel represents about 77 percent of transportation sector distillate demand. Distillate demand in the transportation sector is currently expected to grow by about 2.8 percent in 1993 and 3.3 percent in 1994, as shown in the summary provided below:

Year	Q1	Q2	Q3	Q4	Annual
1991 ..	1.62	1.78	1.81	1.70	1.73
1992 ..	1.68	1.82	1.83	1.72	1.76
1993 ..	1.71	1.83	1.87	1.81	1.81
1994 ..	1.77	1.89	1.93	1.87	1.87

Note: Volumes in millions of barrels per day.

The increase in operating costs and new capital investment required to produce low-sulfur diesel fuel should yield a price premium of 3 cents to 4 cents per gallon over heating oil and other high-sulfur distillate fuels. In California the price premium is expected to be higher because of a more restrictive aromatics specification.

The significant factors in assessing the market price premium for low-sulfur diesel fuel are 1) the variable costs of operating desulfurization units, 2) the capital cost of new desulfurization capacity required to produce low-sulfur diesel fuel, and 3) the availability of other low-sulfur refinery streams which are not normally blended into distillate fuels (such as kerosene) but which could be used for on-highway diesel fuel blending. A low-sulfur diesel market price premium of 3 to 4 cents per gallon over heating oil is projected based on costs faced by the "marginal" producer. This premium covers higher variable costs of about 1 cent

[19]Clean Air Act Amendments of 1990, Section 211(i), "Sulfur Content Requirements for Diesel Fuel", November 15, 1990. Final rule announced by the Environmental Protection Agency in *Federal Register*, Vol. 57 No. 89, May 7, 1992, pp. 19535-19539.

[20]Clean Air Act Amendments of 1990, Section 410(h), "Small Diesel Refineries", November 15, 1990.

[21]Energy Information Administration, *Petroleum Supply Annual 1991*, DOE/EIA-0340(91)/1 (Washington, DC, June 1992), pp. 114-117.

per gallon and capital recovery costs of 2 to 3 cents per gallon. This price premium is consistent with blending of incremental barrels of kerosene into the low-sulfur diesel pool and the observed market response to the low-sulfur diesel regulations imposed by California's South Coast Air Quality Management District (Los Angeles) in 1985.

Not all refiners will respond the same way to the new low-sulfur market constraint. Some refiners may abandon production of low-sulfur diesel fuel completely. Even though the cost to small refiners may be lowered by the SO_2 trading allowances, these credits may not be enough to offset the higher production and capital costs they face. Desulfurization variable production costs are estimated to range from 0.7 cents per gallon for large refiners to 3.1 cents per gallon for small refiners. Capital service costs for new desulfurization capacity are projected to range from 1.1 cents per gallon for large refiners to 7.0 cents per gallon for small refiners.[22] The net cost to small refiners may be lower by about 0.6 cent to 2.4 cents per gallon because of allowances for sulfur dioxide emissions which may be sold.[23]

[22]National Petroleum Refiner's Association, *U.S. Refining Industry Capacity to Manufacture Ultra Low Sulfur Diesel Fuels*, (Washington, DC, 1986), pp. 30-32.

[23]Zimmer, Michael J., "Clean Air Act Project Financing," *Independent Energy*, (Alternative Sources of Energy, Inc.: Milaca, MN, January 1992), pp. 21-24.

Outlook for Petroleum

Demand

Demand for petroleum, as discussed in this report, is synonymous with "petroleum product supplied," which is defined as the sum of petroleum product production (including refinery gain), imports minus exports, and changes in primary stocks.

Based on supply and demand patterns that reflect the mid-price case, world demand for petroleum products is expected to increase by about 600,000 barrels per day in 1993, to 67.4 million barrels per day. This is expected to be followed by a larger increase of more than 1.6 million barrels per day in 1994 (Table 4).

Petroleum demand is expected to increase in most regions of the world in 1993 and 1994. The former Soviet Union is the major exception, where declines in demand are expected due to declining economic activity and the inability of the non-Russian Republics to find other sources of imports to replace sharply lower oil exports from the Russian Republic. In 1993, OECD demand for petroleum is expected to average 39.0 million barrels per day, up by almost 450,000 barrels per day from the 1992 level. This estimate is based on the assumption that OECD economic growth will be 2.0 percent in 1993 (Table 2). About 75 percent of the growth in OECD demand in 1993 is expected to occur in the United States, as economic weakness holds down oil demand growth in Europe and Japan. In 1994, OECD demand is expected to increase by about 850,000 barrels per day, if OECD economic growth accelerates to 3.1 percent as expected.

Demand in non-OECD regions other than the former Soviet Union and Eastern Europe is expected to increase by over 1.0 million barrels per day in 1993 and by almost 1.2 million barrels per day in 1994, with the largest increases occurring in Asia, China, and the Middle East. Petroleum demand (in million barrels per day) for other non-OECD regions is as follows:

Region	1992	1993	1994
China	2.63	2.82	3.01
Latin America	5.37	5.48	5.64
Asia	6.32	6.78	7.36
Middle East	3.69	3.87	4.02
Africa	2.26	2.36	2.46
Total	20.26	21.31	22.50

Total non-OECD demand is expected to increase by about 200,000 barrels per day in 1993, to 28.4 million barrels per day, and then increase by 750,000 barrels per day in 1994. The actual magnitude of these increases will be heavily dependent, however, on the size of the demand changes in the Republics of the former Soviet Union.

Domestic petroleum demand is expected to increase by about 2 percent per year through 1994 in the mid-price case (Tables 1 and 7). Weather and economic uncertainties could limit the rate of growth considerably, but barring a faltering economy or another very mild weather pattern for the next 7 quarters, domestic demand is clearly up through 1994.

Despite relatively slow growth in the U.S. economy and generally very mild weather conditions last year, domestic petroleum demand grew by nearly 300,000 barrels per day in 1992. The U.S. economy has been exhibiting solid growth in recent quarters and is expected to grow by 3 percent or more in 1993 and 1994, which is better than any annual performance over the last several years.

Although the oil intensity of the U.S. economy is generally declining, even this moderate economic growth path will push petroleum demand back toward the high levels of the late 1970's. By 1994 demand is expected reach 17.7 million barrels per day (a 15-year high) under base case assumptions. Figure 3 provides mid-price growth prospects for petroleum products in the United States.

Transportation fuels are expected to make a significant contribution to petroleum growth over the next 2 years, as diesel fuel demand picks up along with highway freight traffic (and the overall expansion of commercial and industrial activity), and as personal travel activity persists amidst relatively small vehicle efficiency increases. Despite industry financial woes, jet fuel is expected to contribute modestly to overall petroleum growth in the short term.

Heavy oil markets are expected to stage a minor comeback (relative to 1992) during the spring and summer months of 1993 if electric utilities along the East Coast see peak cooling demands returning to normal. Rising domestic natural gas prices will present opportunities for higher demand for heavy fuel oil at

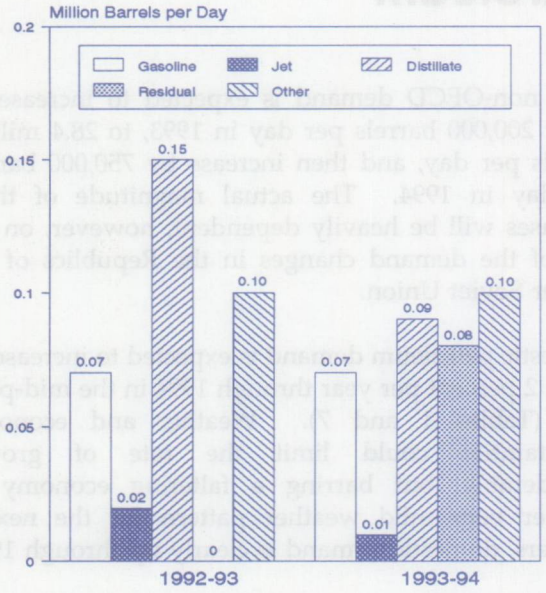

Figure 3. Annual Change in U.S. Petroleum Demand by Fuel

Note: Historical data (including preliminary estimates) through March 1993.
Source: Table 7.

electric utilities and other fuel-oil-capable industrial and commercial facilities next winter. This is particularly true under very cold weather scenarios. Final data for residual fuel demand in March of 1993, which was unusually cold, may be a good indicator of the current sensitivity of heavy oil demand to weather swings. Preliminary data indicate March demand was up by an estimated 3.6 percent over 1992 levels.[24]

Other petroleum products, including liquefied petroleum gases (LPG), petrochemical feedstocks, and miscellaneous fuels, feedstocks, materials, and specialty products grew solidly in 1992 (5.9 percent for the combined category) and in total will continue to expand with the economy over the short term. One aspect of 1992 LPG growth that may not be repeated this year was unusually high agricultural demand for propane last fall for crop drying. However, propane demand for heating and petrochemical uses should increase in 1993 and 1994. Petroleum materials for construction (such as asphalt) are expected to benefit as aggregate spending on structures leads domestic investment over the next couple of years, thanks in part to vastly reduced interest rates.

Supply

NOTE: OPEC supply as discussed in this ***Outlook*** *and as shown in Table 4 has been readjusted to exclude supply from Ecuador. Supply from Ecuador is now included in Other Non-OECD supply and in Non-OPEC supply in Table 4.*

World oil production is expected to increase by only about 100,000 barrels per day in 1993 to 67.0 million barrels per day (Table 4). Another large production decline in the former Soviet Union (1.15 million barrels per day) is expected to be barely offset by a significant production increase in OPEC and increases in other non-OECD regions. Oil supply from the OECD countries is expected to decline by about 300,000 barrels per day in 1993, as a production increase from the North Sea fails to offset production declines from the United States and the Other OECD region.

Increases in oil production by OPEC lead the way for significant global gains in supply in 1994. World production is expected to increase by almost 1.6 million barrels per day next year. Non-OPEC production is expected to fall by only 50,000 barrels per day. A decline of 800,000 barrels per day in production from the former Soviet Union will more than offset increases in production from other non-OECD countries. Unlike 1993, however, a production increase from the North Sea will more than offset the production decline from the United States, resulting in an increase of almost 350,000 barrels per day in OECD oil supply.

Domestic crude oil production is generally expected to decline by an annual average rate of 300,000 barrels per day in 1993 and by 180,000 barrels per day in 1994 under the mid-price case (Table 7). Drilling activity approached a 50-year record low in March when the drilling rig count fell to near 600. Some temporary attenuation of the production decline rate is expected in 1994 because of the expansion of gas-handling facilities in Alaska.[25]

Barring any quick turnaround toward substantially increased efforts to develop domestic oil and gas resources, the short- to mid-term outlook for oil and gas productive capacity is not positive. Under base case assumptions, the oil production outlook beyond 1994 is for continued annual declines of about 200,000 barrels per day through the year 2000.[26] In the current

[24]See Energy Information Administration, *Weekly Petroleum Status Report*, DOE/EIA-0208(93-13).
[25]Computed by the Reserves and Natural Gas Division, Energy Information Administration.
[26]See Energy Information Administration, *Annual Energy Outlook, 1993*, DOE/EIA-0383(93), Table A8.

situation, the lower but quite plausible case in which oil prices average below $17 through 1994 (Table 5) yields a cumulative oil production decline of more than 710,000 barrels per day between 1992 and 1994 (Table 6), compared to the 480,000 barrels per day in the mid-price case (Table 7).

The potential sensitivities of domestic oil production to price variations are presented in Tables 6 and 8. Domestic crude oil production may range from 120,000 barrels per day below the mid-price case to 100,000 barrels per day above the mid-price case in 1993. Table 10 provides a disaggregation of the range of oil production expected for the fourth quarter of 1994 between the high and low price cases. The two main factors affecting this range are price uncertainty and uncertainties relating to the timing of expected maintenance and development operations which affect underlying well productivity.

Declining oil production and rising demand in the United States spells a dramatic increase in imports. Under base case assumptions, net imports of petroleum will climb nearly 19 percent between 1992 and 1994 to 8.19 million barrels per day. This is the highest average annual net import rate since 1977 and the second highest in history, both in absolute terms and as a percent of total petroleum demand (dependence ratio of 46 percent).

While import expenditures, as a percent of total demand, are now approaching record levels, net petroleum import expenditures, as a percent of total GDP, are increasing in the short run, but remain well below the historical maximum of 2.8 percent.[27]

World Oil Prices

World oil prices are affected by supply, demand, and other factors such as expectations of market participants. Each of these factors is subject to substantial uncertainty. The uncertainties concerning oil supply, for example, are centered on oil exports from the former Soviet Union and oil production from OPEC.

- In the former Soviet Union, the production and consumption of oil are expected to continue to decline. Export volumes will be determined by the relative decline rates of production and consumption.
- Two OPEC countries, Kuwait and Iraq, are in the process of restoring their pre-war production capacity and export facilities. Kuwait is expected to increase production and exports as capacity is restored, although production may be held below capacity in compliance with OPEC production quotas. Iraqi production will be constrained as long as the United Nations embargo against exports remains in effect. Aggregate OPEC production depends on the willingness of other OPEC members to restrain their production, if necessary, as production from Kuwait increases and if Iraq is allowed to resume exports.

Two other factors affect the extent to which these uncertainties could influence oil prices:

- *Excess production capacity.* Excess capacity is expected to increase by more than 1.2 million barrels per day in 1993, and then decline by about 250,000 barrels per day in 1994 (Figure 4). These estimates exclude any excess capacity from Iraq because it is unavailable for utilization as long as

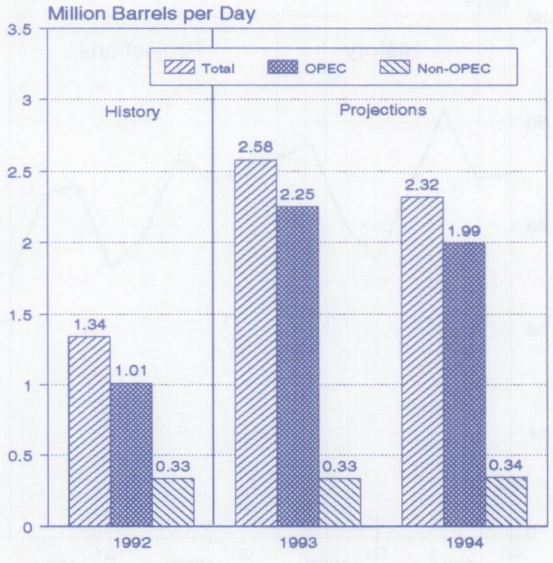

Figure 4. World Excess Oil Production Capacity

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

[27]Based on calculations from the Short-Term Integrated Forecasting System database (for net petroleum imports quantities); the *Monthly Energy Review*, DOE/EIA-0035(93/03) Table 1.6 for historical benchmark merchandise trade value in petroleum; and the DRI/McGraw-Hill CONTROL0393 macroeconomic forecast for the petroleum import price index series used to translate forecasted net imports quantities into dollar values. The ratio is calculated as nominal net petroleum imports expenditures divided by nominal GDP.

the United Nations sanctions remain in force. Capacity restoration in Kuwait and capacity additions in Saudi Arabia and Iran are expected to more than offset increases in actual OPEC production in 1993. In 1994, the total OPEC capacity increase may fall short of OPEC production increases.

- *Stocks.* At the end of the first quarter of 1993, the market economies are expected to have enough stocks readily available to meet petroleum demand for about 29 days (Figure 5), based on anticipated demand levels, two days more than at the same time in 1992. This represents usable commercial stocks only, and excludes strategic government stocks of more than 870 million barrels and the minimum inventory levels that must be maintained for normal operations of about 3.1 billion barrels.[28]

A combination of a higher level of world excess production capacity and a level of readily available stocks similar to those in 1992 is possible for 1993. The interaction between the trends in excess oil production capacity and readily available stocks will continue to influence world oil prices in 1993, as well as in 1994.

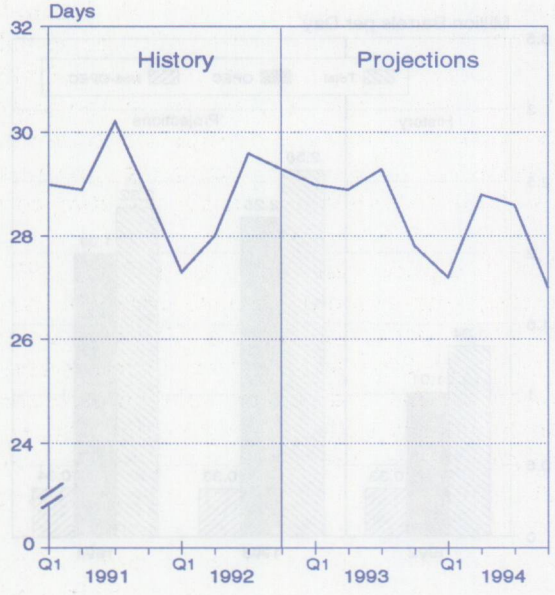

Figure 5. Days Supply of Market Economies Commercial Petroleum Stocks

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

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

The key uncertainties affecting oil demand over the forecast period are the magnitude of economic growth, especially in the United States, Japan, and Western Europe, and the severity of winter weather. Steady economic recovery is expected for the OECD countries as a whole, but European economic growth may continue to decline in 1993 before recovering in 1994. In the short term, variations in weather could have a greater effect on energy demand than variations in economic activity.

Because future price developments remain uncertain, three world oil price cases are developed (Figure 1 and Table 5) for analysis. These cases are used to derive a mid-price case projection and alternative projections for domestic petroleum supply and demand. The three world oil price cases are meant to represent the range over which prices could vary during the forecast period. In the low-price case, the world oil price is about $16.30 per barrel in 1993 and $16.50 per barrel in 1994. In the mid-price case, the price is about $18.30 per barrel in 1993 and $19.50 per barrel in 1994. In the high-price case, the world oil price increases to about $19.80 per barrel in 1993 and to $21.50 per barrel in 1994. The mid-price case is based on the following assumptions:

- Net oil exports from the former Soviet Union will decrease by an average of 300,000 barrels per day in 1993, to 1.8 million barrels per day, and by another 300,000 barrels per day in 1994, as production declines continue to exceed reductions in oil consumption (Table 4).

- Iraqi production will be limited to domestic requirements plus a small volume of exports to Jordan. This assumes that the United Nations embargo against Iraq continues and Iraq does not accept United Nations terms that would allow limited exports for humanitarian purposes.

- Other OPEC member countries will adjust their production, as necessary, to achieve the aggregate OPEC production rates projected. In particular, the projected OPEC oil supply for the second quarter of 1993 includes 24.0 million barrels per day of crude oil production.

[28]Based on assumptions from EIA's Office of Energy Markets and End Use.

The low price case assumes that Iraq is allowed immediately to resume totally unrestricted exports and that other OPEC members do not restrain their production to accommodate these exports. Another supply factor adding to the downward pressure on prices is higher exports from the former Soviet Union than in the mid-price case. World demand could be lower due to slower economic growth in the OECD countries and milder weather than assumed in the mid-price case.

The high-price case assumes that oil exports from the former Soviet Union are lower than in the mid-price case. Production from the OPEC countries is assumed to be restrained in order to push oil prices higher. In addition, abnormally cold winter weather and stronger economic growth than in mid-price case are assumed.

U.S. Petroleum Product Prices

The vagaries of weather, the occurrence of excess fuel oil stocks at the beginning of this year, and the costs of regulatory compliance combined to bleaken the overall picture for improved refined product margins and refiner profitability in 1993. Most prices began the year lower than expected in the last *Outlook*, although this is partly due to crude oil prices being lower than anticipated. For heating fuels other than propane, demand weakness due partly to a very mild January kept prices from attaining expected levels. Transportation-related fuel demand appears to be growing. Although this positive market development may improve margins, refiner profitability will be under some additional stress from increasing requirements for Clean Air Act compliance in motor fuels supply. It is assumed for this forecast that refiners fully recoup costs of complying with low-sulfur diesel fuel requirements.

In gasoline markets, successful efforts to ensure adequate oxygenated gasoline supply in carbon-monoxide non-attainment areas this past winter led to an oversupply of oxygenates (mostly MTBE) and gasoline. The increase in MTBE blending into motor gasoline this winter of about 150,000 barrels per day contributed to higher gasoline inventories and lower gasoline prices. High total gasoline inventories in February and March 1993, contributed to a 2-cent-per-gallon year-over-year decline in spot gasoline prices observed for first quarter of 1993. These prices are particularly weak in light of the fact that crude oil prices rose about 2.5 cents per gallon. Retail prices have not exhibited the same difficulty though, apparently having increased by about 5 cents per gallon on average from the first quarter of 1992 to the first quarter of 1993 (Table 5). In the scenarios reported in this *Outlook*, refiners are assumed to be able to recapture costs for regulatory compliance in gasoline and diesel fuel markets, although the apparent experience of this past winter shows how tricky such an achievement may be. (See "Demand and Price Outlook for Low-Sulfur Diesel Fuel" for an analysis of increased diesel fuel costs in late 1993.)

The following summarizes the general nature of the three price scenarios reported for this Outlook:

- The low-price case assumes slightly lower rates of inflation and a more robust economy than does the high or mid-price cases. In this scenario, petroleum product prices generally follow the crude oil price path, of $16 per barrel throughout the remainder 1993 and first half of 1994 and $17 per barrel in the second half of 1994. Natural gas wellhead prices and electric utility prices fall in 1993 under this scenario, but increase slightly in 1994. Residual fuel oil prices follow the crude oil price path. Coal prices are expected to continue a downward trend, with increasing productivity continuing to offset small rising operating costs.

- The mid-price case assumes that in 1993 the average annual motor gasoline price will increase by 3 cents per gallon over the 1992 average annual price, with State and local tax increases and the Clean Air Act and general inflation each adding about a penny to the pump price. In 1994, higher crude oil prices, the continuing added costs of the Clean Air Act and additional expected growth in State and local taxes should add 4 cents per gallon to the annual average price. Diesel fuel prices should more or less follow motor gasoline prices. In addition, diesel fuel prices are expected to increase by an additional 2 to 4 cents per gallon from the last quarter of 1993, through the remainder of the forecast (in all three cases), due to low-sulfur content requirements.[29]

[29]Published estimates of the cost of producing low-sulfur diesel range from 2 to 7 cents per gallon. Environmental Protection Agency, *Federal Register*, Vol. 54, No. 163, August 24,1989, p.35278. Cambridge Energy Research Associates. *The U.S. Refining Industry: Facing the Challenges of the 1990's.* (January 1992). Page 54.

Residential heating oil prices are projected to rise 1 to 2 cents in 1993, assuming normal weather and no excess inventories next fall. The 1994 price increase of 5 cents per gallon is based on slightly higher world oil prices, a lower average day's supply of distillate fuel oil, and about a 1-cent-per-gallon increase in retail margins, due to general inflation.

In 1993, residual fuel oil prices are expected to be about flat compared to 1992 prices. In 1994, slightly higher crude oil costs are expected to be passed on to the retail price of residual fuel oil. In addition, slightly higher anticipated demand will add to upward price pressures for this fuel.

- The high-price case assumes a slightly higher rate of inflation and a slightly weaker economy than does the mid-price case. In this scenario, prices for petroleum products and natural gas are projected to gain through 1994.

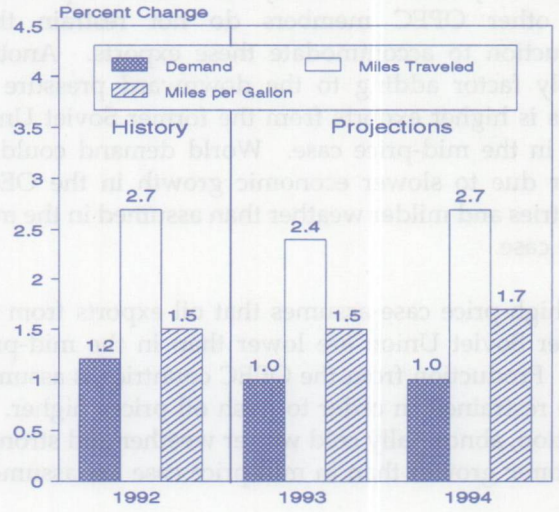

Figure 6. Annual Change in U.S. Motor Gasoline Market Indicators

Sources: **History:** Energy Information Administration, *Petroleum Supply Monthly* (September 1992); Federal Highway Administration, *Traffic Volume Trends*. **Projections:** Tables 3 and 7.

U.S. Petroleum Demand

Motor Gasoline

Following a 1.2-percent increase in 1992, motor gasoline demand is projected to increase by an average of 1.0 percent in 1993 and 1994. (Figure 6). Reflecting steady gains in employment and income, highway travel activity is expected to increase by an average 2.5 percent per year during the next 2 years (Table 3). That travel growth is expected to increase fuel demand. Fuel efficiency growth is estimated to average 1.6 percent per year or only half of the average increase during the 1986-1991 period. This slowdown in fuel efficiency growth reflects the absence of increases in new-car fuel efficiency during the last 4 years as well as the dwindling potential for savings brought about by the retirement of older, less fuel efficient vehicles. In addition, the newly implemented oxygenate requirements are also expected to contribute to the moderation in fuel economy growth during the next 2 years.

For the peak summer driving season (May through August 1993), motor gasoline demand is expected to be about 100,000 barrels per day (1.3 percent) higher than the peak 1992 season, as general economic factors and relatively weak prices continue to expand highway travel. Total vehicle-miles traveled this summer is expected to be up about 2.3 percent from 1992, as personal income and employment continue to expand at a moderate pace. Average fleet automobile efficiency is expected to increase, but only by about 1 percent. This low rate contrasts with average efficiency increases of more than 3 percent in 1986 to 1991.[30] Despite much uncertainty as to likely demand levels, no significant problems in meeting summer demand are currently anticipated even if demand turns out to be higher than expected in the base case. The table below provides a summary of the base case for the summer gasoline market.

	Summer 1992	Summer 1993 (Base)
Demand[a]	7.44	7.54
Travel[b]	6,542	6,690
MPG[c]	20.9	21.1
Retail Price[d]	122.4	124.5

[a]Million barrels per day.
[b]Million miles per day.
[c]Miles per gallon.
[d]Nominal retail price, cents per gallon.
Source: Short-Term Integrated Forecasting System database.

[30]Data from the first quarter 1993 Short-Term Integrated Forecasting System database. For now, slow growth in efficiency is to be expected because of a succession of model years in which new car efficiency has not grown, while the most inefficient old cars have been retired from the fleet.

Jet Fuel

Jet fuel demand registered a 1.4-percent decline in 1992 (Figure 7). Although some of that decline was related to economic uncertainty, part of the year-to-year decrease resulted from the unusually strong demand in early 1991 brought about by Persian Gulf-related activity. Despite aggressive marketing by airlines in the form of deep discounts to discretionary travelers, the resultant recovery in jet fuel demand failed to offset the steep decline during the first half of the year.

Nonetheless, the industry managed to record a 6-percent increase in revenue ton-miles in 1992,[31] while actual capacity growth was less than 4 percent. Average load factors therefore climbed to 55 percent for the year, matching pre-recession levels.

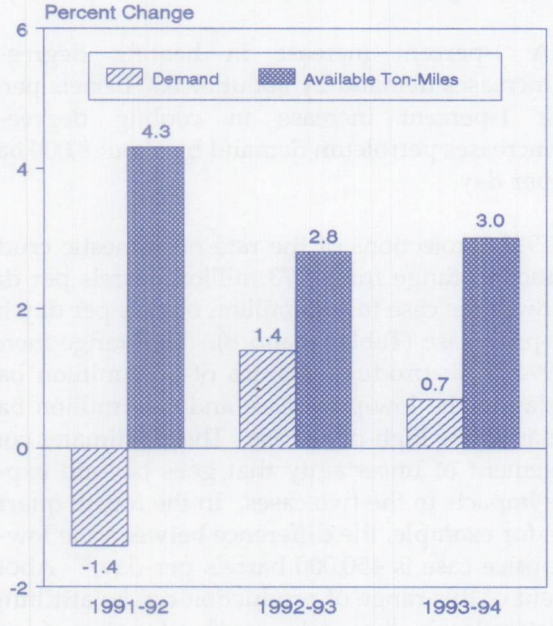

Figure 7. Annual Change in U.S. Jet Fuel Market Indicators

Sources: **History**: Federal Aviation Administration. **Projections**: Tables 3 and 7.

Reversing last year's decline in jet fuel demand, the next 2 years are expected to witness increases in jet fuel demand, but that growth is projected to be modest, averaging 1.1 percent per year (Table 3). Revenue ton-mile growth is expected to average 2.5 percent, while growth in available ton miles, a measure of in-flight capacity, is forecasted to average 2.9 percent. These projections are expected to outpace the projected average 2.2-percent fuel efficiency gains resulting from the acquisition of new aircraft, ensuring some increases in jet fuel demand.

Distillate Fuel Oil

U.S. demand for distillate fuel oil grew only modestly in 1992, but is expected to benefit somewhat from weather and positive economic factors in 1993. Continued increases in fuel demand are expected to maintain growth in distillate markets through 1994. For all of 1992, distillate fuel demand was up an estimated 60,000 barrels per day (2.1 percent) to 2.98 million barrels per day.[32] This demand growth did not prevent excess accumulation of primary distillate inventories by year end, as refiners pushed distillate production to unusually high levels.[33] Demand for distillate fuel seems to be up so far this year and with unusually cold March temperatures lending unexpected support to heating oil. Meanwhile, higher levels of industrial and commercial activity continue to push diesel fuel demand higher.

Residual Fuel Oil

Complete monthly data for 1992 confirm that residual fuel oil demand may have reached its lowest point in decades, with the annual estimate for last year now at 1.09 million barrels per day (Table 7). Early 1993 data, although partly confounded by mild temperatures in January, indicate continued weakness in the demand for residual fuel.

Structural changes in the gas industry that have increased the access of competitively priced natural gas lead to increased gas consumption and diminished

[31]Based on calculations from the Short-Term Integrated Forecasting System database.
[32]Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(93/03).
[33]Energy Information Administration, *Weekly Petroleum Status Report*, DOE/EIA-0208(92-50) (Washington, DC, December 1992).

residual fuel oil use. Very mild weather since early 1991 has had the dual effect on residual fuel of reducing overall demand for electricity and increasing peak period availability of natural gas. This latter effect is relevant particularly in the winter. Thus, if weather patterns finally return to historical norms (or if they swing to the severe side) over the next few quarters, residual fuel oil demand should stage something of a recovery. The recovery could be sharp if weather turns very cold next winter. For the base case, however, residual fuel oil demand will not recover significantly until the first quarter of 1994, although the expected surge in summer electricity demand (compared to 1993) is expected to induce an offset in residual fuel markets to the weakness seen early this year.

Other Petroleum Products

Demand for minor petroleum products increased by 5.9 percent in 1992[34] Higher-than-expected demand for certain miscellaneous products and colder-than-normal weather during the fourth quarter account for much of that strength. The next 2 years are expected to witness continued but more moderate growth in other oils demand (Table 7). Weather that was colder in the first quarter of 1993 than in the same period in 1992 contributes to the expected 2.4 percentage increase this year. Despite the assumption of normal weather, continued economic growth is expected to bring about a 2.3-percent increase in demand for the following year.

Petroleum Demand and Production Sensitivities

The petroleum demand and supply outlook for the mid-price case is based on normal temperatures and a particular set of macroeconomic assumptions. In order to enhance the usefulness of the mid-case forecast, Tables 9 and 10 provide a range of possible outcomes for petroleum demand and supply when alternative macroeconomic, price, and weather assumptions are used.

The petroleum price sensitivity assumes that non-petroleum prices remain constant. The weather sensitivities assume deviations above and below normal that correspond to one-half of the largest quarterly deviations from normal in heating and cooling degree-days over the last 15 years. (See Appendix for more details.) Average petroleum sensitivity factors for this forecast are summarized below:[35]

- A 1-percent increase in real GDP raises petroleum demand by about 147,000 barrels per day.
- A $1-per-barrel increase in crude oil prices, assuming no price response from nonpetroleum energy sources, reduces demand by about 35,000 barrels per day.
- A $1-per-barrel increase in crude oil prices boosts domestic oil supply (crude oil and natural gas liquids production) by 74,000 barrels per day.
- A 1-percent increase in heating degree-days increases demand by about 37,000 barrels per day; a 1-percent increase in cooling degree-days increases petroleum demand by about 8,000 barrels per day.

For 1993, projections of the rate of domestic crude oil production range from 6.73 million barrels per day in the low-price case to 6.95 million barrels per day in the high-price case (Tables 6 and 8). This range increases in 1994, with production rates of 6.44 million barrels per day in the low-price case and 6.86 million barrels per day in the high-price case. These estimates contain an element of uncertainty that goes beyond expected price impacts in the two cases. In the fourth quarter of 1994, for example, the difference between the low- and high-price case is 450,000 barrels per day.[36] About 33 percent of this range of production can be attributed to uncertainties in the preliminary estimates of current production levels and the timing of expected events. About 67 percent of this range is attributed to the impact of prices on drilling rates and well maintenance (Table 10).

[34]Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(93/03).

[35]The oil demand sensitivity factors were derived from internal calculations of the Demand Models of the Short-Term Integrated Forecasting System. The oil supply sensitivity was derived implicitly from Tables 6 and 8 and includes uncertainty components not strictly related to price variation. The latter sensitivity is averaged over the last three quarters of 1993 and all four quarters of 1994.

[36]Of this total, the lower 48 States accounted for 370,000 barrels of oil per day. The uncertainty of 110,000 barrels per day for the lower 48 States contains 80,000 barrels of oil per day that results from varying the low- and high-price case estimates by an amount equal to 1 percent of the 1992 fourth quarter oil rate and reducing that amount starting with the first quarter of 1993 through the end of 1994. The remaining 30,000 barrels per day is additional oil production expected from the Point Arguello field in the Pacific Federal Outer Continental Shelf. The larger portion of the difference (300,000 barrels per day) is attributable to the price impact where more drilling is expected at higher prices, as well as more frequent well maintenance and reduction of well abandonments.

Outlook for Other Major Energy Sources

Natural Gas

The outlook for natural gas over the next 2 years is characterized by steadily growing demand (about 3 percent per year), rising production, and higher gas prices (8 to 9 percent per year increases through 1994). Although uncertainties exist regarding the ultimate impact of Federal Energy Regulatory Commission (FERC) Order 636 on gas pricing and inventory management, the trend of markets is toward equilibrium.

Growth in total demand for natural gas is expected to continue at the same pace as in 1992. Total demand is expected to rise by 3.4 percent in 1993, to 20.40 trillion cubic feet, compared with 19.73 trillion cubic feet in 1992. Gas consumption has not been this high since 1979.[37] Demand growth in 1993 is due to a combination of factors, including: stronger economic growth; winter weather that was colder than that of last year; increased gas-fired generating capacity; increased pipeline capacity; and continued growth of gas-burning non-utility power producers. In 1994, total gas demand is expected to grow by another 3.3 percent to 21.08 trillion cubic feet. Figure 8 illustrates natural gas consumption levels by sector for 1992 to 1994.

The residential and electric utility sectors are projected to be the fastest growing sectors in 1993, with growth rates of 4.9 and 6.1 percent, respectively. Residential sector growth is the result of colder winter weather relative to last year, while utility sector growth is largely the result of higher electricity demand, particularly in the summer. Although hydroelectric power production is expected to rebound in 1993, no growth is expected in nuclear output, and gas use by utilities is projected to increase to meet the additional fuel requirements. Conversions to natural gas and the preference for natural gas in new homes will also contribute to growth in the residential and commercial sectors. In 1994, the industrial and commercial sectors are expected to lead demand growth, at rates of 5.4 and 2.9 percent, respectively, as manufacturing output and commercial employment grow steadily throughout the year.

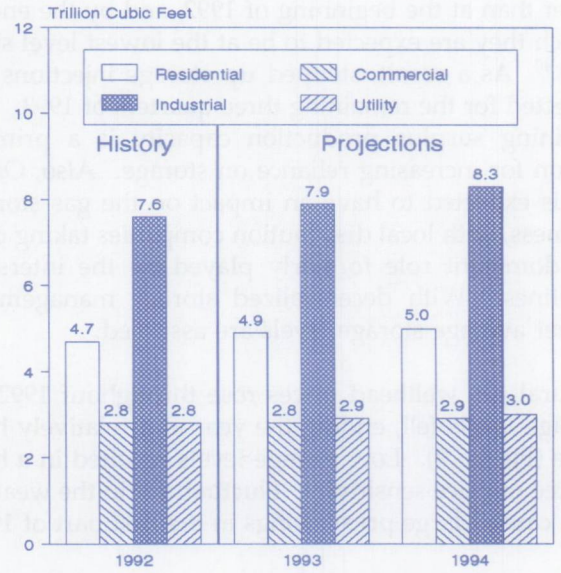

Figure 8. Natural Gas Demand by Sector

Sources: **History**: Energy Information Administration, *Natural Gas Monthly* (September 1992). **Projections**: Table 11.

Lower drilling activity in the face of rising demand is eroding the production capacity surplus in both the United States and Canada.[38] The Baker Hughes rig count on March 12 was at a near-record low of 600 active rigs, 257 of which were drilling for gas.[39] Net imports of natural gas in 1993 are expected to rise by 240 billion cubic feet, to 2.06 trillion cubic feet. This is a 13 percent gain above last year's net import level of 1.82 trillion cubic feet. In 1994 net imports are projected to increase by another 17 percent, to 2.4 trillion cubic feet.

Despite declining surplus production capacity, production has been sustained due to significant improvements in drilling efficiency and by intensively developing existing fields. Some additional supply comes as a result of the tax credit for coalbed methane and tight sands production, as well as expanded access

[37]Energy Information Administration, *Historical Monthly Energy Review 1973-1978*, (DOE/EIA-0035(73-88).
[38]*Natural Gas Week*, March 8, 1993.
[39]*Natural Gas Week*, March 15, 1993

to Canadian supplies. Consequently, U.S. dry gas production is expected to rise along with demand during the forecast period. In 1993, dry gas production is projected to rise by 920 billion cubic feet, or 5.2 percent, to 18.7 trillion cubic feet.

Storage levels at the beginning of 1993 were 7.7 percent lower than at the beginning of 1992, and by the end of March they are expected to be at the lowest level since 1978.[40] As a result, stepped up storage injections are expected for the remaining three quarters of 1993. The declining surplus production capacity is a primary reason for increasing reliance on storage. Also, Order 636 is expected to have an impact on the gas storage business, with local distribution companies taking over the dominant role formerly played by the interstate pipelines. With decentralized storage management, higher average storage levels are assumed.

Natural gas wellhead prices rose throughout 1992, as storage levels fell, ending the year at a relatively high price (Figure 9). Low storage levels resulted in a high degree of price sensitivity. Fluctuations in the weather thus caused large price swings in the first part of 1993.

Spot wellhead prices peaked at $2.23 per million Btu last October, then fell steadily, bottoming out at $1.66 per million Btu in February of this year, as warm January weather lowered demand and, as a result, temporarily eased pressure on prices.[41] However, by February, underground storage levels were unusually low. Thus, the cold weather in March pushed up spot prices to winter-like price levels.

For 1993, under mid-price case assumptions, average wellhead prices are projected to rise by about 15 cents per thousand cubic feet or by about 8.1 percent. In 1994, average wellhead prices are projected to increase by 9.5 percent over 1993 prices (Table 5).

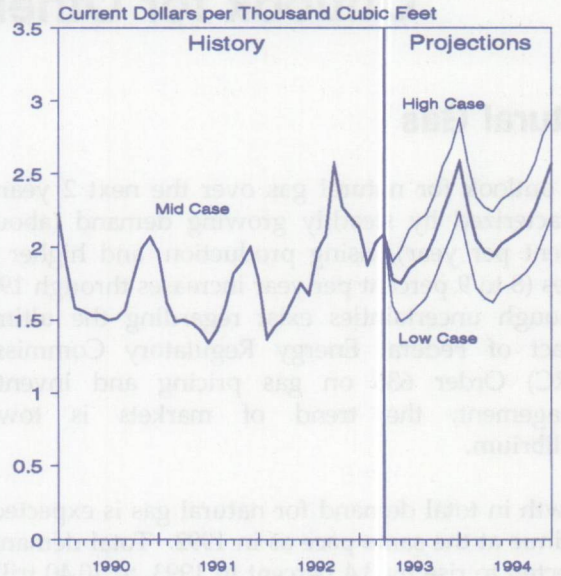

Figure 9. Natural Gas Wellhead Prices

Sources: **History:** Energy Information Administration, *Natural Gas Monthly* (September 1992). **Projections:** Table 5.

Coal

Increases in electricity demand, steel output, and other industrial activity will spur growth in coal production and demand over the next 2 years. Demand for coal at electric utilities grew by 1.0 percent in 1992 despite low electricity demand.[42] In 1993 and 1994 utility coal demand is expected to increase by 2.6 percent and 2.2 percent, respectively, as electricity demand grows (Table 12).

Increases in the domestic production of steel are expected to produce a somewhat higher demand for coal at coke plants, particularly in 1994. Coal demand by the retail and industrial sectors is expected to grow steadily but slowly through 1994.

U.S. coal exports are expected to remain flat in 1993, at the significantly reduced 1992 level of 103 million tons, due primarily to the continuing weakness of the European economy. In 1994 coal exports are projected to rebound with Europe's economy, and reach 106 million tons.

Consumer stocks did not increase in late 1992, despite the threat of a strike between the United Mine Workers of America and the Bituminous Coal Operators' Association. A strike occurred after the contract expired on February 1,1993, but it was limited and lasted approximately 1 month. The loss in coal production, due to the selective strikes, is estimated to be roughly 3 million tons.[43]

[40]Energy Information Administration, *Historical Monthly Energy Review*, 1973-1988. (DOE/EIA-0035(73-88).

[41]*Natural Gas Week*, March 1, 1993, page 6.

[42]Total coal demand was 888 million tons in 1991 (Energy Information Administration,*Monthly Energy Review*,DOE/EIA-0035(92/12)) and 893 million tons in 1992 (Table 12).

[43]Coal strike information provided by the Office of Coal, Nuclear, Electric and Alternate Fuels, Energy Information Administration.

Between 1991 and 1992, coal prices to electric utilities fell.[44] This was largely the result of weak demand and the continuing gains in productivity, due to closing of uneconomic mines, expanded use of longwall mining in underground mines, and the growth of cheaper western production. In addition, costs were eased by slight decreases in prices for diesel fuel (used for mining operations and rail transportation to electric utilities). Prices are expected to increase only slightly through 1994, as rising transportation, mining, and operating costs are largely offset by continued productivity increases. On January 1, 1995, Phase I of the Clean Air Act Amendments will require that 110 coal-fired, electric utility plants reduce SO_2 emissions to no more than 2.5 pounds per million Btu.[45] It is estimated that the effect of meeting this requirement will add about 1 to 2 cents per million Btu to the national average utility coal price in the latter part of 1994 because of increased use of low sulfur coal.[46]

Electricity

Total demand for electricity is expected to increase by 3.4 percent in 1993 and by 3.0 percent in 1994 (Table 13). About one-fifth (0.8 percent) of that increase is due to weather effects. The assumption of normal weather conditions in the forecast gives an added boost to residential electricity growth in 1993. Temperatures during most of 1992 were milder than normal and resulted in slow growth in the residential and commercial sectors.[47] Aside from weather effects, the ongoing economic recovery is expected to support modest growth in all consuming sectors (Figure 10).

In 1993, electricity demand in the commercial sector is expected to recover from the weak 1992 performance, partly because of normal weather assumptions, but mostly because of improving prospects for employment and output expansion. Commercial electricity demand

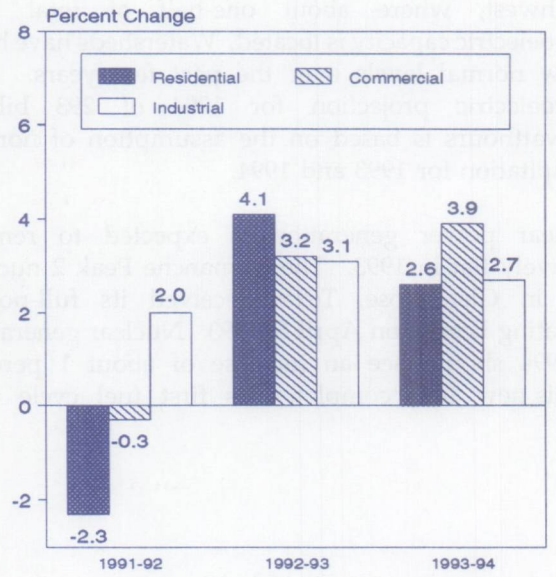

Figure 10. Annual Change in U.S. Electricity Demand by Sector

Source: Table 13.

is expected to continue to expand in 1994. Electricity demand in the industrial sector is expected to be boosted by improved growth in manufacturing production in both forecast years. Residential sector demand is expected to increase by 4.1 percent in 1993, partly because of the assumption of normal weather.

U.S. utilities are expected to supply about 3.3 percent more electricity in 1993 and 2.4 percent in 1994. Non-utility supply of electricity to electric utilities is expected to grow at an even more rapid rate, rising by 8.8 percent in 1993 and by 7.8 percent in 1994. Net imports of electricity from Canada are also expected to grow.

[44]Coal prices delivered to electric utilities averaged $1.45 per million Btu in 1991 (Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(92/12)) and $1.41 per million Btu in 1992 (Table 5).

[45]Environmental Protection Agency, *Clean Air Act Amendments of 1990*, "Title IV Acid Deposition Program" (November 1990), pp. 1-3.

[46]Based on internal EIA calculations. It was estimated that compliance with Phase I of the Clean Air Act requiring low-sulfur coal will increase the cost about $5.00 per ton of coal or about a 17-percent price increase for the approximately 2.5 percent of coal burned at electric utilities that will be affected by Phase I. In order to meet the January 1, 1995, date of compliance, those utilities will be stockpiling coal by the second half of 1994.

[47]Correcting for differences in weather conditions (actual or assumed) in 1992, 1993 and 1994, electricity demand growth is expected to be 2.8 percent in 1993 and 2.9 percent in 1994, compared with the 3.4 percent and 3.0 percent calculated from Table 13, which does not include a weather correction. The weather corrected information is generated from special simulations of the Short-Term Integrated Forecasting System model, holding weather variables constant at normal levels.

Hydroelectric power generation is expected to rebound in 1993 as water conditions improve in the Pacific Northwest, where about one-half of total U.S. hydroelectric capacity is located. Watersheds have been below normal levels over the past few years. The hydroelectric projection for 1994 of 293 billion kilowatthours is based on the assumption of normal precipitation for 1993 and 1994.

Nuclear power generation is expected to remain relatively flat in 1993. The Comanche Peak 2 nuclear unit in Glen Rose, Texas received its full-power operating license on April 6, 1993. Nuclear generation in 1994 should see an increase of about 1 percent as this new unit completes its first fuel cycle and nuclear plants as a whole continue to improve their performance.

The rebound in electricity demand in 1993 and 1994 will require increased output from oil- and gas-fired generation during peak periods. Oil-based utility generation is expected to increase by 15 percent in 1993 after falling by 21 percent in 1992. A 15-percent increase in utility residual fuel oil demand in both forecast years will be needed to meet peak periods of electrical demand. Positive growth of 3.5 percent is also expected for gas-fired generation in 1993. However, 1994 gas generation will rise more slowly because of the expected tightening of gas markets.

Appendix A

Computation of Petroleum Demand Sensitivities

Table 9 summarizes the response of forecasts for U.S. total petroleum demand to changes in assumptions for economic growth, world crude oil prices, and weather. The values in this table are computed using the Short-Term Integrated Forecasting Model (STIFS). The STIFS model is documented in EIA's *Short-Term Integrated Forecasting System: 1990 Model Documentation Report* (DOE/EIA-M009, June 1990). The purpose of the model is to generate forecasts of U.S. energy supply, demand, and prices. Key inputs include assumptions for the imported price of crude oil, the rate of U.S. economic growth, and weather (cooling and heating degree-days). Forecasts are generated for production, imports, exports, demand, and prices for refined petroleum products, natural gas, coal and electricity.

A key relationship shown in Table 9 is that between petroleum demand and economic activity. Gross domestic product (GDP) is varied from low to high for each of the 2 projection years, and the resulting change in petroleum demand is calculated. For each of the 2 years, the percentage difference in GDP is computed as the difference between the low and high case levels shown in Table 2, divided by the midpoint of this range. Thus, the percentage difference in GDP for 1993 (three quarters only) is as follows: (5138 - 5036) / ((5138 + 5036) / 2), or 2.0 percent. For each period, the petroleum demand difference (in million barrels per day) is divided by the percentage difference in GDP. For the last 3 quarters of 1993, the average petroleum demand difference is 290,000 barrels per day; thus, a 1-percent change in GDP corresponds to a change in demand of (290,000/2.0), or 145,000 barrels per day.

For 1994, a 4.2-percent change in GDP corresponds to a change in demand of 620,000 barrels per day; thus, a 1-percent change in GDP corresponds to a demand change of 148,000 barrels per day. The average of the 1993 and 1994 results (weighting the 1993 results by 275 days and 1994 by 365 days) is 147,000 barrels per day per 1 percent difference in GDP. Table 9 also shows the differences in petroleum demand due to changes in energy prices caused by varying the world crude oil price. There are two values for the change in petroleum demand in each year, one value for the case in which and natural gas prices are allowed to change in response to the change in petroleum prices, and a second value for the case in which and natural gas prices are held constant. The industrial and electric utilities sectors have some freedom to switch between use of petroleum, coal and natural gas. If the price of petroleum decreases while the prices of and natural gas remain constant, some industrial and utility users will switch from or natural gas to petroleum, and petroleum demand will increase. If and natural gas prices are reduced to meet the competition from petroleum, then there will be a smaller increase in petroleum demand. In either case, the change in petroleum demand (in million barrels per day) is divided by the change in the crude oil price (in dollars per barrel), and the result is averaged over the 2 projection years to get an estimate of the change in petroleum demand per dollar of change in the crude oil price.

The influence of weather on petroleum demand is also calculated, using the mid-case values for economic activity and imported crude oil prices. The percentage changes in heating or cooling degree-days are computed and divided by the changes in petroleum demand, and the result is averaged over the 2 projection periods to get an estimate of the change in petroleum demand per 1-percent change in heating and cooling degree-days. The changes in demand due to changes in heating degree-days apply only to the heating season, roughly the first and fourth quarters of the year, while the changes in demand due to changes in cooling degree-days apply only to the cooling season, roughly the second and third quarters of the year.

Appendix B

Motor Gasoline Supply Reporting Change

The following key changes have been made to the reporting of 1993 monthly motor gasoline supply data to accommodate the Clean Air Act Amendments of 1990 and to provide more meaningful data on petroleum industry operations:

Finished Motor Gasoline Product Supplied Adjustment

Beginning with the reporting of January 1993 data, the Energy Information Administration (EIA) has made adjustments to the product supplied series for finished motor gasoline. It was recognized that motor gasoline statistics published by the EIA through 1992 were underreported because the reporting system was not collecting all fuel ethanol and motor gasoline blending components being blended downstream from the refinery. The EIA was able to quantify these volumes and make corrective adjustments for 1992 in 1993. Each of these adjustments is discussed in detail following Table B1.

As a result of the changes, any comparisons of 1993 motor gasoline data to historical series must recognize the adjustments made in 1993. To assist in this comparison, the EIA has prepared a table of 1992 finished motor gasoline product supplied on the 1993 basis (Table B1 below) showing the published numbers by month, the adjustments, and the 1993 product supplied basis number. When making a comparison of 1993 to 1992 finished motor gasoline product supplied, it is important to use the 1993 basis numbers. For example, from Table B1 the January 1993 product supplied number of 6,746 should be compared to 6,934, not the original 6,893.

The year 1992 is the only historical year for which data are available to do a comparison on the 1993 basis. The data are preliminary from the *Petroleum Supply Monthly*. A revised table, with final 1992 numbers, will be published in the 1992 *Petroleum Supply Annual*.

Fuel Ethanol Adjustment

Prior to 1993, an estimated 60 to 70 thousand barrels per day of fuel ethanol were added to motor gasoline to produce gasohol but were not included in the Energy Information Administration's (EIA) finished motor gasoline production data. In 1992, the EIA attempted to collect these data from downstream fuel ethanol motor gasoline blenders but found that this effort was impractical and the results were inaccurate.

Beginning in January 1993, an estimate for the missing fuel ethanol blended into motor gasoline is calculated. This estimate is calculated as production (from the EIA-819M, "Monthly Oxygenate Telephone Report"), plus imports (from the EIA-814, "Monthly Imports Report"), minus inputs at refineries (from the EIA-810, "Monthly Refinery Report"), plus or minus stock change (from the EIA-819M survey). This estimate for the amount of fuel ethanol blended into motor gasoline is added to Table 1 for Natural Gas Liquids Field Production (line 14) and in the Field Production column for other motor gasoline in Tables 2 through 25.

An adjustment is then performed to determine how much of the gasohol is used as "oxygenated" gasoline in the Environmental Protection Agency (EPA) carbon monoxide (CO) non-attainment areas specified by the Clean Air Act Amendments of 1990, and how much is used as "other" gasoline. Oxygenated gasoline is required to be used in these areas only during the winter months. Gasohol is used throughout the year and is entirely classified as "other" gasoline during the summer months. It is assumed that during the winter months (November through February), 40 percent of the gasohol will be used in the non-attainment area and hence classified as "oxygenated" gasoline. During October, it is estimated that 20 percent of the gasohol will be produced and stored until November for use in the EPA CO non-attainment areas. These percentages are EIA estimates, which have been reviewed by industry experts.

An estimate for the total amount of gasohol produced with the ethanol is given as 10 times the estimated fuel ethanol blended (this assumes a 10 percent ethanol blend.) The amount of gasohol used as "oxygenated" gasoline is given by the total amount of gasohol times the appropriate percentage for the month as described above. This amount is added to the column labeled

field production of "oxygenated gasoline" and subtracted from "other gasoline" in Tables 2 through 5.

The PAD District level detail shown in Tables 6 through 25 is obtained by allocating the national level estimates calculated above according to the percent of gasohol sales from the U.S. Department of Transportation, Federal Highway Administration, *Monthly Motor Fuel Reported by States*, 1991.

Motor Gasoline Blending Component Adjustment

Prior to 1993, the EIA published a "product supplied" for motor gasoline blending components. Since these components are to be blended into finished motor gasoline, there is no actual demand for this intermediate product. The EIA is correcting this series by including the quantity of "product supplied" for motor gasoline blending components with "other" finished motor gasoline. This change is accomplished in Tables 2 through 25 by adding product supplied for motor gasoline blending components to the column labeled Field Production of "other" motor gasoline, and subtracting it from the Field Production column for "motor gasoline blending components."

The blending components adjustment shown in Table B1 is product supplied for blending components published in the 1992 issues of the *Petroleum Supply Monthly*.

Fuel Ethanol Stock Adjustment

As discussed previously, downstream fuel ethanol motor gasoline blenders do not report on the Petroleum Supply Reporting System (PSRS). As a result, total end-of-month stocks of fuel ethanol have been underreported in the PSRS. Total stocks of fuel ethanol are assumed to be those reported by ethanol producers on the Form EIA-819M, "Monthly Oxygenate Telephone Report." The difference between the stocks reported on the EIA-819M and the stocks reported in the PSRS (from refiners, bulk terminal and pipeline operators) is added to the stocks shown for bulk terminals.

Table B1. Finished Motor Gasoline Product Supplied Adjustment, 1992
(Thousand Barrels per Day)

Months	Product Supplied Published in PSM	Fuel Ethanol Adjustment	Motor Gasoline Blending Component Adjustment	Product Supplied 1993 Basis	Difference
January	6,893	68	-27	6,934	41
February	7,004	68	-17	7,054	51
March	7,145	62	72	7,278	134
April	7,255	68	72	7,395	141
May	7,288	55	48	7,391	104
June	7,451	64	31	7,546	95
July	7,607	52	93	7,752	145
August	7,414	66	118	7,598	184
September	7,339	54	58	7,451	112
October	7,336	76	26	7,437	101
November	7,119	91	81	7,292	172
December	7,377	100	83	7,559	182
Average	7,270	69	53	7,392	122
January 1993	-	60	25	6,746	-

Sources: • **Fuel Ethanol Adjustment**—1992 issues of the *Petroleum Supply Monthly*, Appendix D, EIA-819M, "Monthly Oxygenate Telephone Report." • **Motor Gasoline Blending Component Adjustment**—1992 issues of the *Petroleum Supply Monthly*, product supplied for motor gasoline blending components, Table 5.

Table 2. U.S. Macroeconomic and Weather Assumptions

	Price Case	1992 1st	1992 2nd	1992 3rd	1992 4th	1993 1st	1993 2nd	1993 3rd	1993 4th	1994 1st	1994 2nd	1994 3rd	1994 4th	Year 1992	Year 1993	Year 1994
Macroeconomic[a]																
Real Gross Domestic Product (GDP)	High						*5076*	*5133*	*5206*	*5277*	*5327*	*5374*	*5428*		*5111*	*5352*
(billion 1987 dollars)	Mid	**4874**	**4892**	**4934**	**4992**	**5028**	*5056*	*5082*	*5124*	*5170*	*5218*	*5263*	*5316*	**4923**	*5072*	*5242*
	Low						*5035*	*5031*	*5042*	*5063*	*5108*	*5153*	*5205*		*5034*	*5132*
	High						*3.8*	*4.0*	*4.3*	*5.0*	*4.9*	*4.7*	*4.3*		*3.8*	*4.7*
Percentage Change from Prior Year	Mid	**1.6**	**1.6**	**2.1**	**3.2**	**3.2**	*3.4*	*3.0*	*2.6*	*2.8*	*3.2*	*3.6*	*3.7*	**2.1**	*3.0*	*3.4*
	Low						*2.9*	*2.0*	*1.0*	*0.7*	*1.4*	*2.4*	*3.2*		*2.3*	*1.9*
Annualized Percentage Change	High						*3.8*	*4.5*	*5.7*	*5.5*	*3.8*	*3.5*	*4.0*			
from Prior Quarter	Mid	**2.9**	**1.5**	**3.4**	**4.7**	**2.9**	*2.2*	*2.1*	*3.3*	*3.6*	*3.7*	*3.4*	*4.0*			
	Low						*0.6*	*-0.3*	*0.9*	*1.7*	*3.6*	*3.5*	*4.0*			
GDP Implicit Price Deflator	High						*1.234*	*1.239*	*1.243*	*1.250*	*1.257*	*1.265*	*1.272*		*1.236*	*1.261*
(index, 1987=1.000)	Mid	**1.198**	**1.206**	**1.211**	**1.219**	**1.229**	*1.236*	*1.243*	*1.250*	*1.258*	*1.265*	*1.273*	*1.281*	**1.209**	*1.239*	*1.269*
	Low						*1.237*	*1.247*	*1.256*	*1.266*	*1.273*	*1.282*	*1.290*		*1.242*	*1.278*
	High						*2.3*	*2.3*	*2.0*	*1.7*	*1.9*	*2.1*	*2.3*		*2.2*	*2.0*
Percentage Change from Prior Year	Mid	**2.8**	**2.6**	**2.5**	**2.5**	**2.6**	*2.5*	*2.6*	*2.5*	*2.4*	*2.3*	*2.4*	*2.5*	**2.6**	*2.5*	*2.4*
	Low						*2.6*	*3.0*	*3.0*	*3.0*	*2.9*	*2.8*	*2.7*		*2.7*	*2.9*
Real Disposable Personal Income	High						*3672*	*3699*	*3754*	*3805*	*3827*	*3850*	*3881*		*3690*	*3841*
(billion 1987 dollars)	Mid	**3566**	**3576**	**3581**	**3619**	**3634**	*3657*	*3660*	*3692*	*3724*	*3744*	*3767*	*3797*	**3585**	*3661*	*3758*
	Low						*3642*	*3622*	*3630*	*3643*	*3661*	*3684*	*3713*		*3632*	*3675*
	High						*2.7*	*3.3*	*3.7*	*4.7*	*4.2*	*4.1*	*3.4*		*2.9*	*4.1*
Percentage Change from Prior Year	Mid	**2.2**	**2.0**	**2.0**	**2.5**	**1.9**	*2.3*	*2.2*	*2.0*	*2.5*	*2.4*	*2.9*	*2.8*	**2.2**	*2.1*	*2.6*
	Low						*1.8*	*1.1*	*0.3*	*0.2*	*0.5*	*1.7*	*2.3*		*1.3*	*1.2*
Manufacturing Production	High						*1.149*	*1.176*	*1.204*	*1.231*	*1.246*	*1.260*	*1.273*		*1.165*	*1.252*
(index, 1987=1.000)	Mid	**1.080**	**1.095**	**1.100**	**1.112**	**1.129**	*1.139*	*1.150*	*1.162*	*1.176*	*1.190*	*1.203*	*1.216*	**1.097**	*1.145*	*1.196*
	Low						*1.129*	*1.124*	*1.121*	*1.121*	*1.134*	*1.146*	*1.158*		*1.126*	*1.140*
	High						*4.9*	*6.9*	*8.3*	*9.0*	*8.4*	*7.1*	*5.7*		*6.2*	*7.5*
Percentage Change from Prior Year	Mid	**1.8**	**2.7**	**1.4**	**2.4**	**4.5**	*4.0*	*4.5*	*4.5*	*4.2*	*4.5*	*4.6*	*4.6*	**2.1**	*4.4*	*4.5*
	Low						*3.1*	*2.2*	*0.8*	*-0.7*	*0.4*	*2.0*	*3.3*		*2.6*	*1.2*
OECD Economic Growth[b] (percent)														**1.6**	*2.0*	*3.1*
Weather[c]																
Heating Degree Days																
U.S.		**2162**	**565**	**127**	**1674**	**2332**	*536*	*88*	*1669*	*2401*	*536*	*88*	*1669*	**4528**	*4626*	*4694*
New England		**3167**	**1011**	**242**	**2277**	**3244**	*928*	*193*	*2223*	*3223*	*928*	*193*	*2223*	**6697**	*6588*	*6567*
Middle Atlantic		**2831**	**756**	**117**	**2039**	**2897**	*727*	*118*	*2018*	*2988*	*727*	*118*	*2018*	**5743**	*5760*	*5851*
U.S. Gas-Weighted		**2112**	**531**	**123**	**1692**	**2366**	*539*	*81*	*1686*	*2426*	*539*	*81*	*1686*	**4458**	*4672*	*4732*
Cooling Degree Days (U.S.)		**30**	**264**	**665**	**62**	**24**	*327*	*755*	*63*	*28*	*327*	*755*	*63*	**1021**	*1168*	*1172*

[a]Macroeconomic projections from DRI/McGraw-Hill model forecasts are seasonally adjusted at annual rates and modified as appropriate to the mid world oil price case. These mid-case macroeconomic projections are then modified by the low and high world oil price cases (as shown in Table 5) and by various explicit economic assumptions, with the low world oil price case applied to the high macroeconomic case, and the high world oil price case applied to the low macroeconomic case.

[b]OECD: Organization for Economic Cooperation and Development.

[c]Population-weighted degree days. A degree day indicates the temperature variation from 65 degrees Farenheit (calculated as the simple average of the daily minimum and maximum temperatures) weighted by 1980 population. Normal is used for the forecast period and is defined as the average number of degree days between 1951 and 1980 for a given period.

Note: Historical data are printed in bold, forecasts are in italic.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(93/03); U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, October 1992; U.S. Department of Commerce, National Oceanic and Atmospheric Administration, *Monthly State, Regional, and National Heating/Cooling Degree Days Weighted by Population*; Federal Reserve System, *Statistical Release G.17(419)*, October 1992. Macroeconomic projections are based on DRI/McGraw-Hill Forecast CONTROL0393.

Table 3. U.S. Energy Indicators: Mid World Oil Price Case

	1992				1993				1994				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1992	1993	1994
Macroeconomic[a]															
Real Fixed Investment (billion 1987 dollars)	**681**	**706**	**710**	**734**	*750*	*768*	*784*	*804*	*827*	*852*	*875*	*898*	**708**	*777*	*863*
Real Exchange Rate (index)	**0.977**	**0.985**	**0.947**	**1.009**	*1.024*	*1.029*	*1.035*	*1.040*	*1.051*	*1.054*	*1.054*	*1.047*	**0.980**	*1.032*	*1.051*
Business Inventory Change (billion 1987 dollars)	**-8.7**	**-6.5**	**3.9**	**-16.7**	*1.4*	*1.6*	*1.8*	*3.3*	*5.6*	*11.0*	*16.0*	*19.3*	**-7.0**	*2.0*	*13.0*
Wholesale Price Index (index, 1980-1984=1.000)	**1.159**	**1.174**	**1.179**	**1.176**	*1.182*	*1.190*	*1.196*	*1.201*	*1.208*	*1.213*	*1.222*	*1.230*	**1.172**	*1.192*	*1.218*
Consumer Price Index (index, 1980-1984=1.000)	**1.389**	**1.399**	**1.409**	**1.420**	*1.433*	*1.443*	*1.454*	*1.464*	*1.475*	*1.486*	*1.498*	*1.510*	**1.404**	*1.449*	*1.492*
Petroleum Product Price Index (index, 1980-1984=1.000)	**0.589**	**0.660**	**0.680**	**0.655**	*0.663*	*0.696*	*0.666*	*0.628*	*0.698*	*0.726*	*0.699*	*0.654*	**0.646**	*0.663*	*0.694*
Non-Farm Employment (millions)	**108.15**	**108.43**	**108.53**	**108.65**	*109.10*	*109.47*	*109.98*	*110.55*	*111.25*	*111.97*	*112.73*	*113.52*	**108.44**	*109.77*	*112.36*
Commercial Employment (millions)	**70.74**	**70.99**	**71.09**	**71.30**	*71.74*	*72.14*	*72.58*	*73.10*	*73.69*	*74.31*	*74.96*	*75.64*	**71.03**	*72.39*	*74.65*
Total Industrial Production (index, 1987=1.000)	**1.071**	**1.085**	**1.091**	**1.102**	*1.115*	*1.125*	*1.135*	*1.146*	*1.158*	*1.170*	*1.182*	*1.193*	**1.087**	*1.130*	*1.176*
Housing Stock (millions)	**105.12**	**105.39**	**105.62**	**105.90**	*106.20*	*106.50*	*106.80*	*107.10*	*107.47*	*107.80*	*108.10*	*108.47*	**105.51**	*106.65*	*107.96*
Miscellaneous															
Gas-Weighted Industrial Production (index, 1987=1.000)	**1.080**	**1.096**	**1.103**	**1.116**	*1.126*	*1.135*	*1.141*	*1.150*	*1.161*	*1.173*	*1.183*	*1.194*	**1.098**	*1.138*	*1.178*
Vehicle Miles Traveled (million miles per day)	**5596**	**6381**	**6517**	*5947*	*5750*	*6514*	*6653*	*6118*	*5913*	*6682*	*6832*	*6280*	*6110*	*6259*	*6427*
Vehicle Fuel Efficiency (index)	**18.99**	**20.72**	**20.82**	*19.46*	*19.32*	*21.03*	*21.10*	*19.73*	*19.65*	*21.39*	*21.46*	*20.07*	*20.00*	*20.30*	*20.64*
Real Vehicle Fuel Cost (index)	**4.27**	**4.11**	**4.19**	*4.40*	*4.23*	*4.04*	*4.06*	*4.23*	*4.17*	*3.99*	*4.01*	*4.18*	*4.24*	*4.14*	*4.09*
Air Travel Capacity (available ton-miles)	**315.7**	**330.3**	**350.0**	*334.5*	*332.3*	*337.7*	*354.7*	*342.6*	*337.4*	*348.2*	*367.1*	*355.2*	*332.6*	*341.8*	*352.0*
Aircraft Utilization (revenue ton-miles)	**162.3**	**180.7**	**205.2**	*177.5*	*171.4*	*185.1*	*200.5*	*181.4*	*176.1*	*190.7*	*207.5*	*187.9*	*181.4*	*184.6*	*190.6*
Aircraft Yield (cents per ton-mile)	**14.46**	**12.55**	**10.97**	*11.86*	*12.50*	*12.37*	*11.54*	*12.37*	*12.89*	*12.65*	*11.73*	*12.52*	*12.46*	*12.20*	*12.45*
Residential Natural Gas Customers (millions)	**51.59**	*51.45*	*50.44*	*50.80*	*51.49*	*51.46*	*51.01*	*51.36*	*52.17*	*52.13*	*51.74*	*52.19*	*51.07*	*51.33*	*52.06*
Commerical Natural Gas Customers (millions)	**4.43**	*4.38*	*4.17*	*4.23*	*4.35*	*4.32*	*4.22*	*4.29*	*4.43*	*4.40*	*4.32*	*4.42*	*4.30*	*4.30*	*4.39*
Raw Steel Production (millions)	**23.23**	**23.43**	**22.32**	*22.63*	*23.46*	*24.20*	*24.21*	*25.06*	*23.88*	*24.92*	*25.20*	*26.17*	*91.60*	*96.94*	*100.17*

[a]Macroeconomic projections from DRI/McGraw-Hill model forecasts are seasonally adjusted at annual rates and modified as appropriate to the mid world oil price case. These mid-case macroeconomic projections are then modified by the low and high world price cases (as shown in Table 5) and by various explicit economic assumptions, with low world oil price case applied to the high macroeconomic case, and high world oil price case applied to the low macroeconomic case.

Note: Historical data are printed in bold, forecasts are in italic.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(92/12); U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, October 1992; U.S. Department of Commerce, National Oceanic and Atmospheric Administration, *Monthly State, Regional, and National Heating/Cooling Degree Days Weighted by Population*; Federal Reserve System, *Statistical Release G.17(419)*, October 1992. Macroeconomic projections are based on DRI/McGraw-Hill Forecast CONTROL1292.

Table 4. International Petroleum Supply and Demand: Mid World Oil Price Case
(Million Barrels per Day, Except Closing Stocks)

	1992				1993				1994				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1992	1993	1994
Demand[a]															
OECD															
U.S. (50 States)	**16.89**	**16.70**	**16.95**	**17.48**	*17.26*	*16.95*	*17.28*	*17.84*	*17.93*	*17.22*	*17.55*	*18.06*	**17.01**	*17.33*	*17.69*
U.S. Territories	**0.23**	**0.22**	**0.20**	**0.21**	*0.22*	*0.22*	*0.21*	*0.22*	*0.23*	*0.23*	*0.22*	*0.23*	**0.21**	*0.22*	*0.22*
Canada	**1.63**	**1.58**	**1.67**	**1.72**	*1.64*	*1.63*	*1.69*	*1.78*	*1.68*	*1.66*	*1.73*	*1.82*	**1.65**	*1.68*	*1.73*
Europe[b]	**13.96**	**12.89**	**13.46**	**13.70**	*13.56*	*13.03*	*13.31*	*14.11*	*14.11*	*13.29*	*13.58*	*14.39*	**13.50**	*13.50*	*13.84*
Japan	**5.89**	**4.90**	**4.96**	**5.64**	*5.95*	*4.83*	*4.96*	*5.82*	*6.10*	*4.91*	*5.05*	*5.92*	**5.35**	*5.39*	*5.49*
Australia and New Zealand	**0.79**	**0.81**	**0.80**	**0.84**	*0.80*	*0.83*	*0.83*	*0.85*	*0.82*	*0.85*	*0.85*	*0.87*	**0.81**	*0.83*	*0.84*
Total OECD	**39.39**	**37.10**	**38.03**	**39.59**	*39.44*	*37.49*	*38.29*	*40.61*	*40.86*	*38.16*	*38.98*	*41.28*	**38.53**	*38.96*	*39.82*
Non-OECD															
Former Soviet Union	**7.96**	**7.04**	**6.25**	**6.11**	*6.29*	*5.94*	*5.80*	*5.89*	*5.79*	*5.47*	*5.34*	*5.42*	**6.84**	*5.98*	*5.50*
China	**2.58**	**2.58**	**2.68**	**2.68**	*2.80*	*2.82*	*2.84*	*2.80*	*3.00*	*3.02*	*3.04*	*3.00*	**2.63**	*2.82*	*3.01*
Europe	**1.20**	**1.17**	**1.11**	**1.17**	*1.19*	*1.16*	*1.10*	*1.16*	*1.23*	*1.21*	*1.15*	*1.20*	**1.16**	*1.15*	*1.20*
Other Non-OECD	**17.61**	**17.24**	**17.16**	**18.50**	*18.37*	*18.13*	*18.31*	*19.15*	*19.36*	*19.10*	*19.28*	*20.18*	**17.63**	*18.49*	*19.48*
Total Non-OECD	**29.35**	**28.04**	**27.20**	**28.46**	*28.65*	*28.05*	*28.05*	*29.01*	*29.38*	*28.79*	*28.80*	*29.81*	**28.26**	*28.44*	*29.19*
Total World Demand	**68.74**	**65.14**	**65.23**	**68.05**	*68.09*	*65.54*	*66.35*	*69.61*	*70.24*	*66.95*	*67.79*	*71.09*	**66.79**	*67.40*	*69.02*
Supply[c]															
OECD															
U.S. (50 States)	**9.89**	**9.75**	**9.59**	**9.75**	*9.58*	*9.33*	*9.27*	*9.41*	*9.34*	*9.13*	*9.11*	*9.22*	**9.74**	*9.40*	*9.20*
Canada	**2.10**	**2.01**	**2.12**	**2.12**	*2.11*	*2.06*	*2.08*	*2.11*	*2.13*	*2.08*	*2.10*	*2.13*	**2.09**	*2.09*	*2.11*
North Sea[d]	**4.38**	**4.11**	**4.24**	**4.59**	*4.32*	*4.13*	*4.32*	*4.85*	*4.93*	*4.68*	*4.74*	*5.24*	**4.33**	*4.40*	*4.90*
Other OECD	**1.47**	**1.47**	**1.47**	**1.45**	*1.43*	*1.43*	*1.43*	*1.43*	*1.45*	*1.45*	*1.45*	*1.45*	**1.46**	*1.43*	*1.45*
Total OECD	**17.83**	**17.34**	**17.42**	**17.90**	*17.44*	*16.94*	*17.10*	*17.80*	*17.84*	*17.34*	*17.40*	*18.04*	**17.62**	*17.32*	*17.65*
Non-OECD															
OPEC	**26.09**	**25.63**	**26.31**	**27.15**	*27.20*	*26.24*	*27.92*	*28.60*	*28.82*	*28.67*	*29.06*	*29.94*	**26.30**	*27.49*	*29.12*
Former Soviet Union	**9.37**	**9.16**	**8.69**	**8.44**	*8.16*	*7.89*	*7.62*	*7.37*	*7.21*	*7.06*	*6.91*	*6.76*	**8.91**	*7.76*	*6.98*
China	**2.84**	**2.84**	**2.83**	**2.84**	*2.86*	*2.86*	*2.86*	*2.86*	*2.87*	*2.87*	*2.87*	*2.87*	**2.84**	*2.86*	*2.87*
Mexico	**3.16**	**3.15**	**3.14**	**3.12**	*3.15*	*3.15*	*3.15*	*3.15*	*3.16*	*3.16*	*3.16*	*3.16*	**3.14**	*3.15*	*3.16*
Other Non-OECD	**7.99**	**8.05**	**8.16**	**8.09**	*8.21*	*8.31*	*8.52*	*8.62*	*8.62*	*8.72*	*8.83*	*8.93*	**8.07**	*8.41*	*8.78*
Total Non-OECD	**49.44**	**48.83**	**49.13**	**49.63**	*49.57*	*48.43*	*50.06*	*50.58*	*50.68*	*50.48*	*50.82*	*51.65*	**49.26**	*49.67*	*50.91*
Total World Supply	**67.28**	**66.17**	**66.55**	**67.53**	*67.01*	*65.37*	*67.16*	*68.38*	*68.52*	*67.81*	*68.22*	*69.69*	**66.88**	*66.99*	*68.56*
Stock Changes and Statistical Discrepancy															
Net Stock Withdrawals or Additions (-)															
U.S. (50 States including SPR)	**0.52**	**-0.36**	**-0.36**	**0.47**	*0.09*	*-0.51*	*-0.39*	*0.18*	*0.57*	*-0.47*	*-0.34*	*0.20*	**0.07**	*-0.16*	*-0.01*
Other	**1.12**	**-0.44**	**-1.52**	**-0.25**	*0.70*	*0.23*	*-0.88*	*0.61*	*0.71*	*-0.85*	*-0.55*	*0.74*	**-0.27**	*0.16*	*0.01*
Total Stock Withdrawals	**1.64**	**-0.80**	**-1.88**	**0.22**	*0.79*	*-0.28*	*-1.27*	*0.78*	*1.28*	*-1.32*	*-0.89*	*0.94*	**-0.21**	*0.00*	*0.00*
Statistical Discrepancy	**-0.18**	**-0.24**	**0.56**	**0.29**	*0.30*	*0.45*	*0.46*	*0.45*	*0.44*	*0.45*	*0.46*	*0.45*	**0.11**	*0.41*	*0.45*
Closing Stocks (billion barrels)[e]	**5.42**	**5.50**	**5.67**	**5.65**	*5.58*	*5.61*	*5.72*	*5.65*	*5.53*	*5.65*	*5.74*	*5.65*	**5.65**	*5.65*	*5.65*
Non-OPEC Supply	**41.19**	**40.54**	**40.24**	**40.39**	*39.81*	*39.14*	*39.24*	*39.79*	*39.70*	*39.14*	*39.16*	*39.76*	**40.59**	*39.49*	*39.44*
Net Exports from Former Soviet Union	**1.41**	**2.12**	**2.44**	**2.33**	*1.87*	*1.95*	*1.82*	*1.48*	*1.42*	*1.59*	*1.57*	*1.33*	**2.08**	*1.78*	*1.48*

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

[b]OECD Europe includes eastern Germany.

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

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

[e]Excludes stocks held in the Former CPEs.

OECD: Organization for Economic Cooperation and Development

OPEC: Organization of Petroleum Exporting Countries

SPR: Strategic Petroleum Reserve

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

Notes: Minor discrepancies with other published EIA historical data are due to rounding. Historical data are printed in bold, forecasts are in italic. The forecasts were generated by simulation of the Short-Term Integrated Forecasting System.

Sources: Energy Information Administration, *International Petroleum Statistics Report*, DOE/EIA-0520(93/03); and *International Energy Annual 1991*, DOE/EIA-0219(91); Organization for Economic Cooperation and Development, Annual and Monthly Oil Statistics Database through December 1992.

Table 5. U.S. Energy Prices
(Nominal Dollars)

	Price Case	1992				1993				1994				Year		
		1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1992	1993	1994
Imported Crude Oil[a]	Low						*16.00*	*16.00*	*16.00*	*16.00*	*16.00*	*17.00*	*17.00*		*16.30*	*16.52*
(dollars per barrel)	Mid	**16.16**	**18.65**	**19.43**	**18.36**	**17.27**	*18.00*	*19.00*	*19.00*	*19.00*	*19.00*	*20.00*	*20.00*	**18.22**	*18.34*	*19.51*
	High						*20.00*	*21.00*	*21.00*	*21.00*	*21.00*	*22.00*	*22.00*		*19.85*	*21.51*
Natural Gas Wellhead	Low						*1.74*	*1.59*	*1.93*	*1.96*	*1.66*	*1.78*	*2.06*		*1.82*	*1.87*
(dollars per thousand cubic feet)	Mid	**1.54**	**1.63**	**1.91**	**2.34**	**2.02**	*1.88*	*1.89*	*2.24*	*2.29*	*1.98*	*2.10*	*2.41*	**1.86**	*2.01*	*2.20*
	High						*1.99*	*2.17*	*2.52*	*2.58*	*2.28*	*2.40*	*2.74*		*2.18*	*2.50*
Petroleum Products																
Gasoline, Retail[b]	Low						*1.19*	*1.18*	*1.15*	*1.14*	*1.20*	*1.22*	*1.20*		*1.17*	*1.19*
(dollars per gallon)	Mid	**1.12**	**1.19**	**1.23**	**1.21**	**1.17**	*1.23*	*1.24*	*1.22*	*1.21*	*1.27*	*1.29*	*1.27*	**1.19**	*1.22*	*1.26*
	High						*1.26*	*1.29*	*1.27*	*1.26*	*1.32*	*1.34*	*1.31*		*1.25*	*1.31*
No. 2 Diesel Oil, Retail	Low						*1.08*	*1.08*	*1.16*	*1.15*	*1.13*	*1.16*	*1.19*		*1.11*	*1.16*
(dollars per gallon)	Mid	**1.06**	**1.11**	**1.13**	**1.15**	**1.13**	*1.13*	*1.15*	*1.23*	*1.22*	*1.20*	*1.23*	*1.26*	**1.11**	*1.16*	*1.23*
	High						*1.17*	*1.20*	*1.27*	*1.27*	*1.25*	*1.27*	*1.31*		*1.19*	*1.27*
No. 2 Heating Oil, Wholesale	Low						*0.51*	*0.51*	*0.55*	*0.53*	*0.51*	*0.53*	*0.58*		*0.53*	*0.54*
(dollars per gallon)	Mid	**0.53**	**0.59**	**0.62**	**0.59**	**0.56**	*0.56*	*0.58*	*0.63*	*0.61*	*0.58*	*0.61*	*0.66*	**0.58**	*0.58*	*0.62*
	High						*0.61*	*0.63*	*0.68*	*0.66*	*0.63*	*0.66*	*0.71*		*0.62*	*0.67*
No. 2 Heating Oil, Retail	Low						*0.88*	*0.84*	*0.91*	*0.92*	*0.88*	*0.87*	*0.94*		*0.90*	*0.91*
(dollars per gallon)	Mid	**0.94**	**0.92**	**0.90**	**0.94**	**0.94**	*0.92*	*0.91*	*0.98*	*1.00*	*0.96*	*0.95*	*1.02*	**0.93**	*0.94*	*0.99*
	High						*0.96*	*0.96*	*1.03*	*1.05*	*1.01*	*1.00*	*1.07*		*0.97*	*1.04*
No. 6 Residual Fuel Oil, Retail[c]	Low						*12.01*	*11.94*	*13.20*	*14.02*	*12.83*	*13.33*	*14.46*		*12.82*	*13.68*
(dollars per barrel)	Mid	**11.90**	**13.63**	**15.82**	**15.98**	**14.10**	*13.46*	*14.11*	*15.42*	*16.23*	*15.03*	*15.52*	*16.67*	**14.21**	*14.30*	*15.89*
	High						*14.91*	*15.56*	*16.89*	*17.71*	*16.51*	*17.01*	*18.15*		*15.40*	*17.37*
Electric Utility Fuels																
Coal	Low						*1.41*	*1.38*	*1.37*	*1.38*	*1.40*	*1.39*	*1.39*		*1.39*	*1.39*
(dollars per million Btu)	Mid	**1.42**	**1.43**	**1.40**	**1.41**	**1.42**	*1.43*	*1.41*	*1.40*	*1.41*	*1.43*	*1.43*	*1.42*	**1.41**	*1.41*	*1.42*
	High						*1.47*	*1.45*	*1.45*	*1.46*	*1.48*	*1.47*	*1.47*		*1.46*	*1.47*
Heavy Oil[d]	Low						*2.06*	*2.09*	*2.37*	*2.41*	*2.19*	*2.31*	*2.58*		*2.22*	*2.36*
(dollars per million Btu)	Mid	**2.14**	**2.36**	**2.72**	**2.78**	**2.42**	*2.29*	*2.43*	*2.73*	*2.76*	*2.53*	*2.66*	*2.94*	**2.48**	*2.46*	*2.71*
	High						*2.51*	*2.66*	*2.97*	*2.99*	*2.76*	*2.89*	*3.17*		*2.63*	*2.94*
Natural Gas	Low						*2.21*	*2.11*	*2.39*	*2.43*	*2.14*	*2.25*	*2.52*		*2.27*	*2.31*
(dollars per million Btu)	Mid	**2.14**	**2.08**	**2.30**	**2.87**	**2.50**	*2.30*	*2.34*	*2.65*	*2.69*	*2.40*	*2.52*	*2.81*	**2.33**	*2.42*	*2.58*
	High						*2.38*	*2.54*	*2.87*	*2.91*	*2.63*	*2.76*	*3.06*		*2.56*	*2.82*
Other Residential																
Natural Gas	Low						*6.32*	*7.31*	*5.89*	*5.76*	*6.29*	*7.44*	*6.03*		*6.02*	*6.08*
(dollars per thousand cubic feet)	Mid	**5.52**	**6.00**	**7.24**	**5.93**	**5.72**	*6.33*	*7.44*	*6.03*	*5.89*	*6.45*	*7.64*	*6.19*	**5.87**	*6.07*	*6.23*
	High						*6.34*	*7.56*	*6.15*	*6.00*	*6.60*	*7.83*	*6.34*		*6.12*	*6.36*
Electricity	Low						*8.2*	*8.4*	*8.0*	*7.7*	*8.2*	*8.5*	*8.0*		*8.1*	*8.1*
(cents per kilowatthour)	Mid	**7.8**	**8.3**	**8.6**	**8.2**	**8.0**	*8.4*	*8.7*	*8.2*	*8.0*	*8.6*	*8.8*	*8.4*	**8.2**	*8.3*	*8.4*
	High						*8.6*	*8.9*	*8.4*	*8.4*	*9.0*	*9.3*	*8.8*		*8.5*	*8.9*

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

Notes: Data are estimated for the fourth quarter of 1992. Prices exclude taxes, except prices for gasoline, residential natural gas, and diesel. Price cases are derived by simulating all energy product price models under the assumptions of the threeworld oil price cases using the mid macroeconomic case and normal weather assumptions for all simulations. Historical data are printed in bold, forecasts are in italic. The forecasts were generated by the following simulations of the Short-Term Integrated Forecasting System: for the mid oil price case, for the low oil price case, and for the high oil price case.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(93/03); and *Petroleum Marketing Monthly*, DOE/EIA-0380(93/02).

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

	1992				1993				1994				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1992	1993	1994
Supply															
Crude Oil Supply															
Domestic Production[a]	**7.35**	**7.18**	**7.01**	**7.07**	**7.00**	*6.70*	*6.58*	*6.64*	*6.62*	*6.45*	*6.36*	*6.35*	**7.15**	*6.73*	*6.44*
Alaska	**1.79**	**1.71**	**1.66**	**1.69**	**1.64**	*1.53*	*1.49*	*1.58*	*1.60*	*1.52*	*1.50*	*1.52*	**1.71**	*1.56*	*1.54*
Lower 48	**5.56**	**5.47**	**5.35**	**5.38**	**5.36**	*5.18*	*5.09*	*5.06*	*5.02*	*4.92*	*4.86*	*4.83*	**5.44**	*5.17*	*4.91*
Net Imports (including SPR)[b]	**5.34**	**5.97**	**6.40**	**6.14**	**6.08**	*6.53*	*7.06*	*6.71*	*6.51*	*7.05*	*7.27*	*7.21*	**5.97**	*6.60*	*7.01*
Gross Imports (excluding SPR)	**5.42**	**6.04**	**6.48**	**6.23**	**6.19**	*6.62*	*7.13*	*6.82*	*6.63*	*7.15*	*7.36*	*7.32*	**6.04**	*6.69*	*7.12*
SPR Imports	**0.00**	**0.01**	**0.01**	**0.02**	**0.01**	*0.02*	*0.02*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	**0.01**	*0.01*	*0.00*
Exports	**0.08**	**0.08**	**0.08**	**0.11**	**0.12**	*0.10*	*0.09*	*0.10*	*0.12*	*0.10*	*0.09*	*0.10*	**0.09**	*0.10*	*0.10*
Other SPR Supply	**0.00**	**0.00**	**0.01**	**0.02**	**0.02**	*0.02*	*0.02*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	**0.01**	*0.02*	*0.01*
SPR Stock Withdrawn or Added (-)	**0.00**	**-0.01**	**-0.02**	**-0.04**	**-0.03**	*-0.04*	*-0.04*	*-0.01*	*-0.01*	*-0.01*	*-0.01*	*-0.01*	**-0.02**	*-0.03*	*-0.01*
Other Stock Withdrawn or Added (-)	**-0.15**	**0.15**	**0.03**	**0.04**	**-0.26**	*0.04*	*-0.02*	*0.00*	*-0.02*	*0.04*	*-0.02*	*0.00*	**0.02**	*-0.06*	*0.00*
Product Supplied and Losses	**-0.02**	**-0.01**	**-0.01**	**-0.01**	**-0.02**	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	**-0.01**	*-0.02*	*-0.02*
Unaccounted-for Crude Oil	**0.32**	**0.38**	**0.26**	**0.21**	**0.14**	*0.30*	*0.31*	*0.30*	*0.29*	*0.30*	*0.31*	*0.30*	**0.29**	*0.26*	*0.30*
Total Crude Oil Supply	**12.84**	**13.66**	**13.69**	**13.44**	**12.93**	*13.54*	*13.89*	*13.63*	*13.39*	*13.82*	*13.90*	*13.85*	**13.41**	*13.50*	*13.74*
Other Supply															
NGL Production	**1.69**	**1.70**	**1.65**	**1.73**	**1.72**	*1.67*	*1.64*	*1.65*	*1.64*	*1.63*	*1.62*	*1.64*	**1.70**	*1.67*	*1.63*
Other Hydrocarbon and Alcohol Inputs	**0.12**	**0.09**	**0.13**	**0.18**	**0.16**	*0.09*	*0.14*	*0.21*	*0.16*	*0.09*	*0.14*	*0.22*	**0.13**	*0.15*	*0.15*
Crude Oil Product Supplied	**0.02**	**0.01**	**0.01**	**0.01**	**0.02**	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	**0.01**	*0.02*	*0.02*
Processing Gain	**0.73**	**0.78**	**0.79**	**0.76**	**0.70**	*0.73*	*0.75*	*0.74*	*0.71*	*0.74*	*0.75*	*0.75*	**0.76**	*0.73*	*0.74*
Net Product Imports[c]	**0.83**	**0.96**	**1.04**	**0.89**	**1.36**	*1.48*	*1.31*	*1.45*	*1.51*	*1.54*	*1.58*	*1.48*	**0.93**	*1.40*	*1.53*
Gross Product Imports[c]	**1.72**	**1.81**	**1.81**	**1.83**	**2.18**	*2.32*	*2.12*	*2.35*	*2.40*	*2.39*	*2.40*	*2.38*	**1.79**	*2.24*	*2.39*
Product Exports	**0.89**	**0.85**	**0.77**	**0.94**	**0.82**	*0.84*	*0.81*	*0.90*	*0.89*	*0.85*	*0.82*	*0.91*	**0.86**	*0.84*	*0.87*
Product Stock Withdrawn or Added (-)[d]	**0.68**	**-0.50**	**-0.37**	**0.46**	**0.38**	*-0.51*	*-0.33*	*0.19*	*0.60*	*-0.49*	*-0.30*	*0.21*	**0.07**	*-0.07*	*0.00*
Total Supply	**16.90**	**16.70**	**16.95**	**17.48**	**17.27**	*17.01*	*17.41*	*17.88*	*18.03*	*17.35*	*17.70*	*18.16*	**17.01**	*17.39*	*17.81*
Demand															
Motor Gasoline	**7.01**	**7.33**	**7.45**	**7.28**	**7.08**	*7.40*	*7.55*	*7.43*	*7.21*	*7.48*	*7.63*	*7.49*	**7.27**	*7.37*	*7.45*
Jet Fuel	**1.41**	**1.39**	**1.48**	**1.52**	**1.50**	*1.40*	*1.48*	*1.51*	*1.48*	*1.41*	*1.50*	*1.53*	**1.45**	*1.47*	*1.48*
Distillate Fuel Oil	**3.21**	**2.84**	**2.78**	**3.09**	**3.48**	*2.95*	*2.84*	*3.27*	*3.58*	*3.06*	*2.93*	*3.37*	**2.98**	*3.14*	*3.23*
Residual Fuel Oil	**1.26**	**1.03**	**0.93**	**1.16**	**1.06**	*1.12*	*1.06*	*1.18*	*1.38*	*1.17*	*1.08*	*1.19*	**1.09**	*1.11*	*1.20*
Other Oils[e]	**3.99**	**4.12**	**4.30**	**4.43**	**4.14**	*4.14*	*4.47*	*4.49*	*4.39*	*4.24*	*4.56*	*4.58*	**4.21**	*4.31*	*4.44*
Total Demand	**16.89**	**16.70**	**16.95**	**17.48**	**17.27**	*17.01*	*17.41*	*17.88*	*18.03*	*17.35*	*17.70*	*18.16*	**17.01**	*17.39*	*17.81*
Total Petroleum Net Imports	**6.16**	**6.93**	**7.44**	**7.03**	**7.43**	*8.01*	*8.37*	*8.16*	*8.02*	*8.59*	*8.86*	*8.69*	**6.89**	*8.00*	*8.54*
Closing Stocks (million barrels)															
Crude Oil (excluding SPR)[f]	**339**	**325**	**322**	**318**	**342**	*338*	*340*	*340*	*342*	*338*	*340*	*340*	**318**	*340*	*340*
Total Motor Gasoline	**220**	**225**	**207**	**217**	**225**	*219*	*215*	*224*	*221*	*219*	*214*	*223*	**217**	*224*	*223*
Finished Motor Gasoline	**181**	**188**	**168**	**178**	**185**	*182*	*177*	*185*	*181*	*181*	*176*	*183*	**178**	*185*	*183*
Blending Components	**39**	**37**	**39**	**39**	**40**	*38*	*39*	*39*	*40*	*38*	*39*	*39*	**39**	*39*	*39*
Jet Fuel	**44**	**45**	**48**	**43**	**45**	*46*	*47*	*48*	*46*	*47*	*47*	*48*	**43**	*48*	*48*
Distillate Fuel Oil	**98**	**104**	**127**	**141**	**96**	*104*	*127*	*133*	*102*	*108*	*128*	*134*	**141**	*133*	*134*
Residual Fuel Oil	**40**	**40**	**47**	**43**	**42**	*44*	*45*	*48*	*42*	*45*	*46*	*48*	**43**	*48*	*48*
Other Oils[g]	**260**	**294**	**313**	**256**	**258**	*297*	*308*	*272*	*259*	*297*	*307*	*271*	**256**	*272*	*271*
Total Stocks (excluding SPR)	**1001**	**1033**	**1063**	**1017**	**1007**	*1049*	*1082*	*1064*	*1012*	*1053*	*1083*	*1063*	**1017**	*1064*	*1063*
Crude Oil in SPR	**569**	**570**	**571**	**575**	**577**	*580*	*584*	*585*	*586*	*587*	*589*	*590*	**575**	*585*	*590*
Total Stocks (including SPR)	**1569**	**1602**	**1635**	**1592**	**1584**	*1630*	*1666*	*1649*	*1598*	*1640*	*1671*	*1653*	**1592**	*1649*	*1653*

[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 data are printed in bold, forecasts are in italic. The forecasts were generated by simulation of the Short-Term Integrated Forecasting System.

Sources: Historical data: Energy Information Administration, *Petroleum Supply Annual 1991*, DOE/EIA-0340(91)/1; *Petroleum Supply Monthly*, DOE/EIA-0109(91/01-93/03); and *Weekly Petroleum Status Report*, DOE/EIA-0208(various issues).

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

	1992				1993				1994				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1992	1993	1994
Supply															
Crude Oil Supply															
Domestic Production[a]	**7.35**	**7.18**	**7.01**	**7.07**	**7.00**	*6.84*	*6.74*	*6.82*	*6.82*	*6.66*	*6.60*	*6.61*	**7.15**	*6.85*	*6.67*
Alaska	**1.79**	**1.71**	**1.66**	**1.69**	**1.64**	*1.58*	*1.54*	*1.63*	*1.65*	*1.58*	*1.56*	*1.57*	**1.71**	*1.60*	*1.59*
Lower 48	**5.56**	**5.47**	**5.35**	**5.38**	**5.36**	*5.26*	*5.20*	*5.19*	*5.17*	*5.09*	*5.04*	*5.04*	**5.44**	*5.25*	*5.09*
Net Imports (including SPR)[b]	**5.34**	**5.97**	**6.40**	**6.14**	**6.08**	*6.38*	*6.87*	*6.46*	*6.26*	*6.81*	*7.03*	*6.86*	**5.97**	*6.45*	*6.74*
Gross Imports (excluding SPR)	**5.42**	**6.04**	**6.48**	**6.23**	**6.19**	*6.47*	*6.94*	*6.57*	*6.38*	*6.91*	*7.12*	*6.97*	**6.04**	*6.54*	*6.85*
SPR Imports	**0.00**	**0.01**	**0.01**	**0.02**	**0.01**	*0.02*	*0.02*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	**0.01**	*0.01*	*0.00*
Exports	**0.08**	**0.08**	**0.08**	**0.11**	**0.12**	*0.10*	*0.09*	*0.10*	*0.12*	*0.10*	*0.09*	*0.10*	**0.09**	*0.10*	*0.10*
Other SPR Supply	**0.00**	**0.00**	**0.01**	**0.02**	**0.02**	*0.02*	*0.02*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	**0.01**	*0.02*	*0.01*
SPR Stock Withdrawn or Added (-)	**0.00**	**-0.01**	**-0.02**	**-0.04**	**-0.03**	*-0.04*	*-0.04*	*-0.01*	*-0.01*	*-0.01*	*-0.01*	*-0.01*	**-0.02**	*-0.03*	*-0.01*
Other Stock Withdrawn or Added (-)	**-0.15**	**0.15**	**0.03**	**0.04**	**-0.26**	*0.04*	*-0.02*	*0.00*	*-0.02*	*0.04*	*-0.02*	*0.00*	**0.02**	*-0.06*	*0.00*
Product Supplied and Losses	**-0.02**	**-0.01**	**-0.01**	**-0.01**	**-0.02**	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	**-0.01**	*-0.02*	*-0.02*
Unaccounted-for Crude Oil	**0.32**	**0.38**	**0.26**	**0.21**	**0.14**	*0.30*	*0.30*	*0.30*	*0.29*	*0.30*	*0.31*	*0.30*	**0.29**	*0.26*	*0.30*
Total Crude Oil Supply	**12.84**	**13.66**	**13.69**	**13.44**	**12.93**	*13.53*	*13.86*	*13.56*	*13.34*	*13.80*	*13.90*	*13.76*	**13.41**	*13.47*	*13.70*
Other Supply															
NGL Production	**1.69**	**1.70**	**1.65**	**1.73**	**1.72**	*1.67*	*1.64*	*1.65*	*1.65*	*1.64*	*1.62*	*1.64*	**1.70**	*1.67*	*1.64*
Other Hydrocarbon and Alcohol Inputs	**0.12**	**0.09**	**0.13**	**0.18**	**0.16**	*0.09*	*0.14*	*0.21*	*0.16*	*0.09*	*0.14*	*0.22*	**0.13**	*0.15*	*0.15*
Crude Oil Product Supplied	**0.02**	**0.01**	**0.01**	**0.01**	**0.02**	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	**0.01**	*0.02*	*0.02*
Processing Gain	**0.73**	**0.78**	**0.79**	**0.76**	**0.70**	*0.73*	*0.75*	*0.73*	*0.71*	*0.74*	*0.75*	*0.74*	**0.76**	*0.73*	*0.74*
Net Product Imports[c]	**0.83**	**0.96**	**1.04**	**0.89**	**1.36**	*1.43*	*1.21*	*1.47*	*1.46*	*1.43*	*1.43*	*1.46*	**0.93**	*1.37*	*1.44*
Gross Product Imports[c]	**1.72**	**1.81**	**1.81**	**1.83**	**2.18**	*2.27*	*2.02*	*2.38*	*2.35*	*2.28*	*2.25*	*2.36*	**1.79**	*2.21*	*2.31*
Product Exports	**0.89**	**0.85**	**0.77**	**0.94**	**0.82**	*0.84*	*0.81*	*0.90*	*0.89*	*0.85*	*0.82*	*0.91*	**0.86**	*0.84*	*0.87*
Product Stock Withdrawn or Added (-)[d]	**0.68**	**-0.50**	**-0.37**	**0.46**	**0.38**	*-0.51*	*-0.33*	*0.19*	*0.60*	*-0.49*	*-0.30*	*0.21*	**0.07**	*-0.07*	*0.00*
Total Supply	**16.90**	**16.70**	**16.95**	**17.48**	**17.26**	*16.95*	*17.28*	*17.84*	*17.93*	*17.22*	*17.55*	*18.06*	**17.01**	*17.33*	*17.69*
Demand															
Motor Gasoline	**7.01**	**7.33**	**7.45**	**7.28**	**7.08**	*7.37*	*7.51*	*7.38*	*7.16*	*7.44*	*7.58*	*7.45*	**7.27**	*7.34*	*7.41*
Jet Fuel	**1.41**	**1.39**	**1.48**	**1.52**	**1.50**	*1.40*	*1.48*	*1.51*	*1.48*	*1.41*	*1.50*	*1.53*	**1.45**	*1.47*	*1.48*
Distillate Fuel Oil	**3.21**	**2.84**	**2.78**	**3.09**	**3.48**	*2.95*	*2.83*	*3.28*	*3.57*	*3.04*	*2.92*	*3.36*	**2.98**	*3.13*	*3.22*
Residual Fuel Oil	**1.26**	**1.03**	**0.93**	**1.16**	**1.06**	*1.09*	*1.01*	*1.18*	*1.36*	*1.12*	*1.03*	*1.17*	**1.09**	*1.09*	*1.17*
Other Oils[e]	**3.99**	**4.12**	**4.30**	**4.43**	**4.14**	*4.14*	*4.45*	*4.49*	*4.37*	*4.21*	*4.52*	*4.56*	**4.21**	*4.31*	*4.41*
Total Demand	**16.89**	**16.70**	**16.95**	**17.48**	**17.26**	*16.95*	*17.28*	*17.84*	*17.93*	*17.22*	*17.55*	*18.06*	**17.01**	*17.33*	*17.69*
Total Petroleum Net Imports	**6.16**	**6.93**	**7.44**	**7.03**	**7.43**	*7.81*	*8.08*	*7.93*	*7.72*	*8.24*	*8.46*	*8.32*	**6.89**	*7.82*	*8.19*
Closing Stocks (million barrels)															
Crude Oil (excluding SPR)[f]	**339**	**325**	**322**	**318**	**342**	*338*	*340*	*340*	*342*	*338*	*340*	*340*	**318**	*340*	*340*
Total Motor Gasoline	**220**	**225**	**207**	**217**	**225**	*219*	*215*	*224*	*221*	*219*	*214*	*223*	**217**	*224*	*223*
Finished Motor Gasoline	**181**	**188**	**168**	**178**	**185**	*182*	*177*	*185*	*181*	*181*	*176*	*183*	**178**	*185*	*183*
Blending Components	**39**	**37**	**39**	**39**	**40**	*38*	*39*	*39*	*40*	*38*	*39*	*39*	**39**	*39*	*39*
Jet Fuel	**44**	**45**	**48**	**43**	**45**	*46*	*47*	*48*	*46*	*47*	*47*	*48*	**43**	*48*	*48*
Distillate Fuel Oil	**98**	**104**	**127**	**141**	**96**	*104*	*127*	*133*	*102*	*108*	*128*	*134*	**141**	*133*	*134*
Residual Fuel Oil	**40**	**40**	**47**	**43**	**42**	*44*	*45*	*48*	*42*	*45*	*46*	*48*	**43**	*48*	*48*
Other Oils[g]	**260**	**294**	**313**	**256**	**258**	*297*	*308*	*272*	*259*	*297*	*307*	*271*	**256**	*272*	*271*
Total Stocks (excluding SPR)	**1001**	**1033**	**1063**	**1017**	**1007**	*1049*	*1082*	*1064*	*1012*	*1053*	*1083*	*1063*	**1017**	*1064*	*1063*
Crude Oil in SPR	**569**	**570**	**571**	**575**	**577**	*580*	*584*	*585*	*586*	*587*	*589*	*590*	**575**	*585*	*590*
Total Stocks (including SPR)	**1569**	**1602**	**1635**	**1592**	**1584**	*1630*	*1666*	*1649*	*1598*	*1640*	*1671*	*1653*	**1592**	*1649*	*1653*

[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 data are printed in bold, forecasts are in italic. The forecasts were generated by simulation of the Short-Term Integrated Forecasting System.

Sources: Historical data: Energy Information Administration, *Petroleum Supply Annual 1991*, DOE/EIA-0340(91)/1; *Petroleum Supply Monthly*, DOE/EIA-0109(91/01-93/03); and *Weekly Petroleum Status Report*, DOE/EIA-0208(various issues).

Table 8. U.S. Petroleum Supply and Demand: High World Oil Price Case
(Million Barrels per Day, Except Closing Stocks)

	1992				1993				1994				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1992	1993	1994
Supply															
Crude Oil Supply															
Domestic Production[a]	7.35	7.18	7.01	7.07	7.00	6.95	6.89	6.98	7.00	6.84	6.79	6.80	7.15	6.95	6.86
Alaska	1.79	1.71	1.66	1.69	1.64	1.61	1.57	1.66	1.68	1.61	1.59	1.60	1.71	1.62	1.62
Lower 48	5.56	5.47	5.35	5.38	5.36	5.34	5.32	5.32	5.31	5.24	5.20	5.20	5.44	5.33	5.24
Net Imports (including SPR)[b]	5.34	5.97	6.40	6.14	6.08	6.26	6.67	6.24	6.05	6.60	6.85	6.61	5.97	6.31	6.53
Gross Imports (excluding SPR)	5.42	6.04	6.48	6.23	6.19	6.34	6.74	6.35	6.17	6.70	6.94	6.72	6.04	6.41	6.63
SPR Imports	0.00	0.01	0.01	0.02	0.01	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00
Exports	0.08	0.08	0.08	0.11	0.12	0.10	0.09	0.10	0.12	0.10	0.09	0.10	0.09	0.10	0.10
Other SPR Supply	0.00	0.00	0.01	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01
SPR Stock Withdrawn or Added (-)	0.00	-0.01	-0.02	-0.04	-0.03	-0.04	-0.04	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.03	-0.01
Other Stock Withdrawn or Added (-)	-0.15	0.15	0.03	0.04	-0.26	0.04	-0.02	0.00	-0.02	0.04	-0.02	0.00	0.02	-0.06	0.00
Product Supplied and Losses	-0.02	-0.01	-0.01	-0.01	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.01	-0.02	-0.02
Unaccounted-for Crude Oil	0.32	0.38	0.26	0.21	0.14	0.30	0.30	0.30	0.29	0.30	0.31	0.30	0.29	0.26	0.30
Total Crude Oil Supply	12.84	13.66	13.69	13.44	12.93	13.51	13.81	13.50	13.29	13.77	13.90	13.70	13.41	13.44	13.67
Other Supply															
NGL Production	1.69	1.70	1.65	1.73	1.72	1.67	1.64	1.65	1.65	1.64	1.63	1.65	1.70	1.67	1.64
Other Hydrocarbon and Alcohol Inputs	0.12	0.09	0.13	0.18	0.16	0.09	0.14	0.21	0.16	0.09	0.14	0.22	0.13	0.15	0.15
Crude Oil Product Supplied	0.02	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.02
Processing Gain	0.73	0.78	0.79	0.76	0.70	0.72	0.74	0.73	0.71	0.74	0.75	0.74	0.76	0.72	0.73
Net Product Imports[c]	0.83	0.96	1.04	0.89	1.35	1.39	1.17	1.49	1.44	1.38	1.33	1.46	0.93	1.35	1.40
Gross Product Imports[c]	1.72	1.81	1.81	1.83	2.18	2.23	1.98	2.39	2.33	2.23	2.15	2.37	1.79	2.19	2.27
Product Exports	0.89	0.85	0.77	0.94	0.82	0.84	0.81	0.90	0.89	0.85	0.82	0.91	0.86	0.84	0.87
Product Stock Withdrawn or Added (-)[d]	0.68	-0.50	-0.37	0.46	0.38	-0.51	-0.33	0.19	0.60	-0.49	-0.30	0.21	0.07	-0.07	0.00
Total Supply	16.90	16.70	16.95	17.48	17.26	16.89	17.19	17.80	17.87	17.14	17.46	18.00	17.01	17.29	17.61
Demand															
Motor Gasoline	7.01	7.33	7.45	7.28	7.08	7.35	7.48	7.35	7.13	7.41	7.55	7.42	7.27	7.32	7.38
Jet Fuel	1.41	1.39	1.48	1.52	1.50	1.40	1.48	1.50	1.47	1.41	1.50	1.52	1.45	1.47	1.48
Distillate Fuel Oil	3.21	2.84	2.78	3.09	3.48	2.94	2.82	3.28	3.56	3.03	2.91	3.35	2.98	3.13	3.21
Residual Fuel Oil	1.26	1.03	0.93	1.16	1.06	1.07	0.98	1.17	1.34	1.10	1.00	1.15	1.09	1.07	1.15
Other Oils[e]	3.99	4.12	4.30	4.43	4.14	4.13	4.43	4.49	4.36	4.19	4.50	4.55	4.21	4.30	4.40
Total Demand	16.89	16.70	16.95	17.48	17.26	16.89	17.19	17.80	17.87	17.14	17.46	18.00	17.01	17.29	17.61
Total Petroleum Net Imports	6.16	6.93	7.44	7.03	7.43	7.65	7.84	7.73	7.48	7.97	8.18	8.08	6.89	7.67	7.93
Closing Stocks (million barrels)															
Crude Oil (excluding SPR)[f]	339	325	322	318	342	338	340	340	342	338	340	340	318	340	340
Total Motor Gasoline	220	225	207	217	225	219	215	224	221	219	214	223	217	224	223
Finished Motor Gasoline	181	188	168	178	185	182	177	185	181	181	176	183	178	185	183
Blending Components	39	37	39	39	40	38	39	39	40	38	39	39	39	39	39
Jet Fuel	44	45	48	43	45	46	47	48	46	47	47	48	43	48	48
Distillate Fuel Oil	98	104	127	141	96	104	127	133	102	108	128	134	141	133	134
Residual Fuel Oil	40	40	47	43	42	44	45	48	42	45	46	48	43	48	48
Other Oils[g]	260	294	313	256	258	297	308	272	259	297	307	271	256	272	271
Total Stocks (excluding SPR)	1001	1033	1063	1017	1007	1049	1082	1064	1012	1053	1083	1063	1017	1064	1063
Crude Oil in SPR	569	570	571	575	577	580	584	585	586	587	589	590	575	585	590
Total Stocks (including SPR)	1569	1602	1635	1592	1584	1630	1666	1649	1598	1640	1671	1653	1592	1649	1653

[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 data are printed in bold, forecasts are in italic. The forecasts were generated by simulation of the Short-Term Integrated Forecasting System.

Sources: Historical data: Energy Information Administration, *Petroleum Supply Annual 1991*, DOE/EIA-0340(91)/1; *Petroleum Supply Monthly*, DOE/EIA-0109(91/01-93/03); and *Weekly Petroleum Status Report*, DOE/EIA-0208(various issues).

Table 9. U.S. Petroleum Demand Sensitivities

	1993	1994
	Three Quarters[a]	Four Quarters[a]
Economic Activity		
Gross Domestic Product (billion 1987 dollars)	*5,036 - 5,138*	*5,132 - 5,352*
Resulting Change in Petroleum Demand (million barrels per day)[b]	*0.29*	*0.62*
Energy Prices		
Imported Crude Oil (nominal dollars per barrel)[c]	*$16.00 - $20.67*	*$16.50 - $21.50*
Resulting Change in Petroleum Demand (million barrels per day)[b]		
Due to Changes in All Energy Prices	*0.13*	*0.14*
Due to Changes in the Crude Oil Price	*0.14*	*0.20*
Weather		
Heating Degree Days per Day[d]	*16.73 - 20.38*	*20.84 - 24.64*
Resulting Change in Petroleum Demand (million barrels per day)	*0.59*	*0.74*
Cooling Degree Days per Day[d]	*5.51 - 6.52*	*5.51 - 6.52*
Resulting Change in Petroleum Demand (million barrels per day)[b]	*0.08*	*0.22*

[a]In the weather case, calculations apply to certain quarters only, as follows: for heating degree days, the average of first and fourth quarters only are used; for cooling degree days, the average of second and third quarters only are used.
[b]Ranges of petroleum product supplied associated with varying each determinant (or determinants), holding other things equal.
[c]Cost of imported crude oil to U.S. refiners.
[d]Heating and cooling degree days are U.S. 1980 population-weighted.
Source: Energy Information Administration, Office of Energy Markets and End Use, Energy Markets and Contingency Information Division, Short-Term Integrated Forecasting System.

Table 10. Forecast Components for U.S. Crude Oil Production (Million Barrels per Day)

	High Price Case	Low Price Case	Difference		
			Total	Uncertainty	Price Impact
United States	*6.80*	*6.35*	*0.45*	*0.15*	*0.30*
Lower 48 States	*5.20*	*4.83*	*0.37*	*0.11*	*0.26*
Alaska	*1.60*	*1.52*	*0.08*	*0.04*	*0.04*

Note: Components provided are for the fourth quarter 1994 from Tables 6 and 8. Totals may not add to sum of components due to independent rounding.
Source: Energy Information Administration, Office of Oil and Gas, Reserves and Natural Gas Division.

Table 11. U.S. Natural Gas Supply and Demand: Mid World Oil Price Case
(Trillion Cubic Feet)

	1992				1993				1994				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1992	1993	1994
Supply															
Total Dry Gas Production[a]	**4.48**	**4.30**	**4.34**	**4.61**	**4.76**	*4.57*	*4.52*	*4.82*	*4.73*	*4.67*	*4.55*	*4.87*	**17.74**	*18.66*	*18.81*
Net Imports	**0.47**	**0.45**	**0.44**	**0.46**	**0.49**	*0.48*	*0.49*	*0.59*	*0.61*	*0.58*	*0.57*	*0.65*	**1.82**	*2.06*	*2.40*
Supplemental Gaseous Fuels	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	*0.03*	*0.02*	*0.03*	*0.03*	*0.02*	*0.02*	*0.03*	**0.12**	*0.11*	*0.11*
Total New Supply	**4.98**	**4.78**	**4.81**	**5.11**	**5.29**	*5.07*	*5.03*	*5.44*	*5.36*	*5.27*	*5.14*	*5.55*	**19.68**	*20.83*	*21.32*
Underground Working Gas Storage															
Opening	**2.82**	**1.54**	**2.15**	**3.05**	**2.59**	*1.38*	*2.07*	*3.00*	*2.90*	*1.58*	*2.28*	*3.19*	**2.82**	*2.59*	*2.90*
Closing	**1.54**	**2.15**	**3.05**	**2.59**	**1.38**	*2.07*	*3.00*	*2.90*	*1.58*	*2.28*	*3.19*	*3.02*	**2.59**	*2.90*	*3.02*
Net Withdrawals[b]	**1.20**	**-0.61**	**-0.88**	**0.48**	**1.22**	*-0.69*	*-0.93*	*0.10*	*1.32*	*-0.69*	*-0.92*	*0.17*	**0.18**	*-0.29*	*-0.12*
Total Supply[a]	**6.18**	**4.17**	**3.93**	**5.58**	**6.51**	*4.38*	*4.11*	*5.54*	*6.69*	*4.57*	*4.22*	*5.73*	**19.86**	*20.53*	*21.21*
Balancing Item[c]	**0.03**	**0.22**	**-0.04**	**-0.34**	**0.04**	*0.32*	*-0.10*	*-0.39*	*0.02*	*0.27*	*-0.06*	*-0.37*	**-0.13**	*-0.13*	*-0.13*
Total Primary Supply[a]	**6.21**	**4.39**	**3.89**	**5.24**	**6.55**	*4.70*	*4.01*	*5.14*	*6.70*	*4.85*	*4.17*	*5.36*	**19.73**	*20.40*	*21.08*
Demand															
Lease and Plant Fuel	**0.29**	**0.28**	**0.28**	**0.30**	**0.30**	*0.28*	*0.28*	*0.30*	*0.31*	*0.29*	*0.29*	*0.30*	**1.15**	*1.16*	*1.19*
Pipeline Use	**0.22**	**0.16**	**0.14**	**0.18**	**0.22**	*0.17*	*0.15*	*0.17*	*0.21*	*0.16*	*0.15*	*0.17*	**0.70**	*0.71*	*0.69*
Residential	**2.06**	**0.85**	**0.40**	**1.40**	**2.20**	*0.97*	*0.44*	*1.32*	*2.28*	*0.98*	*0.44*	*1.35*	**4.70**	*4.93*	*5.05*
Commercial	**1.08**	**0.54**	**0.36**	**0.79**	**1.11**	*0.56*	*0.36*	*0.74*	*1.16*	*0.57*	*0.36*	*0.75*	**2.77**	*2.77*	*2.85*
Industrial	**2.01**	**1.84**	**1.80**	**1.99**	**2.17**	*1.91*	*1.83*	*1.98*	*2.19*	*2.04*	*1.96*	*2.12*	**7.64**	*7.89*	*8.32*
Electric Utilities	**0.55**	**0.73**	**0.91**	**0.58**	**0.54**	*0.81*	*0.95*	*0.63*	*0.55*	*0.80*	*0.97*	*0.66*	**2.77**	*2.94*	*2.98*
Total Demand	**6.21**	**4.39**	**3.89**	**5.24**	**6.55**	*4.70*	*4.01*	*5.14*	*6.70*	*4.85*	*4.17*	*5.36*	**19.73**	*20.40*	*21.08*

[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.

[c]The balancing item represents the difference between the sum of the components of natural gas supply and the sum of components of natural gas demand.

Notes: Minor discrepancies with other EIA published historical data are due to rounding. Historical data are printed in bold, forecasts are in italic. The forecasts were generated by simulation of the Short-Term Integrated Forecasting System.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(93/03); *Natural Gas Monthly*, DOE/EIA-0130(93/03); and *Electric Power Monthly*, DOE/EIA-0226(93/03).

Table 12. U.S. Coal Supply and Demand: Mid World Oil Price Case
(Million Short Tons)

	1992				1993				1994				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1992	1993	1994
Supply															
Production	**256.7**	**243.4**	**249.7**	**250.5**	**253.8**	*249.6*	*254.8*	*260.7*	*255.1*	*255.7*	*260.2*	*268.1*	**1000.2**	*1018.9*	*1039.1*
Primary Stock Levels[a]															
Opening	**33.0**	**39.9**	**40.5**	**35.2**	**34.0**	*36.5*	*35.5*	*33.0*	*34.0*	*35.0*	*36.0*	*33.0*	**33.0**	*34.0*	*34.0*
Closing	**39.9**	**40.5**	**35.2**	**34.0**	**36.5**	*35.5*	*33.0*	*34.0*	*35.0*	*36.0*	*33.0*	*33.0*	**34.0**	*34.0*	*33.0*
Net Withdrawals	**-6.9**	**-0.7**	**5.3**	**1.2**	**-2.5**	*1.0*	*2.5*	*-1.0*	*-1.0*	*-1.0*	*3.0*	*0.0*	**-1.0**	*0.0*	*1.0*
Imports	**0.7**	**1.0**	**0.9**	**1.2**	**0.7**	*0.8*	*0.8*	*0.8*	*0.7*	*0.8*	*0.8*	*0.8*	**3.8**	*3.1*	*3.1*
Exports	**24.7**	**27.0**	**26.5**	**24.3**	**22.6**	*26.6*	*26.7*	*26.7*	*24.2*	*26.9*	*27.6*	*27.3*	**102.5**	*102.7*	*106.1*
Total Net Domestic Supply	**225.7**	**216.8**	**229.4**	**228.6**	**229.4**	*224.7*	*231.3*	*233.8*	*230.6*	*228.5*	*236.4*	*241.6*	**900.5**	*919.3*	*937.1*
Secondary Stock Levels[b]															
Opening	**167.7**	**168.6**	**173.1**	**161.0**	**163.0**	*165.6*	*170.7*	*162.7*	*167.0*	*169.1*	*173.8*	*163.8*	**167.7**	*163.0*	*167.0*
Closing	**168.6**	**173.1**	**161.0**	**163.0**	**165.6**	*170.7*	*162.7*	*167.0*	*169.1*	*173.8*	*163.8*	*168.0*	**163.0**	*167.0*	*168.0*
Net Withdrawals	**-0.9**	**-4.5**	**12.1**	**-2.0**	**-2.6**	*-5.1*	*8.0*	*-4.3*	*-2.1*	*-4.8*	*10.0*	*-4.2*	**4.7**	*-4.0*	*-1.0*
Total Supply	**224.8**	**212.3**	**241.5**	**226.6**	**226.8**	*219.6*	*239.4*	*229.5*	*228.6*	*223.7*	*246.4*	*237.4*	**905.3**	*915.2*	*936.1*
Demand															
Coke Plants	**8.3**	**8.1**	**8.2**	**7.7**	**7.9**	*8.1*	*8.3*	*8.6*	*8.4*	*8.7*	*8.8*	*9.1*	**32.4**	*32.9*	*35.0*
Electric Utilities	**190.9**	**183.9**	**210.3**	**194.8**	**197.4**	*191.9*	*211.6*	*198.8*	*197.9*	*195.4*	*218.0*	*205.9*	**779.8**	*799.8*	*817.2*
Retail and General Industry[c]	**21.0**	**18.4**	**19.0**	**21.8**	**21.5**	*19.6*	*19.4*	*22.1*	*22.3*	*19.6*	*19.6*	*22.4*	**80.4**	*82.6*	*83.9*
Total Demand	**220.3**	**210.4**	**237.5**	**224.3**	**226.8**	*219.6*	*239.4*	*229.5*	*228.6*	*223.7*	*246.4*	*237.4*	**892.6**	*915.2*	*936.1*
Discrepancy[d]	**4.5**	**1.9**	**4.0**	**2.3**	**0.0**	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	**12.7**	*0.0*	*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 demand in 1992 was 1.7 million tons per quarter, and is assumed to remain at that level in 1993 and 1994.
[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 50,000 tons. Historical data are printed in bold, forecasts are in italic. The forecasts were generated by simulation of the Short-Term Integrated Forecasting System.

Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(93/03); and *Quarterly Coal Report*, DOE/EIA-0221(92/4Q).

Table 13. U.S. Electricity Supply and Demand: Mid World Oil Price Case
(Billion Kilowatthours)

	1992				1993				1994				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1992	1993	1994
Supply															
Net Utility Generation															
Coal	**386.6**	**373.4**	**423.8**	**391.5**	**396.7**	*388.4*	*423.9*	*399.5*	*398.0*	*395.3*	*437.0*	*414.3*	**1575.3**	*1608.4*	*1644.6*
Petroleum	**27.3**	**18.7**	**22.3**	**20.2**	**25.7**	*26.5*	*27.2*	*22.4*	*31.3*	*29.7*	*29.5*	*23.4*	**88.5**	*101.8*	*114.0*
Natural Gas	**52.2**	**69.5**	**86.8**	**55.1**	**51.0**	*75.0*	*88.3*	*58.6*	*50.5*	*73.7*	*90.1*	*61.3*	**263.7**	*272.8*	*275.6*
Nuclear	**156.5**	**139.1**	**165.6**	**157.6**	**157.7**	*137.0*	*167.7*	*155.1*	*157.9*	*138.8*	*169.5*	*156.0*	**618.8**	*617.4*	*622.2*
Hydroelectric	**61.0**	**64.4**	**54.6**	**59.5**	**68.7**	*76.6*	*65.6*	*66.8*	*75.5*	*82.4*	*67.3*	*67.5*	**239.5**	*277.8*	*292.6*
Geothermal and Other[a]	**2.6**	**2.5**	**2.6**	**2.6**	**2.4**	*2.3*	*2.4*	*2.3*	*2.2*	*2.2*	*2.2*	*2.2*	**10.2**	*9.4*	*8.7*
Total Net Generation	**686.3**	**667.6**	**755.6**	**686.4**	**702.1**	*705.8*	*775.1*	*704.7*	*715.4*	*722.1*	*795.6*	*724.7*	**2795.9**	*2887.6*	*2957.8*
Net Imports	**4.7**	**5.4**	**8.4**	**8.1**	**6.7**	*6.6*	*9.2*	*8.4*	*9.3*	*8.7*	*9.9*	*8.7*	**26.6**	*31.0*	*36.6*
Utility Purchases from Nonutilities[b]	**38.0**	**36.1**	**36.6**	**42.2**	**41.4**	*39.3*	*39.9*	*45.9*	*44.6*	*42.3*	*43.0*	*49.5*	**153.0**	*166.5*	*179.5*
Total Supply	**729.1**	**709.0**	**800.6**	**736.7**	**750.2**	*751.6*	*824.2*	*759.0*	*769.4*	*773.1*	*848.5*	*782.9*	**2975.4**	*3085.0*	*3173.9*
Losses and Unaccounted[c]	**46.5**	**58.9**	**56.8**	**57.3**	**43.2**	*70.2*	*62.6*	*57.7*	*45.0*	*72.2*	*64.5*	*59.5*	**219.6**	*233.7*	*241.1*
Demand															
Residential	**246.8**	**203.8**	**255.9**	**227.0**	**252.7**	*222.2*	*263.6*	*233.3*	*260.3*	*227.7*	*269.6*	*239.1*	**933.5**	*971.8*	*996.7*
Commercial	**181.8**	**183.6**	**210.6**	**187.2**	**188.1**	*189.0*	*215.9*	*194.2*	*194.3*	*196.2*	*224.8*	*203.0*	**763.2**	*787.3*	*818.3*
Industrial	**231.2**	**239.7**	**252.3**	**242.1**	**240.1**	*247.4*	*257.5*	*250.3*	*246.1*	*253.8*	*264.6*	*257.4*	**965.3**	*995.3*	*1021.9*
Other	**22.8**	**23.0**	**25.0**	**23.1**	**23.3**	*22.9*	*24.5*	*23.5*	*23.6*	*23.3*	*25.1*	*24.0*	**93.9**	*94.1*	*96.0*
Total Demand	**682.5**	**650.1**	**743.8**	**679.4**	**704.2**	*681.5*	*761.6*	*701.3*	*724.4*	*700.9*	*784.1*	*723.4*	**2755.9**	*2848.5*	*2932.8*

[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: Data for utility purchases from nonutilities, net utility imports, and losses and unaccounted are estimated for 1992. Minor discrepancies with other EIA published historical data are due to rounding. Historical data are printed in bold, forecasts are in italic. The forecasts were generated by simulation of the Short-Term Integrated Forecasting System.
Sources: Historical data: Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0035(93/03); and *Electric Power Monthly*, DOE/EIA-0226(93/03).

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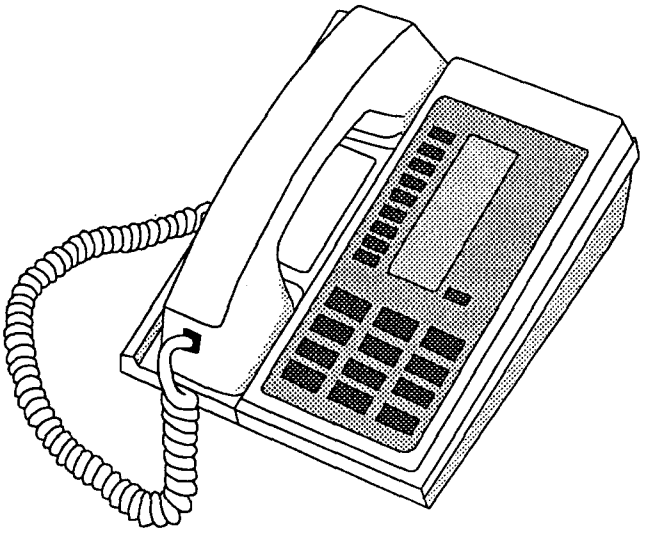

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