April 1998

Highlights

World Oil Prices: Weak Fundamentals May be Difficult to Counteract

Proposals by major producers inside and outside of OPEC to reduce the burgeoning surplus may keep oil prices from sliding to new record lows this year, but, compared to 1997, price levels are still expected to be down throughout 1998, with corresponding impacts on petroleum product prices. U.S. refiner costs for imported oil are now expected to average about $14.70 per barrel this year, compared to $18.60 in 1997.

Record Low Fuel Costs for Motorists Likely This Summer

Given our base case projections for crude oil prices, it is likely that motorists will experience this year the lowest (inflation-adjusted) gasoline prices ever for a summer. Average retail prices for the second and third quarters of 1998 are expected to be about a dime per gallon below last summer's average. Factors that may prevent lowest-ever prices are: greater-than-expected commitment from oil producers to reduce overproduction and unexpected supply problems (capacity outages, shortages of imports).

With Record Low Prices and Continued Economic Growth, Can Strong Gasoline Demand Growth Be Far Behind?

This summer is likely to witness solid growth in motor gasoline demand from the previous year. Our base case scenario calls for 2.8 percent growth in summer demand over 1997 levels. Preliminary data for the first quarter of this year is even stronger. Sizable increases in highway travel are expected, brought about by high growth in household incomes (and associated increases in consumer confidence) and expected declines in fuel prices.

Electricity Growth Should Move to a Higher Level this Year

Electricity demand growth is expected to move to the more typical level of 2.4 percent this year after posting only a 0.8 percent advance in 1997. Last year both heating and cooling demand were down from 1996. While demand so far this year has been weak due to low winter heating requirements, spring and summer demand should make up for it, assuming normal temperatures. Summer (second and third quarter) demand could average about 3.5 percent higher than 1997.

Warm Weather, Low Prices Lead to Consumer Savings

Lower heating demand and heating fuel prices and cheaper gasoline reduced first-quarter household energy expenditures by an estimated $5.9 billion, or about $52 per household, compared to year-ago levels. Base-case projections suggest an overall savings in 1998 of $12 billion, or $105 per household.

Table HL1. U.S. Energy Supply and Demand Summary

	Year				Annual Percentage Change		
	1996	1997	1998	1999	1996-1997	1997-1998	1998-1999
Real Gross Domestic Product (GDP)							
(billion chained 1992 dollars)	**6928**	**7191**	*7395*	*7540*	**3.8**	*2.8*	*2.0*
Imported Crude Oil Price [a]							
(nominal dollars per barrel)	**20.61**	**18.58**	*14.66*	*15.35*	**-9.8**	*-21.1*	*4.7*
Petroleum Supply							
Crude Oil Production [b]	**6.46**	**6.41**	*6.37*	*6.33*	**-0.8**	*-0.6*	*-0.6*
Total Petroleum Net Imports (including SPR)							
(million barrels per day)	**8.50**	**8.90**	*9.11*	*9.63*	**4.7**	*2.4*	*5.7*
Energy Demand							
World Petroleum							
(million barrels per day)	**71.5**	**73.4**	*75.2*	*77.4*	**2.7**	*2.5*	*2.9*
Petroleum							
(million barrels per day)	**18.31**	**18.58**	*18.91*	*19.35*	**1.5**	*1.8*	*2.3*
Natural Gas							
(trillion cubic feet)	**21.96**	**21.90**	*22.05*	*23.20*	**-0.3**	*0.7*	*5.2*
Coal							
(million short tons)	**1006**	**1028**	*1040*	*1076*	**2.2**	*1.2*	*3.5*
Electricity (billion kilowatthours)							
Utility Sales [c]	**3098**	**3120**	*3194*	*3272*	**0.7**	*2.4*	*2.4*
Nonutility Own Use [d]	**164**	**169**	*173*	*178*	**3.0**	*2.4*	*2.9*
Total	**3262**	**3288**	*3367*	*3450*	**0.8**	*2.4*	*2.5*
Adjusted Total Energy Demand [e]							
(quadrillion Btu)	**93.9**	**94.5**	*95.6*	*98.2*	**0.6**	*1.2*	*2.7*
Adjusted Total Energy Demand per Dollar of GDP							
(thousand Btu per 1992 Dollar)	**13.56**	**13.14**	*12.93*	*13.03*	**-3.1**	*-1.6*	*0.8*
Renewable Energy as Percent of Total	**7.7**	**7.8**	*7.4*	*7.0*			

[a] Refers to the refiner acquisition cost (RAC) of imported crude oil.

[b] Includes lease condensate.

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

[d] Defined as the difference between total nonutility electricity generation and sales to electric utilities by nonutility generators, reported on Form EIA-867, "Annual Nonutility Power Producer Report." Data for 1997 are estimates.

[e] The conversion from physical units to Btu is calculated by using a subset of conversion factors used in the calculations performed for gross energy consumption in Energy Information Administration, *Monthly Energy Review* (*MER*). Consequently, the historical data may not precisely match those published in the *MER* or the *Annual Energy Review (AER)*.

SPR: Strategic Petroleum Reserve.

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

Sources: Historical data: Latest data available from Bureau of Economic Analysis and Energy Information Administration; latest data available from EIA databases supporting the following reports: *Petroleum Supply Monthly*, DOE/EIA-0109; *Petroleum Supply Annual*, DOE/EIA-0340/2; *Natural Gas Monthly*, DOE/EIA-0130; *Electric Power Monthly*, DOE/EIA-0226; and *Quarterly Coal Report*, DOE/EIA-0121; *International Petroleum Statistics Report* DOE/EIA-0520; *Weekly Petroleum Status Report* DOE/EIA-0208. Macroeconomic projections are based on DRI/McGraw-Hill Forecast CONTROL0398.

1998 Summer Motor Gasoline Outlook

This year's base case outlook for summer motor gasoline markets may be summarized as follows:

- **Demand:** up 2.8 percent from last summer due to brisk household income growth, record-high consumer confidence, and historically low prices; highway travel may reach 1.37 trillion miles for the season, up about 3.9 percent from last year.

- **Prices:** (average all grades) projected to average $1.20 per gallon, down 9 cents from last year; in inflation-adjusted terms, these would arguably be the lowest summer prices on record.

- **Supplies:** expected to be tight but adequate. Refineries will continue to operate at very high rates. But imports should rise and stocks are currently higher than last summer, easing supply pressures somewhat.

U.S. Motor Gasoline Summer Outlook: Mid World Oil Price Case

	1997			1998			Percent Change		
	Q2	Q3	Summer	Q2	Q3	Summer	Q2	Q3	Summer
Demand/Supply (million barrels per day)									
Total Demand	**8.151**	**8.226**	**8.189**	*8.379*	*8.450*	*8.415*	*2.8%*	*2.7%*	*2.8%*
Total Output [a]	**7.965**	**8.045**	**8.005**	*7.996*	*8.163*	*8.080*	*0.4%*	*1.5%*	*0.9%*
Net Stock Withdrawal	**-0.056**	**0.064**	**0.005**	*0.098*	*0.022*	*0.059*			
Net Imports	**0.242**	**0.117**	**0.179**	*0.286*	*0.265*	*0.275*	*18.1%*	*126.6%*	*53.7%*
Refinery Utilization (percent)	**95.9%**	**98.4%**	**97.2%**	*96.8%*	*98.2%*	*97.5%*			
Stocks (million barrels, ending period)									
Total Gasoline Stocks	**204.8**	**198.8**	**198.8**	*204.0*	*202.0*	*202.0*	*-0.4%*	*1.6%*	*1.6%*
Finished	**163.9**	**158.1**	**158.1**	*161.9*	*161.2*	*161.2*	*-1.2%*	*2.0%*	*2.0%*
Blending Components	**40.9**	**40.7**	**40.7**	*42.1*	*40.8*	*40.8*	*3.0%*	*0.2%*	*0.2%*
Prices (cents per gallon)									
Imported Crude Oil Price [b]	**42.7**	**42.4**	**42.5**	*35.3*	*34.5*	*34.9*	*-17.3%*	*-18.6%*	*-17.9%*
Wholesale Gasoline Price [c]	**69.9**	**71.6**	**70.8**	*63.1*	*61.6*	*62.3*	*-9.7%*	*-14.0%*	*-11.9%*
Retail Gasoline Price [d]	**128.6**	**130.2**	**129.4**	*119.4*	*121.2*	*120.3*	*-7.2%*	*-6.9%*	*-7.1%*
Market Indicators									
Real GDP (billion 1992 dollars)	**7159.6**	**7217.6**	**7188.6**	*7381.7*	*7413.8*	*7397.7*	*3.1%*	*2.7%*	*2.9%*
Real Income (bill. 1992 dollars)	**5200.8**	**5235.3**	**5218.1**	*5429.5*	*5461.8*	*5445.7*	*4.4%*	*4.3%*	*4.4%*
Industrial Output (index, 1987=1.0)	**1.233**	**1.251**	**1.242**	*1.295*	*1.298*	*1.297*	*5.0%*	*3.8%*	*4.4%*
Miles Traveled (mill. miles per day)	**7138.4**	**7309.3**	**7224.3**	*7418.0*	*7589.2*	*7504.1*	*3.9%*	*3.8%*	*3.8%*
Average MPG (miles per gallon)	**20.85**	**21.16**	**21.01**	*21.08*	*21.38*	*21.23*	*1.1%*	*1.1%*	*1.1%*

[a]Refinery output plus motor gasoline field production, including fuel ethanol blended into gasoline and new supply of oxygenates and other hydrocarbons for gasoline production.
[b]Cost of imported crude oil to U.S.
[c]Price of gasoline sold by refiners to resellers.
[d]Average pump price for gasoline, all grades and services.
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: latest data available from: Energy Information Administration, *Petroleum Supply Monthly*, DOE/EIA-0109; *Monthly Energy Review*, DOE/EIA-0035; U.S. Department of Commerce, Bureau of Economic Analysis; Federal Reserve System; National Oceanic and Atmospheric Administration. Macroeconomic projections are based on DRI/McGraw-Hill Forecast CONTROL0298.

Gasoline Prices

Consumers have been enjoying extraordinarily low gasoline prices in 1998, with March retail prices reaching levels not seen in more than three years. Prices are expected to rise from these lows, both because of normal seasonal patterns and because crude oil prices have moved up from earlier lows. Nevertheless, average summer prices are expected to be about 9 cents below last summer's average, implying a U.S. average of $1.20 for the average of all grades, and about $1.10 for unleaded regular average (Figure 1). The base-case Outlook implies real (inflation-adjusted) annual average prices at their lowest ever (Figure 2).

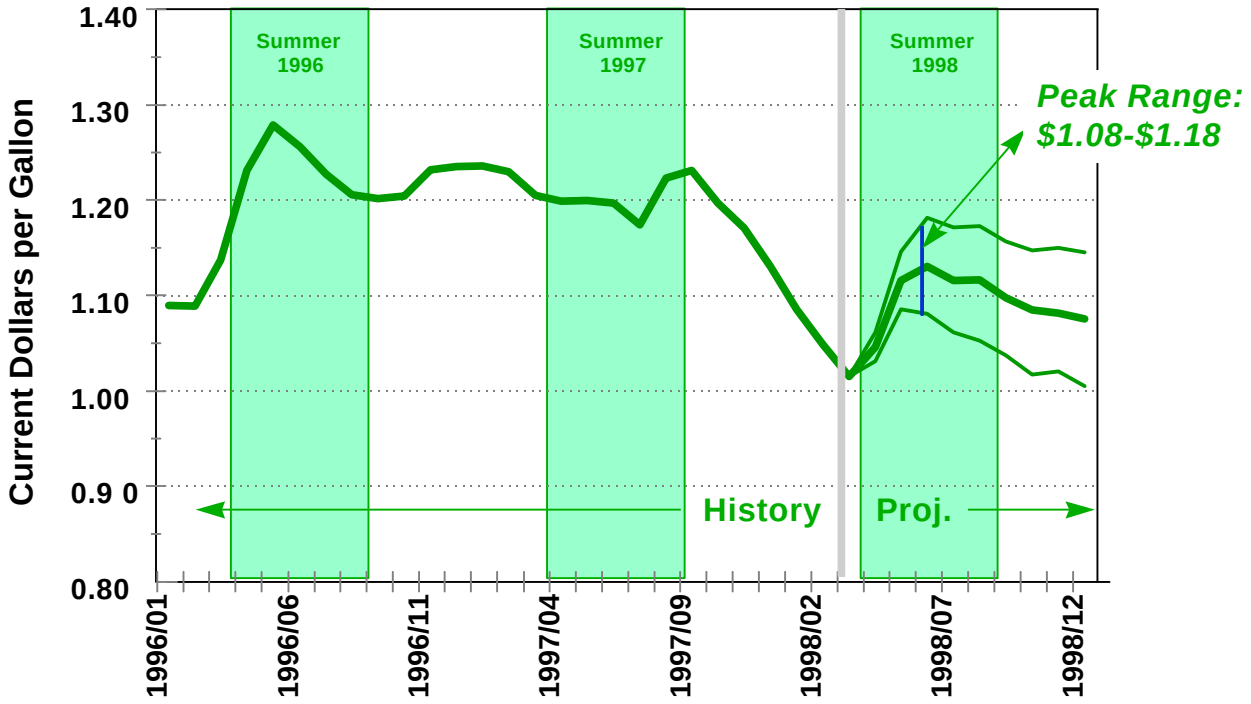
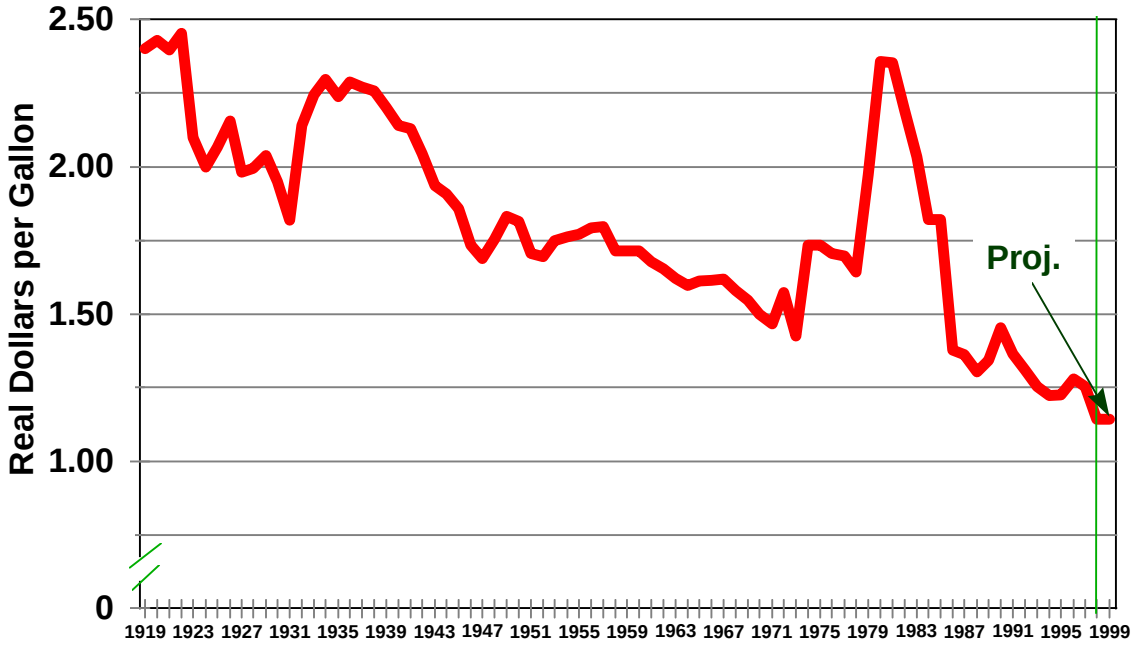


Figure 1. Retail Gasoline Price Cases: Unleaded Regular
(Based on High, Base and Low Oil Price Cases)

Declines in crude oil prices account for most of the fall in gasoline prices. The base case forecasts an average crude oil price of $14.67 per barrel (34.9 cents per gallon) during the upcoming summer season, down from $17.86 (42.5 cents per gallon) last summer. Contributing to that decline are: increased worldwide production, low winter fuels demand and the Asian financial crisis.



Leaded Regular Gasoline: 1919-1981; Unleaded Regular: 1982-1999

Figure 2. Real Gasoline Pump Price (U.S. Average, 1919 to 1999)

If recent plans by producing countries to constrain production are more or successful than anticipated, or if the Asian financial crisis has a larger- or smaller-than-expected effect on crude oil demand, crude oil prices could deviate sharply from those projected in the base case. If no significant problems with gasoline production, refinery capacity or imports arise, summer gasoline prices should stay within 5 cents of the base case, as shown in Figure 1. However, higher-than-expected demand growth could place additional pressure on supplies, and, therefore, prices.

Demand

Motor gasoline demand during this coming summer (defined as the second and third quarters) is projected to average 8.41 million barrels per day, up 226,000 barrels per day, or 2.8 percent, from the previous summer (Figure 3). This is an even larger increase than the 155-thousand-barrels-per-day growth of the previous year. The increase results from a 3.9-percent climb in vehicle miles traveled, nearly twice the growth rate of the previous summer and the largest such increase in 10 years.

Large shifts in two of the major determinants of travel activity--real disposable personal income and inflation-adjusted fuel costs--account for much of the large growth in motor gasoline demand (Figure 3). Real household incomes are projected to rise 4.4 percent, compared to last summer's 2.8 percent. Inflation-adjusted fuel costs per mile are projected to decline 8.6 percent this summer, reaching record lows once again. This compares to the previous summer's 4.5-

percent decline in fuel costs despite the price hike late in the season.

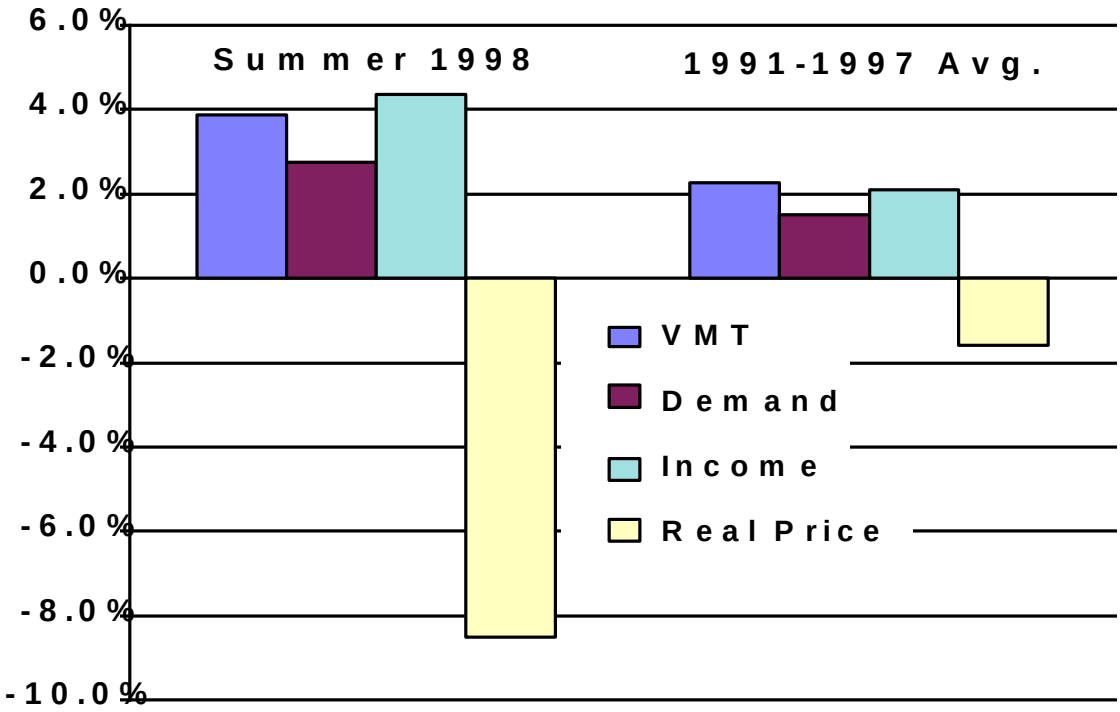


Figure 3. Summer Gasoline Outlook (Change from Year Ago)

In addition to current economic conditions, previous household income growth and fuel price changes are two major factors contributing to the large projected increase in this summer's demand for motor gasoline. Consumers typically adjust gradually to shifts in these indicators. Thus, this summer's anticipated increase in demand results from the brisk income increases and price declines observed during the last two years.

Production

U.S. production of motor gasoline (including ethanol for blending into gasoline) is projected to average a record 8.13 million barrels per day during the summer season, an increase of about 95,000 barrels per day. (Last summer, output expanded by more than 286,000 barrels per day, substantially higher than the demand increase). During peak periods this summer, refiners are expected to operate at close to full capacity. Thus, higher imports will be required to meet the full gasoline demand increase.

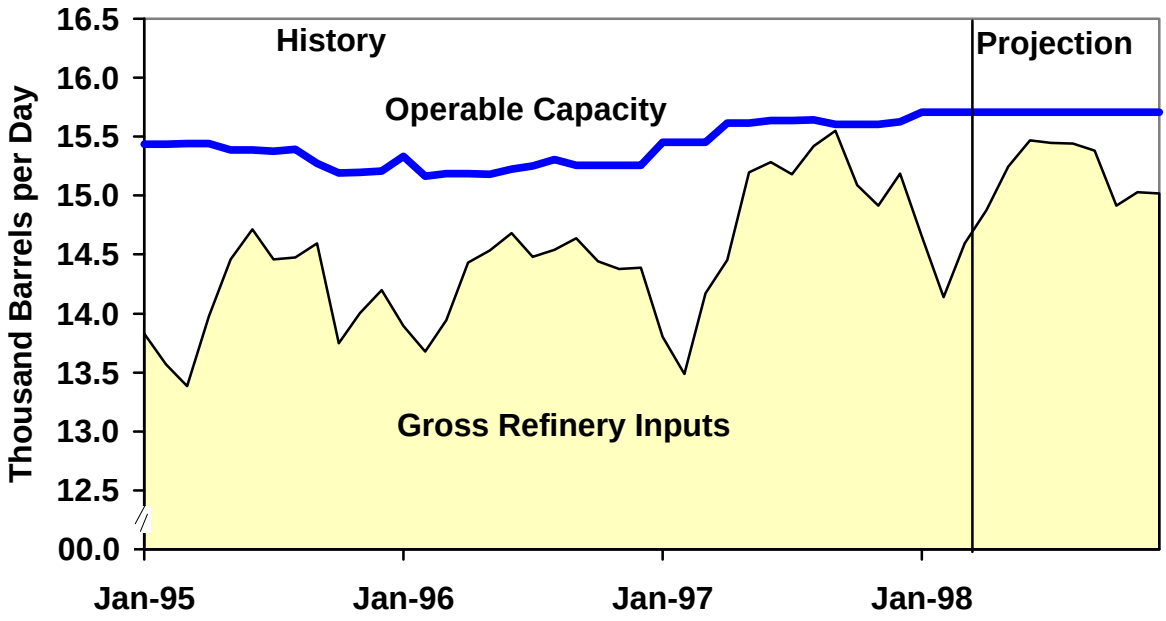


Figure 4. Refinery Capacity and Throughput

With little additional capacity this coming summer, refiners are expected to operate at very high utilization rates, averaging 97.5 percent, versus 97.2 percent last summer (Figure 4). Higher gasoline production can be achieved in 1998 with higher yields at the expense of distillate production, since distillate stocks are abundant. But the high operable utilization rates are expected to limit refiners' flexibility in responding to unexpected supply or demand changes. During last summer's late demand surge, refineries increased utilization rates to more than 99 percent to accommodate the additional requirement. Because little new distillation capacity is predicted to come on-stream this summer, refiners are unlikely to be able increase gasoline production much over last summer's levels. If the market tightens quickly as it did at the end of last summer, refiners alone may not be able to resolve the imbalance quickly.

On the positive side, refiners may have more capacity this summer than is assumed in the base case. One report indicated distillation capacity at operating refineries might increase 280 thousand barrels per day in 1998 over 1997, and that the TransAmerica refinery in Louisiana may start up, which could boost distillation capacity another 200,000 barrels per day in 1998.[1] However, the BP Lima refinery (with a distillation capacity of 162,000 barrels per day) may be shut down.

[1]Nick Snow, "U.S. Capacity Creep to Outpace Product Demand, Survey Finds," *Octane Week*, Vol. XIII, No. 5, Hart Publications, Inc., Arlington, VA, February 2, 1998, p. 1.

Imports

Gasoline imports are another area where the near-term outlook is for adequate supplies, but where minor unexpected shocks could have disproportionate consequences. Net imports of finished gasoline are expected to increase 96,000 barrels per day over last summer to average 275,000 barrels per day during summer 1998. Blendstock net imports could average 165,000 barrels per day, similar to levels seen during the second half of last summer.

The large share of blendstocks being imported is relatively new (Figure 5). Much of the net imported blendstock (the difference between total and finished net imports in Figure 5) is being used to produce reformulated gasoline. Since the summer prior to the start of the reformulated gasoline program in 1995, blendstock imports have increased tenfold to 216,000 barrels per day last summer, often exceeding finished gasoline import volumes.

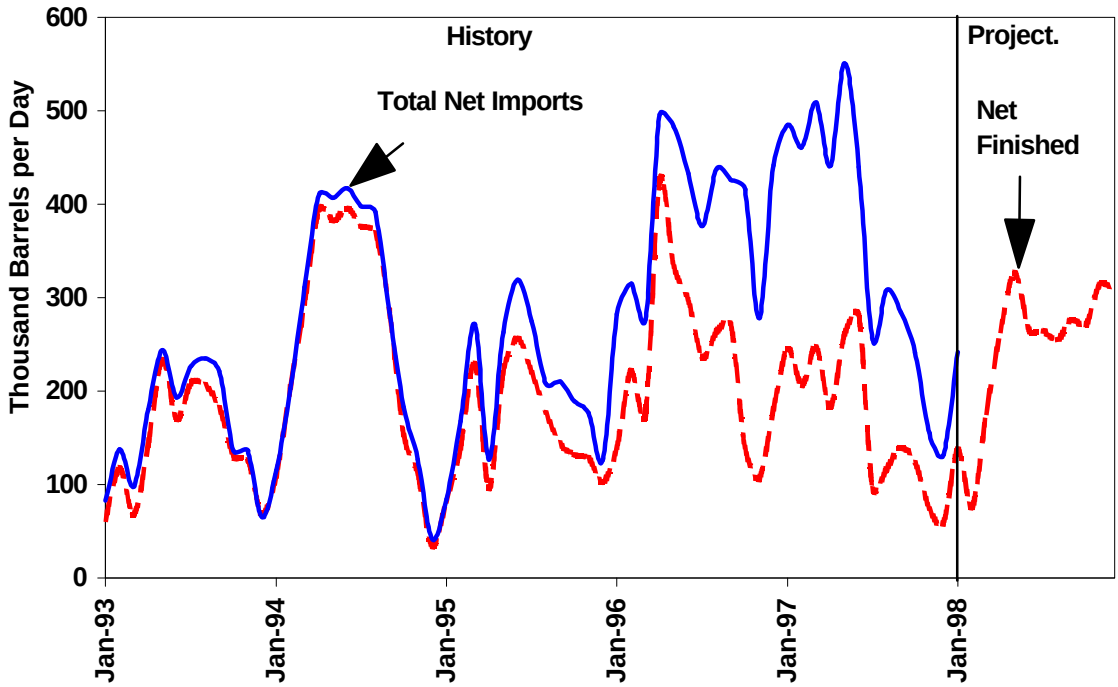


Figure 5. Net Imports of Gasoline

Imports should be readily available to the United States this summer. Europe, which supplied about 27 percent of last summer's gasoline imports, is expected to have about 400,000 barrels per day of excess production capability,[2] but other countries are expected to import gasoline from that area. For example, Brazil, Chile, and Mexico will be net importers of gasoline in 1998, and strong growth in Brazil can have a significant effect on total gasoline demand in the Western

[2]Poor Demand Seen Dogging European Products Markets," *Oil Market Intelligence*, Energy Intelligence Group, New York, N.Y., January 1998, page 6.

hemisphere. Brazil alone imported 625,000 barrels per day in 1996 and annual demand growth is expected to be 6 to 8 percent[3].

In summary, maintaining the projected finished gasoline net import level of 275,000 barrels per day is quite possible this year. But unexpected surprises such as those that occurred in 1997, with refinery problems in Canada, the U.S. and Europe, could constrain import availability.

Stocks

Stocks are an important indicator of the relative balance between supply and demand in gasoline markets. Gasoline stocks normally peak in January, as refineries co-produce gasoline while running to produce distillate for heating and transportation needs; at the same time, gasoline demand drops due to adverse weather conditions. Gasoline stock levels at end of March were estimated to be 213 million barrels, 6.5 percent higher at the start of the driving season than last year (Figure 6).

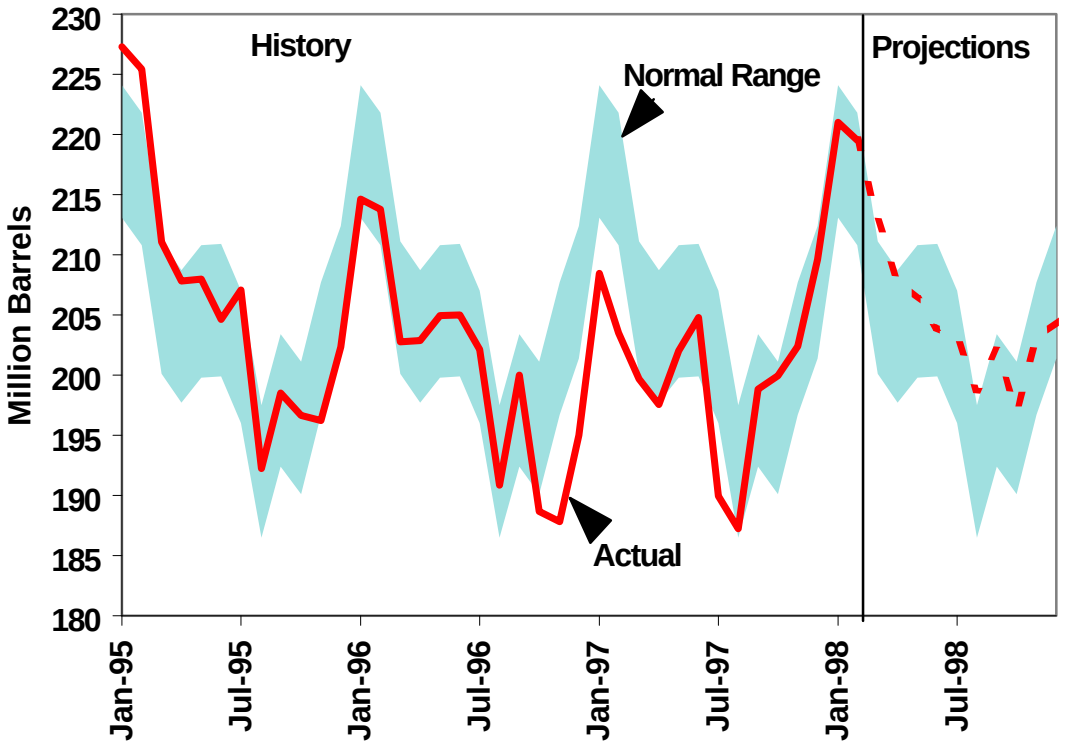


Figure 6. Total Gasoline Stocks

Even though the current forecast projects stocks at comfortable levels at the outset of the driving period, seasonal withdrawals are expected to reduce inventories to year-ago levels by the end of June. Last year, those comfortable

[3]"Refining Potential Lags Demand Gains in Latin America" PIW Vol. 36 #33 8/8/97; page 3

June stocks were unexpectedly drawn down to record lows within a month. Therefore, stocks are still vulnerable to unexpected demand surges or refinery problems. Since high projected utilization rates are expected to limit production increases, price hikes similar to those of last summer may result. Assuming no unexpected supply disruptions, a stock draw of about 60,000 barrels a day is projected. This represents a 55,000 barrels per day increase over last summer. Total stocks will then end the season at 202 million barrels, slightly higher than last summer's ending stock levels and within the normal range.

Conclusion

The Outlook this summer is for sharply higher growth rates in travel and gasoline demand than have been seen in recent years. Despite recent agreements among OPEC members and other oil-producing countries to reduce output, crude oil prices are still likely to be lower than during last summer. Assuming no supply disruptions, summer average retail gasoline prices (after adjustment for inflation) are likely to be at historical lows this year. But that price outlook depends on U.S. refiners matching last year's high utilization rates and on the availability of additional imported supplies at low product prices. With excess European refining capacity, weak Asian oil demand, and larger beginning-of-season stocks than observed last year, it seems likely that the expected motor gasoline demand growth for the U.S. can be accommodated at historically low inflation-adjusted prices.

The Outlook

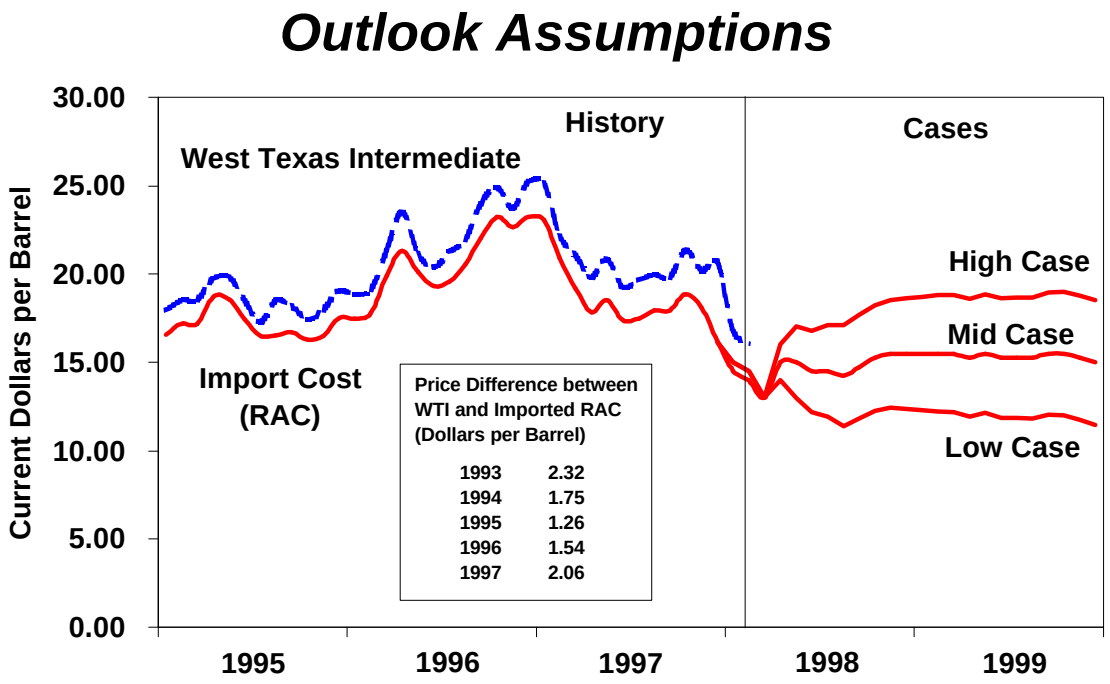


Figure 7. U.S. Monthly Crude Oil Prices

World Oil Prices

This forecast assumes that Iraqi humanitarian oil sales approved by the United Nations (U.N.) Security Council will be increased to about 1.6 million barrels per day from the current estimated amount of 1.1 million barrels per day, beginning around the second half of 1998, and that increased rate will continue through the forecast period. The recent announcement by major oil producers indicating possible agreements to cut back significantly on production to halt sliding oil prices should offset the impact of the Iraqi increase and firm up prices. Despite this development, our current base world oil price projection calls for an average 1998 price of $14.66 per barrel, down about $4 from our estimated 1997 world oil price of $18.57 per barrel (Figure 7). In 1999, the world oil price is forecast to increase a little to $15.35 per barrel as oil demand in Southeast Asia is expected to rebound slightly and increases in oil supply should more closely match increases in world oil demand. The high and low price cases illustrated in Figure 7 represent a typical uncertainty range around our base case forecast.

Economic Outlook

U.S. Gross Domestic Product (GDP) growth in 1997 was estimated at an average of 3.8 percent. In 1998 and 1999, GDP is expected to continue to grow but at somewhat slower paces of 2.8 percent and 2.0 percent, respectively. This slowdown in growth, expected in any case, has been further exacerbated by the financial crisis in Asia. However, growth in disposable income should reach 4.2 percent in 1998 and 2.3 percent in 1999 (Figure 8 and Table 1).

Inflation (consumer price index; see Table 2) should remain moderate over the next few years. Consumer price inflation is expected to be 1.6 percent in 1998 and 2.5 percent in 1999 (Table 1).

Manufacturing production growth rises more than GDP, reaching 4.5 percent in 1998, as investment and export growth remain strong. In 1999, manufacturing production growth slows to 1.8 percent as investment growth decelerates. Total employment will increase slowly over the forecast period.

Weather Assumptions

Heating and cooling degree-days are assumed to follow historical norms in the forecast period, resulting in projected cooling degree-days being sharply higher (15.6 percent) during second quarter 1998 compared with second quarter 1997. Winter heating degree-days (fourth quarter 1998) are projected to be below last year's by 3.4 percent.

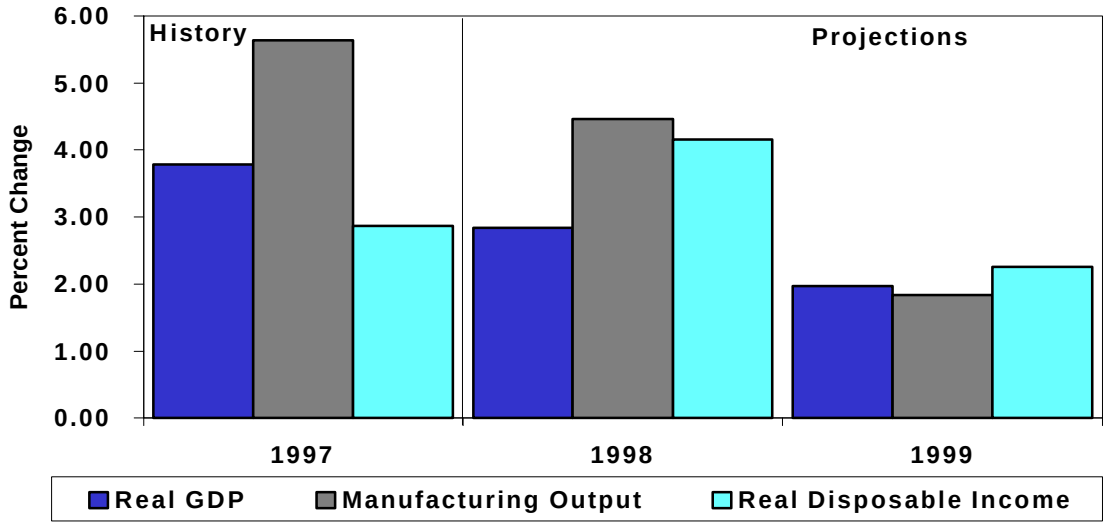


Figure 8. U.S. Macroeconomic Indicators

U.S. Energy Prices

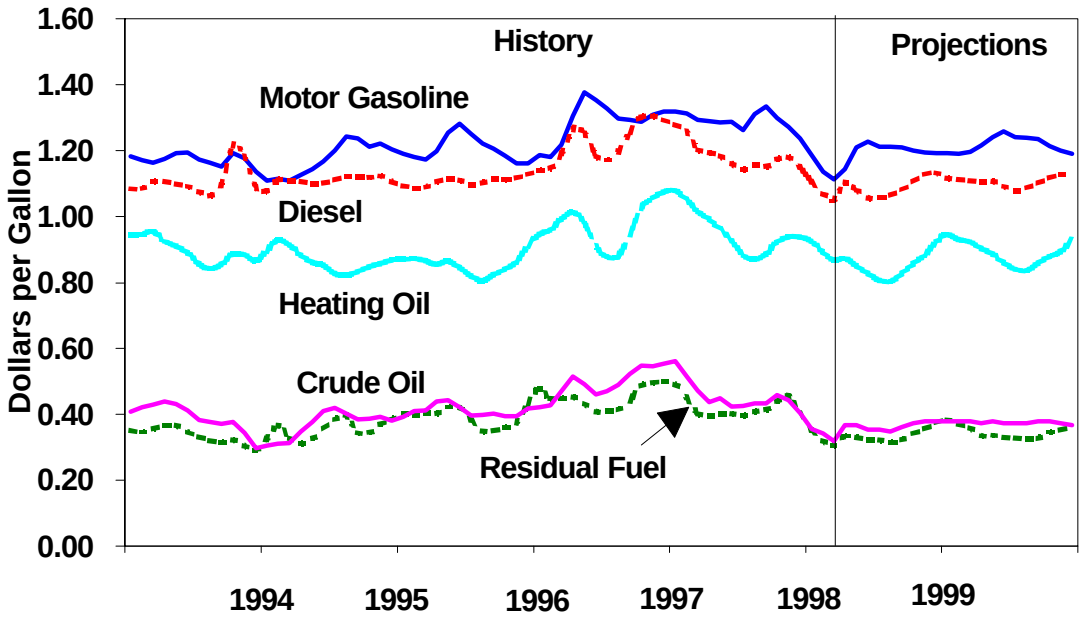


Figure 9. Petroleum Product Prices

As the driving season begins, motorists have been enjoying unusual and unseasonably low motor gasoline prices. The recent collapse of world crude oil prices has helped send real (adjusted for inflation) retail gasoline prices to their lowest level ever. However, the recent agreement at the end of March among several of the major oil exporting countries to curtail crude oil production has lifted spot prices for gasoline by about 5 cents per gallon. Thus retail prices could turn upward if this agreement holds. Even so, this price boost should not be felt at the pump until mid-April. Moreover, even if there is discipline among the petroleum exporting nations, crude oil prices are still expected to be about $3.00 per barrel below last year's level. Thus, prices at the pump this driving season (April-September) are projected to run about a dime per gallon lower than last year's prices, even as vehicle miles traveled are projected to hit record levels.

With lower crude oil prices and plentiful stocks--due in part to low petroleum product demand from the warm winter -- the annual average retail motor gasoline price is expected to be 9 cents per gallon less than the 1997 average price (Table 4 and Figure 9). As the driving season progresses and motor gasoline stocks are withdrawn, there should be some normal seasonal upward price movement, given the crude oil price assumptions. But if crude oil prices fall back, motor gasoline prices could stay level or decline further this spring and summer. This would reinforce the tendency toward record lows (in real terms) for prices. Conversely, the low world crude oil prices may prove unsustainable

for more than a short period. In that case, rising crude oil prices will push up gasoline (and other petroleum product) prices.

With these lower crude oil price assumptions, all petroleum product prices are expected to decline in 1998. With crude oil prices about $4.00 per barrel lower in 1998, petroleum product prices are projected to average 9-11 cents per gallon less than in 1997. In 1999, with rising crude oil costs projected, petroleum product prices are expected to inch up 2-3 cents per gallon over 1998 prices. Average retail heating oil prices should be about 4-5 cents per gallon lower in the fourth quarter of 1998 compared to the previous year.

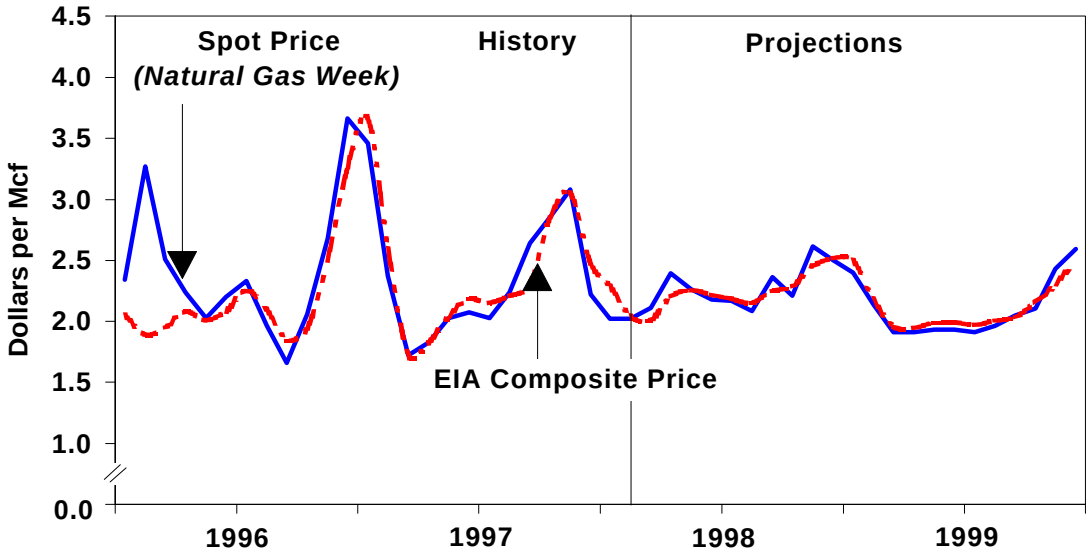


Figure 10. Natural Gas Wellhead Prices: Composite and Spot

Natural gas wellhead prices have hovered somewhat above $2.00 per thousand cubic feet over the last several months rising slightly from the January low price. This is an unusual and counter-cyclical pattern, since these prices generally peak during the coldest months of the year. However, the weather has exhibited shifting patterns—unusually warm in February and more or less normal in March (Table 4 and Figure 10). After the wild ride prices took last fall, we are now in a more placid period. Concern over storage levels may be a factor behind these prices. In addition, the continuing rail delivery problems of coal to electric utilities in the Southwest has not yet been completely resolved as the air conditioning season begins next month. Thus, gas will be required in lieu of coal, putting upward pressure on wellhead prices. So as the heating season ends, natural gas wellhead prices are projected to continue to rise, albeit slightly. Assuming normal weather in the months ahead, these price increases are projected to proceed , resuming their historical seasonal upward tick towards the end of the summer as the underground storage injection season tapers off and

the heating season begins. Because no extreme price spike like the one last fall is anticipated (but it is not ruled out entirely), the annual average wellhead price is projected to decline by as much as 8 percent per cent in 1998.

In 1999, assuming normal weather, a more normal seasonal price pattern for natural gas at the wellhead is projected, with prices peaking in the winter quarters. The average annual price is projected to decline by about 5 percent as further increases in productive capacity and Canadian imports combined with a projected slowdown in economic growth more than offset assumptions of colder winter weather compared to this year. It is interesting to note that weather for the months of January and February 1988, when combined, were the warmest on record for the sum of those two months since 1932. (The weather "projection" for the months of 1999 (and all other forecasted months) is simply a 30-year average of population-weighted heating degree-days (see Summary of Important Terms) .

The lower wellhead prices projected for 1998 should translate into lower prices for residential and other end-users. The price of gas to electric utilities should decline by about 9 percent. However, given the steep drop in crude oil prices projected for 1998 (19 percent), the annual average price of residual fuel oil to electric utilities is expected to fall below the price of natural gas in 1998 (Table 4 and Figure 8). As a result, those electric utilities with fuel switching capability will find it advantageous to switch to the cheaper fuel, namely residual fuel oil. In 1999, the average annual prices for these two fuels are projected to be nearly equal as gas prices dip again while residual fuel oil prices follow the rising price path of crude oil. Last year, the average annual prices for these two boiler fuels were nearly equal. Usually, residual fuel oil is the more expensive of the two. Coal prices are by far the least expensive of fossil fuels to electric utilities (Table 4 and Figure 11). Coal prices are expected to decline through 1999 even after accounting for costs associated with compliance with the Clean Air Act Amendments of 1990. Continued increases in mining productivity and the closing of costly marginal mines will more than offset increases in costs associated with rail transportation.

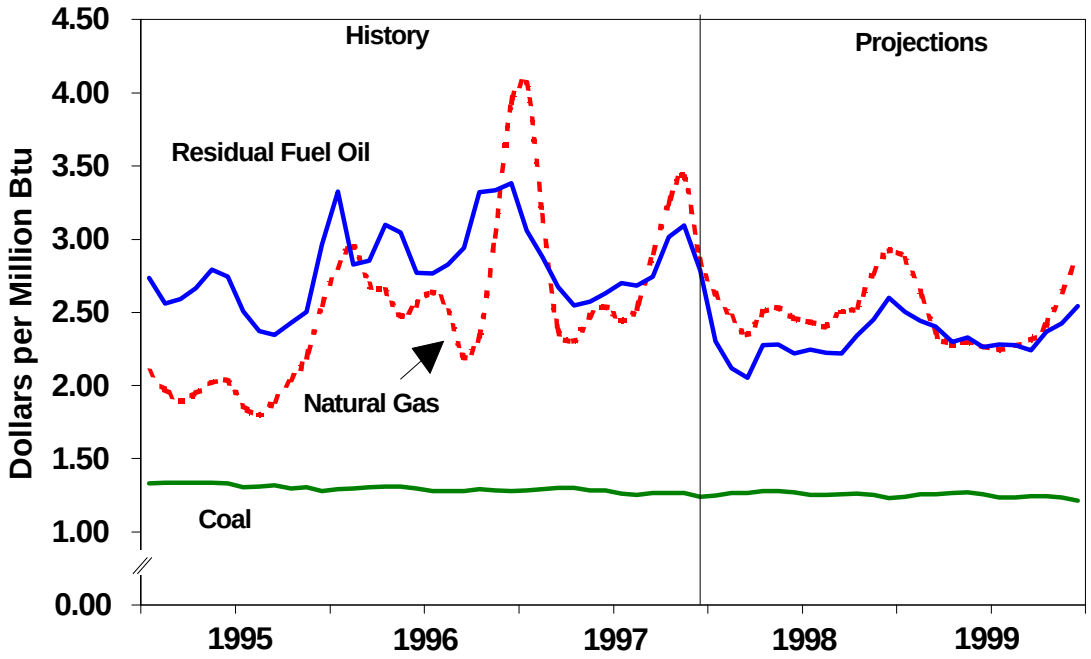


Figure 11. Fossil Fuel Prices to Electric Utilities

World Oil Supply and the Oil Production Cutback Agreement of March 1998

On March 22, 1998, Saudi Arabia, Venezuela, and Mexico announced that they would be cutting oil production by a combined 600,000 barrels per day beginning on April 1, 1998. OPEC then ratified its portion of the agreement at an emergency meeting that took place at the end of March 1998. By April 1, 14 countries (10 from OPEC and 4 outside OPEC) had announced cuts from actual production levels totaling 1.5 million barrels per day (see table of announced cuts below). Of course, the extent of any reduction in oil supplies will depend on the effective determination of key producers to act jointly and make significant and sustained cuts. If sustained, such output cuts would likely increase prices somewhat, although our forecast still shows oil prices in 1998 and 1999 significantly less than in 1997.

Our forecast, however, does not assume 100 percent implementation of the agreement throughout 1998. With the initial increase in the world oil price as a result of this agreement, there will be increasing pressure on oil-producing countries to reap the benefits of higher prices and produce a little more. For this reason, we have assumed that over the latter part of 1998, the cutbacks in production may become somewhat smaller than announced. This agreement, along with increased oil from Iraq as a result of the expansion of United Nations Security Council Resolution (see International Oil Supply section), has oil prices in this forecast very similar to our price forecast in the March 1998 Short-Term Energy Outlook update.

	Pledged Cutback
Saudi Arabia	300,000 barrels per day
Venezuela	200,000 barrels per day
Iran	140,000 barrels per day
Kuwait	125,000 barrels per day
United Arab Emirates	125,000 barrels per day
Nigeria	125,000 barrels per day
Mexico (non-OPEC)	100,000 barrels per day
Norway (non-OPEC)	100,000 barrels per day
Libya	80,000 barrels per day
Indonesia	70,000 barrels per day
Algeria	50,000 barrels per day
Qatar	30,000 barrels per day
Oman (non-OPEC)	30,000 barrels per day
Yemen (non-OPEC)	20,000 barrels per day
Total	1,495,000 barrels per day

International Oil Demand

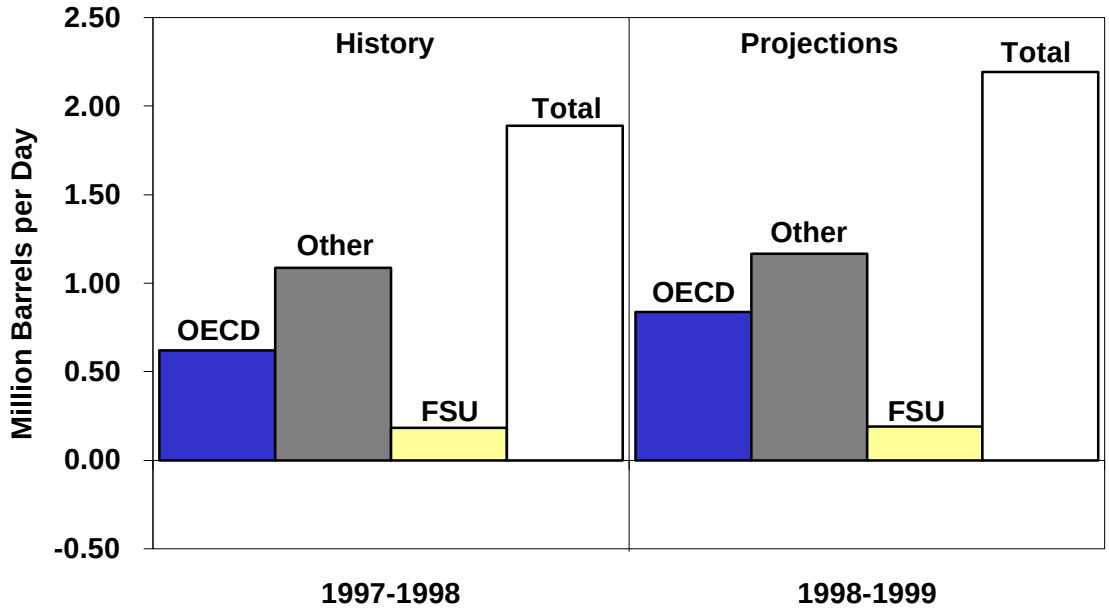


Figure 12. World Oil Demand Changes by Regions

World oil demand is expected to continue to increase through 1999 (Figure 12), by which time total world oil demand may average 77.4 million barrels per day (Table 3). Problems in several Southeast Asian economies are expected to soften the increase in world oil demand, particularly for 1998. Still, following an annual world oil demand increment of 1.8 million barrels per day worldwide in 1997, world oil demand is expected to increase by 1.9 million barrels per day in 1998 with another 2.2 million barrels per day increase in 1999. Thus, even with less demand in Southeast Asia than originally expected, world oil demand under these assumptions will be growing at an average annual rate of 2.7 percent between 1997-1999 after growing at an average annual rate of only 1.7 percent between 1992-1996.

Oil demand in countries of the Organization for Economic Cooperation and Development (OECD) is expected to increase by about 600,000 barrels per day in 1998 and another 800,000 barrels per day in 1999, an average annual rate of 1.7 percent (Figure 12 and Table 3). The United States' oil demand growth represents about half of OECD oil demand growth in 1998 and 1999.

The major story of this forecast is the effect the economic problems in Southeast Asia might have on oil demand growth in the region. Prior to this recent economic slowdown, non-OECD countries exhibited strong growth in oil demand (Figure 12). This was especially true in Asian countries. For example,

oil demand in China has grown by 7.5 percent per year so far this decade, and in Other Asia (see Summary of Important Terms for definition), oil demand has grown by 8.0 percent per year so far this decade. However, partly due to the recent economic slowdown in several Asian countries, this forecast estimates an average annual growth rate of 6.7 percent in China's oil demand and 4.0 percent for Other Asian oil demand. While this may appear higher than some other estimates, Other Asia includes several countries, such as India and Pakistan, which have not been affected by the economic slowdown as of this publication. At the same time, however, Latin American oil demand is expected to grow at an annual rate of 4.5 percent between 1997 and 1999. Continued strength in world oil demand is partly due to significant increases in U.S. and Latin American oil demand growth.

After showing growth in oil demand in 1997 for the first time since the collapse of the Soviet Union, oil demand in the former Soviet Union (FSU) is projected to increase even further in 1998 and 1999. This increase reflects the expectation that growth in economic activity will continue to be positive over the forecast period. Demand stood at 8.9 million barrels per day just 10 years ago, reached a low of 4.4 million barrels per day in 1996, and is forecast to increase to 4.9 million barrels per day by 1999 (Table 3)..

International Oil Supply

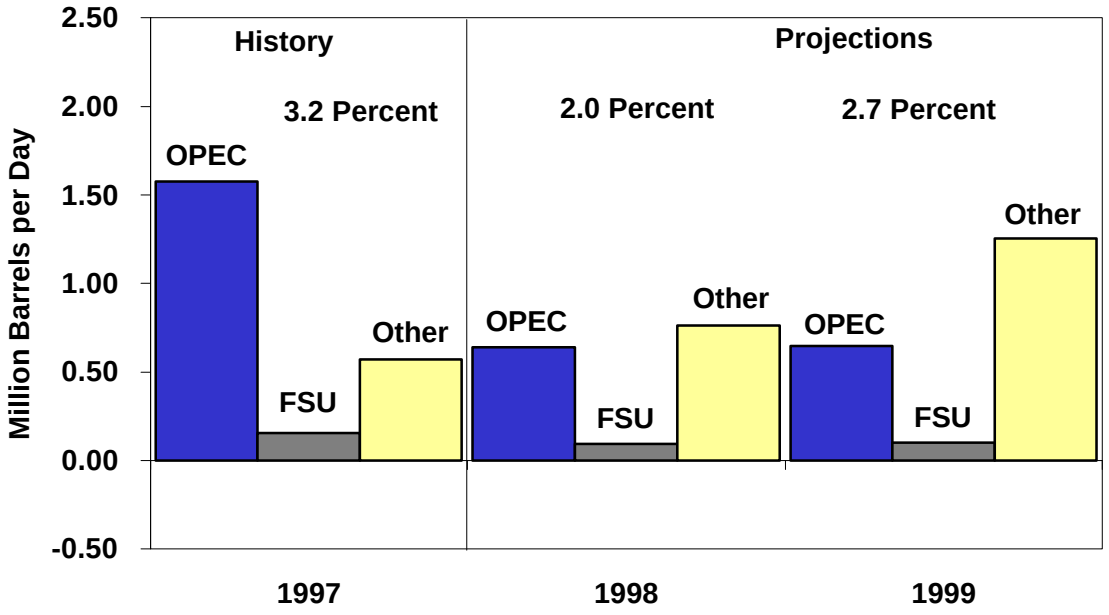


Figure 13. World Oil Supply (Changes from previous Year)

On March 22, 1998, Saudi Arabia, Venezuela, and Mexico announced that they would be cutting oil production by a combined 600,000 barrels per day beginning on April 1, 1998. OPEC then ratified its portion of the agreement at an emergency meeting that took place at the end of March 1998. By April 1, 14 countries (10 from OPEC and 4 outside OPEC) had announced cuts from actual production levels totaling 1.5 million barrels per day (see table of announced cuts below). Of course, any significant cutback in oil supply, if real and sustained, would put upward pressure on prices. However, in February 1998, the United Nations Security Council (UNSC) approved an increase in the amount of oil Iraq is allowed to export under UNSC Resolution 986. These oil sales, which originally started in December 1996, have added about 750,000 barrels per day of oil to the world market over the last year. Previously Resolution 986 allowed Iraq to sell up to $1.07 billion ($1 billion worth of oil plus $70 million paid to Turkey for use of the Iraq-Turkey oil pipeline) of oil every 90 days for 2 consecutive periods totaling 180 days (6 months). Under the new proposal, Iraq will be allowed to export over $5.2 billion worth of oil every 180 days. However, Iraq is still negotiating with the UNSC on the details of the increase. At current prices, this would allow Iraq to export about 2.4 million barrels per day. However, current estimates of Iraqi oil export capacity range from about 1.6 million barrels per day to just over 2 million barrels per day. It is still unclear as to how much oil Iraq will actually export under the program and when the increase will begin. For the purposes of this forecast we have assumed

Iraqi oil exports to average about 1.6 million barrels per day for the second half of 1998 and all of 1999. This is merely an assumption for this forecast and does not reflect any official U.S. government view on the future of Iraqi oil exports. Any increase in Iraqi oil exports will lessen the impact of the production cuts announced in late March 1998.

With some OPEC countries cutting back oil production at the same time Iraq, a member of OPEC, is increasing oil production, for this forecast we have assumed that OPEC oil production will increase by a little more than 600,000 barrels per day in 1998 (Figure 14) and 1999.

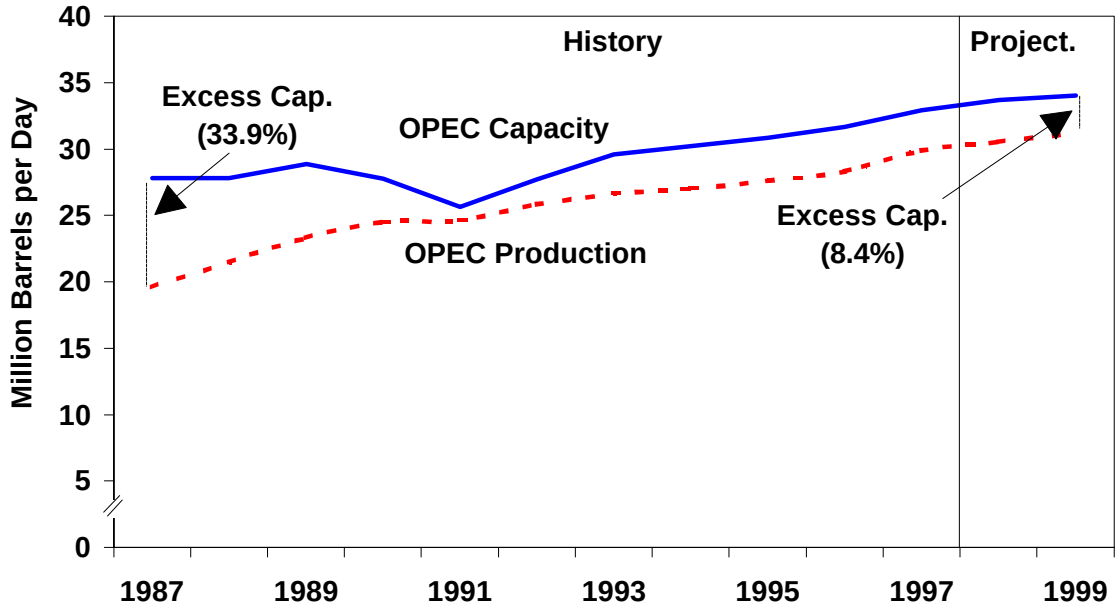


Figure 14. OPEC Oil Production and Capacity

Sustained growth of non-OPEC supply is expected to continue for the foreseeable future, both inside and outside of the OECD (Figure 11). The major growth story within the OECD region is North Sea production, which grew by about 2.2 million barrels per day between 1991 and 1996. North Sea production actually decreased in 1997, as several oil development projects were delayed. However, this forecast assumes a return to growth in North Sea oil production, with an increase of about 200,000 barrels per day expected in 1998 and about 500,000 barrels per day 1999 (Table 3).

Outside the OECD, the non-OPEC growth story is depicted by the "Other" group (Figure 13). Increments from this group are accelerating due to increases from Latin America, Africa, Other Asia, and some slight increases from the Middle East. Privatization efforts are beginning to accelerate growth, particularly in Latin America. Together, the non-OECD, non-OPEC countries,

excluding the Former Soviet Union republics (FSU), are expected to increase production by 1.2 million barrels per day between 1997 and 1999 to 18.3 million barrels per day (Table 3).

Joint ventures in the FSU, although growing slowly due to legal problems and export pipeline constraints, are beginning to foster positive supply prospects. Significant near-term increases are most likely to come from Kazakhstan, Russia, and Azerbaijan, rather than from any of the other former republics. This forecast assumes oil supply from the Former Soviet Union will increase by about 100,000 barrels per day in both 1998 and 1999.

Non-OPEC supply has become a significant source of oil production during the last few years. Since 1994, OPEC production has increased less than world oil demand in every year (Figure 15).

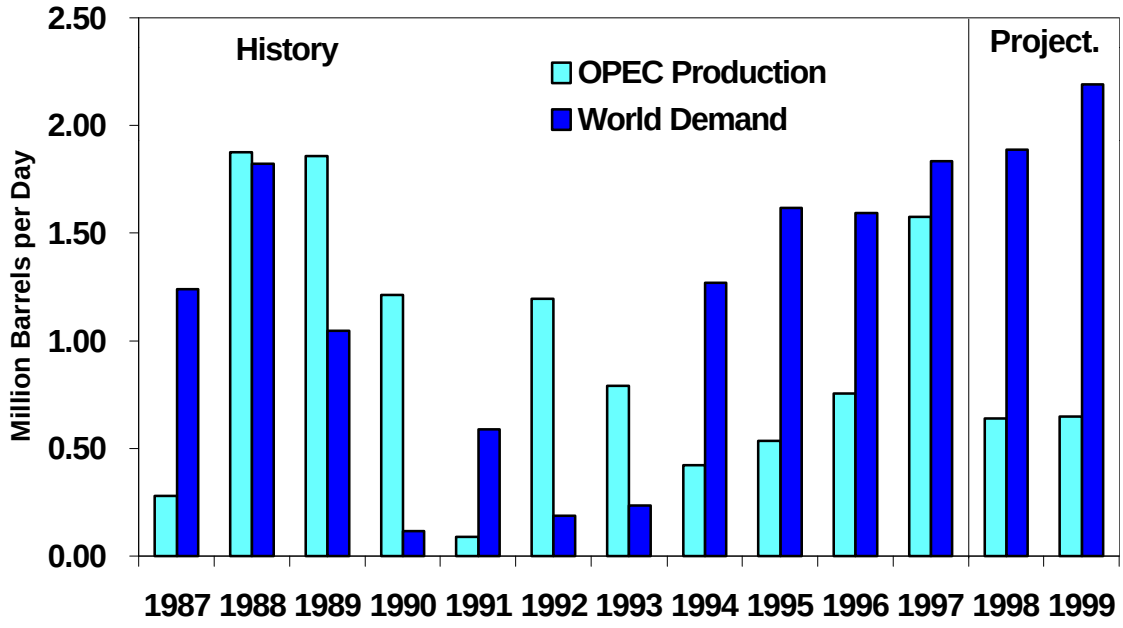


Figure 15. Annual Increases in OPEC Production and World Demand Changes, 1986-1998

World Oil Stocks, Capacity and Net Trade

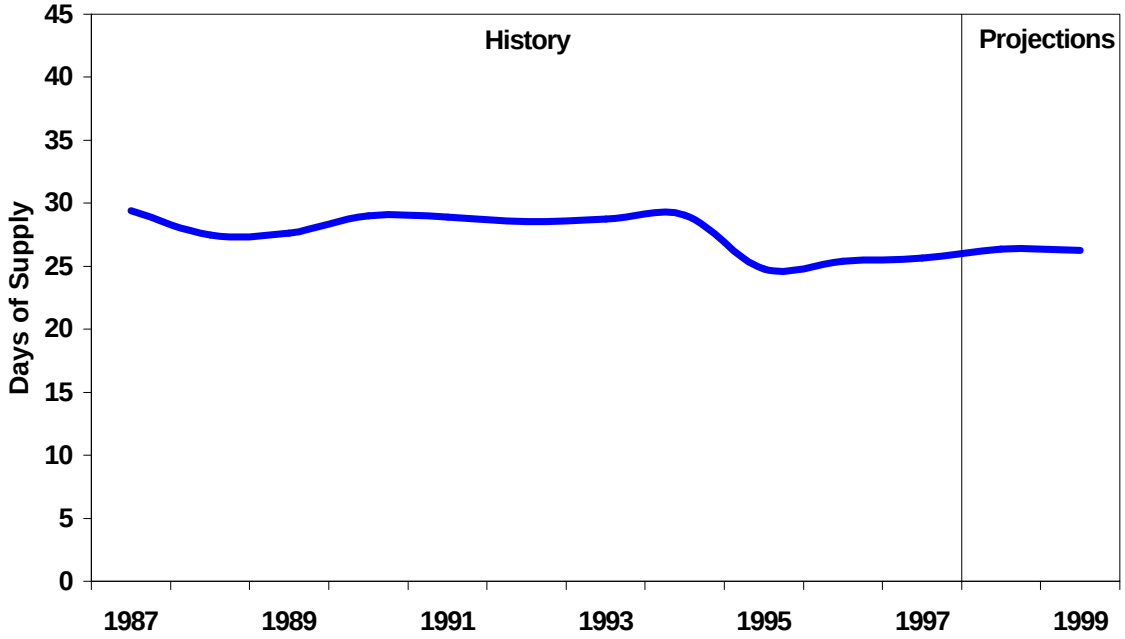


Figure 16. OECD Commercial Oil stocks

Commercial oil inventories (measured in days of supply) in OECD countries increased in 1997, but are expected to increase even more in 1998 before declining slightly in 1999 (Figure 16). The increase in 1998 is in large part due to the currently oversupplied market, but by 1999 our forecast shows a more balanced world oil market in terms of supply and demand.

Outside Iraq, OPEC oil production capacity is expected to increase by about 400,000 barrels per day in both 1998 and 1999. However, OPEC excess production capacity is expected to increase in 1998 as increases in actual production are expected to be less than expansions in production capacity. This is in large part due to the cutbacks in production announce in late March 1998. In 1999, this trend is expected to reverse, as increases in production should outstrip increases in capacity. Overall, OPEC excess oil production capacity is expected to decline by about 400,000 barrels per day between 1996 and 1999. Saudi Arabia controls the bulk of OPEC excess production capacity.

Current exports of crude oil worldwide are averaging 34 million barrels per day, with about 60 percent originating from OPEC countries. Saudi Arabia is by far the world's largest exporter, with over 7 million barrels per day of crude exports.

Net exports from the FSU are expected to decrease slightly during the forecast period, from 2.7 million barrels per day in 1997 to about 2.5 million barrels per day in 1999, as increases in oil demand are expected to be slightly more than anticipated increases in oil production (Figure 17 and Table 3). Most of the increase in oil production in FSU countries is still expected to come after 1999. However, FSU exports are still significantly higher than they were immediately following the collapse of the FSU (2.1 million barrels per day in 1991 and 1992) and are now at levels seen just prior to the collapse of the FSU.

With our assumption that Iraqi oil exports allowed by the UN will increase in 1998, along with expected increases in oil production from Saudi Arabia, Kuwait, and the United Arab Emirates, exports from the Persian Gulf region are also expected to increase in 1998.

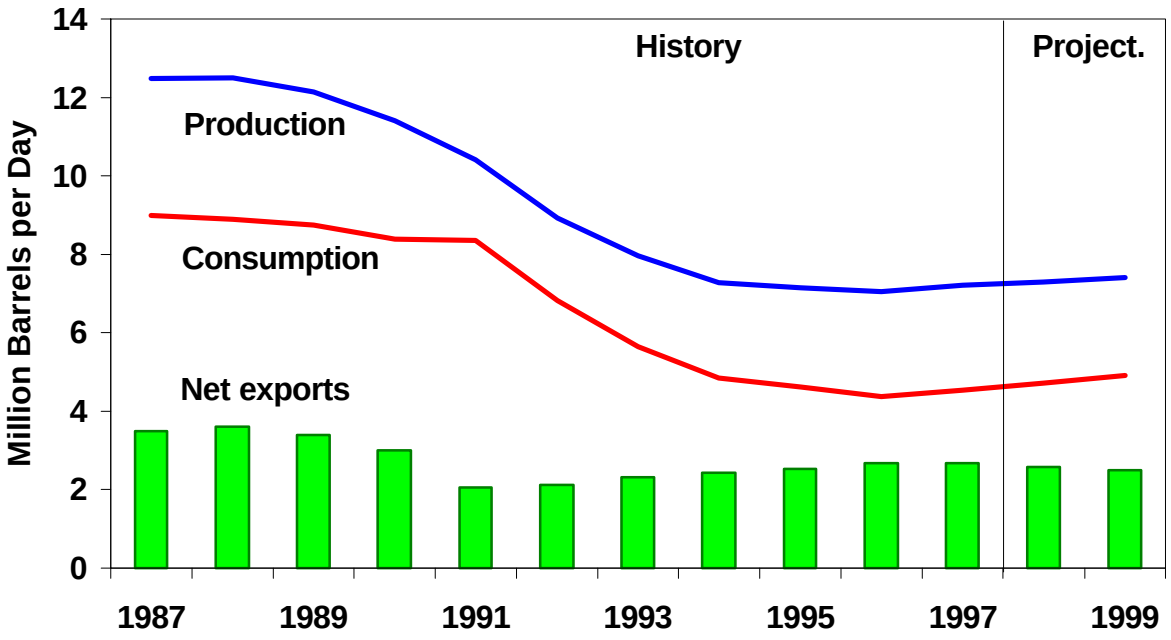


Figure 17. FSU Oil Output, Demand and Net Exports

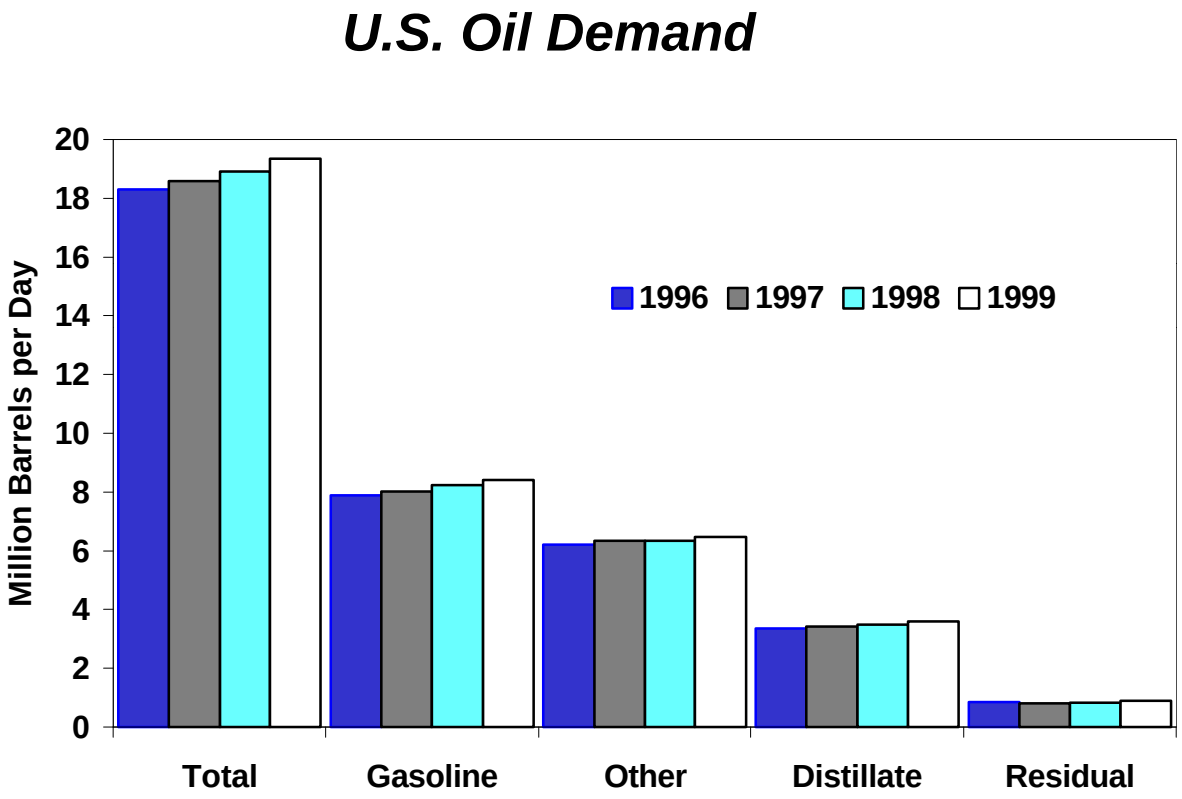


Figure 18. U. S. Petroleum Demand Change

Petroleum demand is projected to rise 330,000 barrels per day, or 1.7 percent, in 1998 and a further 440,000 barrels per day, or 2.3 percent, in 1999 (Figure 18 and Table 5). Continued strong transportation growth, boosted by high rates of income growth and sharp price declines, account for much of that demand increase.

Motor gasoline demand is projected to climb by 2.9 percent in 1998, the largest percentage increase in 20 years, reflecting a projected 3.8-percent increase in vehicle miles traveled. The robust growth is brought about by a 4.2-percent rise in real household income and a 10-percent decline in real fuel costs per mile--the steepest decline since 1986--to a new low. In 1999, demand is projected to rise by a more moderate 2.0 percent, brought about by a 2.9-percent rise in highway travel. That growth reflects not only a 2.3-percent increase in real disposable income and continued low prices, but also the lagged effects of earlier high income growth and steep price declines.

During the forecast interval, jet fuel demand increases are projected to average a robust 2.9 percent per year. Continuing a pattern of high growth, capacity growth rates are expected to average 5.3 percent. This implies average fuel efficiency growth of 2.4 percent as a result of the continued new deployment of new long-haul aircraft. Air

travel activity growth, averaging 4.4 percent, is expected to lag that of capacity, resulting in a slight decline in average load factors from their recent highs.

Distillate demand is projected to grow by 1.7 percent in 1998. Strong transportation demand growth brought about by a robust, 4.4-percent, growth in total manufacturing production, is partly offset by the effects of mild weather during the first quarter as well as the continued stagnation in residential and commercial consumption (Figure 19). The projected 2.7 percent growth in total distillate demand for 1999 is brought about by a sharp cyclical slowdown in growth of manufacturing output to 1.8 percent, offset by increases in heating oil demand and the return to normal weather patterns in the first quarter.

Reversing a 10-year slide, residual fuel oil demand in 1998 is projected to rise 5 percent, spearheaded by declines in residual fuel prices of about 20 percent in the electric utility and industrial sectors. In 1999, continued low prices and normal weather are expected to result in overall growth of almost 6 percent.

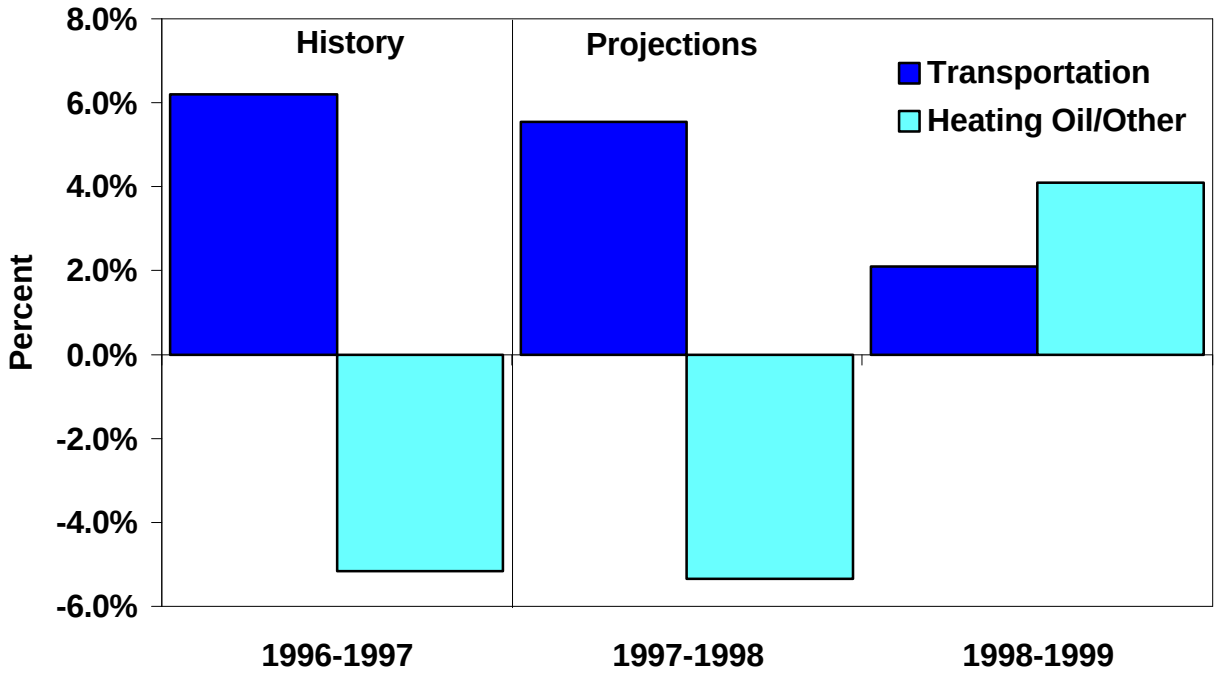


Figure 19. Distillate Demand Growth

U.S. Oil Supply

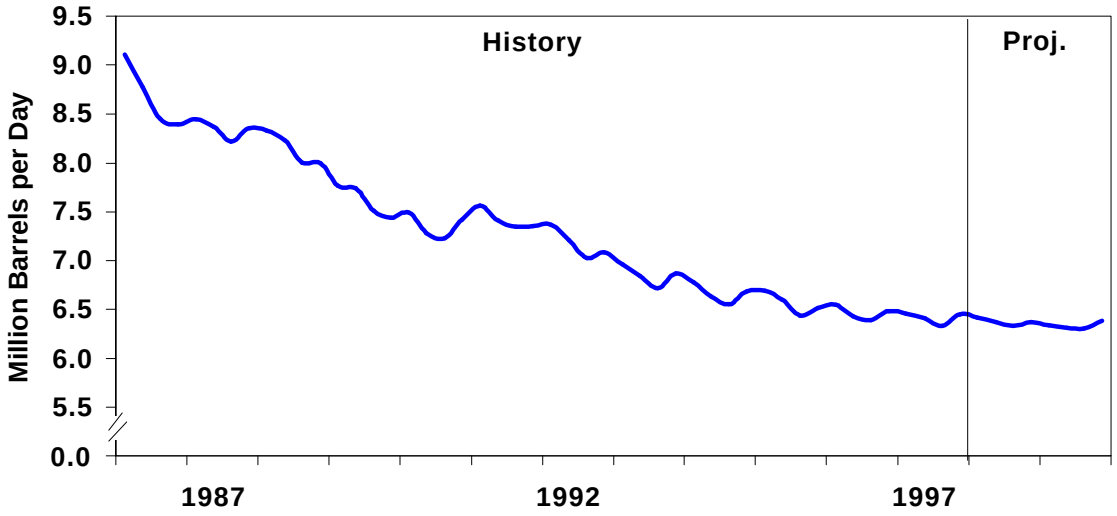


Figure 20. U.S. Crude Oil Production

Because of weaker crude oil prices, the outlook is now for a slight decrease in domestic oil production in 1998 compared with 1997. Average domestic oil production is expected to decrease by 40,000 barrels per day, or 0.6 percent, in 1998 to a level of 6.37 million barrels per day (Figure 20). The downward trend continues in 1999 with another 0.6 percent decline expected.

Lower-48 States oil production is expected to increase by 65,000 barrels per day to about 5.18 million barrels per day in 1998, followed by a decrease of 38,000 barrels per day in 1999. Production from the Ram-Powell field began in third quarter 1997, with an accompanying increase of 60,000 barrels per day in early 1998. British Petroleum has purchased Marathon's Troika sub-sea project and is producing as of November 1997. This production will add 80,000 barrels per day to offshore production in early 1998. Shell will start production in 1999 in their Ursa field, which will peak in production in the year 2000 at 150,000 barrels per day of condensate. Oil production from the Mars, Ram-Powell, Auger, Troika, Ursa, and Santa Ynez Federal Offshore fields is expected to account for about 10.8 per cent of the lower-48 oil production by the 4th quarter of 1999.

Alaska is expected to account for about 19 percent of the total U.S. oil production in 1999. Production there is expected to decrease by 8 percent in 1998 and remain about flat in 1999.

U.S. Natural Gas Demand

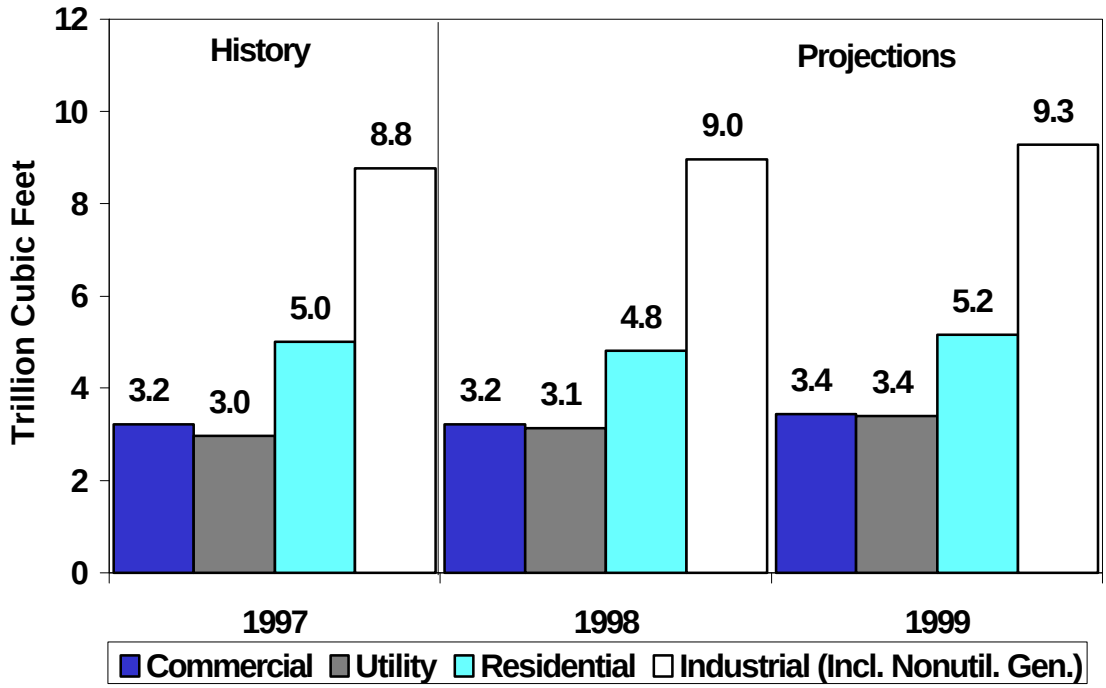


Figure 21. Natural Gas Demand by Sector

Demand growth for natural gas is expected to be 0.7 percent for 1998, following flat demand growth in 1997. Expectations about natural gas demand have been lowered for 1998 primarily because of the weather-related drop in residential, and to some extent, commercial, demand for gas heating in first quarter 1998. Milder than normal first quarter weather (more than 7 percent milder than in first quarter 1997) is mainly responsible for the expected drop in our previous forecast of gas demand growth. Industrial and electric utility demand account for the gas demand growth total, while the residential and commercial sectors are expected to show negative or flat growth this year (Figure 21 and Table 8).

The positive natural gas demand growth expected in the industrial and electricity generating sectors in 1998 is mainly due to rapidly rising economic growth. Problems with coal deliveries, particularly in Texas, has been leading to substitution of natural gas for coal at several utilities to conserve coal stocks. However, weather-related demand declines in the residential sector served to counteract to some extent high demand growth in the industrial and power sectors.

Gas demand is expected to grow across all sectors in 1999 under the assumptions of normal weather conditions and continued economic growth, rising by 5.3. percent.

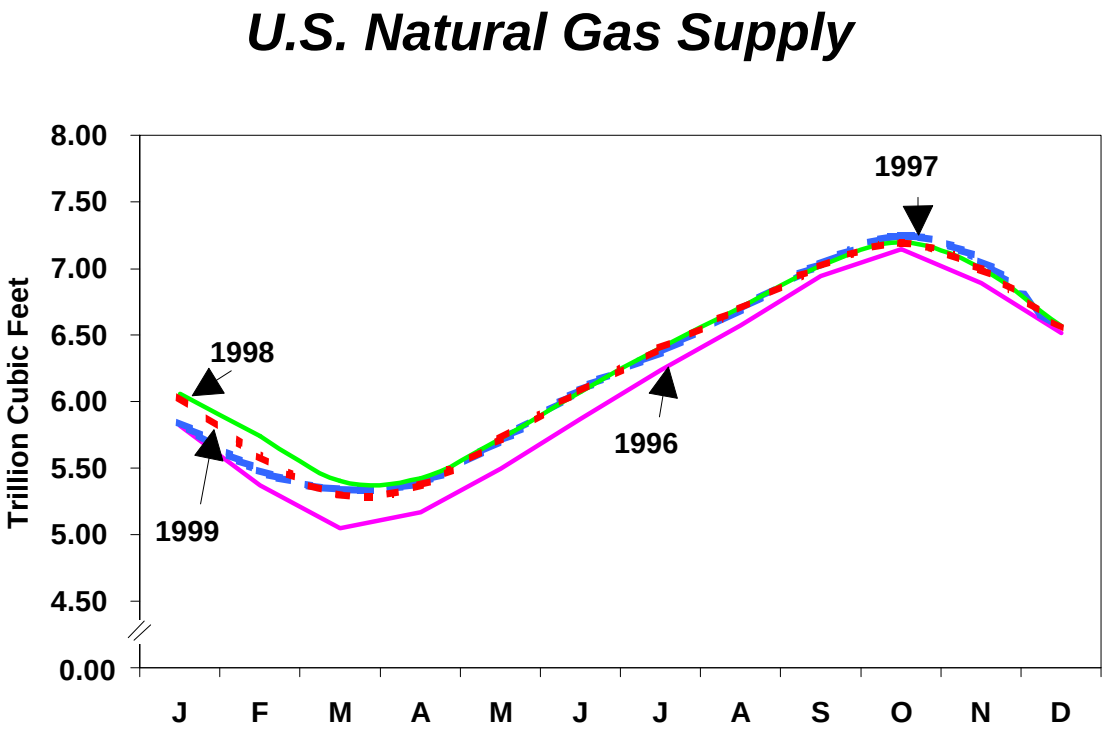


Figure 22. Total Gas in Underground Storage

The winter has generally been very mild in most areas of the country in the first quarter of 1998 and storage levels are expected to end the heating season ahead of last year. Overall heating degree-days have been 7 percent below (warmer than) normal, despite some cold periods. Gas storage is estimated to have been 64 billion cubic feet higher at the end of March than they were a year ago (Figure 22). Each of the three gas consuming and producing regions currently has more gas in storage than a year ago.

Despite the large increase in drilling activity in 1997 to the highest levels since 1990 and relatively higher wellhead prices, U.S. gas production is expected to rise only about 1.2 percent in 1998 from 1997 levels, reflecting the limited growth in demand. High decline rates for some recent wells, particularly in the Outer Continental Shelf of the Gulf of Mexico, indicate a need for continued high levels of drilling to maintain production. Dry gas production growth is expected to average 1.3 percent in 1999 as net imports rise significantly to meet increasing gas demand.

Net imports of natural gas are expected to increase by 7.7 percent in 1998 and by 7.8 percent in 1999, as a total of about 2.6 billion cubic feet per day of increased Canadian export pipeline capacity is expected to be added in these years.

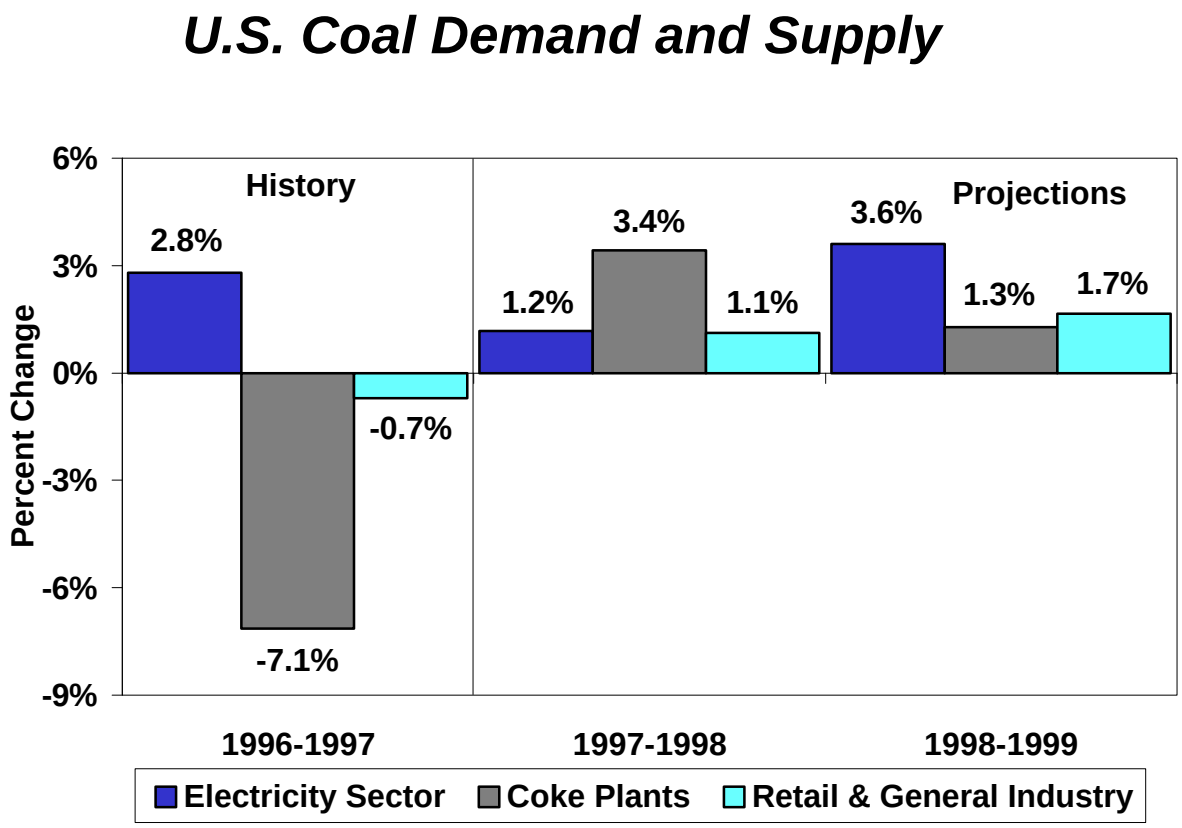


Figure 23. Annual Change in U.S. Coal Demand

Total coal demand is expected to increase by 1.2 percent in 1998 and by 3.4 percent in 1999, compared to 2.2 percent growth in 1997 (Table 9 and Figure 23). Coal demand by the electricity sector (including independent power producers) grew by 2.8 percent to a record 922.0 million short tons (mmst) in 1997, despite weak electricity demand growth of about 0.8 percent. Declines in nuclear generation were largely responsible for the rise in coal consumed for power generation in 1997. Continued growth in electricity demand (2.4 percent in 1998 and 2.5 percent in 1999), combined with assumed declines in hydroelectric generation, will spur the continued growth in coal demand by the electricity sector. The electric sector currently consumes nearly 90 percent (89.7percent in 1997) of all coal used in the United States.

Coal carbonized (consumed) by coke plants fell 7.1 percent in 1997 to 29.4 mmst. Demand for coal at coke plants is expected to be below 31 mmst throughout the

forecast period, primarily as a result of coking plant capacity constraints. There are currently 26 coke plants operating in the United States, compared with 34 operating units at the end of 1990 and 65 at the end of 1970. The growth of coke plant coal consumption is also hindered by the use of non-coke methods of steel production (steel recycling and electric arc furnaces) by the iron and steel industry. Electric-arc production grew by 5.6 percent in 1997, accounting for 43 percent of all raw steel produced in the United States. Coal-based raw steel production grew by 1.0 percent in 1997.

Demand for coal by the retail and general industry sectors is projected at 77.3 mmst in 1998, a 1.1 percent increase from 1997 demand. In 1999, demand is expected to be 78.5 mmst.

U.S. coal exports are expected to rebound in 1998 but not reach the levels achieved in 1996 (90.5 mmst). Exports are projected to be 85.1 mmst in 1998 (a 1.8 percent increase) and 85.3 mmst in 1999 (Table 9).

A record 1,088.6 mmst of coal was produced in 1997. Production is expected to grow by 1.6 percent in 1998, with annual output exceeding 1,105.8 mmst. Production is projected to grow an additional 2.9 percent in 1999. Production in the Western region should continue to rise significantly over the forecast period (5.4 percent in 1998 and 6.2 percent in 1999). The Western region is expected to become the nation's largest coal producer in 1998 supplanting the Appalachian region. Production in the Appalachian (in 1998) and Interior regions is projected to decline over the forecast period.

U.S. Electricity Demand and Supply

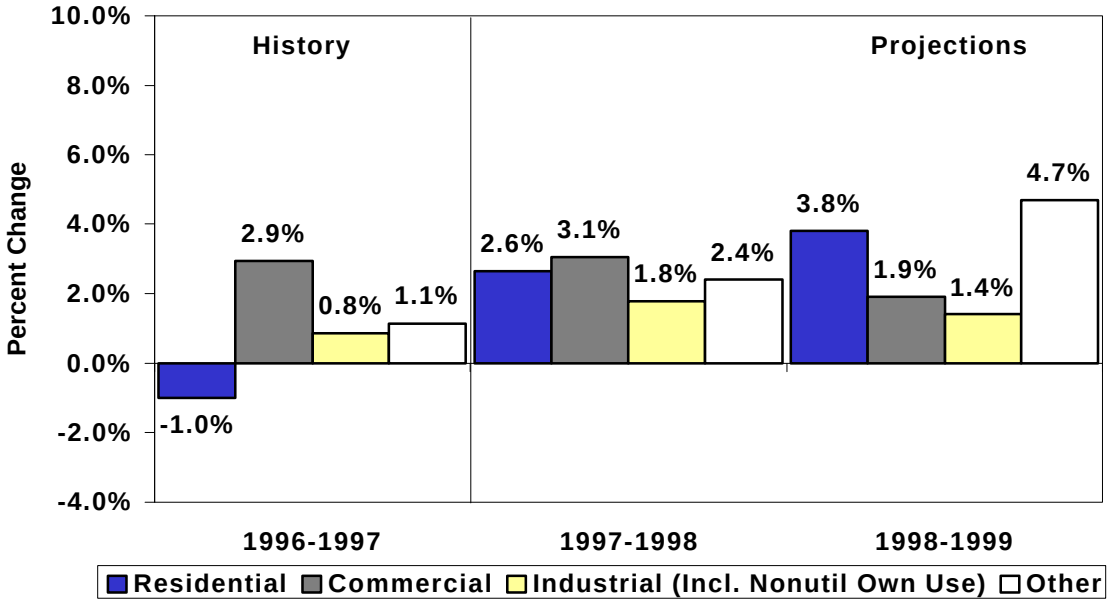


Figure 24. U.S. Electricity Demand

Total electricity demand growth for 1998 is expected to move to the more typical level of 2.4 percent after posting only a 0.8 percent advance in 1997 (Figure 24 and Table 10). This increase is due largely to the expected rise in residential demand due to assumptions of normal weather during the summer. Cooling demand in the second and third quarters of 1998 is expected to be 3.5 percent higher than was the case last year, when temperatures were milder than normal. Higher growth in commercial and industrial demand is also a factor. In 1999, total demand for electricity is expected to be up by 2.4 percent due mainly to expectations of normal winter weather in the first quarter compared with the generally very mild first quarter of 1998.

In 1998, nuclear generation is forecast to recover from the negative growth seen in 1997, as many of the downed nuclear plants go back on line, but not back up to peak 1996 levels. Coal, oil and natural gas generation of electricity are projected to continue to rise significantly in 1998 and 1999, as hydroelectric generation falls below the unusual peaks seen since 1996 (Figure 25). Problems with coal transport by train, which resulted in lower-than-usual coal stocks at utilities in Texas in 1997, may be resolved in 1998.

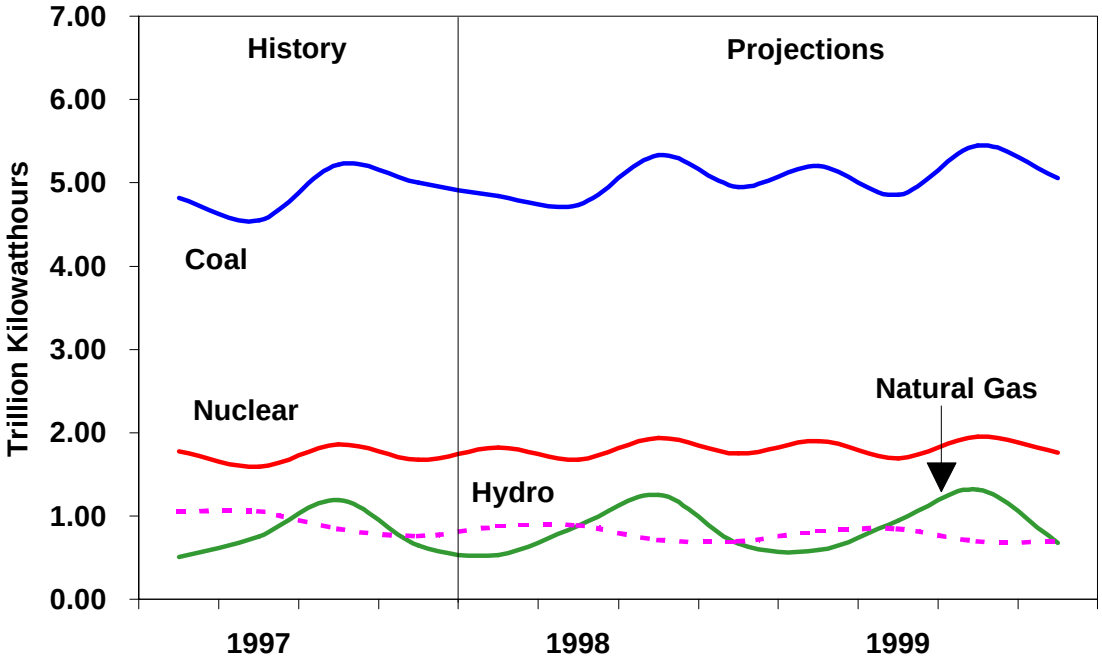


Figure 25. Electric Utility Generation by Fuel

U.S. Renewable Energy Demand

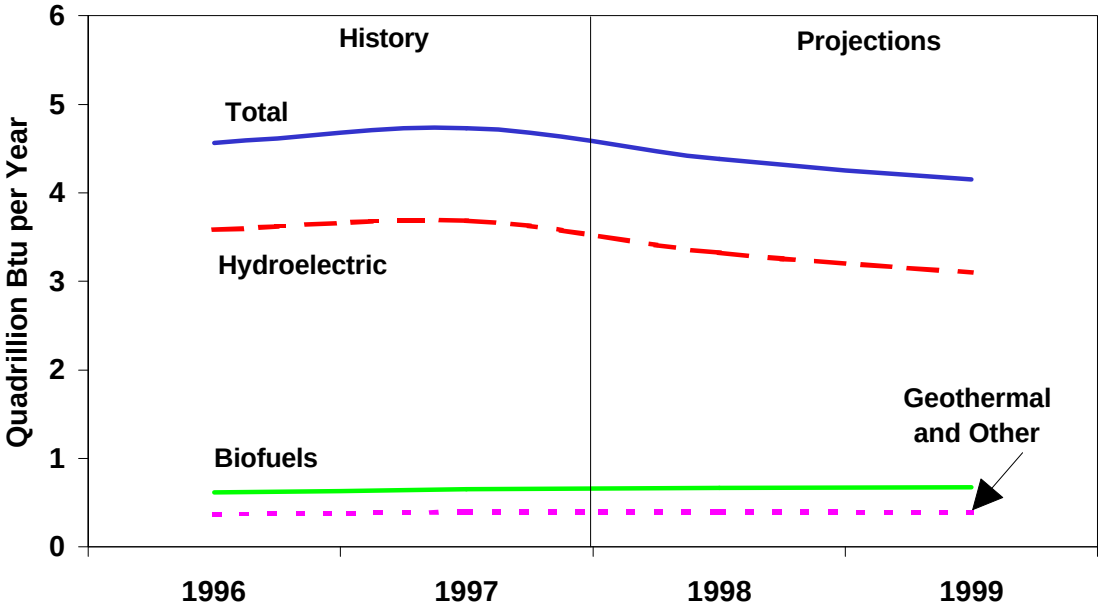


Figure 26. Renewable Energy Use for Electricity

Renewable energy use in the United States amounted to about 7.4 quadrillion Btu (quads), or about 7.8 percent of total domestic gross energy demand, in 1997 (Tables HL1 and 11). In 1998, use of renewables is expected to decrease by about

4.1 percent due to a decline in hydroelectric generation . In 1999, renewables use is expected to decrease further by an annual average of 3.3 percent, as hydroelectric availability continues to decline to more normal levels due to the assumption of normal rain and snowfall for the remainder of the forecast period.

More than half of all renewable energy use measured by EIA is associated with the production of electricity. While the biggest component of electricity producers' use of renewables is hydroelectric power generated by electric utilities (Figure 26), a significant and growing portion of renewables use occurs at nonutility generating facilities.

Hydropower generation by electric utilities in 1998 and 1999 is expected to be lower than the abnormally high levels seen in 1996 and 1997 because of the assumption that weather will be normal. Less rain and snow fall leads to lower hydropower availability.

Most of the nonutility use of renewables involves biofuels, principally wood, wood by-products, and waste, and use of these sources of energy are projected to grow through the forecast period (Figure 27).

Currently, aside from power generation, the most significant area of renewables use is in the industrial sector, accounting for 21 percent of the total in 1997. This component is principally biofuels.

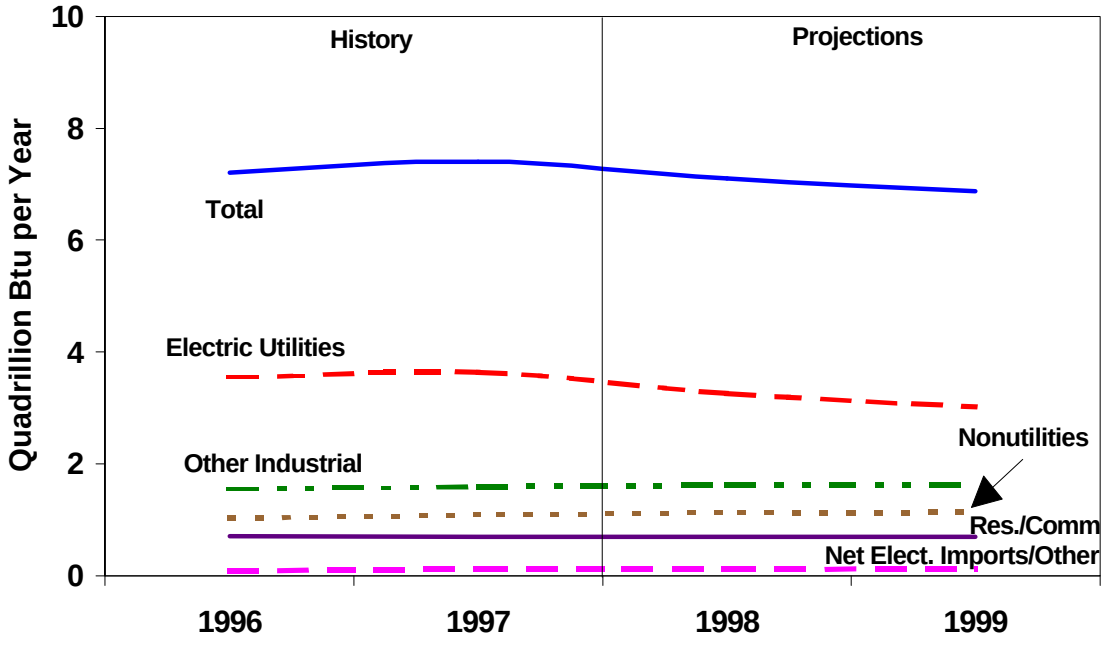


Figure 27. Renewable Energy Use by Sector

Renewables use in the combined residential and commercial sector, at about 0.70 quad in 1997 (Figure 27), generally accounts for about 9.4 percent of total domestic renewables demand (Table 11). Most of this energy is wood used for home heating, with only a very small amount having to do with solar hot water heating.

U.S. Energy Demand and Supply Sensitivities

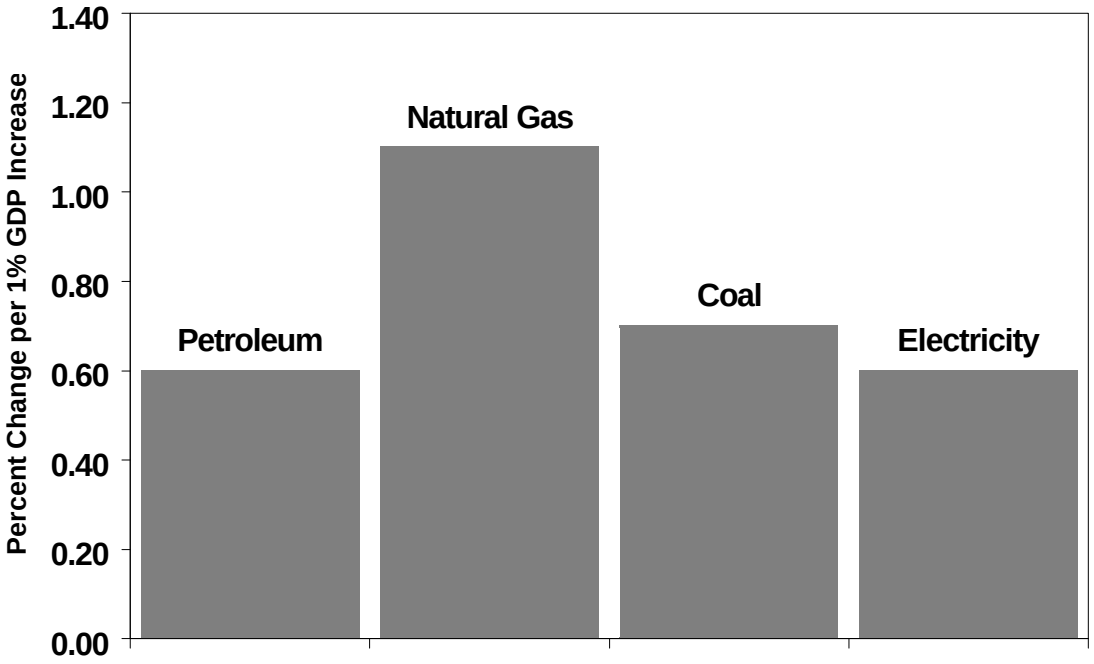


Figure 28. Macro Sensitivities

The petroleum demand and supply outlook for the mid-price case is based on assumed normal temperatures and GDP growth of 2.8 percent per year in 1998 and 2.0 percent in 1999. To enhance the usefulness of the mid-case forecasts, sensitivities of energy demand and supply are also derived, using alternative macroeconomic, price and weather assumptions. Plausible macroeconomic and weather-related petroleum demand sensitivities are illustrated in Figures 28 and 29 and Table 6.

A 1-percent increase in real GDP raises petroleum demand by about 0.6 percent; natural gas demand by 1.1 percent; coal demand by 0.7 percent; and electricity

demand by 0.6 percent (Figure 28). The impact of shifts in economic growth varies, depending upon distribution of incremental growth across energy-intensive and non-energy-intensive sectors.

A 10 percent increase in crude oil prices, assuming no price response from non-petroleum energy sources, reduces petroleum demand by 0.3 percent. A 10 percent increase in gas prices at the wellhead, assuming no price response for other fuels, reduces natural gas demand by 0.4 percent.

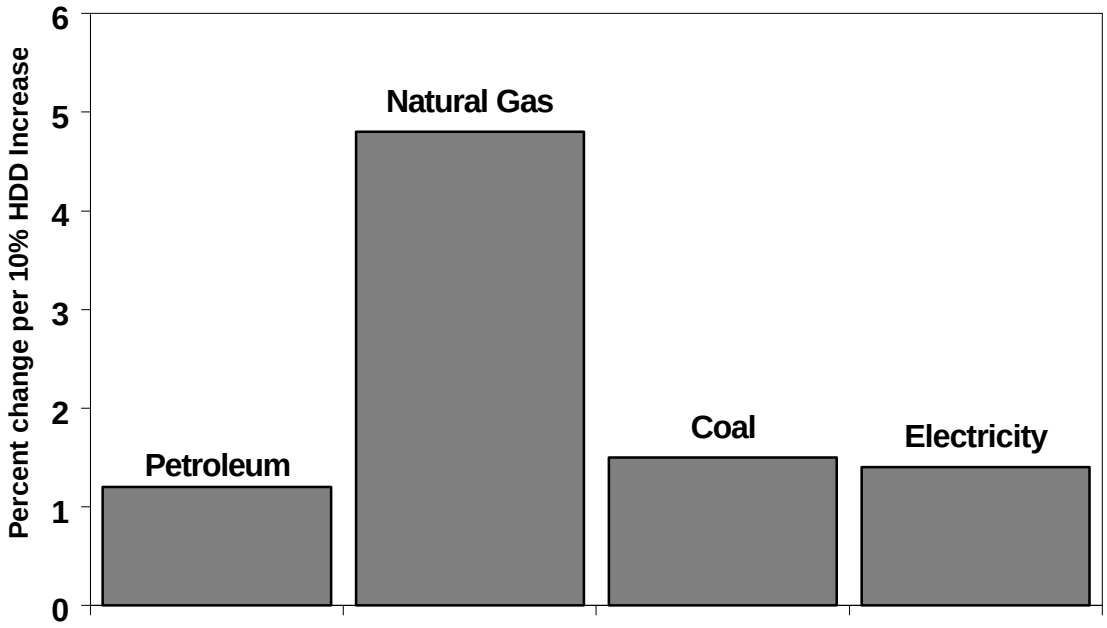


Figure 29. Weather Sensitivities

A 10-percent increase in heating degree-days increases winter petroleum demand by 1.2 percent; natural gas demand by 4.8 percent; coal demand by 1.5 percent; and electricity demand by 1.4 percent (Figure 29). The impact of heating degree-day deviations from normal may not be symmetrical. Extremely cold weather could result in indirect effects on fuel oil markets due to potential natural gas supply constraints.

A 10-percent increase in cooling degree-days increases summer petroleum demand by about 0.1 percent, other fuels by 1.4 percent.

A $1-per-barrel increase in crude oil prices boosts domestic oil supply (crude oil and natural gas liquids production) by about 75,000 barrels per day (Table 7).

Summary of Important Terms

PETROLEUM PRICES

Refiner acquisition cost of crude oil (RAC): The average monthly cost of crude oil to U.S. refiners, including transportation and fees. The composite cost is the weighted average of domestic and imported crude oil costs. Typically, the imported RAC is about $1.50 per barrel below the monthly average spot price of West Texas Intermediate (WTI) crude oil and is within about $0.20 per barrel of the average monthly spot price of Brent crude oil. Unless otherwise stated, the imported RAC is what is referred to in this report as the "world oil price" or "average crude oil price."

Retail motor gasoline prices: The average pump price of gasoline (all services, all grades) for the United States. Unless otherwise stated, the average gasoline retail price is based on the composite gasoline price average computed by the Bureau of Labor Statistics (BLS) in conjunction with the construction of the Consumer Price Index (CPI). Those prices are collected in 85 urban areas selected to represent all urban consumers--about 80 percent of the total U.S. population.

Wholesale motor gasoline price: The monthly average price to refiners of motor gasoline (all types) sold to resellers; it is reported monthly on Table 4 of EIA's *Petroleum Marketing Monthly*.

Retail heating oil price: The cost of Number 2 distillate fuel oil to residences (less taxes). The retail heating oil price referred to in this report is from Table 18 of EIA's *Petroleum Marketing Monthly*.

PETROLEUM DEMAND and SUPPLY

Petroleum Demand (consumption/petroleum products supplied): For each product (gasoline, distillate, etc.), the amount supplied is calculated by summing production, imports, and net withdrawals from primary stocks and subtracting exports. Thus, petroleum demand is represented by the "disappearance" of product from the primary supply system. This demand definition coincides exactly with the term "product supplied" as used in EIA's *Petroleum Supply Monthly*.

Petroleum Stocks, primary: Stocks of crude oil or petroleum products held in storage at (or in) leases, refineries, natural gas processing plants, pipelines, tank farms, and bulk terminals. Crude oil that is in transit from Alaska or that is stored on Federal leases or in the Strategic Petroleum Reserve is included. These

are the only stocks included in this report when petroleum inventories or inventory changes are discussed. Excluded are stocks of foreign origin that are held in bonded warehouse storage.

NATURAL GAS

Natural gas wellhead price: The wellhead price of natural gas is calculated by dividing the total reported value at the wellhead by the total quantity produced as reported by the appropriate agencies of individual producing States and the U.S. Minerals Management Service, Department of the Interior. The price includes all costs prior to shipment from the lease, including gathering and compression costs, in addition to State production, severance, and similar charges.

Natural gas spot price: A transition price for natural gas concluded "on the spot," that is, on a one-time prompt (immediate) basis, as opposed to a longer-term contract price which obligates the seller to deliver the product at an agreed price over an extended period of time.

MACROECONOMIC

Gross Domestic Product (GDP): The total value of goods and services produced by labor and property located in the United States. As long as the labor and property are located in the United States, the supplier may be either U.S. residents or residents of foreign countries. Nominal GDP refers to current dollar value; real GDP refers to GDP corrected for inflation.

GDP Implicit Price Deflator: A byproduct of the price deflation of gross domestic product (GDP). It is derived as the ratio of current- to constant-dollar GDP. It is a weighted average of the detailed price indexes used in the deflation of GDP, but these indexes are combined using weights that reflect the composition of GDP in each period. Thus, changes in the implicit price deflator reflect not only changes in prices but also changes in the composition of GDP. Corresponding current- and constant-dollar series are published by the U.S. Bureau of Economic Analysis, National Income and Product Accounts. The current base year for the deflator is 1992.

Manufacturing Production Index: A measure of nondurable and durable manufacturing production expressed as a percentage of output in a reference period (currently 1992). Data are published by the Federal Reserve System in the Federal Reserve Bulletin.

Employment: Employment data refer to persons on establishment payrolls who received pay for any part of the pay period which includes the 12th of the month (or the last day of the calendar month for government employees). The data

exclude proprietors, the self-employed, unpaid volunteer or family workers, farm workers, and domestic workers. Salaried officers of corporations are included. Employment statistics are published by the U.S. Bureau of Labor Statistics in the Employment and Earnings report.

Consumer Price Index: A measure of the average change in prices paid by urban consumers for a fixed market basket of goods and services. The consumer price index is based on the prices of food, clothing, shelter, fuel, drugs, transportation fares, doctors and dentists fees, and other goods and services that people buy for day-to-day living. All taxes directly associated with the purchase and use of items are included in the index. The consumer price index is published by the U.S. Bureau of Labor Statistics in the *Monthly Labor Review*.

Degree-days, cooling (CDD): For one day, the number of degrees that the average temperature for that day is above 65 degrees Fahrenheit. The daily average temperature is the mean of the maximum and minimum temperatures for a 24-hour period. As covered in this report, cooling degree-days in a period represent the sum of daily degree-day calculations over the period. Thus, national cooling-degree-days for a month represent the weighted average of the daily cooling degree-days for the States, summed across all days in the month. The weights used are population shares unless otherwise noted.

Degree-days, heating (HDD): For one day, the number of degrees that the average temperature is below 65 degrees Fahrenheit. The daily average temperature is the mean of the maximum and minimum temperatures for a 24-hour period. As covered in this report, heating degree-days in a period represent the sum of daily degree-day calculations over the period. Thus, national heating-degree-days for a month represent the weighted-average of the daily heating degree-days for the States, summed across all days in the month. The weights used are population shares unless otherwise noted.

British thermal unit (Btu): The quantity of heat required to raise the temperature of 1 pound of water by 1 degree Fahrenheit. In this report, Btu-equivalent energy values are calculated by multiplying estimated thermal content coefficients per physical unit for various products by the respective quantities. These are then aggregated across products to obtain, for example, total energy demand or supply variables.

TOTAL ENERGY

Total energy demand: The sum of fossil fuel consumed by the five sectors (residential, commercial, industrial, transportation, and electric utility), plus hydroelectric power, nuclear electric power, net imports of coal coke, and electricity generated for distribution from wood, waste, geothermal, wind, photovoltaic, and solar thermal energy.

Adjusted Total Energy Demand: Total Energy Demand (as defined above), plus estimated renewable energy use in the residential, commercial, and industrial sectors not included in the definition of Total Energy Demand. This adjustment amounted to an estimated 3.4 quadrillion Btu (about 4 percent) over and above Total Energy Demand in 1995.

GEOGRAPHICAL

Other Asia includes: Afghanistan, American Samoa, Bangladesh, Bhutan, Brunei, Burma, Cambodia, Cook Islands, Fiji, French Polynesia, Hong Kong (prior to July 1, 1997), India, Indonesia, Kiribati, North Korea, South Korea, Laos, Macau, Malaysia, Maldives, Mongolia, Nauru, Nepal, New Caledonia, Niue, Pakistan, Papua New Guinea, Philippines, Singapore, Solomon Islands, Sri Lanka, Taiwan, Thailand, Tonga, U.S. Pacific Islands, Vanuatu, Vietnam, Wake Island, Western Samoa.

Latin America is defined as including all of the countries of Central and South America, plus Mexico, but excluding Puerto Rico and the U.S. Virgin Islands.

The States in the Appalachian region are: Alabama, Georgia, Eastern Kentucky, Maryland, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia.

The Interior region is composed of: Arkansas, Illinois, Indiana, Iowa, Kansas, Western Kentucky, Louisiana, Missouri, Oklahoma, and Texas.

The Western region States are: Alaska, Arizona, California, Colorado, Montana, New Mexico, North Dakota, Utah, Washington, and Wyoming.

Table 1. U.S. Macroeconomic and Weather Assumptions

	1997				1998				1999				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1997	1998	1999
Macroeconomic [a]															
Real Gross Domestic Product (billion chained 1992 dollars - SAAR)	**7102**	**7160**	**7218**	**7283**	*7334*	*7382*	*7414*	*7449*	*7480*	*7513*	*7555*	*7613*	**7191**	*7395*	*7540*
Percentage Change from Prior Year	**4.0**	**3.4**	**3.9**	**3.8**	*3.3*	*3.1*	*2.7*	*2.3*	*2.0*	*1.8*	*1.9*	*2.2*	**3.8**	*2.8*	*2.0*
Annualized Percent Change from Prior Quarter	**4.8**	**3.3**	**3.2**	**3.6**	*2.8*	*2.6*	*1.7*	*1.9*	*1.7*	*1.8*	*2.2*	*3.0*			
GDP Implicit Price Deflator (Index, 1992=1.000)	**1.118**	**1.123**	**1.127**	**1.131**	*1.135*	*1.141*	*1.147*	*1.152*	*1.158*	*1.163*	*1.168*	*1.174*	**1.125**	*1.144*	*1.166*
Percentage Change from Prior Year	**2.3**	**2.2**	**1.9**	**1.8**	*1.6*	*1.6*	*1.8*	*1.9*	*2.0*	*1.9*	*1.9*	*1.9*	**2.0**	*1.7*	*1.9*
Real Disposable Personal Income (billion chained 1992 Dollars - SAAR)	**5161**	**5201**	**5235**	**5292**	*5373*	*5430*	*5462*	*5493*	*5524*	*5554*	*5573*	*5596*	**5222**	*5439*	*5562*
Percentage Change from Prior Year	**2.2**	**2.8**	**2.8**	**3.7**	*4.1*	*4.4*	*4.3*	*3.8*	*2.8*	*2.3*	*2.0*	*1.9*	**2.9**	*4.2*	*2.3*
Manufacturing Production (Index, 1992=1.000)	**1.243**	**1.257**	**1.276**	**1.301**	*1.315*	*1.326*	*1.329*	*1.333*	*1.336*	*1.344*	*1.354*	*1.367*	**1.269**	*1.326*	*1.350*
Percentage Change from Prior Year	**5.8**	**5.0**	**5.3**	**6.3**	*5.8*	*5.5*	*4.2*	*2.5*	*1.6*	*1.3*	*1.8*	*2.6*	**5.6**	*4.5*	*1.8*
OECD Economic Growth (percent) [b]													**3.1**	*2.7*	*2.4*
Weather [c]															
Heating Degree-Days															
U.S.	**2156**	**635**	**122**	**1692**	*1999*	*524*	*89*	*1636*	*2327*	*524*	*89*	*1636*	**4605**	*4248*	*4576*
New England	**3108**	**1047**	**281**	**2329**	*2840*	*915*	*171*	*2269*	*3267*	*915*	*171*	*2269*	**6765**	*6194*	*6621*
Middle Atlantic	**2777**	**866**	**187**	**2070**	*2485*	*716*	*105*	*2026*	*2993*	*716*	*105*	*2026*	**5900**	*5332*	*5839*
U.S. Gas-Weighted	**2275**	**711**	**127**	**1773**	*2111*	*539*	*81*	*1686*	*2426*	*539*	*81*	*1686*	**4886**	*4417*	*4732*
Cooling Degree-Days (U.S.)	**50**	**289**	**716**	**68**	*20*	*334*	*758*	*72*	*30*	*334*	*758*	*72*	**1123**	*1183*	*1193*

[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.

[b] OECD: Organization for Economic Cooperation and Development: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. Mexico is also a member but is not yet included in OECD data.

[c] Population-weighted degree days. A degree day indicates the temperature variation from 65 degrees Fahrenheit (calculated as the simple average of the daily minimum and maximum temperatures) weighted by 1990 population. Normal is used for the forecast period and is defined as the average number of degree days between 1961 and 1990 for a given period.

SAAR: Seasonally-adjusted annualized rate.

Note: Historical data are printed in bold; forecasts are in italics.

Sources: Historical data: latest data available from: U.S. Department of Commerce, Bureau of Economic Analysis; U.S. Department of Commerce, National Oceanic and Atmospheric Administration; Federal Reserve System, *Statistical Release G.17(419)*. Projections of OECD growth are based on WEFA Group, "World Economic Outlook," Volume 1. Macroeconomic projections are based on DRI/McGraw-Hill Forecast CONTROL0398.

Table 2. U.S. Energy Indicators: Mid World Oil Price Case

	1997				1998				1999				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1997	1998	1999
Macroeconomic [a]															
Real Fixed Investment (billion chained 1992 dollars-SAAR)	**1079**	**1111**	**1148**	**1149**	*1180*	*1200*	*1218*	*1227*	*1235*	*1247*	*1256*	*1269*	**1122**	*1206*	*1252*
Real Exchange Rate (index)	**1.085**	**1.096**	**1.106**	**1.117**	*1.137*	*1.132*	*1.121*	*1.096*	*1.065*	*1.054*	*1.044*	*1.037*	**1.101**	*1.121*	*1.050*
Business Inventory Change (billion chained 1992 dollars-SAAR)	**20.9**	**29.0**	**16.9**	**22.3**	*12.8*	*7.7*	*0.8*	*-0.5*	*-1.0*	*-0.4*	*0.9*	*4.4*	**22.2**	*5.2*	*1.0*
Producer Price Index (index, 1980-1984=1.000)	**1.285**	**1.268**	**1.272**	**1.274**	*1.253*	*1.253*	*1.255*	*1.261*	*1.266*	*1.269*	*1.272*	*1.275*	**1.275**	*1.256*	*1.271*
Consumer Price Index (index, 1980-1984=1.000)	**1.597**	**1.601**	**1.609**	**1.617**	*1.621*	*1.626*	*1.635*	*1.645*	*1.656*	*1.667*	*1.677*	*1.688*	**1.606**	*1.632*	*1.672*
Petroleum Product Price Index (index, 1980-1984=1.000)	**0.722**	**0.675**	**0.669**	**0.651**	*0.555*	*0.571*	*0.578*	*0.587*	*0.596*	*0.592*	*0.594*	*0.587*	**0.679**	*0.573*	*0.592*
Non-Farm Employment (millions)	**121.1**	**121.9**	**122.6**	**123.5**	*124.5*	*125.2*	*125.8*	*126.2*	*126.5*	*126.8*	*127.1*	*127.4*	**122.3**	*125.4*	*127.0*
Commercial Employment (millions)	**82.5**	**83.2**	**83.7**	**84.5**	*85.4*	*86.1*	*86.7*	*87.2*	*87.6*	*87.9*	*88.2*	*88.5*	**83.5**	*86.3*	*88.0*
Total Industrial Production (index, 1992=1.000)	**1.220**	**1.233**	**1.251**	**1.273**	*1.284*	*1.295*	*1.298*	*1.301*	*1.304*	*1.311*	*1.320*	*1.333*	**1.244**	*1.295*	*1.317*
Housing Stock (millions)	**112.1**	**112.5**	**112.9**	**113.3**	*113.6*	*114.0*	*114.4*	*114.8*	*115.1*	*115.5*	*115.9*	*116.2*	**112.7**	*114.2*	*115.7*
Miscellaneous															
Gas Weighted Industrial Production (index, 1992=1.000)	**1.140**	**1.152**	**1.155**	**1.169**	*1.181*	*1.188*	*1.193*	*1.195*	*1.197*	*1.202*	*1.209*	*1.219*	**1.154**	*1.189*	*1.207*
Vehicle Miles Traveled [b] (million miles/day)	**6463**	**7138**	**7309**	**6818**	*6667*	*7418*	*7589*	*7108*	*6908*	*7626*	*7789*	*7293*	**6934**	*7198*	*7406*
Vehicle Fuel Efficiency (index, 1996=1.000)	**1.038**	**0.998**	**0.996**	**1.002**	*1.041*	*1.009*	*1.007*	*1.012*	*1.052*	*1.018*	*1.015*	*1.020*	**1.008**	*1.017*	*1.025*
Real Vehicle Fuel Cost (cents per mile)	**4.06**	**3.85**	**3.83**	**3.89**	*3.48*	*3.48*	*3.47*	*3.57*	*3.51*	*3.50*	*3.42*	*3.47*	**3.91**	*3.50*	*3.47*
Air Travel Capacity (mill. available ton-miles/day)	**402.1**	**417.1**	**434.1**	**427.7**	*427.2*	*445.9*	*463.0*	*452.0*	*447.4*	*463.9*	*480.7*	*471.0*	**420.3**	*447.1*	*465.8*
Aircraft Utilization (mill. revenue ton-miles/day)	**230.5**	**248.0**	**260.9**	**247.2**	*243.6*	*259.2*	*273.8*	*257.5*	*252.7*	*268.7*	*284.2*	*270.2*	**246.7**	*258.6*	*269.0*
Aircraft Yield (cents per ton-mile)	**14.16**	**13.61**	**13.04**	**13.78**	*14.60*	*14.43*	*13.72*	*14.54*	*15.25*	*14.92*	*14.10*	*14.85*	**13.65**	*14.32*	*14.78*
Raw Steel Production (millions tons)	**26.47**	**26.59**	**26.52**	**27.69**	*28.58*	*28.61*	*28.45*	*29.04*	*29.51*	*29.39*	*29.03*	*29.75*	**106.97**	*114.68*	*117.69*

[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.
[b] Includes all highway travel.
SAAR: Seasonally-adjusted annualized rate.
Note: Historical data are printed in bold; forecasts are in italics.
Sources: Historical data: latest data available from: U.S. Department of Commerce, Bureau of Economic Analysis; U.S. Department of Commerce, National Oceanic and Atmospheric Administration; Federal Reserve System, *Statistical Release* G.17(419); U.S. Department of Transportation; American Iron and Steel Institute. Macroeconomic projections are based on DRI/McGraw-Hill Forecast CONTROL0398.

Table 3. International Petroleum Supply and Demand: Mid World Oil Price Case

(Million Barrels per Day, Except OECD Commercial Stocks)

	1997				1998				1999				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1997	1998	1999
Demand [a]															
OECD															
U.S. (50 States)	**18.2**	**18.5**	**18.7**	**18.9**	*18.4*	*18.8*	*19.1*	*19.4*	*19.2*	*19.1*	*19.4*	*19.7*	**18.6**	*18.9*	*19.4*
U.S. Territories	**0.2**	**0.2**	**0.2**	**0.3**	*0.2*	*0.2*	*0.2*	*0.3*	*0.2*	*0.2*	*0.2*	*0.3*	**0.2**	*0.2*	*0.2*
Canada	**1.8**	**1.8**	**1.9**	**1.9**	*1.9*	*1.9*	*2.0*	*2.0*	*2.0*	*2.0*	*2.1*	*2.1*	**1.9**	*1.9*	*2.0*
Europe	**14.3**	**14.2**	**14.4**	**14.8**	*14.5*	*14.3*	*14.6*	*14.9*	*14.7*	*14.6*	*14.8*	*15.1*	**14.4**	*14.6*	*14.8*
Japan	**6.4**	**5.2**	**5.4**	**6.0**	*6.4*	*5.2*	*5.4*	*6.0*	*6.4*	*5.2*	*5.5*	*6.1*	**5.7**	*5.7*	*5.8*
Australia and New Zealand	**0.9**	**0.9**	**0.9**	**1.0**	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	**1.0**	*1.0*	*1.0*
Total OECD	**41.9**	**40.7**	**41.5**	**42.9**	*42.3*	*41.3*	*42.3*	*43.5*	*43.6*	*42.0*	*43.0*	*44.2*	**41.7**	*42.4*	*43.2*
Non-OECD															
Former Soviet Union	**4.7**	**4.3**	**4.3**	**4.7**	*4.9*	*4.5*	*4.5*	*4.9*	*5.1*	*4.7*	*4.7*	*5.1*	**4.5**	*4.7*	*4.9*
Europe	**1.5**	**1.3**	**1.3**	**1.4**	*1.6*	*1.4*	*1.4*	*1.5*	*1.7*	*1.5*	*1.5*	*1.6*	**1.4**	*1.5*	*1.6*
China	**3.8**	**3.9**	**3.9**	**4.0**	*4.1*	*4.1*	*4.2*	*4.2*	*4.4*	*4.4*	*4.5*	*4.5*	**3.9**	*4.2*	*4.4*
Other Asia	**8.9**	**8.7**	**8.2**	**9.4**	*9.3*	*9.0*	*8.5*	*9.7*	*9.6*	*9.4*	*8.9*	*10.2*	**8.8**	*9.1*	*9.5*
Other Non-OECD	**12.8**	**13.1**	**12.8**	**13.1**	*13.2*	*13.6*	*13.3*	*13.5*	*13.6*	*14.0*	*13.7*	*13.9*	**13.0**	*13.4*	*13.8*
Total Non-OECD	**31.8**	**31.4**	**30.7**	**32.6**	*33.1*	*32.6*	*31.9*	*34.0*	*34.4*	*34.0*	*33.2*	*35.4*	**31.6**	*32.9*	*34.2*
Total World Demand	**73.6**	**72.1**	**72.2**	**75.5**	*75.4*	*73.9*	*74.2*	*77.5*	*78.0*	*76.0*	*76.2*	*79.6*	**73.4**	*75.2*	*77.4*
Supply [b]															
OECD															
U.S. (50 States)	**9.4**	**9.4**	**9.4**	**9.5**	*9.4*	*9.4*	*9.4*	*9.4*	*9.4*	*9.4*	*9.4*	*9.5*	**9.4**	*9.4*	*9.4*
Canada	**2.6**	**2.5**	**2.6**	**2.6**	*2.6*	*2.7*	*2.7*	*2.7*	*2.7*	*2.7*	*2.8*	*2.8*	**2.6**	*2.7*	*2.7*
North Sea [c]	**6.5**	**6.1**	**6.0**	**6.4**	*6.5*	*6.3*	*6.3*	*6.6*	*6.8*	*6.6*	*6.9*	*7.2*	**6.2**	*6.4*	*6.9*
Other OECD	**1.6**	**1.6**	**1.6**	**1.7**	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	**1.6**	*1.7*	*1.7*
Total OECD	**20.1**	**19.6**	**19.6**	**20.1**	*20.1*	*20.0*	*20.1*	*20.5*	*20.6*	*20.5*	*20.8*	*21.1*	**19.9**	*20.2*	*20.8*
Non-OECD															
OPEC	**29.5**	**29.7**	**30.1**	**30.3**	*30.9*	*30.1*	*30.4*	*30.7*	*31.0*	*31.1*	*31.2*	*31.4*	**29.9**	*30.5*	*31.2*
Former Soviet Union	**7.1**	**7.2**	**7.3**	**7.3**	*7.3*	*7.3*	*7.3*	*7.4*	*7.4*	*7.4*	*7.4*	*7.5*	**7.2**	*7.3*	*7.4*
China	**3.2**	**3.2**	**3.2**	**3.3**	*3.3*	*3.3*	*3.3*	*3.3*	*3.3*	*3.3*	*3.3*	*3.3*	**3.2**	*3.3*	*3.3*
Mexico	**3.4**	**3.4**	**3.5**	**3.5**	*3.6*	*3.5*	*3.5*	*3.5*	*3.6*	*3.6*	*3.6*	*3.6*	**3.4**	*3.5*	*3.6*
Other Non-OECD	**10.4**	**10.5**	**10.3**	**10.5**	*10.7*	*10.7*	*10.8*	*11.0*	*11.1*	*11.3*	*11.4*	*11.6*	**10.4**	*10.8*	*11.4*
Total Non-OECD	**53.6**	**54.0**	**54.4**	**54.9**	*55.7*	*54.9*	*55.3*	*55.8*	*56.2*	*56.7*	*56.9*	*57.4*	**54.2**	*55.4*	*56.8*
Total World Supply	**73.7**	**73.5**	**74.0**	**75.0**	*75.8*	*74.9*	*75.3*	*76.2*	*76.8*	*77.1*	*77.8*	*78.5*	**74.1**	*75.6*	*77.6*
Stock Changes															
Net Stock Withdrawals or Additions (-)															
U.S. (50 States including SPR)	**-0.1**	**-0.7**	**-0.2**	**0.3**	*0.0*	*-0.2*	*0.0*	*0.5*	*0.5*	*-0.6*	*-0.3*	*0.5*	**-0.1**	*0.1*	*0.0*
Other	**0.0**	**-0.8**	**-1.6**	**0.1**	*-0.4*	*-0.8*	*-1.1*	*0.7*	*0.7*	*-0.6*	*-1.3*	*0.6*	**-0.6**	*-0.4*	*-0.1*
Total Stock Withdrawals	**0.0**	**-1.5**	**-1.8**	**0.5**	*-0.4*	*-0.9*	*-1.2*	*1.2*	*1.2*	*-1.2*	*-1.6*	*1.1*	**-0.7**	*-0.3*	*-0.1*
OECD Comm. Stocks, End (bill. bbls.)	**2.7**	**2.7**	**2.8**	**2.7**	*2.7*	*2.8*	*2.8*	*2.7*	*2.7*	*2.8*	*2.8*	*2.8*	**2.7**	*2.7*	*2.8*
Non-OPEC Supply	**44.2**	**43.9**	**43.9**	**44.7**	*44.9*	*44.8*	*44.9*	*45.5*	*45.9*	*46.1*	*46.5*	*47.1*	**44.2**	*45.0*	*46.4*
Net Exports from Former Soviet Union	**2.3**	**2.9**	**2.9**	**2.5**	*2.3*	*2.8*	*2.8*	*2.4*	*2.2*	*2.7*	*2.7*	*2.3*	**2.7**	*2.6*	*2.5*

[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] 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.

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

OECD: Organization for Economic Cooperation and Development: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. Mexico is also a member, but is not yet included in OECD data.

OPEC: Organization of Petroleum Exporting Countries: Algeria, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

SPR: Strategic Petroleum Reserve

Former Soviet Union: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

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

Sources: Energy Information Administration: latest data available from EIA databases supporting the following reports: *International Petroleum Statistics Report*, DOE/EIA-0520; Organization for Economic Cooperation and Development, Annual and Monthly Oil Statistics Database.

Table 4. U. S. Energy Prices

(Nominal Dollars)

	1997				1998				1999				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1997	1998	1999
Imported Crude Oil [a]															
(dollars per barrel)	**21.03**	**17.93**	**17.80**	**17.77**	*13.84*	*14.83*	*14.50*	*15.41*	*15.50*	*15.33*	*15.33*	*15.25*	**18.58**	*14.66*	*15.35*
Natural Gas Wellhead															
(dollars per thousand cubic feet)	**2.66**	**2.01**	**2.22**	**2.79**	*2.12*	*2.23*	*2.19*	*2.42*	*2.21*	*1.97*	*2.00*	*2.33*	**2.42**	*2.24*	*2.13*
Petroleum Products															
Gasoline Retail [b]															
(dollars per gallon)	**1.31**	**1.29**	**1.30**	**1.27**	*1.15*	*1.19*	*1.21*	*1.19*	*1.19*	*1.24*	*1.24*	*1.20*	**1.29**	*1.19*	*1.22*
No. 2 Diesel Oil, Retail															
(dollars per gallon)	**1.25**	**1.18**	**1.15**	**1.17**	*1.07*	*1.08*	*1.07*	*1.12*	*1.11*	*1.10*	*1.09*	*1.12*	**1.19**	*1.09*	*1.11*
No. 2 Heating Oil, Wholesale															
(dollars per gallon)	**0.65**	**0.57**	**0.54**	**0.57**	*0.47*	*0.48*	*0.48*	*0.54*	*0.53*	*0.50*	*0.51*	*0.54*	**0.59**	*0.50*	*0.52*
No. 2 Heating Oil, Retail															
(dollars per gallon)	**1.05**	**0.97**	**0.88**	**0.93**	*0.90*	*0.86*	*0.82*	*0.90*	*0.93*	*0.89*	*0.85*	*0.91*	**0.99**	*0.88*	*0.91*
No. 6 Residual Fuel Oil, Retail [c]															
(dollars per barrel)	**19.00**	**16.84**	**17.04**	**18.16**	*13.78*	*13.81*	*13.45*	*15.04*	*15.63*	*14.05*	*13.70*	*14.92*	**17.80**	*14.04*	*14.61*
Electric Utility Fuels															
Coal															
(dollars per million Btu)	**1.29**	**1.29**	**1.26**	**1.25**	*1.26*	*1.27*	*1.25*	*1.25*	*1.25*	*1.26*	*1.24*	*1.23*	**1.27**	*1.26*	*1.24*
Heavy Fuel Oil [d]															
(dollars per million Btu)	**2.91**	**2.59**	**2.71**	**2.96**	*2.17*	*2.25*	*2.23*	*2.47*	*2.45*	*2.29*	*2.27*	*2.45*	**2.80**	*2.27*	*2.37*
Natural Gas															
(dollars per million Btu)	**3.11**	**2.45**	**2.60**	**3.17**	*2.48*	*2.49*	*2.44*	*2.72*	*2.60*	*2.28*	*2.27*	*2.62*	**2.77**	*2.52*	*2.40*
Other Residential															
Natural Gas															
(dollars per thousand cubic feet)	**6.67**	**6.90**	**8.57**	**6.90**	*6.52*	*6.90*	*8.24*	*6.45*	*6.44*	*7.04*	*8.29*	*6.69*	**6.92**	*6.70*	*6.75*
Electricity															
(cents per kilowatthour)	**8.04**	**8.69**	**8.79**	**8.31**	*8.08*	*8.55*	*8.74*	*8.26*	*7.87*	*8.45*	*8.70*	*8.21*	**8.46**	*8.42*	*8.32*

[a] Refiner acquisition cost (RAC) of imported crude oil.
[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 1997. Prices exclude taxes, except prices for gasoline, residential natural gas, and diesel. The forecasts were generated by simulation of the Short-Term Integrated Forecasting System.

Sources: Historical data: Energy Information Administration: latest data available from EIA databases supporting the following reports: *Petroleum Marketing Monthly*, DOE/EIA-0380; *Natural Gas Monthly*, DOE/EIA-0130; *Monthly Energy Review*, DOE/EIA-0035; *Electric Power Monthly*, DOE/EIA-0226.

Table 5. U.S. Petroleum Supply and Demand: Mid World Oil Price Case

(Million Barrels per Day, Except Closing Stocks)

	1997				1998				1999				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1997	1998	1999
Supply															
Crude Oil Supply															
Domestic Production [a]	**6.45**	**6.41**	**6.33**	**6.45**	*6.42*	*6.37*	*6.33*	*6.37*	*6.33*	*6.31*	*6.30*	*6.38*	**6.41**	*6.37*	*6.33*
Alaska	**1.36**	**1.30**	**1.24**	**1.28**	*1.21*	*1.17*	*1.16*	*1.23*	*1.23*	*1.19*	*1.16*	*1.19*	**1.30**	*1.19*	*1.19*
Lower 48	**5.09**	**5.11**	**5.09**	**5.17**	*5.21*	*5.20*	*5.17*	*5.15*	*5.10*	*5.12*	*5.15*	*5.19*	**5.12**	*5.18*	*5.14*
Net Imports (including SPR) [b]	**7.32**	**8.11**	**8.17**	**7.95**	*7.70*	*8.18*	*8.35*	*8.10*	*7.81*	*8.59*	*8.77*	*8.34*	**7.89**	*8.09*	*8.38*
Other SPR Supply	**0.00**	**0.00**	**0.00**	**0.00**	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	**0.00**	*0.00*	*0.00*
SPR Stock Withdrawn or Added (-)	**0.03**	**0.00**	**0.00**	**0.00**	*0.00*	*0.08*	*0.12*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	**0.01**	*0.05*	*0.00*
Other Stock Withdrawn or Added (-)	**-0.34**	**-0.08**	**0.20**	**-0.02**	*-0.28*	*0.05*	*0.15*	*0.05*	*-0.06*	*-0.02*	*0.06*	*0.02*	**-0.06**	*-0.01*	*0.00*
Product Supplied and Losses	**0.00**	**0.00**	**0.00**	**0.00**	*0.00*	*-0.01*	*-0.01*	*-0.01*	*-0.01*	*-0.01*	*-0.01*	*-0.01*	**0.00**	*-0.01*	*-0.01*
Unaccounted-for Crude Oil	**0.24**	**0.41**	**0.46**	**0.39**	*0.34*	*0.28*	*0.29*	*0.28*	*0.27*	*0.29*	*0.29*	*0.29*	**0.38**	*0.30*	*0.28*
Total Crude Oil Supply	**13.71**	**14.84**	**15.16**	**14.78**	*14.18*	*14.96*	*15.23*	*14.80*	*14.35*	*15.16*	*15.42*	*15.03*	**14.63**	*14.79*	*14.99*
Other Supply															
NGL Production	**1.87**	**1.84**	**1.86**	**1.80**	*1.85*	*1.88*	*1.87*	*1.88*	*1.90*	*1.88*	*1.87*	*1.88*	**1.84**	*1.87*	*1.88*
Other Hydrocarbon and Alcohol Inputs	**0.31**	**0.34**	**0.36**	**0.35**	*0.33*	*0.33*	*0.34*	*0.35*	*0.36*	*0.34*	*0.35*	*0.36*	**0.34**	*0.34*	*0.35*
Crude Oil Product Supplied	**0.00**	**0.00**	**0.00**	**0.00**	*0.00*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	**0.00**	*0.01*	*0.01*
Processing Gain	**0.78**	**0.84**	**0.87**	**0.90**	*0.78*	*0.84*	*0.86*	*0.84*	*0.80*	*0.86*	*0.88*	*0.86*	**0.85**	*0.83*	*0.85*
Net Product Imports [c]	**1.30**	**1.22**	**0.82**	**0.73**	*0.93*	*1.06*	*1.08*	*1.05*	*1.29*	*1.39*	*1.25*	*1.07*	**1.02**	*1.03*	*1.25*
Product Stock Withdrawn or Added (-) [d]	**0.26**	**-0.63**	**-0.38**	**0.36**	*0.31*	*-0.32*	*-0.28*	*0.43*	*0.51*	*-0.57*	*-0.37*	*0.49*	**-0.10**	*0.04*	*0.01*
Total Supply	**18.23**	**18.46**	**18.69**	**18.92**	*18.38*	*18.75*	*19.11*	*19.36*	*19.21*	*19.08*	*19.42*	*19.69*	**18.58**	*18.91*	*19.35*
Demand															
Motor Gasoline	**7.59**	**8.15**	**8.23**	**8.05**	*7.80*	*8.38*	*8.45*	*8.31*	*8.00*	*8.54*	*8.60*	*8.46*	**8.01**	*8.24*	*8.40*
Jet Fuel	**1.57**	**1.56**	**1.65**	**1.61**	*1.57*	*1.58*	*1.68*	*1.70*	*1.68*	*1.63*	*1.72*	*1.74*	**1.60**	*1.63*	*1.69*
Distillate Fuel Oil	**3.58**	**3.33**	**3.23**	**3.58**	*3.60*	*3.40*	*3.36*	*3.60*	*3.85*	*3.45*	*3.39*	*3.65*	**3.43**	*3.49*	*3.59*
Residual Fuel Oil	**0.90**	**0.77**	**0.77**	**0.75**	*0.80*	*0.82*	*0.84*	*0.88*	*0.97*	*0.84*	*0.84*	*0.89*	**0.80**	*0.84*	*0.88*
Other Oils [e]	**4.61**	**4.65**	**4.81**	**4.93**	*4.61*	*4.57*	*4.79*	*4.87*	*4.71*	*4.61*	*4.86*	*4.95*	**4.75**	*4.71*	*4.78*
Total Demand	**18.24**	**18.46**	**18.69**	**18.93**	*18.38*	*18.75*	*19.11*	*19.36*	*19.21*	*19.08*	*19.42*	*19.69*	**18.58**	*18.91*	*19.35*
Total Petroleum Net Imports	**8.62**	**9.32**	**8.99**	**8.68**	*8.63*	*9.24*	*9.43*	*9.15*	*9.10*	*9.98*	*10.02*	*9.42*	**8.90**	*9.11*	*9.63*
Closing Stocks (million barrels)															
Crude Oil (excluding SPR)	**314**	**322**	**303**	**305**	*330*	*326*	*312*	*307*	*313*	*315*	*309*	*307*	**305**	*307*	*307*
Total Motor Gasoline	**200**	**205**	**199**	**210**	*213*	*204*	*202*	*205*	*206*	*202*	*202*	*200*	**210**	*205*	*200*
Finished Motor Gasoline	**154**	**164**	**158**	**166**	*163*	*162*	*161*	*163*	*165*	*162*	*161*	*159*	**166**	*163*	*159*
Blending Components	**46**	**41**	**41**	**44**	*50*	*42*	*41*	*41*	*42*	*40*	*41*	*41*	**44**	*41*	*41*
Jet Fuel	**39**	**43**	**45**	**44**	*41*	*40*	*41*	*41*	*42*	*43*	*45*	*44*	**44**	*41*	*44*
Distillate Fuel Oil	**102**	**118**	**139**	**139**	*120*	*125*	*137*	*135*	*98*	*111*	*129*	*131*	**139**	*135*	*131*
Residual Fuel Oil	**41**	**39**	**35**	**40**	*40*	*39*	*38*	*42*	*34*	*38*	*39*	*42*	**40**	*42*	*42*
Other Oils [e]	**253**	**286**	**309**	**261**	*253*	*286*	*301*	*257*	*254*	*292*	*305*	*257*	**261**	*257*	*257*
Total Stocks (excluding SPR)	**949**	**1013**	**1030**	**998**	*995*	*1020*	*1032*	*987*	*946*	*1000*	*1028*	*982*	**998**	*987*	*982*
Crude Oil in SPR	**563**	**563**	**563**	**563**	*563*	*556*	*545*	*545*	*545*	*545*	*545*	*545*	**563**	*545*	*545*
Total Stocks (including SPR)	**1512**	**1577**	**1594**	**1562**	*1559*	*1576*	*1577*	*1532*	*1492*	*1545*	*1574*	*1527*	**1562**	*1532*	*1527*

[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 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.

[e] 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 italics. The forecasts were generated by simulation of the Short-Term Integrated Forecasting System.

Sources: Historical data: Energy Information Administration: latest data available from EIA databases supporting the following reports: *Petroleum Supply Monthly*, DOE/EIA-0109, and *Weekly Petroleum Status Report*, DOE/EIA-0208

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Table 6. Approximate Energy Demand Sensitivities[a] for the STIFS[b] Model
(Percent Deviation Base Case)

Demand Sector	+1% GDP	+ 10% Prices		+ 10% Weather [e]	
		Crude Oil [c]	N.Gas Wellhead [d]	Fall/Winter [f]	Spring/Summer [f]
Petroleum					
Total	0.6%	-0.3%	0.1%	1.1%	0.1%
Motor Gasoline	0.1%	-0.3%	0.0%	0.0%	0.0%
Distillate Fuel	0.8%	-0.2%	0.0%	2.7%	0.1%
Residual Fuel	1.6%	-3.4%	2.6%	2.0%	2.7%
Natural Gas					
Total	1.1%	0.3%	-0.4%	4.4%	1.0%
Residential	0.1%	0.0%	0.0%	8.2%	0.0%
Commercial	0.9%	0.0%	0.0%	7.3%	0.0%
Industrial	1.7%	0.2%	-0.5%	1.3%	0.0%
Electric Utility	1.8%	1.6%	-1.5%	1.0%	4.0%
Coal					
Total	0.7%	0.0%	0.0%	1.7%	1.7%
Electric Utility	0.6%	0.0%	0.0%	1.9%	1.9%
Electricity					
Total	0.6%	0.0%	0.0%	1.5%	1.7%
Residential	0.1%	0.0%	0.0%	3.2%	3.6%
Commercial	0.9%	0.0%	0.0%	1.0%	1.4%
Industrial	0.8%	0.0%	0.0%	0.3%	0.2%

[a]Percent change in demand quantity resulting from specified percent changes in model inputs.
[b]Short-Term Integrated Forecasting System.
[c]Refiner acquisitions cost of imported crude oil.
[d]Average unit value of marketed natural gas production reported by States.
[e]Refers to percent changes in degree-days.
[f]Response during fall/winter period(first and fourth calendar quarters) refers to change in heating degree-days. Response during the spring/summer period refers to change in cooling degree-days.

Table 7. 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	*6.61*	*6.07*	*0.54*	*0.11*	*0.43*
Lower 48 States	*5.39*	*4.91*	*0.48*	*0.08*	*0.40*
Alaska	*1.22*	*1.16*	*0.06*	*0.03*	*0.03*

Note: Components provided are for the fourth quarter 1999. 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 8. U.S. Natural Gas Supply and Demand: Mid world Oil Price Case

(Trillion cubic Feet)

	1997				1998				1999				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1997	1998	1999
Supply															
Total Dry Gas Production	**4.74**	**4.70**	**4.72**	**4.78**	*4.78*	*4.75*	*4.78*	*4.85*	*4.84*	*4.81*	*4.84*	*4.91*	**18.94**	*19.16*	*19.40*
Net Imports	**0.74**	**0.68**	**0.68**	**0.74**	*0.75*	*0.74*	*0.75*	*0.82*	*0.83*	*0.80*	*0.81*	*0.87*	**2.84**	*3.06*	*3.30*
Supplemental Gaseous Fuels	**0.03**	**0.03**	**0.02**	**0.03**	*0.04*	*0.03*	*0.03*	*0.03*	*0.04*	*0.03*	*0.03*	*0.03*	**0.12**	*0.13*	*0.13*
Total New Supply	**5.51**	**5.40**	**5.43**	**5.55**	*5.57*	*5.52*	*5.56*	*5.70*	*5.71*	*5.64*	*5.67*	*5.81*	**21.89**	*22.35*	*22.83*
Underground Working Gas Storage															
Opening	**6.51**	**5.34**	**6.09**	**7.03**	*6.52*	*5.40*	*6.07*	*7.02*	*6.56*	*5.30*	*6.08*	*7.01*	**6.51**	*6.52*	*6.56*
Closing	**5.34**	**6.09**	**7.03**	**6.52**	*5.40*	*6.07*	*7.02*	*6.56*	*5.30*	*6.08*	*7.01*	*6.56*	**6.52**	*6.56*	*6.56*
Net Withdrawals	**1.18**	**-0.75**	**-0.95**	**0.51**	*1.12*	*-0.67*	*-0.95*	*0.46*	*1.27*	*-0.78*	*-0.94*	*0.46*	**-0.01**	*-0.04*	*0.01*
Total Supply	**6.68**	**4.65**	**4.48**	**6.06**	*6.69*	*4.85*	*4.61*	*6.15*	*6.97*	*4.86*	*4.73*	*6.27*	**21.88**	*22.30*	*22.84*
Balancing Item [a]	**0.18**	**0.16**	**0.02**	**-0.34**	*0.05*	*0.04*	*-0.04*	*-0.30*	*0.48*	*0.21*	*-0.02*	*-0.29*	**0.01**	*-0.26*	*0.36*
Total Primary Supply	**6.86**	**4.81**	**4.50**	**5.72**	*6.74*	*4.88*	*4.56*	*5.86*	*7.45*	*5.07*	*4.71*	*5.98*	**21.90**	*22.05*	*23.20*
Demand															
Lease and Plant Fuel	**0.31**	**0.31**	**0.31**	**0.31**	*0.31*	*0.31*	*0.31*	*0.32*	*0.31*	*0.31*	*0.31*	*0.32*	**1.24**	*1.24*	*1.24*
Pipeline Use	**0.22**	**0.16**	**0.15**	**0.19**	*0.21*	*0.15*	*0.14*	*0.18*	*0.22*	*0.15*	*0.14*	*0.19*	**0.71**	*0.69*	*0.70*
Residential	**2.28**	**0.88**	**0.38**	**1.47**	*2.17*	*0.86*	*0.37*	*1.42*	*2.48*	*0.87*	*0.37*	*1.43*	**5.01**	*4.82*	*5.15*
Commercial	**1.26**	**0.62**	**0.42**	**0.91**	*1.24*	*0.63*	*0.42*	*0.92*	*1.43*	*0.64*	*0.43*	*0.93*	**3.22**	*3.21*	*3.43*
Industrial (Incl. Cogenerators)	**2.27**	**2.08**	**2.05**	**2.17**	*2.28*	*2.09*	*2.08*	*2.32*	*2.39*	*2.16*	*2.13*	*2.38*	**8.56**	*8.76*	*9.07*
Cogenerators [b]	**0.53**	**0.56**	**0.56**	**0.63**	*0.57*	*0.55*	*0.60*	*0.67*	*0.59*	*0.56*	*0.61*	*0.69*	**2.28**	*2.39*	*2.46*
Electricity Production															
Electric Utilities	***0.47***	***0.72***	***1.15***	**0.62**	*0.48*	*0.80*	*1.19*	*0.65*	*0.57*	*0.90*	*1.27*	*0.67*	**2.96**	*3.13*	*3.40*
Nonutilities (Excl. Cogen.)	**0.05**	**0.05**	**0.05**	**0.05**	*0.05*	*0.05*	*0.05*	*0.06*	*0.05*	*0.05*	*0.05*	*0.06*	**0.20**	*0.20*	*0.21*
Total Demand	**6.86**	**4.81**	**4.50**	**5.72**	*6.74*	*4.88*	*4.56*	*5.86*	*7.45*	*5.07*	*4.71*	*5.98*	**21.90**	*22.05*	*23.20*

[a] 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.

[b] Quarterly estimates and projections for gas consumption by nonutility generators are based on estimates for quarterly gas-fired generation at nonutilities, supplied by the Office of Coal, Nuclear, Electric and Alternate Fuels (CNEAF), Energy Information Administration (EIA), based on annual data reported to EIA on Form EIA-867 (Annual Nonutility Power Producer Report). Annual projections for nonutility gas consumption, as well as the detail on independent power producers' share of gas consumption, are provided by CNEAF.

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

Sources: Historical data: Energy Information Administration: latest data available from EIA databases supporting the following reports: *Natural Gas Monthly*, DOE/EIA-0130; *Electric Power Monthly*, DOE/EIA-0226; Projections: Energy Information Administration, Short-Term Integrated Forecasting System database, and Office of Oil and Gas, Reserves and Natural Gas Division.

Table 9. U.S. Coal Supply and Demand: Mid World Oil Price Case

(Million Short Tons)

	1997				1998				1999				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1997	1998	1999
Supply															
Production	**273.9**	**269.7**	**271.3**	**273.7**	*272.6*	*267.7*	*281.4*	*284.2*	*286.2*	*278.9*	*286.7*	*286.3*	**1088.6**	*1105.8*	*1138.1*
Appalachia	**119.0**	**117.8**	**112.0**	**115.9**	*116.5*	*113.0*	*113.8*	*118.5*	*120.2*	*115.7*	*113.6*	*117.4*	**464.7**	*461.8*	*467.0*
Interior	**42.9**	**41.4**	**44.4**	**43.6**	*41.2*	*39.4*	*44.2*	*43.4*	*41.7*	*39.3*	*43.2*	*41.9*	**172.3**	*168.2*	*166.0*
Western	**112.0**	**110.5**	**114.9**	**114.2**	*114.9*	*115.2*	*123.4*	*122.3*	*124.3*	*123.9*	*130.0*	*127.0*	**451.6**	*475.8*	*505.1*
Primary Stock Levels [a]															
Opening	**28.6**	**37.5**	**42.5**	**39.1**	*32.9*	*34.0*	*34.0*	*32.0*	*32.0*	*32.0*	*34.0*	*32.0*	**28.6**	*32.9*	*32.0*
Closing	**37.5**	**42.5**	**39.1**	**32.9**	*34.0*	*34.0*	*32.0*	*32.0*	*32.0*	*34.0*	*32.0*	*30.0*	**32.9**	*32.0*	*30.0*
Net Withdrawals	**-8.9**	**-5.0**	**3.4**	**6.2**	*-1.1*	*(S)*	*2.0*	*(S)*	*(S)*	*-2.0*	*2.0*	*2.0*	**-4.2**	*0.9*	*2.0*
Imports	**1.3**	**1.7**	**2.2**	**2.2**	*1.8*	*1.8*	*1.8*	*1.8*	*1.8*	*1.8*	*1.8*	*1.8*	**7.5**	*7.2*	*7.3*
Exports	**20.0**	**20.6**	**22.4**	**20.6**	*20.7*	*21.3*	*21.6*	*21.5*	*20.8*	*21.4*	*21.6*	*21.5*	**83.5**	*85.1*	*85.3*
Total Net Domestic Supply	**246.4**	**245.8**	**254.6**	**261.6**	*252.6*	*248.1*	*263.6*	*264.5*	*267.3*	*257.3*	*269.0*	*268.6*	**1008.3**	*1028.9*	*1062.1*
Secondary Stock Levels [b]															
Opening	**123.0**	**119.8**	**128.1**	**110.2**	*106.3*	*109.9*	*114.6*	*101.5*	*104.7*	*105.5*	*112.0*	*99.2*	**123.0**	*106.3*	*104.7*
Closing	**119.8**	**128.1**	**110.2**	**106.3**	*109.9*	*114.6*	*101.5*	*104.7*	*105.5*	*112.0*	*99.2*	*101.7*	**106.3**	*104.7*	*101.7*
Net Withdrawals	**3.2**	**-8.2**	**17.9**	**3.9**	*-3.6*	*-4.7*	*13.1*	*-3.2*	*-0.8*	*-6.6*	*12.8*	*-2.5*	**16.8**	*1.6*	*3.0*
Total Supply	**249.5**	**237.6**	**272.5**	**265.5**	*248.9*	*243.4*	*276.8*	*261.3*	*266.5*	*250.7*	*281.8*	*266.1*	**1025.1**	*1030.4*	*1065.1*
Demand															
Coke Plants	**7.6**	**7.4**	**7.9**	**6.6**	*7.5*	*7.3*	*7.6*	*8.0*	*7.8*	*7.6*	*7.5*	*7.9*	**29.4**	*30.4*	*30.8*
Electricity Production															
Electric Utilities	**218.2**	**207.4**	**243.1**	**229.9**	*217.4*	*214.1*	*247.4*	*228.9*	*233.9*	*220.9*	*252.0*	*233.2*	**898.5**	*907.7*	*939.9*
Nonutilities (Excl. Cogen.) [c]	**5.9**	**5.9**	**5.9**	**5.9**	*6.3*	*6.2*	*6.3*	*6.3*	*6.6*	*6.6*	*6.6*	*6.6*	**23.5**	*25.0*	*26.5*
Retail and General Industry [d]	**20.2**	**18.3**	**18.2**	**19.6**	*20.2*	*18.3*	*18.1*	*20.7*	*20.8*	*18.3*	*18.3*	*21.1*	**76.4**	*77.3*	*78.5*
Total Demand	**251.8**	**238.9**	**275.1**	**261.9**	*251.4*	*245.9*	*279.3*	*263.8*	*269.1*	*253.4*	*284.4*	*268.8*	**1027.8**	*1040.4*	*1075.7*
Discrepancy [e]	**-2.3**	**-1.3**	**-2.6**	**3.5**	*-2.5*	*-2.5*	*-2.5*	*-2.5*	*-2.7*	*-2.6*	*-2.6*	*-2.6*	**-2.7**	*-10.0*	*-10.6*

[a] Primary stocks are held at the mines, preparation plants, and distribution points.

[b] Secondary stocks are held by users.

[c] Consumption of coal by Independent Power Producers (IPPs). In 1995, IPP consumption was estimated to be 5.290 million tons per quarter. Quarterly estimates and projections for coal consumption by nonutility generators are based on estimates for annual coal-fired generation at nonutilities, supplied by the Office of Coal, Nuclear, Electric and Alternate Fuels, Energy Information Administration (EIA), based on annual data reported to EIA on Form EIA-867 (Annual Nonutility Power Producer Report). Data for fourth quarter 1997 are estimates.

[d] Synfuels plant demand in 1993 was 1.7 million tons per quarter and is assumed to remain at that level in 1994, 1995, 1996, 1997 and 1998.

[e] Historical period discrepancy reflects an unaccounted-for shipper and receiver reporting difference. Estimated IPP consumption not included in production (waste coal) has been netted out of the discrepancy. The estimated annual consumption for 1994 is 7.875 million tons, 8.496 million tons in 1995, 9.6 million tons in 1996, 10.4 million tons in 1997 and the estimate for 1998 is 11.2 million tons, and 12.0 million tons in 1999.

(S) indicates amounts of less than 50,000 tons in absolute value.

Notes: Rows and columns may not add due to independent rounding. Historical data are printed in bold; forecasts are in italics. The forecasts were generated by simulation of the Short-Term Integrated Forecasting System.

Sources: Historical data: Energy Information Administration: latest data available from EIA databases supporting the following reports: *Quarterly Coal Report*, DOE/EIA-0121, and *Electric Power Monthly*, DOE/EIA-0226. Projections: Energy Information Administration, Short-Term Integrated Forecasting System database, and Office of Coal, Nuclear, Electric and Alternate Fuels.

Table 10. U.S. Electricity Supply and Demand: Mid World Oil Price Case

(Billion Kilowatthours)

	1997				1998				1999				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1997	1998	1999
Supply															
Net Utility Generation															
Coal	**434.0**	**414.0**	**480.5**	**460.2**	*433.8*	*429.2*	*494.0*	*457.6*	*469.2*	*443.0*	*502.9*	*465.9*	**1788.7**	*1814.6*	*1881.1*
Petroleum	**17.6**	**15.4**	**24.6**	**21.4**	*26.8*	*20.9*	*27.1*	*20.9*	*26.8*	*22.3*	*26.8*	*21.4*	**79.0**	*95.7*	*97.2*
Natural Gas	**45.6**	**69.1**	**109.6**	**59.3**	*46.2*	*77.3*	*114.9*	*62.2*	*54.5*	*86.1*	*121.9*	*64.1*	**283.6**	*300.6*	*326.6*
Nuclear	**160.0**	**144.4**	**171.0**	**154.0**	*161.6*	*153.8*	*174.8*	*157.9*	*168.3*	*151.6*	*176.8*	*159.7*	**629.4**	*648.1*	*656.5*
Hydroelectric	**94.3**	**96.0**	**77.7**	**69.3**	*85.7*	*85.5*	*66.1*	*63.9*	*74.0*	*77.6*	*63.9*	*63.5*	**337.3**	*301.3*	*279.0*
Geothermal and Other [a]	**1.6**	**1.8**	**2.0**	**2.0**	*1.8*	*1.7*	*1.7*	*1.7*	*1.6*	*1.6*	*1.6*	*1.6*	**7.5**	*6.9*	*6.4*
Subtotal	**753.1**	**740.8**	**865.4**	**766.2**	*756.0*	*768.4*	*878.7*	*764.3*	*794.4*	*782.1*	*894.0*	*776.1*	**3125.5**	*3167.3*	*3246.7*
Nonutility Generation [b]															
Coal	**15.3**	**16.3**	**16.4**	**18.4**	*16.6*	*15.9*	*17.3*	*19.3*	*17.0*	*16.3*	*17.7*	*19.8*	**66.4**	*69.1*	*70.8*
Petroleum	**4.0**	**4.2**	**4.2**	**4.7**	*4.4*	*4.2*	*4.6*	*5.1*	*4.7*	*4.5*	*4.9*	*5.5*	**17.1**	*18.4*	*19.6*
Natural Gas	**49.2**	**52.5**	**52.8**	**59.1**	*53.7*	*51.4*	*55.9*	*62.6*	*55.2*	*52.9*	*57.6*	*64.5*	**213.7**	*223.7*	*230.2*
Other Gaseous Fuels [c]	**2.9**	**3.1**	**3.1**	**3.5**	*3.0*	*2.9*	*3.1*	*3.5*	*3.0*	*2.9*	*3.1*	*3.5*	**12.5**	*12.5*	*12.6*
Hydroelectric	**3.9**	**4.2**	**4.2**	**4.7**	*4.4*	*4.2*	*4.5*	*5.1*	*4.6*	*4.4*	*4.7*	*5.3*	**17.1**	*18.2*	*19.0*
Geothermal and Other [d]	**19.0**	**20.3**	**20.4**	**22.9**	*20.3*	*19.4*	*21.2*	*23.7*	*20.5*	*19.6*	*21.3*	*23.9*	**82.6**	*84.6*	*85.3*
Subtotal	**94.3**	**100.6**	**101.2**	**113.3**	*102.3*	*98.0*	*106.7*	*119.4*	*104.9*	*100.5*	*109.4*	*122.5*	**409.4**	*426.4*	*437.4*
Total Generation	**847.4**	**841.4**	**966.6**	**879.5**	*858.3*	*866.4*	*985.3*	*883.7*	*899.4*	*882.7*	*1003.4*	*898.6*	**3534.9**	*3593.7*	*3684.1*
Net Imports [e]	**7.5**	**8.9**	**11.8**	**8.2**	*7.9*	*9.3*	*12.2*	*8.0*	*7.2*	*9.2*	*11.7*	*7.9*	**36.5**	*37.4*	*36.0*
Total Supply	**854.9**	**850.3**	**978.4**	**887.7**	*866.1*	*875.7*	*997.5*	*891.7*	*906.5*	*891.8*	*1015.2*	*906.6*	**3571.3**	*3631.1*	*3720.1*
Losses and Unaccounted for [f]	**53.3**	**82.0**	**74.6**	**73.3**	*50.6*	*75.1*	*69.6*	*68.5*	*53.3*	*76.4*	*70.8*	*69.5*	**283.1**	*263.7*	*270.0*
Demand															
Electric Utility Sales															
Residential	**276.8**	**226.2**	**309.8**	**258.9**	*277.7*	*245.4*	*318.9*	*257.3*	*299.6*	*251.8*	*327.1*	*263.4*	**1071.7**	*1099.3*	*1141.9*
Commercial	**214.5**	**217.6**	**256.0**	**225.3**	*221.1*	*227.5*	*264.1*	*228.6*	*229.7*	*231.2*	*267.5*	*231.0*	**913.5**	*941.2*	*959.3*
Industrial	**248.0**	**259.5**	**269.8**	**258.6**	*251.5*	*263.7*	*274.2*	*263.3*	*255.8*	*266.1*	*276.9*	*266.6*	**1035.9**	*1052.6*	*1065.4*
Other	**23.4**	**23.6**	**26.7**	**25.0**	*23.8*	*24.3*	*27.4*	*25.5*	*25.5*	*25.5*	*28.4*	*26.3*	**98.6**	*101.0*	*105.8*
Subtotal	**762.8**	**726.9**	**862.2**	**767.8**	*774.0*	*760.9*	*884.6*	*774.7*	*810.6*	*774.6*	*899.9*	*787.3*	**3119.7**	*3194.2*	*3272.4*
Nonutility Gener. for Own Use [b]	**38.8**	**41.4**	**41.7**	**46.6**	*41.5*	*39.8*	*43.3*	*48.5*	*42.6*	*40.9*	*44.5*	*49.8*	**168.6**	*173.1*	*177.7*
Total Demand	**801.6**	**768.4**	**903.9**	**814.4**	*815.5*	*800.7*	*927.9*	*823.2*	*853.3*	*815.4*	*944.4*	*837.0*	**3288.2**	*3367.4*	*3450.1*
Memo:															
Nonutility Sales to Electric Utilities [b]	**55.5**	**59.2**	**59.5**	**66.6**	*60.7*	*58.2*	*63.3*	*70.9*	*62.3*	*59.7*	*65.0*	*72.7*	**240.8**	253.2	259.7

[a] "Other" includes generation from wind, wood, waste, and solar sources.

[b] Electricity from nonutility sources, including cogenerators and small power producers. Quarterly estimates and projections for nonutility net sales, own use, and generation by fuel source supplied by the Office of Coal, Nuclear, Electric and Alternate Fuels, Energy Information Administration (EIA), based on annual data reported to EIA on Form EIA-867, "Annual Nonutility Power Producer Report."

[c] Includes refinery still gas and other process or waste gases, and liquefied petroleum gases.

[d] Includes geothermal, solar, wind, wood, waste, nuclear, hydrogen, sulfur, batteries, chemicals and spent sulfite liquor.

[e] Data for 1997 are estimates.

[f] Balancing item, mainly transmission and distribution losses.

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

Sources: Historical data: Energy Information Administration: latest data available from EIA databases supporting the following reports: *Electric Power Monthly*, DOE/EIA-0226. Projections: Energy Information Administration, Short-Term Integrated Forecasting System database, and Office of Coal, Nuclear, Electric and Alternate Fuels.

Table 11. U.S. Renewable Energy Use by Sector : Mid World Oil Price Case

(Quadrillion Btu)

	Year				Annual Percentage Change		
	1996	1997	1998	1999	1996-1997	1997-1998	1998-1999
Electric Utilities							
Hydroelectric Power [a]	**3.411**	**3.509**	*3.134*	*2.901*	**2.9**	*-10.7*	*-7.4*
Geothermal, Solar and Wind Energy [b]	**0.110**	**0.114**	*0.105*	*0.094*	**3.6**	*-7.9*	*-10.5*
Biofuels [c]	**0.020**	**0.020**	*0.020*	*0.020*	**0.0**	*0.0*	*0.0*
Total	**3.541**	**3.643**	*3.258*	*3.015*	**2.9**	*-10.6*	*-7.5*
Nonutility Power Generators							
Hydroelectric Power [a]	**0.170**	**0.175**	*0.187*	*0.195*	**2.9**	*6.9*	*4.3*
Geothermal, Solar and Wind Energy [b]	**0.257**	**0.280**	*0.288*	*0.293*	**8.9**	*2.9*	*1.7*
Biofuels [c]	**0.597**	**0.634**	*0.647*	*0.650*	**6.2**	*2.1*	*0.5*
Total	**1.024**	**1.089**	*1.122*	*1.138*	**6.3**	*3.0*	*1.4*
Total Power Generation	**4.565**	**4.733**	*4.380*	*4.153*	**3.7**	*-7.5*	*-5.2*
Other Sectors							
Residential and Commercial [d]	**0.713**	**0.695**	*0.697*	*0.697*	**-2.5**	*0.3*	*0.0*
Industrial [e]	**1.546**	**1.586**	*1.620*	*1.620*	**2.6**	*2.1*	*0.0*
Transportation [f]	**0.082**	**0.104**	*0.109*	*0.115*	**26.8**	*4.8*	*5.5*
Total	**2.341**	**2.385**	*2.426*	*2.431*	**1.9**	*1.7*	*0.2*
Net Imported Electricity [g]	**0.307**	**0.294**	*0.302*	*0.291*	**-4.2**	*2.7*	*-3.6*
Total Renewable Energy Demand	**7.214**	**7.412**	*7.107*	*6.874*	**2.7**	*-4.1*	*-3.3*

[a] Conventional hydroelectric power only. Hydroelectricity generated by pumped storage is not included in renewable energy.

[b] Also includes photovoltaic and solar thermal energy.

[c] Biofuels are fuelwood, wood byproducts, waste wood, municipal solid waste, manufacturing process waste, and alcohol fuels.

[d] Includes biofuels and solar energy consumed in the residential and commercial sectors.

[e] Consists primarily of biofuels for use other than in electricity cogeneration.

[f] Ethanol blended into gasoline.

[g] Represents 78.6 percent of total electricity net imports, which is the proportion of total 1994 net imported electricity (0.459 quadrillion Btu) attributable to renewable sources (0.361 quadrillion Btu).

(S) Less than 500 billion Btu.

NM indicates percent change calculations are not meaningful or undefined at the precision level of this table.

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

Table A1. Annual U.S. Energy Supply and Demand

	Year														
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Real Gross Domestic Product (GDP)															
(billion chained 1992 dollars)	**5324**	**5488**	**5649**	**5865**	**6062**	**6136**	**6079**	**6244**	**6390**	**6611**	**6742**	**6928**	**7191**	*7395*	*7540*
Imported Crude Oil Price [a]															
(nominal dollars per barrel)	**26.99**	**14.00**	**18.13**	**14.57**	**18.08**	**21.75**	**18.70**	**18.20**	**16.14**	**15.52**	**17.14**	**20.61**	**18.58**	*14.66*	*15.35*
Petroleum Supply															
Crude Oil Production [b]															
(million barrels per day)	**8.97**	**8.68**	**8.35**	**8.14**	**7.61**	**7.36**	**7.42**	**7.17**	**6.85**	**6.66**	**6.56**	**6.46**	**6.41**	*6.37*	*6.33*
Total Petroleum Net Imports (including SPR)															
(million barrels per day)	**4.29**	**5.44**	**5.91**	**6.59**	**7.20**	**7.16**	**6.63**	**6.94**	**7.62**	**8.05**	**7.89**	**8.50**	**8.90**	*9.11*	*9.63*
Energy Demand															
World Petroleum															
(million barrels per day)	**60.1**	**61.8**	**63.1**	**64.9**	**65.9**	**66.0**	**66.6**	**66.8**	**67.0**	**68.3**	**69.9**	**71.5**	**73.4**	*75.2*	*77.4*
U.S. Petroleum															
(million barrels per day)	**15.78**	**16.33**	**16.72**	**17.34**	**17.37**	**17.04**	**16.77**	**17.10**	**17.24**	**17.72**	**17.72**	**18.31**	**18.58**	*18.91*	*19.35*
Natural Gas															
(trillion cubic feet)	**17.28**	**16.22**	**17.21**	**18.03**	**18.80**	**18.72**	**19.03**	**19.54**	**20.28**	**20.71**	**21.58**	**21.96**	**21.90**	*22.05*	*23.20*
Coal															
(million short tons)	**818**	**804**	**837**	**884**	**891**	**897**	**898**	**907**	**944**	**951**	**962**	**1006**	**1028**	*1040*	*1076*
Electricity (billion kilowatthours)															
Utility Sales [c]	**2324**	**2369**	**2457**	**2578**	**2647**	**2713**	**2762**	**2763**	**2861**	**2935**	**3013**	**3098**	**3120**	*3194*	*3272*
Nonutility Own Use [d]	**NA**	**NA**	**NA**	**NA**	**108**	**113**	**122**	**132**	**138**	**150**	**158**	**164**	**169**	*173*	*178*
Total	**2324**	**2369**	**2457**	**2578**	**2755**	**2826**	**2884**	**2895**	**3000**	**3085**	**3171**	**3262**	**3288**	*3367*	*3450*
Total Energy Demand [e]															
(quadrillion Btu)	**74.0**	**74.3**	**76.9**	**80.2**	**81.3**	**81.2**	**81.1**	**82.4**	**84.2**	**85.9**	**87.5**	**89.7**	**90.5**	*91.6*	*94.2*
Total Energy Demand per Dollar of GDP															
(thousand Btu per 1992 Dollar)	**13.90**	**13.54**	**13.61**	**13.68**	**13.42**	**13.23**	**13.33**	**13.20**	**13.17**	**12.99**	**12.98**	**12.95**	**12.58**	*12.38*	*12.49*
Adjusted Total Energy Demand [e]															
(quadrillion Btu)	**NA**	**NA**	**NA**	**NA**	**NA**	**84.1**	**84.0**	**85.5**	**87.3**	**89.2**	**90.9**	**93.9**	**94.4**	*95.3*	*98.0*
Adjusted Total Energy Demand per Dollar of GDP															
(thousand Btu per 1992 Dollar)	**NA**	**NA**	**NA**	**NA**	**NA**	**13.70**	**13.82**	**13.70**	**13.67**	**13.49**	**13.49**	**13.55**	**13.12**	*12.88*	*13.00*

[a] Refers to the imported cost of crude oil to U.S. refiners.

[b] Includes lease condensate.

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

[d] Defined as the difference between total nonutility electricity generation and sales to electric utilities by nonutility generators, reported on Form EIA-867, "Annual Nonutility Power Producer Report." Data for 1997 are estimates.

[e] "Total Energy Demand" refers to the aggregate energy concept presented in Energy Information Administration, *Annual Energy Review*, 1995, DOE/EIA-0384(95), Table 1.1 for the period 1960 to 1989. Adjusted "Total Energy Demand" refers to the aggregate energy demand concept reported in the same table for 1990 and beyond. The former concept is extended here in order to provide a more consistent long-term energy demand series. The latter concept is more comprehensive and is intended as the primary energy demand aggregate for assessing energy intensity trends since 1990. The adjusted measure incorporates information on renewable energy consumption among households, commercial establishments, and electricity generating facilities other than electric utilities (including industrial cogenerators). The conversion from physical units to Btu is calculated using a subset of conversion factors used in the calculations performed for gross energy consumption in Energy Information Administration, *Monthly Energy Review* (*MER*). Consequently, the historical data may not precisely match those published in the *MER* or the *AER*.

Notes: SPR: Strategic Petroleum Reserve. Minor discrepancies with other published EIA historical data are due to independent rounding. Historical data are printed in bold; forecasts are in italics. The forecasts were generated by simulation of the Short-Term Integrated Forecasting System.

Sources: Historical data: Latest data available from Bureau of Economic Analysis; Energy Information Administration; latest data available from EIA databases supporting the following reports: *Petroleum Supply Monthly*, DOE/EIA-0109; *Petroleum Supply Annual*, DOE/EIA-0340/2; *Natural Gas Monthly*, DOE/EIA-0130; *Electric Power Monthly*, DOE/EIA-0226; and *Quarterly Coal Report*, DOE/EIA-0121; *International Petroleum Statistics Report* DOE/EIA-520; *Weekly Petroleum Status Report* DOE/EIA-0208. Macroeconomic projections are based on DRI/McGraw-Hill Forecast CONTROL0398.

Table A2. Annual U.S. Macroeconomic and Weather Indicators

	Year														
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Macroeconomic															
Real Gross Domestic Product (billion chained 1992 dollars)	**5324**	**5488**	**5649**	**5865**	**6062**	**6136**	**6079**	**6244**	**6390**	**6611**	**6742**	**6928**	**7191**	*7395*	*7540*
GDP Implicit Price Deflator (Index, 1992=1.000)	**0.786**	**0.806**	**0.831**	**0.861**	**0.897**	**0.936**	**0.973**	**1.000**	**1.026**	**1.051**	**1.078**	**1.102**	**1.125**	*1.144*	*1.166*
Real Disposable Personal Income (billion chained 1992 Dollars)	**3972**	**4101**	**4168**	**4332**	**4417**	**4498**	**4500**	**4627**	**4704**	**4805**	**4964**	**5077**	**5222**	*5439*	*5562*
Manufacturing Production (Index, 1987=1.000)	**0.857**	**0.881**	**0.928**	**0.971**	**0.990**	**0.985**	**0.962**	**1.000**	**1.038**	**1.100**	**1.160**	**1.202**	**1.269**	*1.326*	*1.350*
Real Fixed Investment (billion chained 1992 dollars)	**799**	**805**	**799**	**818**	**832**	**806**	**741**	**783**	**843**	**916**	**962**	**1042**	**1122**	*1206*	*1252*
Real Exchange Rate (Index, 1990=1.000)	**NA**	**NA**	**NA**	**NA**	**NA**	**1.000**	**1.006**	**1.012**	**1.056**	**1.033**	**0.960**	**1.015**	**1.101**	*1.121*	*1.050*
Business Inventory Change (billion chained 1992 dollars)	**-4.5**	**-4.2**	**5.1**	**9.5**	**19.2**	**6.6**	**-6.1**	**-9.2**	**6.1**	**11.1**	**7.8**	**9.9**	**22.2**	*5.2*	*1.0*
Producer Price Index (index, 1980-1984=1.000)	**1.032**	**1.002**	**1.028**	**1.069**	**1.122**	**1.163**	**1.165**	**1.172**	**1.189**	**1.205**	**1.248**	**1.277**	**1.275**	*1.256*	*1.271*
Consumer Price Index (index, 1980-1984=1.000)	**1.076**	**1.097**	**1.137**	**1.184**	**1.240**	**1.308**	**1.363**	**1.404**	**1.446**	**1.483**	**1.525**	**1.570**	**1.606**	*1.632*	*1.672*
Petroleum Product Price Index (index, 1980-1984=1.000)	**0.832**	**0.532**	**0.568**	**0.539**	**0.612**	**0.748**	**0.671**	**0.647**	**0.620**	**0.591**	**0.608**	**0.701**	**0.679**	*0.573*	*0.592*
Non-Farm Employment (millions)	**97.4**	**99.3**	**102.0**	**105.2**	**107.9**	**109.4**	**108.3**	**108.6**	**110.7**	**114.1**	**117.2**	**119.5**	**122.3**	*125.4*	*127.0*
Commercial Employment (millions)	**60.8**	**62.9**	**65.2**	**67.8**	**70.0**	**71.3**	**70.8**	**71.2**	**73.2**	**76.1**	**78.8**	**81.0**	**83.5**	*86.3*	*88.0*
Total Industrial Production (index, 1987=1.000)	**0.880**	**0.890**	**0.931**	**0.973**	**0.990**	**0.989**	**0.969**	**1.000**	**1.035**	**1.092**	**1.145**	**1.185**	**1.244**	*1.295*	*1.317*
Housing Stock (millions)	**96.3**	**98.0**	**99.8**	**101.6**	**102.9**	**103.5**	**104.5**	**105.5**	**106.8**	**108.2**	**109.8**	**111.2**	**112.7**	*114.2*	*115.7*
Weather [a]															
Heating Degree-Days															
U.S.	**4642**	**4295**	**4334**	**4653**	**4726**	**4016**	**4200**	**4441**	**4700**	**4483**	**4531**	**4713**	**4605**	*4248*	*4576*
New England	**6571**	**6517**	**6546**	**6715**	**6887**	**5848**	**5960**	**6844**	**6728**	**6672**	**6559**	**6679**	**6765**	*6194*	*6621*
Middle Atlantic	**5660**	**5665**	**5699**	**6088**	**6134**	**4998**	**5177**	**5964**	**5948**	**5934**	**5831**	**5986**	**5900**	*5332*	*5839*
U.S. Gas-Weighted	**4856**	**4442**	**4391**	**4779**	**4856**	**4139**	**4337**	**4458**	**4754**	**4659**	**4707**	**5040**	**4886**	*4417*	*4732*
Cooling Degree-Days (U.S.)	**1194**	**1249**	**1269**	**1283**	**1156**	**1260**	**1331**	**1040**	**1218**	**1220**	**1293**	**1180**	**1123**	*1183*	*1193*

[a]Population-weighted degree days. A degree day indicates the temperature variation from 65 degrees Fahrenheit (calculated as the simple average of the daily minimum and maximum temperatures) weighted by 1990 population. Normal is used for the forecast period and is defined as the average number of degree days between 1961 and 1990 for a given period.

Notes: Historical data are printed in bold; forecasts are in italics.

Sources: Historical data: latest data available from: U.S. Department of Commerce, Bureau of Economic Analysis; U.S. Department of Commerce, National Oceanic and Atmospheric Administration; Federal Reserve System, *Statistical Release* G.17(419); U.S. Department of Transportation; American Iron and Steel Institute. Macroeconomic projections are based on DRI/McGraw-Hill Forecast CONTROL0398.

Table A3. Annual International Petroleum Supply and Demand Balance

(Millions Barrels per Day, Except OECD Commercial Stocks)

	Year														
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Demand [a]															
OECD															
U.S. (50 States)	**15.8**	**16.3**	**16.7**	**17.3**	**17.4**	**17.0**	**16.8**	**17.1**	**17.2**	**17.7**	**17.7**	**18.3**	**18.6**	*18.9*	*19.4*
Europe [b]	**11.7**	**12.1**	**12.3**	**12.4**	**12.5**	**12.6**	**13.4**	**13.6**	**13.5**	**13.6**	**14.1**	**14.3**	**14.4**	*14.6*	*14.8*
Japan	**4.4**	**4.4**	**4.5**	**4.8**	**5.0**	**5.1**	**5.3**	**5.4**	**5.4**	**5.7**	**5.7**	**5.9**	**5.7**	*5.7*	*5.8*
Other OECD	**2.5**	**2.5**	**2.5**	**2.6**	**2.7**	**2.7**	**2.7**	**2.7**	**2.8**	**2.9**	**3.0**	**3.0**	**3.0**	*3.1*	*3.2*
Total OECD	**34.3**	**35.3**	**36.0**	**37.1**	**37.6**	**37.5**	**38.1**	**38.8**	**39.0**	**39.9**	**40.6**	**41.4**	**41.7**	*42.4*	*43.2*
Non-OECD															
Former Soviet Union	**9.0**	**9.0**	**9.0**	**8.9**	**8.7**	**8.4**	**8.3**	**6.8**	**5.6**	**4.8**	**4.6**	**4.4**	**4.5**	*4.7*	*4.9*
Europe	**2.2**	**2.2**	**2.2**	**2.2**	**2.1**	**1.9**	**1.4**	**1.3**	**1.3**	**1.3**	**1.3**	**1.3**	**1.4**	*1.5*	*1.6*
China	**1.9**	**2.0**	**2.1**	**2.3**	**2.4**	**2.3**	**2.5**	**2.7**	**3.0**	**3.1**	**3.3**	**3.5**	**3.9**	*4.2*	*4.4*
Other Asia	**3.6**	**3.8**	**4.1**	**4.4**	**4.9**	**5.3**	**5.7**	**6.2**	**6.8**	**7.3**	**7.9**	**8.3**	**8.8**	*9.1*	*9.5*
Other Non-OECD	**9.1**	**9.5**	**9.7**	**10.0**	**10.3**	**10.5**	**10.6**	**11.0**	**11.4**	**11.8**	**12.2**	**12.5**	**13.0**	*13.4*	*13.8*
Total Non-OECD	**25.8**	**26.5**	**27.1**	**27.7**	**28.3**	**28.5**	**28.5**	**28.0**	**28.1**	**28.4**	**29.4**	**30.1**	**31.6**	*32.9*	*34.2*
Total World Demand	**60.1**	**61.8**	**63.1**	**64.9**	**66.0**	**66.0**	**66.6**	**66.8**	**67.0**	**68.3**	**69.9**	**71.5**	**73.4**	*75.2*	*77.4*
Supply [c]															
OECD															
U.S. (50 States)	**11.2**	**11.0**	**10.7**	**10.5**	**9.9**	**9.7**	**9.9**	**9.8**	**9.6**	**9.4**	**9.4**	**9.4**	**9.4**	*9.4*	*9.4*
Canada	**1.8**	**1.8**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.1**	**2.2**	**2.3**	**2.4**	**2.5**	**2.6**	*2.7*	*2.7*
North Sea [d]	**3.6**	**3.8**	**3.8**	**3.8**	**3.7**	**3.9**	**4.1**	**4.5**	**4.8**	**5.5**	**5.9**	**6.3**	**6.2**	*6.4*	*6.9*
Other OECD	**1.4**	**1.4**	**1.4**	**1.5**	**1.4**	**1.5**	**1.5**	**1.4**	**1.4**	**1.5**	**1.5**	**1.5**	**1.6**	*1.7*	*1.7*
Total OECD	**18.1**	**17.9**	**17.9**	**17.8**	**17.1**	**17.1**	**17.5**	**17.9**	**18.0**	**18.7**	**19.2**	**19.7**	**19.9**	*20.2*	*20.8*
Non-OECD															
OPEC	**17.2**	**19.3**	**19.6**	**21.5**	**23.3**	**24.5**	**24.6**	**25.8**	**26.6**	**27.0**	**27.6**	**28.3**	**29.9**	*30.5*	*31.2*
Former Soviet Union	**11.9**	**12.3**	**12.5**	**12.5**	**12.1**	**11.4**	**10.4**	**8.9**	**8.0**	**7.3**	**7.1**	**7.1**	**7.2**	*7.3*	*7.4*
China	**2.5**	**2.6**	**2.7**	**2.7**	**2.8**	**2.8**	**2.8**	**2.8**	**2.9**	**2.9**	**3.0**	**3.1**	**3.2**	*3.3*	*3.3*
Mexico	**3.0**	**2.8**	**2.9**	**2.9**	**2.9**	**3.0**	**3.2**	**3.2**	**3.2**	**3.2**	**3.1**	**3.3**	**3.4**	*3.5*	*3.6*
Other Non-OECD	**6.6**	**11.0**	**6.9**	**7.3**	**7.7**	**8.0**	**8.1**	**8.4**	**8.7**	**9.2**	**9.9**	**10.2**	**10.4**	*10.8*	*11.4*
Total Non-OECD	**41.2**	**43.9**	**44.6**	**47.0**	**48.9**	**49.7**	**49.1**	**49.1**	**49.4**	**49.6**	**50.7**	**52.0**	**54.2**	*55.4*	*56.8*
Total World Supply	**59.3**	**61.8**	**62.5**	**64.8**	**65.9**	**66.8**	**66.7**	**67.0**	**67.4**	**68.3**	**69.9**	**71.8**	**74.1**	*75.6*	*77.6*
Total Stock Withdrawals	**0.8**	**0.0**	**0.6**	**0.1**	**0.0**	**-0.8**	**-0.1**	**-0.2**	**-0.3**	**0.1**	**0.1**	**-0.2**	**-0.7**	*-0.3*	*-0.1*
OECD Comm. Stocks, End (bill. bbls.)	**2.6**	**2.7**	**2.7**	**2.6**	**2.6**	**2.7**	**2.7**	**2.7**	**2.8**	**2.8**	**2.7**	**2.7**	**2.7**	*2.7*	*2.8*
Net Exports from Former Soviet Union	**3.0**	**3.4**	**3.5**	**3.6**	**3.4**	**3.0**	**2.1**	**2.1**	**2.3**	**2.4**	**2.5**	**2.7**	**2.7**	*2.6*	*2.5*

[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 the former East 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.

OECD: Organization for Economic Cooperation and Development: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. Mexico is also a member but OECD data do not yet include Mexico.

OPEC: Organization of Petroleum Exporting Countries: Algeria, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

SPR: Strategic Petroleum Reserve

Former Soviet Union: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

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

Sources: Energy Information Administration: latest data available from EIA databases supporting the following reports: *International Petroleum Statistics Report*, DOE/EIA-0520, and Organization for Economic Cooperation and Development, Annual and Monthly Oil Statistics Database.

Table A4. Annual Average U.S. Energy Prices

(Nominal Dollars)

	Year														
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Imported Crude Oil [a]															
(dollars per barrel)	**28.88**	**26.99**	**14.00**	**14.57**	**18.08**	**21.75**	**18.70**	**18.20**	**16.14**	**15.52**	**17.14**	**20.61**	**18.58**	*14.66*	*15.35*
Natural Gas Wellhead															
(dollars per thousand cubic feet)	**2.51**	**1.94**	**1.66**	**1.69**	**1.69**	**1.71**	**1.64**	**1.74**	**2.04**	**1.85**	**1.55**	**2.16**	**2.42**	*2.24*	*2.13*
Petroleum Products															
Gasoline Retail [b]															
(dollars per gallon)	**1.20**	**0.93**	**0.96**	**0.96**	**1.06**	**1.22**	**1.20**	**1.19**	**1.17**	**1.17**	**1.21**	**1.29**	**1.29**	*1.19*	*1.22*
No. 2 Diesel Oil, Retail															
(dollars per gallon)	**1.16**	**0.88**	**0.93**	**0.91**	**0.99**	**1.16**	**1.12**	**1.10**	**1.11**	**1.11**	**1.11**	**1.23**	**1.19**	*1.09*	*1.11*
No. 2 Heating Oil, Wholesale															
(dollars per gallon)	**0.78**	**0.49**	**0.53**	**0.47**	**0.56**	**0.70**	**0.62**	**0.58**	**0.54**	**0.51**	**0.51**	**0.64**	**0.59**	*0.50*	*0.52*
No. 2 Heating Oil, Retail															
(dollars per gallon)	**1.05**	**0.84**	**0.80**	**0.81**	**0.90**	**1.06**	**1.02**	**0.93**	**0.91**	**0.89**	**0.87**	**0.99**	**0.99**	*0.88*	*0.91*
No. 6 Residual Fuel Oil, Retail [c]															
(dollars per barrel)	**25.57**	**14.46**	**17.76**	**14.04**	**16.20**	**18.66**	**14.32**	**14.21**	**14.00**	**14.79**	**16.49**	**18.97**	**17.80**	*14.04*	*14.61*
Electric Utility Fuels															
Coal															
(dollars per million Btu)	**1.65**	**1.58**	**1.51**	**1.47**	**1.44**	**1.45**	**1.45**	**1.41**	**1.38**	**1.36**	**1.32**	**1.29**	**1.27**	*1.26*	*1.24*
Heavy Fuel Oil [d]															
(dollars per million Btu)	**4.26**	**2.40**	**2.98**	**2.41**	**2.85**	**3.22**	**2.49**	**2.46**	**2.36**	**2.40**	**2.60**	**3.01**	**2.80**	*2.27*	*2.37*
Natural Gas															
(dollars per million Btu)	**3.43**	**2.35**	**2.24**	**2.26**	**2.36**	**2.32**	**2.15**	**2.33**	**2.56**	**2.23**	**1.98**	**2.64**	**2.77**	*2.52*	*2.40*
Other Residential															
Natural Gas															
(dollars per thousand cubic feet)	**6.12**	**5.83**	**5.55**	**5.47**	**5.64**	**5.80**	**5.82**	**5.89**	**6.17**	**6.41**	**6.06**	**6.35**	**6.92**	*6.70*	*6.75*
Electricity															
(cents per kilowatthour)	**7.8**	**7.4**	**7.4**	**7.5**	**7.6**	**7.8**	**8.1**	**8.2**	**8.3**	**8.4**	**8.4**	**8.4**	**8.5**	*8.4*	*8.3*

[a] Refiner acquisition cost (RAC) of imported crude oil.

[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: Prices exclude taxes, except prices for gasoline, residential natural gas, and diesel. The forecasts were generated by simulation of the Short-Term Integrated Forecasting System.

Sources: Historical data: Energy Information Administration: latest data available from EIA databases supporting the following reports: *Petroleum Marketing Monthly*, DOE/EIA-0380; *Natural Gas Monthly*, DOE/EIA-0130; *Monthly Energy Review*, DOE/EIA-0035; *Electric Power Monthly*, DOE/EIA-0226.

Table A5. Annual U.S. Petroleum Supply and Demand

(Million Barrels per Day, Except Closing Stocks)

	Year														
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Supply															
Crude Oil Supply															
Domestic Production [a]	**8.97**	**8.68**	**8.35**	**8.14**	**7.61**	**7.36**	**7.42**	**7.17**	**6.85**	**6.66**	**6.56**	**6.46**	**6.41**	*6.37*	*6.33*
Alaska	**1.83**	**1.87**	**1.96**	**2.02**	**1.87**	**1.77**	**1.80**	**1.71**	**1.58**	**1.56**	**1.48**	**1.39**	**1.30**	*1.19*	*1.19*
Lower 48	**7.15**	**6.81**	**6.39**	**6.12**	**5.74**	**5.58**	**5.62**	**5.46**	**5.26**	**5.10**	**5.08**	**5.07**	**5.12**	*5.18*	*5.14*
Net Imports (including SPR) [b]	**3.00**	**4.02**	**4.52**	**4.95**	**5.70**	**5.79**	**5.67**	**5.99**	**6.69**	**6.96**	**7.14**	**7.40**	**7.89**	*8.09*	*8.38*
Other SPR Supply	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	*0.00*	*0.00*
Stock Draw (Including SPR)	**-0.05**	**-0.08**	**-0.12**	**0.00**	**-0.09**	**0.02**	**-0.01**	**0.01**	**-0.06**	**-0.02**	**0.09**	**0.05**	**-0.06**	*-0.01*	*0.00*
Product Supplied and Losses	**-0.06**	**-0.05**	**-0.03**	**-0.04**	**-0.03**	**-0.02**	**-0.02**	**-0.01**	**-0.01**	**-0.01**	**-0.01**	**-0.01**	**0.00**	*-0.01*	*-0.01*
Unaccounted-for Crude Oil	**0.15**	**0.14**	**0.14**	**0.20**	**0.20**	**0.26**	**0.20**	**0.26**	**0.17**	**0.27**	**0.19**	**0.22**	**0.38**	*0.30*	*0.28*
Total Crude Oil Supply	**12.00**	**12.72**	**12.85**	**13.25**	**13.40**	**13.41**	**13.30**	**13.41**	**13.61**	**13.87**	**13.97**	**14.19**	**14.63**	*14.79*	*14.99*
Other Supply															
NGL Production	**1.61**	**1.55**	**1.59**	**1.62**	**1.55**	**1.56**	**1.66**	**1.70**	**1.74**	**1.73**	**1.76**	**1.83**	**1.84**	*1.87*	*1.88*
Other Hydrocarbon and Alcohol Inputs	**0.11**	**0.11**	**0.12**	**0.11**	**0.11**	**0.13**	**0.15**	**0.20**	**0.25**	**0.26**	**0.30**	**0.31**	**0.34**	*0.34*	*0.35*
Crude Oil Product Supplied	**0.06**	**0.05**	**0.03**	**0.04**	**0.03**	**0.02**	**0.02**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.00**	*0.01*	*0.01*
Processing Gain	**0.56**	**0.62**	**0.64**	**0.66**	**0.66**	**0.70**	**0.71**	**0.77**	**0.76**	**0.77**	**0.77**	**0.84**	**0.85**	*0.83*	*0.85*
Net Product Imports [c]	**1.29**	**1.41**	**1.39**	**1.63**	**1.50**	**1.38**	**0.96**	**0.94**	**0.93**	**1.09**	**0.75**	**1.10**	**1.02**	*1.03*	*1.25*
Product Stock Withdrawn or Added (-)	**0.15**	**-0.12**	**0.09**	**0.03**	**0.13**	**-0.14**	**-0.04**	**0.06**	**-0.05**	**0.00**	**0.15**	**0.03**	**-0.10**	*0.04*	*0.01*
Total Supply	**15.78**	**16.33**	**16.72**	**17.33**	**17.37**	**17.05**	**16.76**	**17.10**	**17.25**	**17.72**	**17.72**	**18.31**	**18.58**	*18.91*	*19.35*
Demand															
Motor Gasoline [d]	**6.78**	**6.94**	**7.19**	**7.36**	**7.40**	**7.31**	**7.23**	**7.38**	**7.48**	**7.60**	**7.79**	**7.89**	**8.01**	*8.24*	*8.40*
Jet Fuel	**1.22**	**1.31**	**1.38**	**1.45**	**1.49**	**1.52**	**1.47**	**1.45**	**1.47**	**1.53**	**1.51**	**1.58**	**1.60**	*1.63*	*1.69*
Distillate Fuel Oil	**2.87**	**2.91**	**2.98**	**3.12**	**3.16**	**3.02**	**2.92**	**2.98**	**3.04**	**3.16**	**3.21**	**3.37**	**3.43**	*3.49*	*3.59*
Residual Fuel Oil	**1.20**	**1.42**	**1.26**	**1.38**	**1.37**	**1.23**	**1.16**	**1.09**	**1.08**	**1.02**	**0.85**	**0.85**	**0.80**	*0.84*	*0.88*
Other Oils [e]	**3.71**	**3.75**	**3.90**	**4.03**	**3.95**	**3.95**	**3.99**	**4.20**	**4.17**	**4.41**	**4.36**	**4.63**	**4.75**	*4.71*	*4.78*
Total Demand	**15.78**	**16.33**	**16.72**	**17.34**	**17.37**	**17.04**	**16.77**	**17.10**	**17.24**	**17.72**	**17.72**	**18.31**	**18.58**	*18.91*	*19.35*
Total Petroleum Net Imports	**4.29**	**5.44**	**5.91**	**6.59**	**7.20**	**7.16**	**6.63**	**6.94**	**7.62**	**8.05**	**7.89**	**8.50**	**8.90**	*9.11*	*9.63*
Closing Stocks (million barrels)															
Crude Oil (excluding SPR)	**321**	**331**	**349**	**330**	**341**	**323**	**325**	**318**	**335**	**337**	**303**	**284**	**305**	*307*	*307*
Total Motor Gasoline	**223**	**233**	**226**	**228**	**213**	**220**	**219**	**216**	**226**	**215**	**202**	**195**	**210**	*205*	*200*
Jet Fuel	**40**	**50**	**50**	**44**	**41**	**52**	**49**	**43**	**40**	**47**	**40**	**40**	**44**	*41*	*44*
Distillate Fuel Oil	**144**	**155**	**134**	**124**	**106**	**132**	**144**	**141**	**141**	**145**	**130**	**127**	**139**	*135*	*131*
Residual Fuel Oil	**50**	**47**	**47**	**45**	**44**	**49**	**50**	**43**	**44**	**42**	**37**	**46**	**40**	*42*	*42*
Other Oils [f]	**247**	**265**	**260**	**267**	**257**	**261**	**267**	**263**	**273**	**275**	**258**	**250**	**261**	*257*	*257*

[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] For years prior to 1993, motor gasoline includes an estimate of fuel ethanol blended into gasoline and certain product reclassifications, not reported elsewhere in EIA. See Appendix B in Energy Information Administration, *Short-Term Energy Outlook*, EIA/DOE-0202(93/3Q), for details on this adjustment.
[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 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 italics. The forecasts were generated by simulation of the Short-Term Integrated Forecasting System.

Sources: Historical data: Energy Information Administration: latest data available from EIA databases supporting the following reports: *Petroleum Supply Monthly*, DOE/EIA-0109, and *Weekly Petroleum Status Report*, DOE/EIA-0208.

Table A6. Annual U.S. Natural Gas Supply and Demand

(Trillion Cubic Feet)

	Year														
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Supply															
Total Dry Gas Production	**16.45**	**16.06**	**16.62**	**17.10**	**17.31**	**17.81**	**17.70**	**17.84**	**18.10**	**18.82**	**18.60**	**18.79**	**18.94**	*19.16*	*19.40*
Net Imports	**0.89**	**0.69**	**0.94**	**1.22**	**1.27**	**1.45**	**1.64**	**1.92**	**2.21**	**2.46**	**2.69**	**2.78**	**2.84**	*3.06*	*3.30*
Supplemental Gaseous Fuels	**0.13**	**0.11**	**0.10**	**0.10**	**0.11**	**0.12**	**0.11**	**0.12**	**0.12**	**0.11**	**0.11**	**0.11**	**0.12**	*0.13*	*0.13*
Total New Supply	**17.47**	**16.86**	**17.66**	**18.42**	**18.69**	**19.38**	**19.45**	**19.88**	**20.42**	**21.39**	**21.40**	**21.69**	**21.89**	*22.35*	*22.83*
Total Underground Storage															
Opening	**6.71**	**6.45**	**6.57**	**6.55**	**6.65**	**6.33**	**6.94**	**6.78**	**6.64**	**6.65**	**6.97**	**6.50**	**6.51**	*6.52*	*6.56*
Closing	**6.45**	**6.57**	**6.55**	**6.65**	**6.33**	**6.94**	**6.78**	**6.64**	**6.65**	**6.97**	**6.50**	**6.51**	**6.52**	*6.56*	*6.56*
Net Withdrawals	**0.26**	**-0.12**	**0.02**	**-0.10**	**0.33**	**-0.61**	**0.16**	**0.14**	**-0.01**	**-0.32**	**0.46**	**-0.01**	**-0.01**	*-0.04*	*0.01*
Total Supply	**17.73**	**16.74**	**17.68**	**18.32**	**19.02**	**18.77**	**19.61**	**20.02**	**20.42**	**21.08**	**21.86**	**21.68**	**21.88**	*22.30*	*22.84*
Balancing Item [a]	**-0.45**	**-0.52**	**-0.47**	**-0.29**	**-0.22**	**-0.05**	**-0.58**	**-0.47**	**-0.14**	**-0.37**	**-0.28**	**0.29**	**0.01**	*-0.26*	*0.36*
Total Primary Supply	**17.28**	**16.22**	**17.21**	**18.03**	**18.80**	**18.72**	**19.03**	**19.54**	**20.28**	**20.71**	**21.58**	**21.96**	**21.90**	*22.05*	*23.20*
Demand															
Lease and Plant Fuel	**0.97**	**0.92**	**1.15**	**1.10**	**1.07**	**1.24**	**1.13**	**1.17**	**1.17**	**1.12**	**1.22**	**1.25**	**1.24**	*1.24*	*1.24*
Pipeline Use	**0.50**	**0.49**	**0.52**	**0.61**	**0.63**	**0.66**	**0.60**	**0.59**	**0.62**	**0.69**	**0.70**	**0.71**	**0.71**	*0.69*	*0.70*
Residential	**4.43**	**4.31**	**4.31**	**4.63**	**4.78**	**4.39**	**4.56**	**4.69**	**4.96**	**4.85**	**4.85**	**5.24**	**5.01**	*4.82*	*5.15*
Commercial	**2.43**	**2.32**	**2.43**	**2.67**	**2.72**	**2.62**	**2.73**	**2.80**	**2.86**	**2.90**	**3.03**	**3.16**	**3.22**	*3.21*	*3.43*
Industrial (Incl. Nonutilities)	**5.90**	**5.58**	**5.95**	**6.38**	**6.82**	**7.02**	**7.23**	**7.53**	**7.98**	**8.17**	**8.58**	**8.87**	**8.76**	*8.96*	*9.28*
Cogenerators [b]	**0.00**	**0.00**	**0.00**	**0.00**	**1.12**	**1.30**	**1.41**	**1.67**	**1.80**	**1.98**	**2.18**	**2.09**	**2.28**	*2.39*	*2.46*
Other Nonutil. Gen. [b]	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.09**	**0.16**	**0.18**	**0.22**	**0.17**	**0.17**	**0.18**	**0.20**	*0.20*	*0.21*
Electric Utilities	**3.04**	**2.60**	**2.84**	**2.64**	**2.79**	**2.79**	**2.79**	**2.77**	**2.68**	**2.99**	**3.20**	**2.73**	**2.96**	*3.13*	*3.40*
Total Demand	**17.28**	**16.22**	**17.21**	**18.03**	**18.80**	**18.72**	**19.03**	**19.54**	**20.28**	**20.71**	**21.58**	**21.96**	**21.90**	*22.05*	*23.20*

[a] 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.

[b] Annual projections for nonutility gas consumption, as well as the detail on independent power producers' share of gas consumption, are provided by the office of Coal, Nuclear, Electric and Alternative Fuels, Energy Information Administration.

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

Sources: Historical data: Energy Information Administration: latest data available from EIA databases supporting the following reports: *Natural Gas Monthly*, DOE/EIA-0130; *Electric Power Monthly*, DOE/EIA-0226; Projections: Energy Information Administration, Short-Term Integrated Forecasting System database, and Office of Oil and Gas, Reserves and Natural Gas Division.

Table A7. Annual U.S. Coal Supply and Demand

(Million Short Tons)

	Year														
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Supply															
Production	**883.6**	**890.3**	**918.8**	**950.3**	**980.7**	**1029.1**	**996.0**	**997.5**	**945.4**	**1033.5**	**1033.0**	**1063.9**	**1088.6**	*1105.8*	*1138.1*
Appalachia	**NA**	**NA**	**NA**	**NA**	**464.8**	**489.0**	**457.8**	**456.6**	**409.7**	**445.4**	**434.9**	**451.9**	**464.7**	*461.8*	*467.0*
Interior	**NA**	**NA**	**NA**	**NA**	**198.1**	**205.8**	**195.4**	**195.7**	**167.2**	**179.9**	**168.5**	**172.8**	**172.3**	*168.2*	*166.0*
Western	**NA**	**NA**	**NA**	**NA**	**317.9**	**334.3**	**342.8**	**345.3**	**368.5**	**408.3**	**429.6**	**439.1**	**451.6**	*475.8*	*505.1*
Primary Stock Levels [a]															
Opening	**34.1**	**33.1**	**32.1**	**28.3**	**30.4**	**29.0**	**33.4**	**33.0**	**34.0**	**25.3**	**33.2**	**34.4**	**28.6**	*32.9*	*32.0*
Closing	**33.1**	**32.1**	**28.3**	**30.4**	**29.0**	**33.4**	**33.0**	**34.0**	**25.3**	**33.2**	**34.4**	**28.6**	**32.9**	*32.0*	*30.0*
Net Withdrawals	**1.0**	**1.0**	**3.8**	**-2.1**	**1.4**	**-4.4**	**0.4**	**-1.0**	**8.7**	**-7.9**	**-1.2**	**5.8**	**-4.2**	*0.9*	*2.0*
Imports	**2.0**	**2.2**	**1.7**	**2.1**	**2.9**	**2.7**	**3.4**	**3.8**	**7.3**	**7.6**	**7.2**	**7.1**	**7.5**	*7.2*	*7.3*
Exports	**92.7**	**85.5**	**79.6**	**95.0**	**100.8**	**105.8**	**109.0**	**102.5**	**74.5**	**71.4**	**88.5**	**90.5**	**83.5**	*85.1*	*85.3*
Total Net Domestic Supply	**793.9**	**808.0**	**844.7**	**855.3**	**884.2**	**921.6**	**890.9**	**897.8**	**886.9**	**961.8**	**950.4**	**986.3**	**1008.3**	*1028.9*	*1062.1*
Secondary Stock Levels [b]															
Opening	**197.2**	**170.2**	**175.2**	**185.5**	**158.4**	**146.1**	**168.2**	**167.7**	**163.7**	**120.5**	**136.1**	**134.6**	**123.0**	*106.3*	*104.7*
Closing	**170.2**	**175.2**	**185.5**	**158.4**	**146.1**	**168.2**	**167.7**	**163.7**	**120.5**	**136.1**	**134.6**	**123.0**	**106.3**	*104.7*	*101.7*
Net Withdrawals	**27.0**	**-5.0**	**-10.2**	**27.0**	**12.3**	**-22.1**	**0.5**	**4.0**	**43.2**	**-15.7**	**1.5**	**11.6**	**16.8**	*1.6*	*3.0*
Total Supply	**820.8**	**803.1**	**834.4**	**882.3**	**896.5**	**899.4**	**891.4**	**901.8**	**930.2**	**946.1**	**951.9**	**997.9**	**1025.1**	*1030.4*	*1065.1*
Demand															
Coke Plants	**41.1**	**35.9**	**37.0**	**41.9**	**40.5**	**38.9**	**33.9**	**32.4**	**31.3**	**31.7**	**33.0**	**31.7**	**29.4**	*30.4*	*30.8*
Electricity Production															
Electric Utilities	**693.8**	**685.1**	**717.9**	**758.4**	**766.9**	**773.5**	**772.3**	**779.9**	**813.5**	**817.3**	**829.0**	**874.7**	**898.5**	*907.7*	*939.9*
Nonutilities (Excl. Cogen.) [c]	**NA**	**NA**	**NA**	**NA**	**0.9**	**1.6**	**10.2**	**14.8**	**17.8**	**20.9**	**21.2**	**22.2**	**23.5**	*25.0*	*26.5*
Retail and General Industry [d]	**83.2**	**83.3**	**82.1**	**83.4**	**82.3**	**83.1**	**81.5**	**80.2**	**81.1**	**81.2**	**78.9**	**76.9**	**76.4**	*77.3*	*78.5*
Total Demand [e]	**818.0**	**804.2**	**836.9**	**883.6**	**890.6**	**897.1**	**897.8**	**907.3**	**943.7**	**951.1**	**962.0**	**1005.6**	**1027.8**	*1040.4*	*1075.7*
Discrepancy [f]	**2.8**	**-1.2**	**-2.5**	**-1.3**	**5.9**	**2.4**	**-6.4**	**-5.4**	**-13.5**	**-4.9**	**-10.1**	**-7.6**	**-2.7**	*-10.0*	*-10.6*

[a] Primary stocks are held at the mines, preparation plants, and distribution points.

[b] Secondary stocks are held by users.

[C] consumption of coal by Independent Power Producers (IPPs). In 1995, IPP consumption was estimated to be 5.290 million tons per quarter. Quarterly estimates and projections for coal consumption by nonutility generators are based on estimates for annual coal-fired generation at nonutilities supplied by the Office of Coal Nuclear, Electric and Alternate Fuels, Energy Information Administration (EIA), based on annual data reported to EAIA on Form EIA-867 (Annual Nonutility Power Producer Report). Data for fourth quarter 1997 are estimates. These quantities are not reported in EIA's *Monthly Energy Review or Annual energy Review.*

[d] Synfuels plant demand in 1993 was 1.7 million tons per quarter and is assumed to remain at that level throughout the forecast.

[e] Total excludes any shipments to independent power producers (IPPs) not calculated in Retail and General Industry for years prior to 1993.

[f] Historical period discrepancy reflects an unaccounted-for shipper and receiver reporting difference. It also includes any shipment to IPPs not captured in Retail and General Industry and consumption by IPPs not included in production (waste coal).

(S) indicates amounts of less than 50,000 tons.

Notes: Rows and columns may not add due to independent rounding. Historical data are printed in bold; forecasts are in italics. The forecasts were generated by simulation of the Short-Term Integrated Forecasting System.

Sources: Historical data: Energy Information Administration: latest data available from EIA databases supporting the following reports: *Quarterly Coal Report*, DOE/EIA-0121, and *Electric Power Monthly*, DOE/EIA-0226. Projections: Energy Information Administration, Short-Term Integrated Forecasting System database, and Office of Coal, Nuclear, Electric and Alternate Fuels.

Table A8. Annual U.S. Electricity Supply and Demand

(Billion Kilowatthours)

	Year														
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Supply															
Net Utility Generation															
Coal	**1402.1**	**1385.8**	**1463.8**	**1540.7**	**1553.7**	**1559.6**	**1551.2**	**1575.9**	**1639.2**	**1635.5**	**1652.9**	**1737.5**	**1788.7**	*1814.6*	*1881.1*
Petroleum	**100.2**	**136.6**	**118.5**	**148.9**	**158.3**	**117.0**	**111.5**	**88.9**	**99.5**	**91.0**	**60.8**	**67.3**	**79.0**	*95.7*	*97.2*
Natural Gas	**291.9**	**248.5**	**272.6**	**252.8**	**266.6**	**264.1**	**264.2**	**263.9**	**258.9**	**291.1**	**307.3**	**262.7**	**283.6**	*300.6*	*326.6*
Nuclear	**383.7**	**414.0**	**455.3**	**527.0**	**529.4**	**576.9**	**612.6**	**618.8**	**610.3**	**640.4**	**673.4**	**674.7**	**629.4**	*648.1*	*656.5*
Hydroelectric	**281.1**	**290.8**	**249.7**	**222.9**	**265.1**	**279.9**	**275.5**	**239.6**	**265.1**	**243.7**	**293.7**	**328.0**	**337.3**	*301.3*	*279.0*
Geothermal and Other [a]	**10.7**	**11.5**	**12.3**	**12.0**	**11.3**	**10.7**	**10.1**	**10.2**	**9.6**	**8.9**	**6.4**	**7.2**	**7.5**	*6.9*	*6.4*
Subtotal	**2469.8**	**2487.3**	**2572.1**	**2704.3**	**2784.3**	**2808.2**	**2825.0**	**2797.2**	**2882.5**	**2910.7**	**2994.5**	**3077.4**	**3125.5**	*3167.3*	*3246.7*
Nonutility Generation [b]	**NA**	**NA**	**NA**	**NA**	**191.3**	**221.8**	**253.7**	**296.0**	**325.5**	**354.9**	**374.4**	**382.5**	**409.4**	*426.4*	*437.4*
Total Generation	**NA**	**NA**	**NA**	**NA**	**2975.6**	**3030.0**	**3078.7**	**3093.2**	**3208.1**	**3265.6**	**3369.0**	**3460.0**	**3534.9**	*3593.7*	*3684.1*
Net Imports	**40.9**	**35.9**	**46.3**	**31.8**	**11.0**	**2.0**	**22.3**	**28.3**	**28.4**	**44.6**	**37.6**	**38.0**	**36.5**	*37.4*	*36.0*
Total Supply	**NA**	**NA**	**NA**	**NA**	**2986.6**	**3032.0**	**3101.0**	**3121.6**	**3236.5**	**3310.3**	**3406.6**	**3498.0**	**3571.3**	*3631.1*	*3720.1*
Losses and Unaccounted for [c]	**NA**	**NA**	**NA**	**NA**	**231.4**	**206.1**	**217.1**	**226.6**	**236.9**	**225.5**	**235.4**	**236.2**	**283.1**	*263.7*	*270.0*
Demand															
Electric Utility Sales															
Residential	**793.9**	**819.1**	**850.4**	**892.9**	**905.5**	**924.0**	**955.4**	**935.9**	**994.8**	**1008.5**	**1042.5**	**1082.5**	**1071.7**	*1099.3*	*1141.9*
Commercial	**606.0**	**630.5**	**660.4**	**699.1**	**725.9**	**751.0**	**765.7**	**761.3**	**794.6**	**820.3**	**862.7**	**887.4**	**913.5**	*941.2*	*959.3*
Industrial	**836.8**	**830.5**	**858.2**	**896.5**	**925.7**	**945.5**	**946.6**	**972.7**	**977.2**	**1008.0**	**1012.7**	**1030.4**	**1035.9**	*1052.6*	*1065.4*
Other	**87.3**	**88.6**	**88.2**	**89.6**	**89.8**	**92.0**	**94.3**	**93.4**	**94.9**	**97.8**	**95.4**	**97.5**	**98.6**	*101.0*	*105.8*
Subtotal	**2324.0**	**2368.8**	**2457.3**	**2578.1**	**2646.8**	**2712.6**	**2762.0**	**2763.4**	**2861.5**	**2934.6**	**3013.3**	**3097.8**	**3119.7**	*3194.2*	*3272.4*
Nonutility Own Use [b]	**NA**	**NA**	**NA**	**NA**	**108.4**	**113.4**	**121.9**	**131.6**	**138.1**	**150.2**	**157.9**	**164.0**	**168.6**	*173.1*	*177.7*
Total Demand	**NA**	**NA**	**NA**	**NA**	**2755.2**	**2825.9**	**2883.9**	**2895.0**	**2999.6**	**3084.8**	**3171.2**	**3261.8**	**3288.2**	*3367.4*	*3450.1*
Memo:															
Nonutility Sales to Electric Utilities [d]	**26.0**	**39.9**	**50.0**	**68.0**	**83.0**	**108.5**	**131.9**	**164.4**	**187.4**	**204.7**	**216.5**	**218.5**	**240.8**	*253.2*	*259.7*

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

[b] For 1989 to 1991, estimates for nonutility generation are estimates made by the Energy Markets and Contingency Information Division, based on Form EIA-867 data. Historical data and Projections for the same items are from the Office of Coal, Nuclear, Electric and Alternate Fuels, Energy Information Administration, based on Form EIA-867 (Annual Nonutility Power Producer Report).

[c] Balancing item, mainly transmission and distribution losses.

[d] Historical data for nonutility sales to electric utilities are from the Energy Information Administration, *Annual Energy Review*, DOE/EIA-0389, Table 8.1, for 1982 to 1988; from Form EIA-867 (Annual Nonutility Power Producer Report) for 1989 to 1996.

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

Sources: Historical data: Energy Information Administration: latest data available from EIA databases supporting the following reports: *Electric Power Monthly*, DOE/EIA-0226. Projections: Energy Information Administration, Short-Term Integrated Forecasting System database, and Office of Coal, Nuclear, Electric and Alternate Fuels.