# Short-Term Energy Outlook

## January 1999 (Released January 8, 1999)

Energy Information Administration

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# *Preface*

The Energy Information Administration (EIA) prepares the *Short-Term Energy Outlook* (energy supply, demand, and price projections) monthly for distribution on the internet at: **www.eia.doe.gov/emeu/steo/pub/contents.html.**  In addition, printed versions of the report are available to subscribers in January, April, July and October

The forecast period for this issue of the *Outlook* extends from January 1999 through December 2000.  Data values for the fourth quarter 1998, however, are preliminary EIA estimates (for example, some monthly values for petroleum supply and disposition are derived in part from weekly data reported in EIA's *Weekly Petroleum Status Report*) or are calculated from model simulations that use the latest exogenous information available (for example, electricity sales and generation are simulated by using actual weather data).  The historical energy data, compiled in the January 1999 version of the Short-Term Integrated Forecasting System (STIFS) database, are mostly EIA data regularly published in the *Monthly Energy Review*, *Petroleum Supply Monthly*, and other EIA publications.  Minor discrepancies between the data in these publications and the historical data in this *Outlook* are due to independent rounding.

The STIFS model is driven principally by three sets of assumptions or inputs: estimates of key macroeconomic variables, world oil price assumptions, and assumptions about the severity of weather.  Macroeconomic estimates are produced by DRI/McGraw-Hill but are adjusted by EIA to reflect EIA assumptions about the world price of crude oil, energy product prices, and other assumptions which may affect the macroeconomic outlook.  By varying the assumptions, alternative cases are produced by using the STIFS model.

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# *Highlights*

## World Oil Prices Expected to Rise From Low December Levels

The average price of imported crude for U.S. refiners (an indicator of world oil prices) is expected to climb from the estimated December level of about $9.25 per barrel to be about $13 per barrel by the end of 1999. The average price is expected to move above $14 per barrel by the end of 2000. Despite these increases, prices would remain low by historical standards.

## U.S. Oil Demand: Despite Slower Economy, 1999 Likely to Yield Higher Growth

Despite the assumption of a slower economy, U.S. petroleum demand growth is expected to increase in 1999 by over 500,000 barrels per day, or 2.9 percent, from 1998 levels. Much of this growth is attributed to increases in demand for heating fuel and other weather-sensitive products.

## High Stock Levels, Low World Oil Prices Curtail Rise in Heating Oil

U.S. heating oil prices in first-quarter 1999 are expected to rise an average of just 2 cents per gallon above fourth-quarter 1998 prices, a level still 10 cents per gallon below the first-quarter 1998 average. This comparatively low price scenario is expected despite expected colder weather because of the current low world oil prices and plentiful distillate inventories.

## Iraqi Oil Exports Continue Despite Bombings

Iraqi oil exports do not appear to have been affected by airstrikes on that country in mid-December. This forecast includes the assumption that Iraqi oil exports will continue under the current United Nations Security Council resolutions, meaning, by EIA estimates, that Iraq will export about 1.8 million barrels per day in 1999 and 2.0 million barrels per day in 2000.

## High Natural Gas Storage Levels to Keep Wellhead Prices Under $2.00

Natural gas spot prices are projected to remain under $2 per thousand cubic feet through the summer of 1999, unless the weather in the gas-consuming regions turns unusually cold over the next few months. Current high storage levels relative to levels last year at this time will serve to moderate prices.

## Electricity Demand Continues to Rise

Electricity demand in first quarter 1999 is expected to rise above year-ago levels, along with heating demand, especially in the residential and commercial sectors. However, the industrial sales growth rate is likely to tail off through the next year. For 1999, projected growth in demand is 1.6 percent over 1998 levels, reflecting expected comparative weakness in summer cooling demand and a general slowing in the economy.

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

| | Year | | | | Annual Percentage Change | | |
|---|---|---|---|---|---|---|---|
| | 1997 | 1998 | 1999 | 2000 | 1997-1998 | 1998-1999 | 1999-2000 |
| **Real Gross Domestic Product (GDP)** (billion chained 1992 dollars) ......................... | **7270** | **7541** | *7714* | *7846* | **3.7** | *2.3* | *1.7* |
| Imported Crude Oil Price [a] (nominal dollars per barrel) ............................ | **18.57** | **12.09** | *11.26* | *13.74* | **-34.9** | *-6.9* | *22.0* |
| **Petroleum Supply** (million barrels per day) Crude Oil Production [b] ................................. | **6.45** | **6.36** | *6.29* | *6.06* | **-1.4** | *-1.1* | *-3.7* |
| Total Petroleum Net Imports (including SPR) ............................................. | **9.16** | **9.42** | *9.63* | *10.16* | **2.8** | *2.2* | *5.5* |
| **Energy Demand** | | | | | | | |
| World Petroleum (million barrels per day).................................. | **73.2** | **74.0** | *75.5* | *77.1* | **1.1** | *2.0* | *2.1* |
| Petroleum (million barrels per day).................................. | **18.62** | **18.71** | *19.25* | *19.53* | **0.5** | *2.9* | *1.5* |
| Natural Gas (trillion cubic feet) ......................................... | **21.97** | **21.38** | *22.26* | *22.67* | **-2.7** | *4.1* | *1.8* |
| Coal (million short tons) ........................................ | **1029** | **1043** | *1061* | *1091* | **1.4** | *1.7* | *2.8* |
| Electricity (billion kilowatthours) Utility Sales [c] ................................................ | **3115** | **3233** | *3268* | *3330* | **3.8** | *1.1* | *1.9* |
| Nonutility Own Use [d] .................................... | **161** | **164** | *166* | *168* | **1.9** | *1.2* | *1.2* |
| Total .......................................................... | **3276** | **3396** | *3434* | *3499* | **3.7** | *1.1* | *1.9* |
| Total Energy Demand [e] (quadrillion Btu)............................................. | **94.3** | **94.3** | *96.4* | *98.1* | **0.0** | *2.3* | *1.7* |
| Total Energy Demand per Dollar of GDP (thousand Btu per 1992 Dollar)..................... | **12.97** | **12.50** | *12.50* | *12.50* | **-3.6** | *0.0* | *0.0* |
| Renewable Energy as Percent of Total [f] ........ | **7.5** | **7.2** | *6.8* | *6.7* | | | |

[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).*

[f] Renewable energy includes minor components of non-marketed renewable energy, which is renewable energy that is neither bought nor sold, either directly or indirectly as inputs to marketed energy. The Energy Information Administration does not estimate or project total consumption of non-marketed renewable energy.
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 CONTROL1298.

# The Outlook

# *Outlook Assumptions*

### Figure 1.  U.S. Monthly Crude Oil Prices
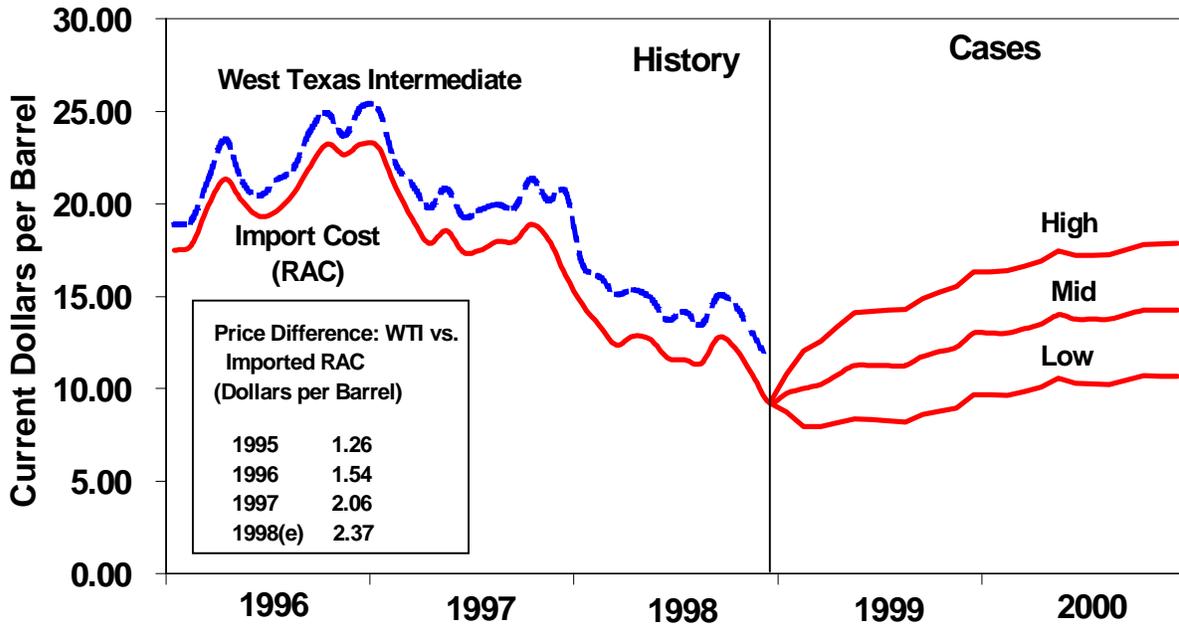


## World Oil Prices

The average cost of imported oil to U.S. refiners, an indicator of world oil prices, is assumed to climb gradually from the estimated December level of about $9.25 per barrel, which now appears to have been the low point (on a monthly average basis) of the current oil price depression that began in December 1997.  Monthly prices are assumed to be about $13 per barrel by the end of 1999, as the shifting balance between world oil production and demand stops the continued accumulation of oil in storage.  We expect prices to move above $14 per barrel by the end of 2000 as long as oil demand growth outside of the major industrialized countries begins to show some strength after this year (Figure 1).   Despite the joint U.S./British bombing of Iraq in mid-December, net exports of Iraqi oil have continued and we assume that they will continue at about 1.8 million barrels per day in 1999 and 2.0 million barrels per day in 2000.

## Economic Outlook

In 1999, GDP is expected to continue to grow at the rate of 2.3 percent, considerably lower than the 3.7 percent growth seen in 1998. In 2000, GDP is projected to continue to grow at the still slower pace of 1.7 percent.  Personal disposable income is assumed to be up by 2.7 percent in 1999 from its 1998 level,

and up by another 2.5 percent in 2000.  This is somewhat below the 3.1 percent growth seen in 1998 (Figure 2 and Table 1).

Inflation (consumer price index: see Table 2) should rise somewhat over the next two years.  Consumer price inflation is expected to be 2.5 percent in 1999,  up slightly from the 1.6 percent in 1998 (Table 1), and 2.9 percent in 2000. Manufacturing production is expected to grow by 2.3 percent  in 1999, and by 2.2 percent in 2000, compared with 4.1 percent in 1998, as investment growth decelerates and exports decline.  Total employment will increase slowly over the forecast period.

**Figure 2.  U.S. Macroeconomic Indicators**
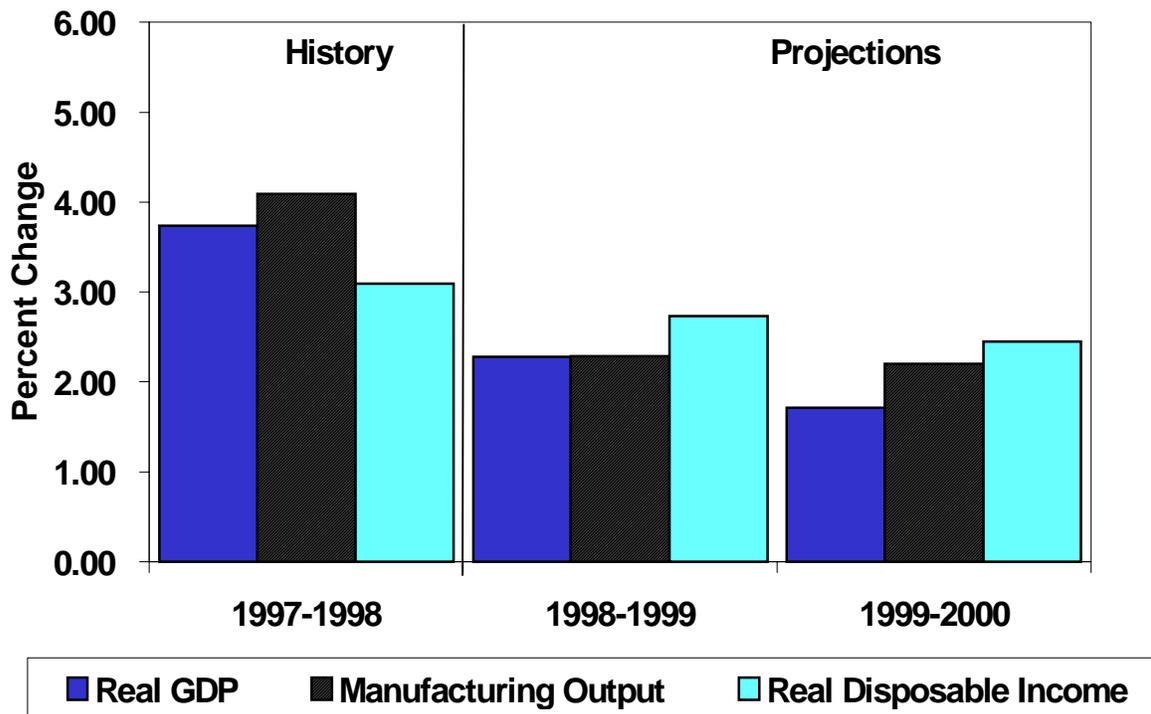


## Weather Assumptions

Weather patterns (expressed as heating and cooling degree-days in Table 1) are assumed to follow historical norms in 1999 and 2000.  This means that overall 1999 heating degree-days are assumed to be 14.6 percent above 1998 levels, while summer cooling degree-days are assumed to be 14 percent lower than 1998 levels.  Winter heating degree-days in the first quarter 1999 are expected to be 18 percent higher than heating degree-days during the same period in 1998.

# U.S. Energy Prices

**Figure 3.  Quarterly Retail Heating Oil Prices (Percent Change from Year Ago)**
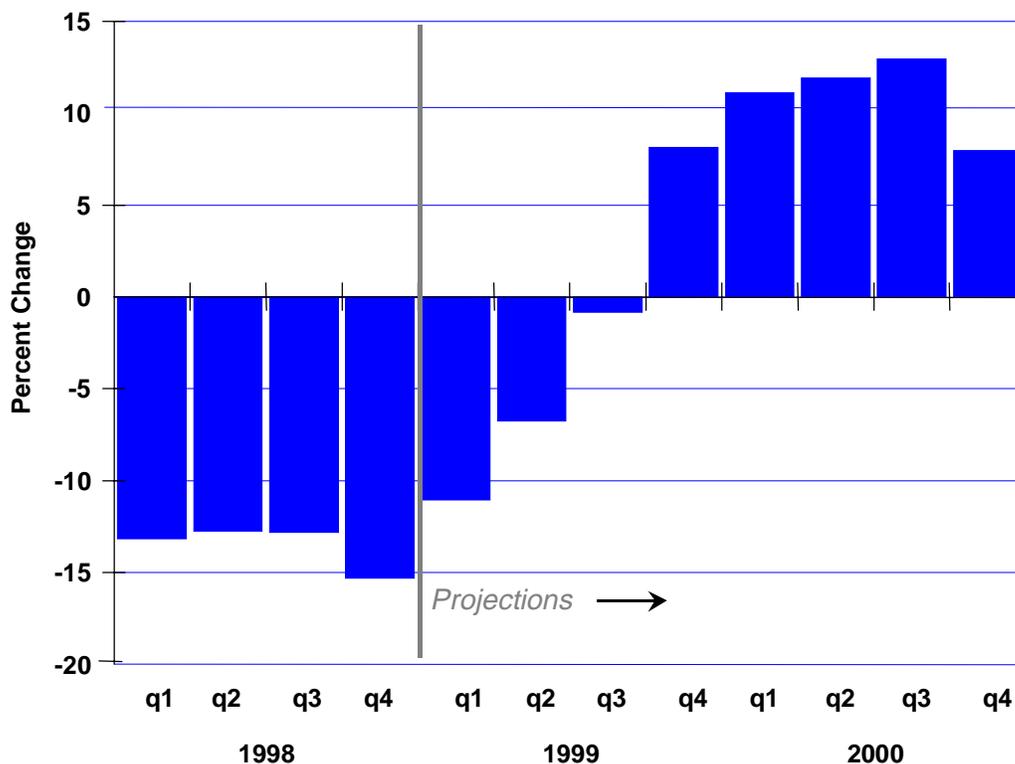


Residential heating oil prices for the fourth quarter of 1998 averaged about 14 cents per gallon (15 percent) less than in the same period in 1997, because of the warm weather and low world oil price (Figure 3).  The assumption of normal heating degree-days for the first quarter of this year (18 percent colder than the same period last year) is not expected to result in significantly higher heating oil prices, in light of the current situation of low world oil prices and plentiful distillate inventories.  Prices are expected to rise just a penny or 2 per gallon above the prior quarter prices, as world oil prices are assumed to stay low (26 percent below last year's first quarter price) and as distillate stocks are projected to start the year nearly 9 percent above last year's levels.

However, if the winter turns out to be exceptionally cold in the heating oil consuming regions (the Northeast) for a prolonged interval, then prices will respond accordingly.  Strong demand would eat away the stock supply, driving up not only distillate prices, but perhaps crude oil prices as well.   Of course, the reverse is also possible.  Although it seems unlikely that prices could get much lower, continued above-normal temperatures would certainly depress heating oil margins and generate a windfall for heating oil consumers.  Residential heating

oil prices decline slightly in 1999 by about 3 cents per gallon from the 1998 annual average, as the annual average crude price still declines. In the year 2000, these prices are projected to rebound by 8 cents per gallon as world crude oil prices recover.

The biggest single variable affecting petroleum product prices over the next two years is crude oil prices. With the crude oil price collapse of 1998, all petroleum product prices fell sharply last year. Crude oil prices dropped about $6.50 per barrel in 1998 and petroleum product prices fell by an average of 14-17 cents per gallon for the year (Table A4). In 1999, with even lower crude oil costs projected--falling by nearly one dollar per barrel-- petroleum product prices can be expected to decline by 1-3 cents per gallon. In 2000, crude oil prices are projected to recover somewhat, allowing product prices to increase by an average of 7-9 cents per gallon.

**Figure 4. Quarterly Retail Motor Gasoline Prices** (Percent Change from Year Ago)
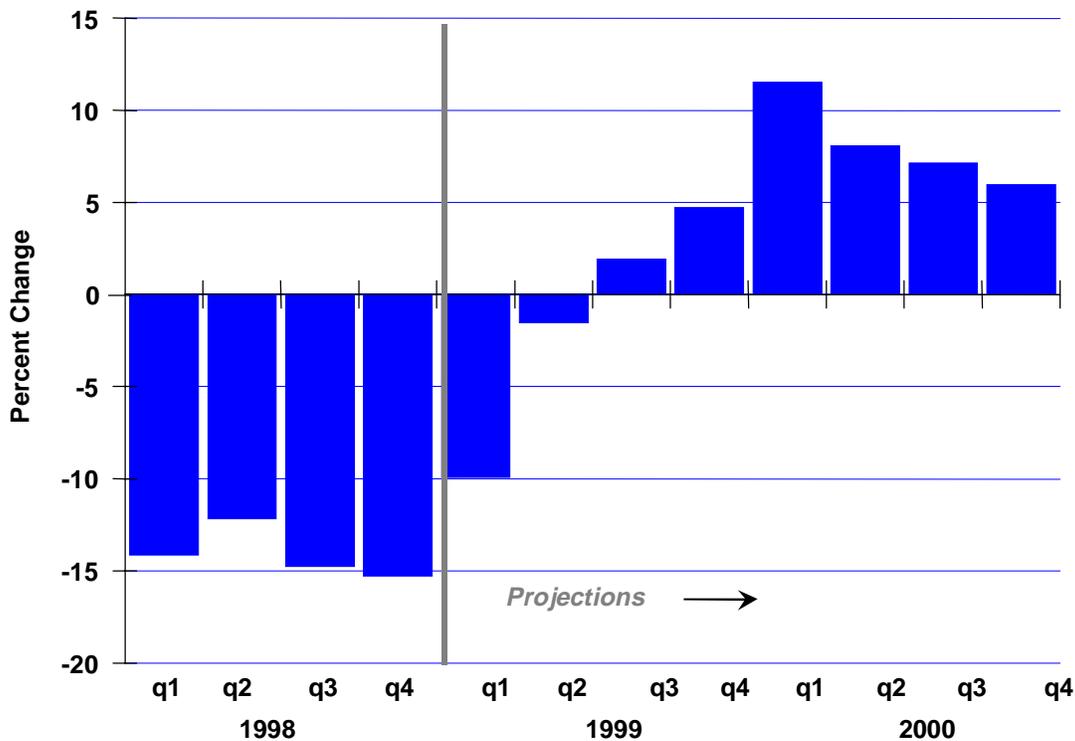


U.S. retail motor gasoline prices--unleaded regular, self-service, cash--hit bottom for the year in December due largely to the $9.25 per barrel estimated world oil price at the time. In real (inflation-adjusted) terms the December unleaded regular gasoline price is the lowest U.S. monthly price on record, breaking the record set only a month earlier. Prices in the fourth quarter of 1998 were 18 cents per gallon lower than they were during the same period in 1997 (Figure 4

and Table 4).  The average price for 1998 for this grade of gasoline was  $1.03 per gallon, the lowest (real) annual price in U.S history.  Despite the expectation of rising monthly oil prices through the forecast, the annual average price may slip even further this year (by about 1 cent per gallon), because of how low prices are compared to last year at this time.  Given the projected crude oil price for 2000, annual average pump prices are expected to gain back about 7 to 8 cents per gallon next year.

**Figure 5.  Weekly Natural Gas Prices (NYMEX Futures vs Henry Hub Spot)**
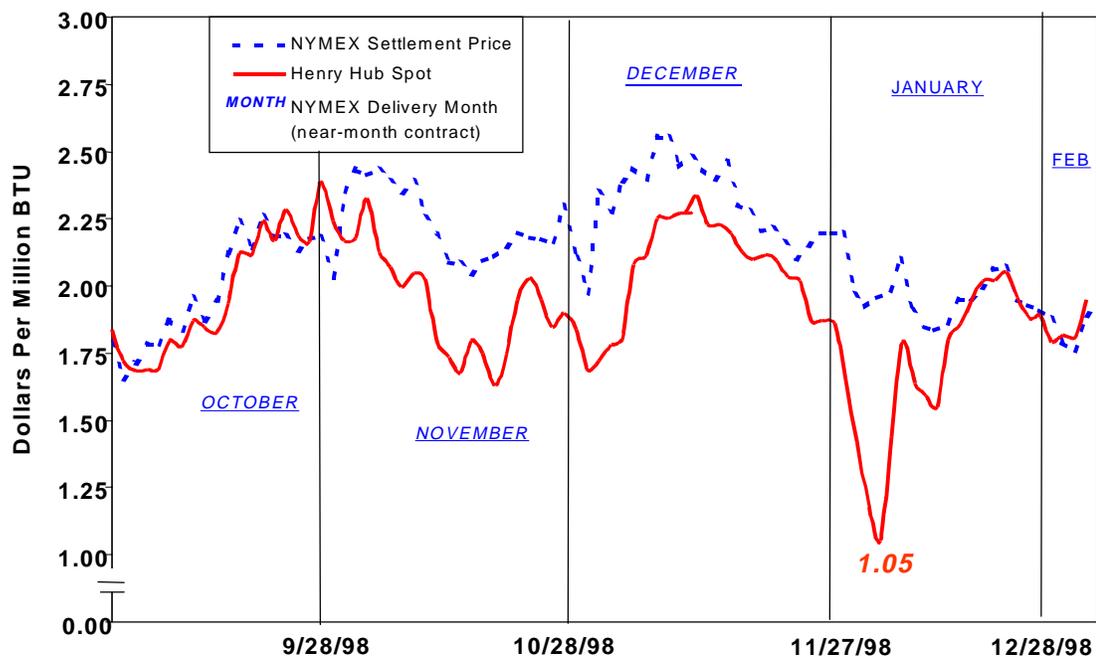


Note: The Henry Hub spot price  from the  *GAS DAILY*   is the midpoint of their high and low price for a day.
The dates marked by vertical lines are the NYMEX near-month contract settlement dates.

Natural gas composite spot wellhead prices briefly plunged to about $1.00 per thousand cubic feet during the first week of December 1998, as mild weather in late fall resulted in unusually large underground storage levels for that time of the year.  In fact, there were highly uncommon seasonal net injections to storage in early December.  At one point, the price difference between Henry Hub spot and the near month futures contract was about 90 cents per thousand cubic feet (Figure 5).   The gap between spot and futures has narrowed rapidly, in fact has closed,  as  the weather turned colder. The spot prices have rebounded, at about $2.00 per thousand cubic feet as the heart of the winter approaches. Nevertheless, unless the weather in the gas consuming regions turns unusually cold in the next few months, average wellhead prices from February on are projected to stay under  $2.00 through the summer of 1999 (Figure 6).

The current storage situation, as stated before, shows levels far above last year's levels.   At present, gas in storage is so plentiful that it is hard to see prices  rising

**Figure 6.  Natural Gas Wellhead Prices: Composite and Spot**
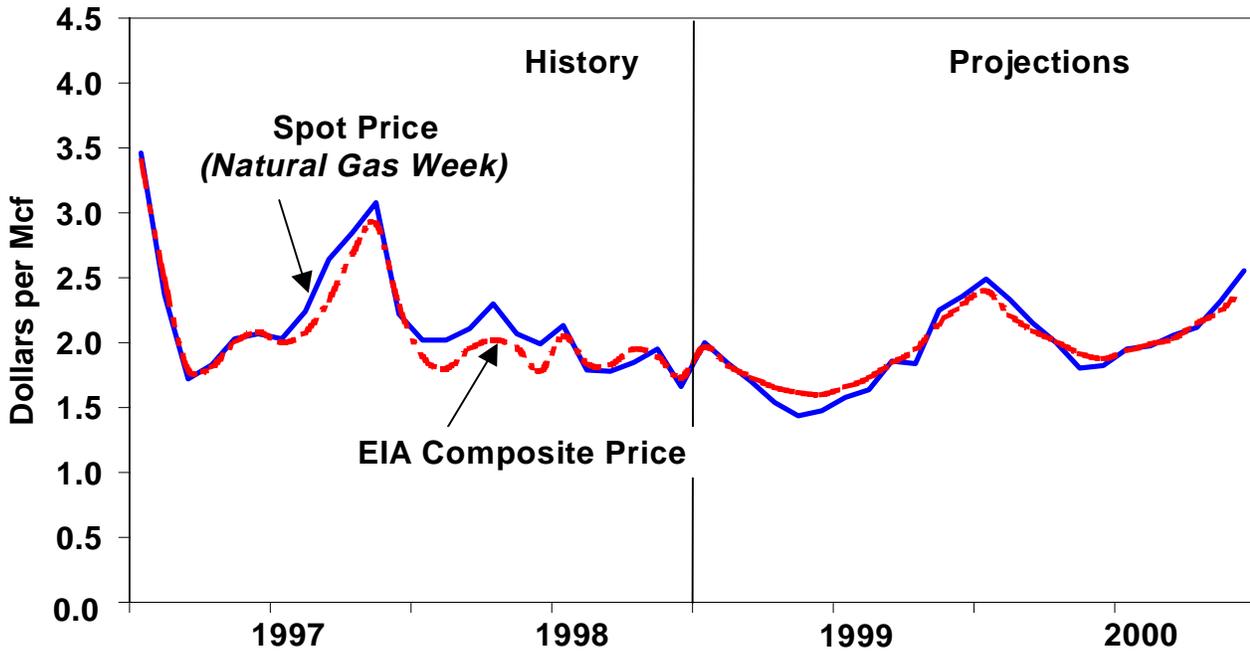


much further from their current levels in the near term even though the coldest weather is still to come (Figure 7).  Thus, the expected wellhead price for the first quarter should be similar to the previous quarter's price; that is less than $2.00 per thousand cubic feet.

**Figure 7.  Quarterly Natural Gas Wellhead Prices (Percent Change from Year Ago)**
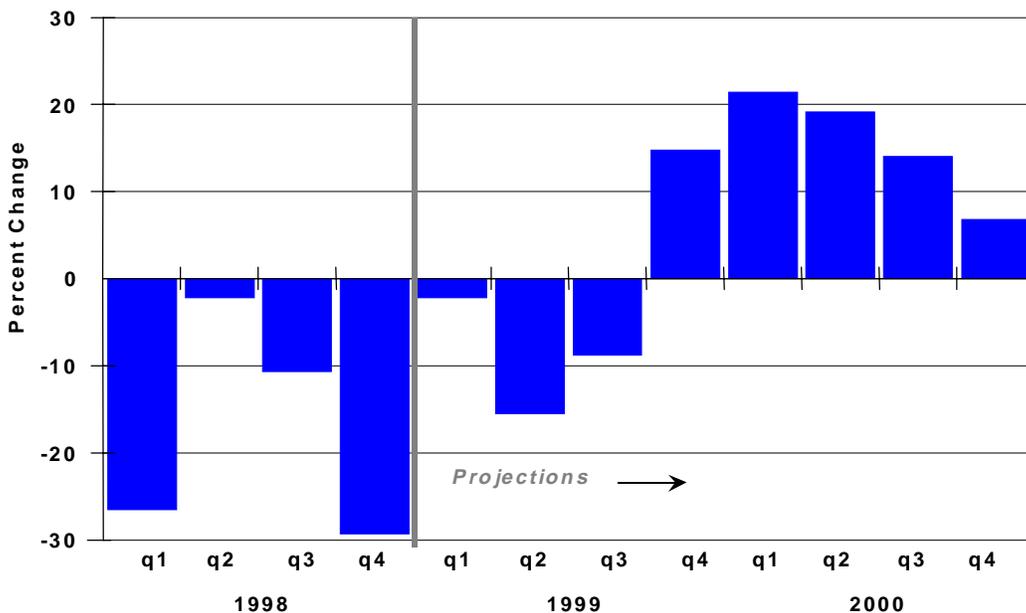
In 2000, again assuming normal weather, a return to typical seasonal price patterns for natural gas at the wellhead is projected, with prices once again peaking in the winter quarters. Mainly due to anticipated strength of demand during the heating season, the average annual price is projected to increase by about 15 percent next year.

Although natural gas prices have fallen in recent times, oil prices have fallen even further, giving oil the price advantage for electricity generation. Residual fuel oil will likely remain the cheaper of the two fossil fuels burned at electric utilities throughout the forecast period if our base case crude oil price trajectory holds. Coal remains by far the least expensive fossil fuel for electric utilities (Table 4 and Figure 8). Coal prices are expected to decline through 2000 after costs associated with compliance with the Clean Air Act Amendments of 1990 are accounted for. Continued increases in mining productivity, including longwall mining, as well as the closing of costly marginal mines, has kept coal supply costs on a declining trend for many years.

### Figure 8. Fossil Fuel Prices to Electric Utilities
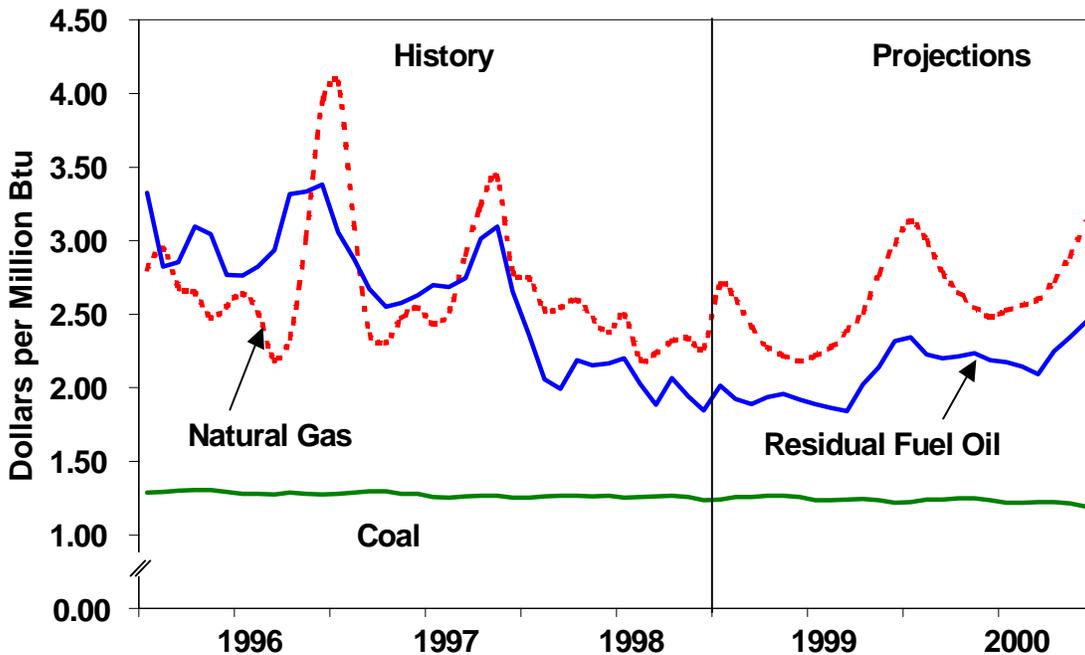
# International Oil Supply

**Figure 9.  World Oil Supply (Changes from Previous Year)**
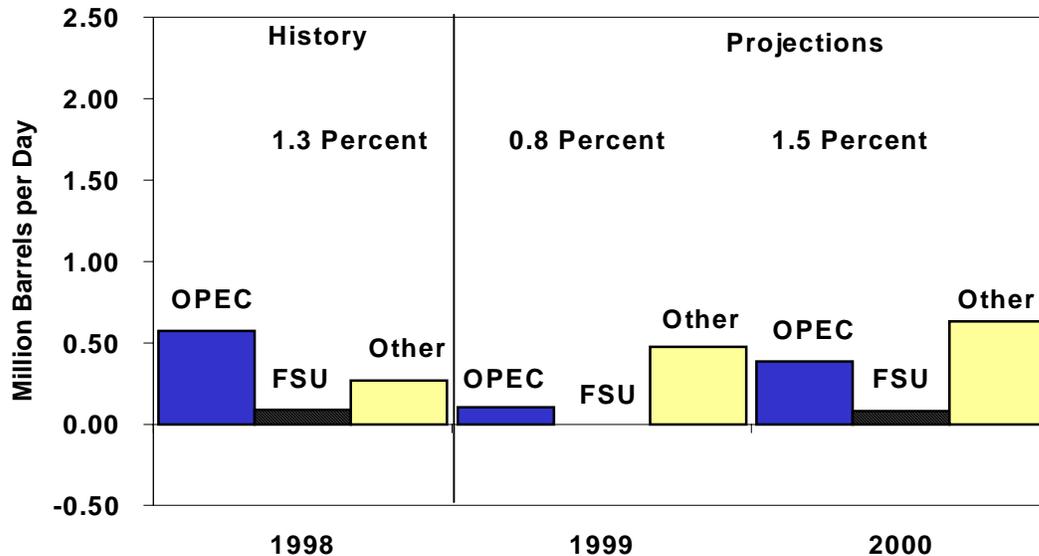


Two times in 1998, once in March and once in June, OPEC and some major non-OPEC oil producing countries agreed to oil production cuts in an attempt to stem the decline in oil prices.  But when OPEC met in late November and couldn't agree to either deeper production cuts or extending the current pledged cuts from June 1999 to the end of 1999, oil prices declined to inflation-adjusted levels not seen since at least 1949.  OPEC plans to meet next in March 1999.  For this forecast we have assumed that no additional cuts take place in 1999 and 2000, and that OPEC production will gradually increase over the next 2 years as oil demand increases at a faster rate than in 1997 and 1998.  With this is in mind, our world oil supply forecast, along with our world oil demand forecast, results in a relatively balanced market in 1999 before beginning a fairly sizeable drawdown of world oil inventories in 2000 from their current high levels.

World oil supply is expected to increase by only 0.6 million barrels per day in 1999, and another 1.1 million barrels per day in 2000 (Figure 9).  As a result of the pledged production cuts, OPEC production is expected to only increase by 0.1 million barrels per day in 1999 and about 0.4 million barrels per day in 2000 (Figure 10).  This assumes that OPEC compliance with the pledged production cuts deteriorates over time.

In mid-December, the United States and the United Kingdom launched airstrikes on Iraq in response to Iraq's refusal to fully cooperate with United Nations

## Figure 10. OPEC Oil Production and Capacity
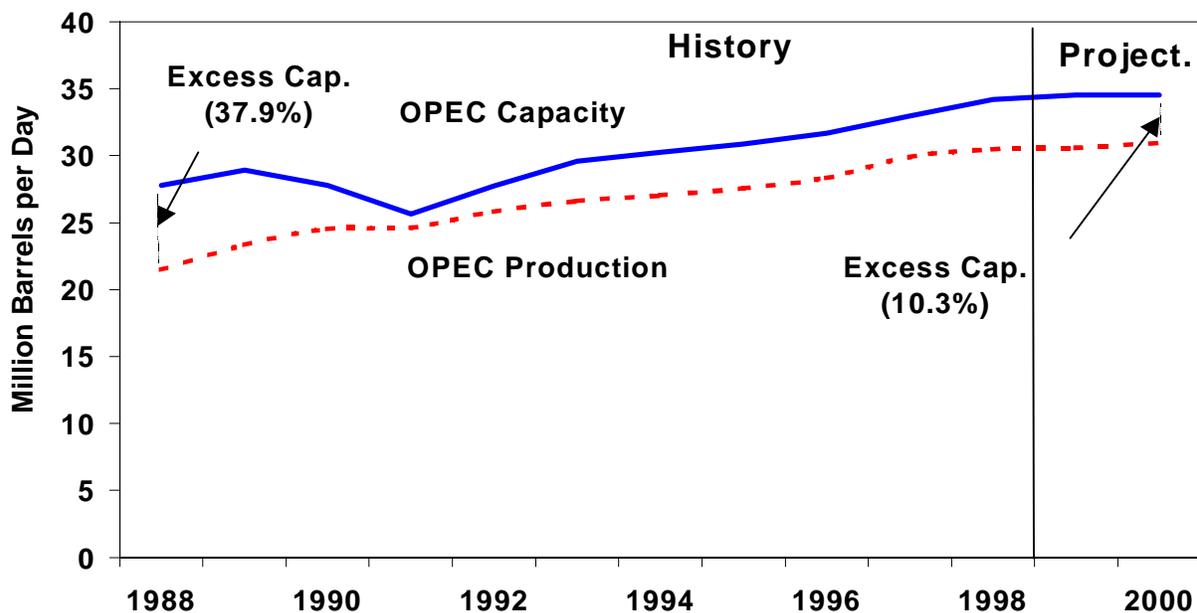


weapons inspectors. As of the writing of this publication, Iraqi oil exports have not been interrupted despite the bombing. For the purpose of this forecast, we have assumed that Iraqi oil exports will continue throughout the forecast period under the current United Nations Security Council resolutions. If oil exports remain uninterrupted, as assumed, there would be no change in our world oil supply estimates. Of course, there is a possibility that Iraqi oil exports may be disrupted temporarily at any point in our forecast horizon. However, as long as Iraqi oil exports are not disrupted for a protracted period of time, we would not expect to see a significant increase in our world oil price forecast.

In early December 1998, Iraq and the United Nations Security Council (UNSC) agreed to another phase in the United Nations "oil-for-food" deal in which Iraq will be allowed to export over $5.2 billion worth of oil exports over the next 180 days. However, limitations on Iraq's ability to produce and export oil will likely limit the total amount to less than $4 billion. In June 1998, Iraq came to terms with the United Nations on allowing Iraq to import $300 million worth of spare parts in order to boost production and export levels. For the purposes of this forecast we have assumed Iraqi oil exports will average about 1.8 to 2.0 million barrels per day in 1999 and 2000. 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 beyond this will limit the amount and extend the timing of any price increase over the next 2 years.

Sustained growth of non-OPEC supply is expected to continue for the foreseeable future, both inside and outside of the Organization of Economic Cooperation and Development (OECD).

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 and 1998, 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 300,000 barrels per day expected in both 1999 and 2000 (Table 3).

Outside the OECD, the non-OPEC growth story is depicted by the "Other" group (Figure 9). 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 about 600,000 barrels per day between 1998 and 2000 (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 remain relatively flat in 1999, before increasing by about 100,000 barrels per day in 2000.

**Figure 11.  Annual Increases in OPEC Production and World Demand Changes, 1986-1998**
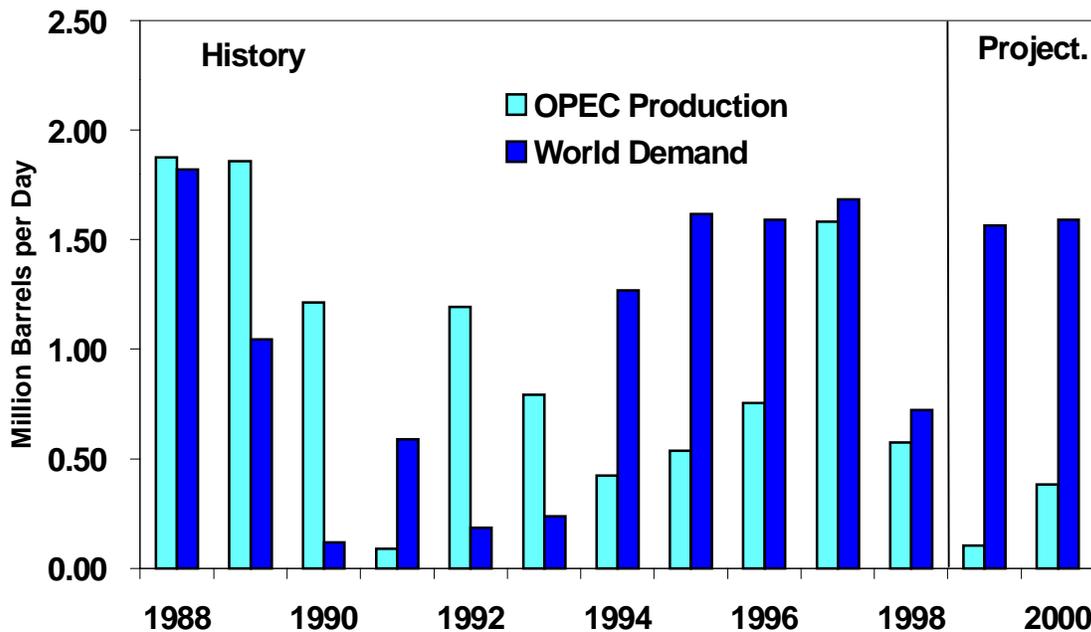
Non-OPEC supply has become a significant source of oil production during the last few years. Since 1994, OPEC production has increased less than world oil demand in every year, although in 1997 the increase in OPEC oil production nearly equaled the increase in world oil demand (Figure 11).

# *International Oil Demand*

**Figure 12. World Oil Demand (Changes from Previous Year)**
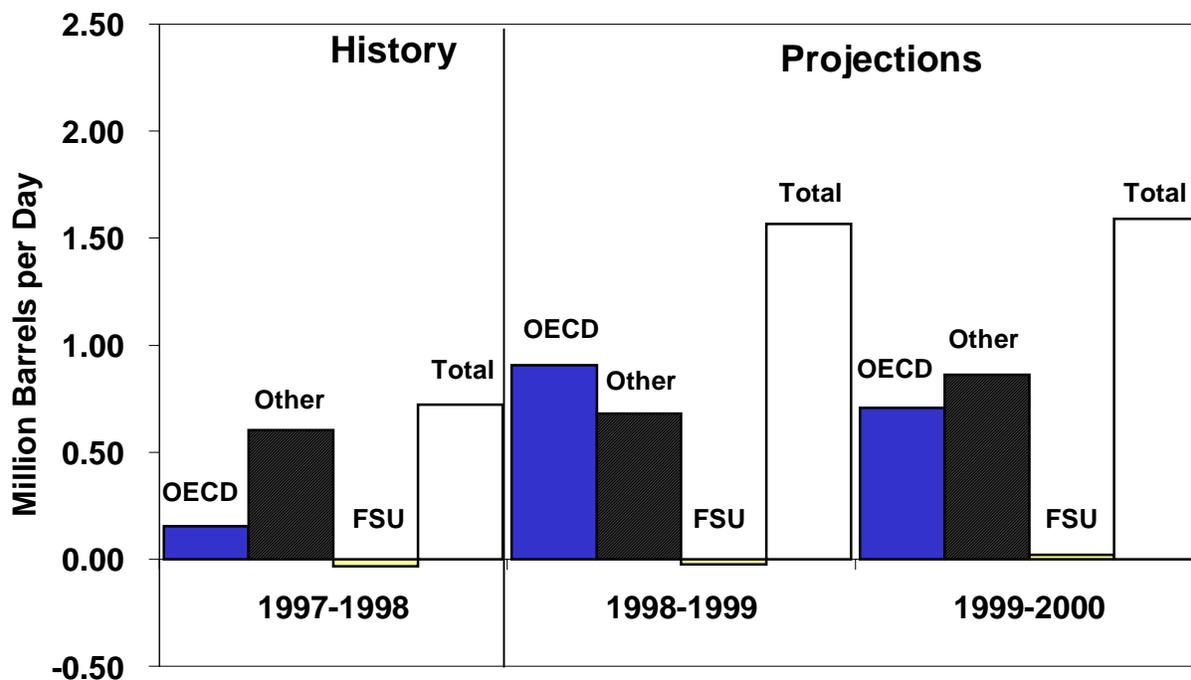


World oil demand is expected to continue to increase through 2000 (Figure 12), by which time total world oil demand may average over 77 million barrels per day (Table 3). With problems in several Southeast Asian countries softening the increase in world oil demand in 1998, world oil demand increases in 1999 and 2000, while larger than in 1998, are forecasted to be less than the increases seen before the Asian economic problems began. Following an annual world oil demand increment of 1.7 million barrels per day worldwide in 1997, world oil demand is estimated to have increased by only 0.7 million barrels per day in 1998. However, world oil demand is forecasted to increase by nearly 1.6 million barrels per day each in both 1999 and 2000. With less demand in Southeast Asia than originally expected, world oil demand under these assumptions will be growing at an average annual rate of 1.7 percent between 1997-2000 after growing at an average annual rate of 2.3 percent between 1994-1997.

After increasing by less than 200,000 barrels per day in 1998, oil demand in countries of the OECD is expected to increase by about 900,000 barrels per day in

1999, and another 700,000 barrels per day in 2000, an average annual rate of 1.9 percent (Figure 12 and Table 3). (Our OECD estimates do not yet include those of the Czech Republic, Hungary, Mexico, Poland, and South Korea). Japan's current recession is the main reason for a decline in Japanese oil demand in 1998 while remaining relatively flat in 1999 and increasing slightly in 2000. Partly because of this, the United States' oil demand growth represents over 60 percent of OECD oil demand growth in 1999, and about 40 percent of OECD oil demand growth in 2000.

A major story of this forecast is the effect the economic problems in Southeast Asia are expected to have on oil demand growth in the region. Prior to this recent economic slowdown, non-OECD countries exhibited strong growth in oil demand. This was especially true in Asian countries. For example, oil demand in China and in Other Asia (see Summary of Important Terms for definition) grew by 7.6 percent per year between 1991-1997. However, due to the recent economic slowdown in several Asian countries, this forecast has an average annual oil demand growth rate of 5.5 percent for China and a barely noticeable growth of 0.4 percent for Other Asian oil demand between 1997 and 2000. At the same time, however, Latin American oil demand is expected to grow at an annual rate of 4.1 percent between 1997 and 2000. Continued strength in world oil demand is partly due to significant increases in U.S. and Latin American oil demand growth. Of course, this assumes that the economic slowdown in Asia does not impact Latin America at nearly the same degree.

After showing some 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 decrease slightly in 1998 and 1999 due to economic problems, particularly in Russia. However, by 2000, oil demand in the FSU is expected to increase slightly as the economy is expected to improve in 2000. Oil demand in the FSU, which was 8.7 million barrels per day just 10 years ago, is forecasted to be only 4.4 million barrels per day in 2000 (Table 3).

# World Oil Stocks, Capacity and Net Trade

**Figure 13.  OECD Commercial Oil Stocks**
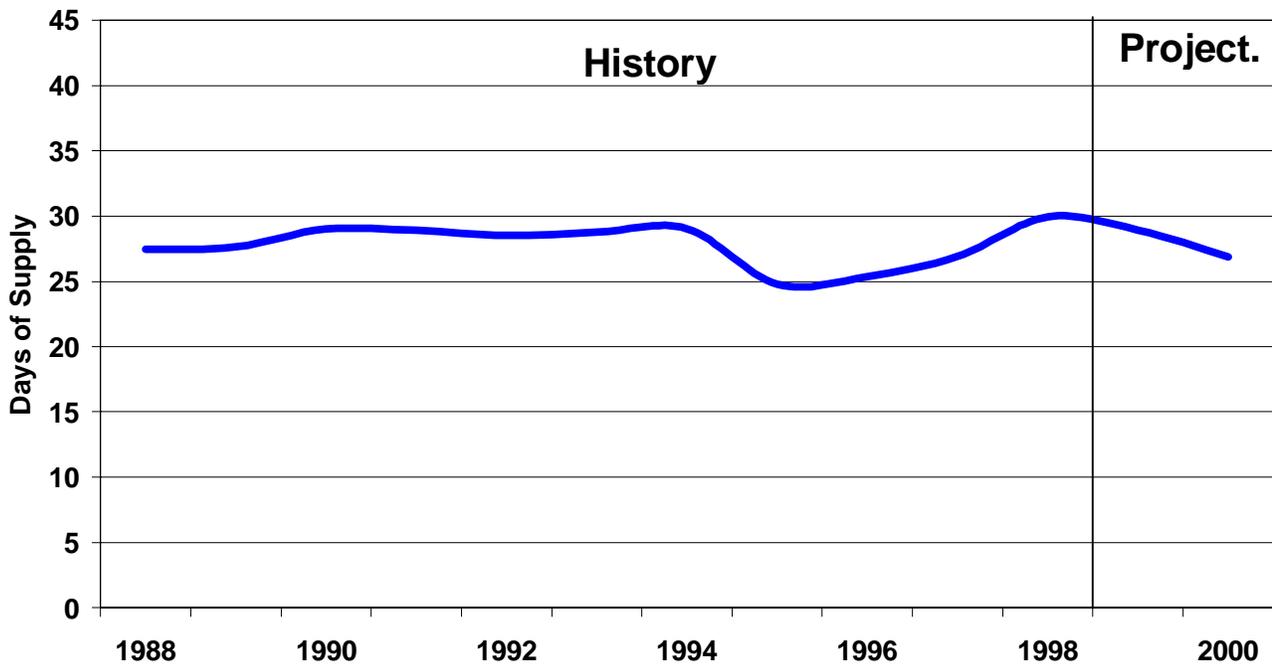


Commercial oil inventories (measured in days of supply) in OECD countries increased nearly 1.6 days worth of supply in 1997, the largest such increase since 1990; that is until 1998, when inventories increased by over 3 days of supply. OECD commercial oil inventories are expected to decrease in 1999 (down 1.0 days of supply) and in 2000 (down 2.1 days of supply) to end 2000 at end-1997 levels, in terms of days of supply (Figure 13).  The increase in 1997 and 1998 is in large part due to the currently oversupplied market, but by 1999-2000 our forecast shows a more balanced world oil market in terms of supply and demand, thus reducing the days of supply level for OECD commercial oil inventories (Figure 14).

Excluding Iraq, OPEC oil production capacity is expected to increase by less than 500,000 barrels per day between 1998 and 2000. This is due to the market being oversupplied in 1997 and 1998, thus limiting the incentive to build productive capacity over the next 2 years.  Overall, OPEC excess oil production capacity is expected to increase from about 3.1 million barrels per day in 1997 to about 3.9 million barrels per day in 1999, the most since 1989, before declining slightly to 3.6 million barrels per day in 2000.  This is in large part due to the production cuts made by several OPEC countries in 1998, which in effect increases excess production capacity.   Saudi Arabia is still expected to control over half of OPEC

excess production capacity and, along with Kuwait and the United Arab Emirates, controls the vast majority of excess world oil production capacity.

**Figure 14.  OECD Oil Stocks vs World Oil Price, 1990-2000**
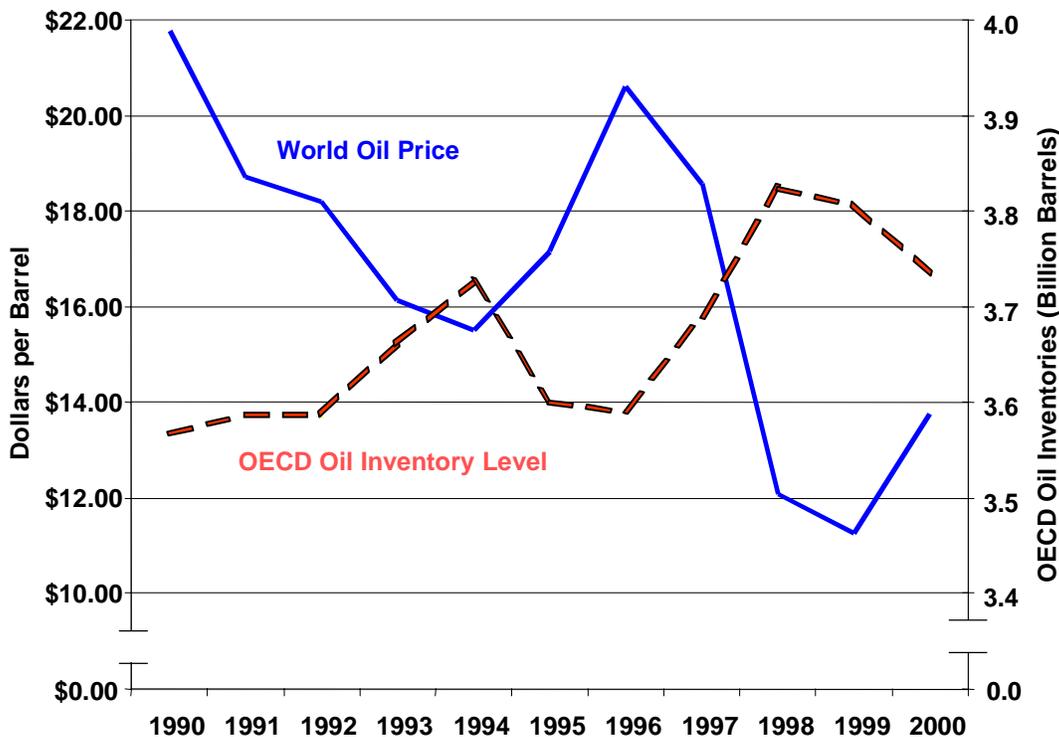


Net exports from the FSU are expected to increase slightly during the forecast period, from 2.7 million barrels per day in 1997 to about 2.9 million barrels per day in 2000.  This is mainly because of forecasted decreases in oil demand in 1998 and 1999 (Figure 15 and Table 3).  Following no growth in oil production in FSU countries in 1999, FSU oil production is expected to increase again in 2000.  FSU exports are 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 closer to levels seen just prior to the collapse of the FSU (3.0 million barrels per day in 1990).

# Figure 15. FSU Oil Production, Consumption and Net Exports
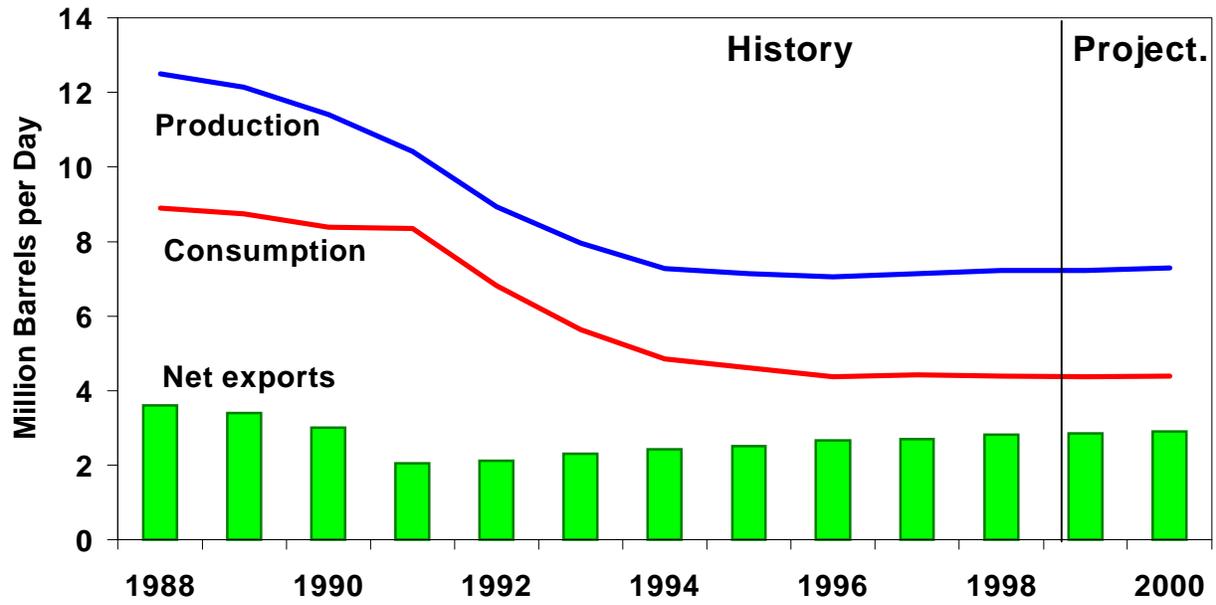
# U.S. Oil Demand

**Figure 16.  Petroleum Demand Growth (Change from Year Ago)**
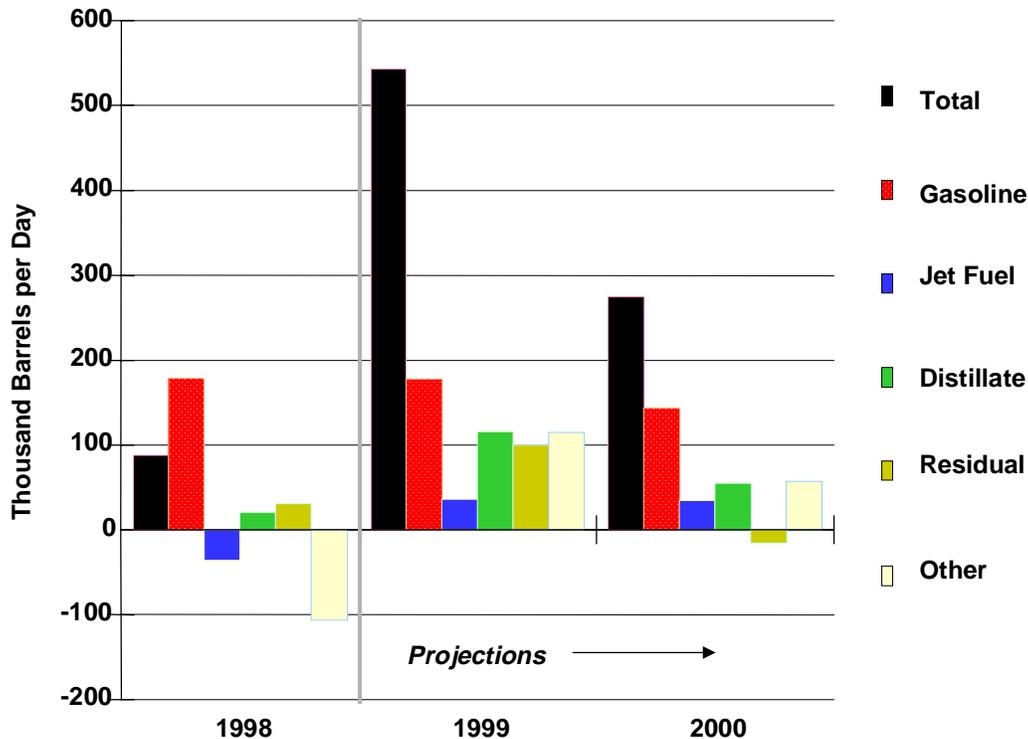


Total petroleum demand in 1998 increased by an estimated 90,000 barrels per day, or only 0.5 percent, from that of 1997.  This compares to the 1.7-percent growth recorded for the previous year. The continued robust growth in most economic indicators--combined with substantial declines in product prices-- would have been expected to stimulate demand for oil products.  Several factors, however, helped constrain demand last year.  The first was warm weather during the first and fourth quarters.  In terms of heating degree-days, weather was 12 percent warmer than in 1997 (considered to be a "normal" weather year) in both the Northeast and in the U.S. as a whole.  The second factor was a marked reduction in residual fuel oil shipments to users other than electric utilities.  A continuation of the shrinkage in the U.S. market for heavy oil in the industrial and commercial sectors as well as the further diminution in the U.S. role as a supply source for bunker fuel are suspected causes.  As indicated in EIA's *Fuel Oil and Kerosene Report, 1997*, residual fuel oil sales to these three sectors fell by about 150,000 barrels per day (24 percent) between 1995 and 1997. Also, 1998 saw an apparent year-long decline in total jet fuel demand. Commercial air traffic growth slowed markedly, and non-commercial deliveries declined as a result of the warm weather, which reduced the role of kero-jet in fuel blending.

Following a first-half lull in petroleum markets, modest strength returned briefly for the third quarter, primarily in motor gasoline, distillate fuel oil, and residual fuel oil, resulting in a 1.5-percent growth in year-to-year demand growth for that period. Dampened by warmer-than-normal weather and strike-related weakness in commercial jet-fuel markets, demand for the fourth quarter actually declined slightly, contributing to the slow growth for the year as a whole (Figure 16).

Despite a slowing economy, U.S. petroleum demand growth is expected to increase in 1999 by a robust 540,000 barrels per day, or 2.9 percent. Much of this growth is attributed to 1) increased demand for heating fuel and other weather-sensitive products resulting from an assumed return to normal weather patterns and 2) continued growth in transportation demand. In 2000, total demand is projected to increase an additional 275,000 barrels per day, or 1.4 percent. That moderation in growth assumes unchanged weather patterns from those of the previous year and a moderation in overall economic growth.

Motor gasoline demand in 1998 grew by an estimated 2.2 percent, reflecting a 2.6-percent increase in highway travel and small efficiency gains. That moderate growth in highway travel was obtained despite a 3.1-percent increase in real disposable income and a 15.6-percent decline in inflation-adjusted fuel costs per mile to a record low. (A similar combination of high economic growth and sharply declining fuel prices had brought about much higher growth in gasoline demand during the mid-to-late eighties). Moreover, growth last year was erratic. First-half growth, averaging 1.5 percent, was anemic, but second-half growth averaged 2.8 percent, due to the combined effects of mild weather and declining prices.

For the 1999-2000 period, growth in motor gasoline is expected to average 2.0 percent, similar to that of 1998. That reflects growth in vehicle miles traveled averaging 2.5 percent. Although comparable to the 1998 growth rate, it is slightly less than that of real income. These projections (as well as the preliminary data for 1998) point to a continuing shift away from the historical pattern of highway travel growth outpacing that of real income, despite fuel costs continuing to hover around record lows.

Total jet fuel demand in 1998 was uncharacteristically weak, having declined an estimated 2.3 percent. Commercial air demand continued to increase, but growth slowed to an estimated 2.0 percent for the year, less than half the growth rate of the previous year. Markets experienced a general slowdown in both domestic and international growth and the recent labor dispute that grounded one of the major airlines for several weeks. Purchases by downstream blenders for use as cold-weather additives declined substantially, reflecting warmer-than-normal weather during the first and fourth quarters. Military jet fuel purchases, having declined steadily for the past several years, averaged an estimated 150,000 barrels per day (believed to be an all-time recorded low), similar to that of the previous year (Figure 17). During the year, airline capacity (available

passenger and cargo space in the air) increased an estimated 3.1 percent, well below the previous year's growth rate. But growth in air travel (utilization of the available capacity) climbed by only an estimated 2.6 percent, down substantially from l997's robust 6.9 percent rate.

**Figure 17. Military Jet Fuel Deliveries**
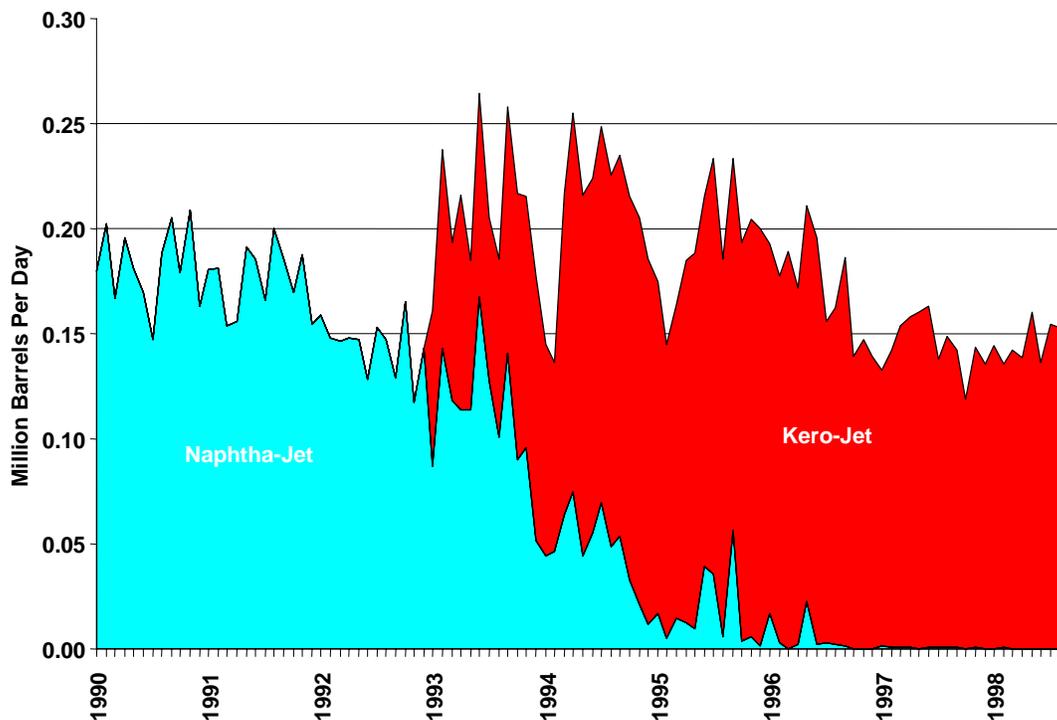


Source: Petroleum Supply Monthly-Naphtha-Jet; Weekly Petroleum Status Report--Refinery Output of Military Jet Fuel (a proxy for estimated Kero-Jet deliveries).

Despite last year's developments, jet fuel markets are expected to recover some of their lost momentum during the forecast interval. Total jet fuel demand is projected to increase by an average 2.4 percent. Capacity is projected to grow by an average 4.3 percent and air travel activity is projected to climb an average 4.6 percent. Although somewhat more robust than in 1998, these growth rates are less than the 5-7 percent increases observed during the mid-1990's. Military purchases of jet fuel are not expected to decline any further from present levels but are not expected to contribute to jet fuel demand growth either. Under assumptions of normal weather, demand for jet fuel as a blending component is expected to increase noticeably from 1998's levels, contributing to the overall turnaround in jet fuel demand from the recent slide.

Distillate demand growth for 1998 was very weak, estimated to be 0.6 percent, compared to growth of 2.1 percent in 1997 (Figure 18). Much of that slowdown was brought about two factors: a moderation in manufacturing output growth from 5.6 percent in 1997 to 4.1 percent estimated for 1998 and (most importantly) the combined effects of warmer weather in the first and fourth quarters.

Total distillate demand is projected to increase by 3.3 percent in 1999 and a further 1.5 percent in 2000. This growth results largely from both an assumed return to normal weather patterns in 1998 and continued growth in transportation (diesel) demand in both years.

**Figure 18.  Distillate Demand Growth (Percent Change from Year Ago)**
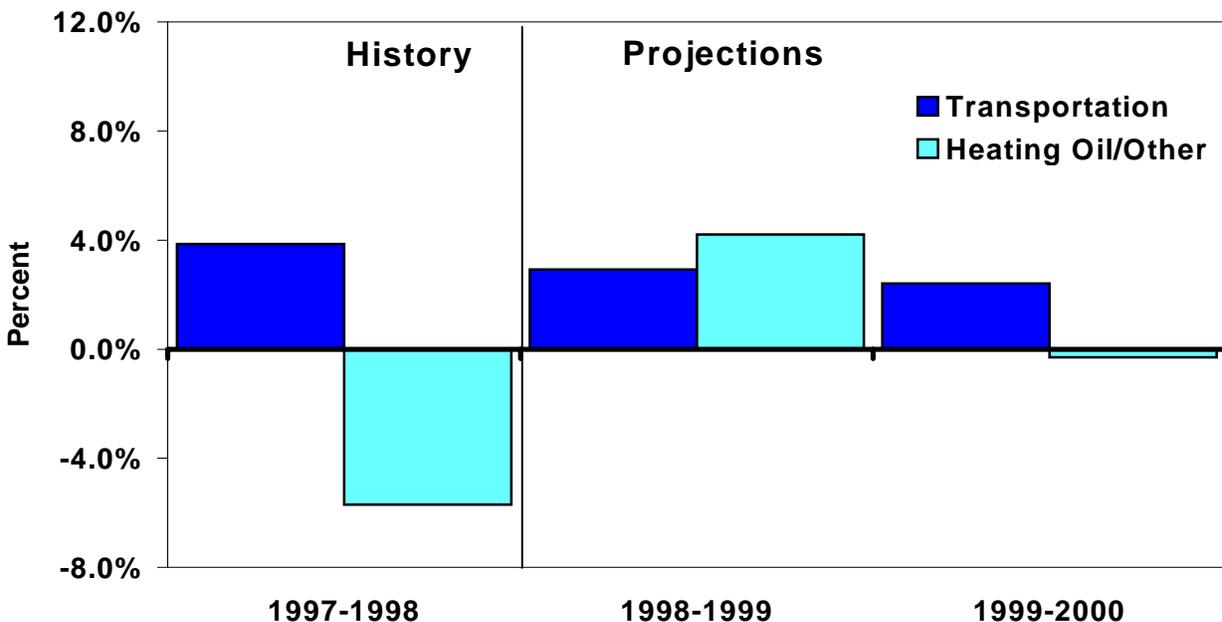


Recovering from all-time lows, residual fuel oil demand in 1998 staged a recovery, increasing by almost 4 percent. That increase was brought about by declines in residual fuel prices of between 20 and 30 percent in the price-sensitive electricity generation sector. Electric utility consumption of heavy fuel oil increased by an estimated 130,000 barrels per day, or 42 percent, with year-over-year growth rates ranging as high as 100 percent or more for some months. Other sectors, however, experienced demand weakness in 1998. Transportation deliveries of residual fuel oil (bunker fuel) shrank as refinery upgrades reduced the availability of the fuel. Abnormally warm weather during the first and fourth quarters resulted in a decline in deliveries to weather-sensitive sectors.

In 1999, total residual fuel oil demand is projected to rise a further 12 percent, almost all of which can be accounted for by continued strength in electric utility purchases. Boosted by continued low prices and a return to normal weather patterns, utilities are expected to continue to step up purchases of the fuel. The overall impact of increased utility purchases would be greater in 1999, if, as we assume, non-utility markets stabilize or are positively affected by normal weather. In 2000, total residual fuel oil markets are projected to decline by about 2 percent, largely brought about by a 4-percent drop in electric utility deliveries.

# U.S. Oil Supply

**Figure 19.  U.S. Crude Oil Production**
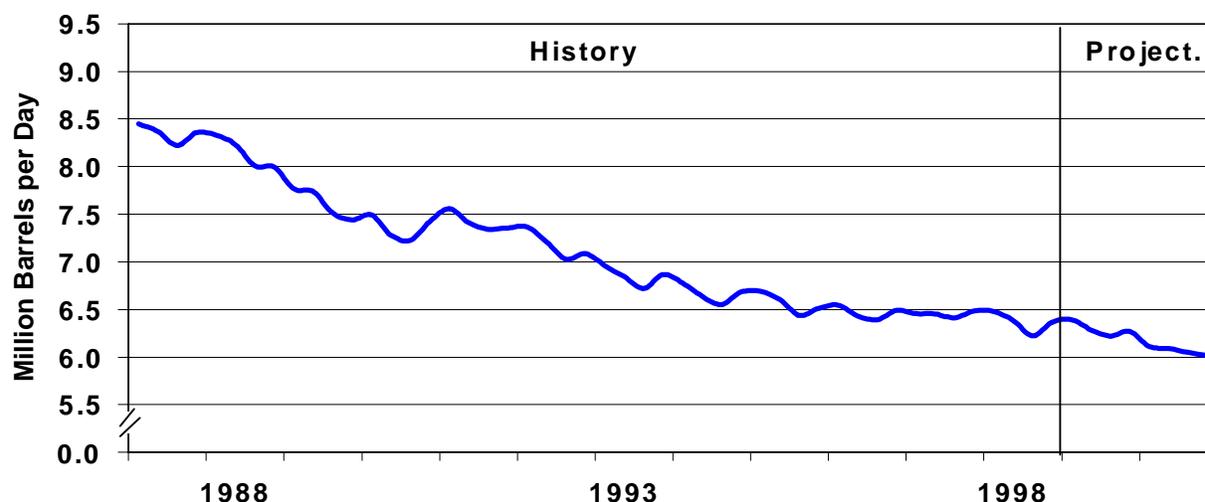


New production from Federal offshore oil slowed the steady decline of domestic crude oil supply in 1998. But, hurricane activity in the Gulf of Mexico during September prompted the precautionary shutdown of production from offshore wells. September 1998 domestic crude oil production is now estimated to be about 6.07 million barrels per day, about 270,000 barrels per day below what was expected for the month. This dip in production lowers the projected 1998 average domestic crude oil production to 6.36 million barrels per day, a decline of 1.4 percent from the 1997 average (Figure 19).  A similar rate of decline is expected in 1999, followed by an acceleration to a decline rate of almost 4 percent in 2000 as expanded development of oil resources suffers from persistently low prices.

Lower-48 States oil production is actually expected to remain steady at about 5.19 million barrels per day in 1998, and 1999. The Baldplate platform started producing in August and Amerada Hess estimates a production rate of 50,000 barrels per day in the first quarter of 1999.  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.  Shell also estimates that production from the Mars platform will increase by another 40,000 barrels per day in 1999.  Exxon's Diana-Hoover fields will start production in mid-2000 at a rate of 30,000 barrels per day, increasing to 100,000 barrels per day in early 2001.  Oil production from the Mars, Ram-Powell, Auger, Troika, Ursa, Diana-Hoover, and Baldplate Federal Offshore fields is expected to account for about 11.5 percent of the lower-48 oil production by the 4th quarter of 2000.  Alaska is expected to account for about 16.7  percent of the total U.S. oil production in 2000. Production there is expected to decrease by 70,000 barrels per day (6.3 percent) in 1999, followed by an decline of 90,000 barrels per day in 2000 (8.2 percent).

Despite the projected acceleration in demand growth in 1999 (due mostly to weather assumptions) and declines in domestic production, increases in net imports of petroleum in 1999 should be limited because of the expected reduction in inventories during the year. We now estimate that about 50 percent of total U.S. petroleum demand was met by net imports in 1998. That percentage is expected to hold in 1999 as well if, as we assume, domestic inventories are reduced to more normal levels. Import dependence would likely grow to the 52-percent range in 2000 if the expected acceleration in the decline rate for domestic oil production occurs and normal weather conditions along with modest economic growth continues.

# U.S. Natural Gas Demand

**Figure 20. Natural Gas Demand by Sector**
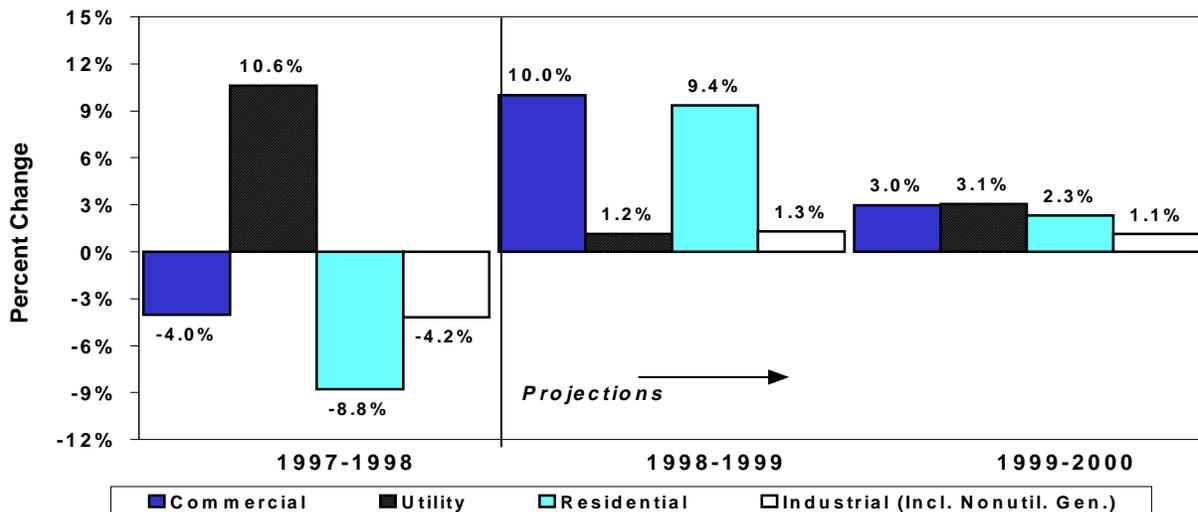


On the assumption that weather conditions will be normal through 2000, we are projecting a growth rate for total gas demand of 4.1 percent for 1999 (Figure 20), and a 1.9 percent growth rate for 2000. Most of the strength this year hinges on the occurrence of a normal or colder-than-normal winter. Base case demand is expected to be 7 percent above year-ago levels in first quarter 1999. Gas demand is expected to grow across all sectors in 1999 and 2000 under the assumptions of normal weather conditions and continued, although slowing, economic growth.

Current estimates of demand growth for natural gas in 1998 reflect the weather-related weakness in residential and commercial sector demand for gas. Natural gas demand in 1998 was below the estimated 1997 level of 21.97 trillion cubic feet by 2.7 percent. The only strength in gas demand in 1998 was due to growth in electricity generation, boosted largely by the substantial increase in cooling demand this year, but also by the reduction in available hydroelectric power in the Western regions of the country. The industrial sector did not generally

provide any strength to the market this year. Industrials are using less energy to produce more output while gas is losing share to other fuels in this shrinking market, due partly to interfuel competition.  In 1999 and 2000, natural gas demand is expected to grow across the board, led by the residential and commercial sectors, due to assumptions of normal weather. Tentatively, we are projecting that some growth in industrial use will occur over the next two years, allowing for some improvement in the cogeneration market and fuel use by gas-intensive industrial processes, which have been weak since mid-1997.  Gas-fired electricity generation is expected to continue to grow in the forecast years, although at much slower rates than in 1998.

# *U.S. Natural Gas Supply*

## Figure 21.  Changes in Total Gas Underground Storage (From Year Ago)
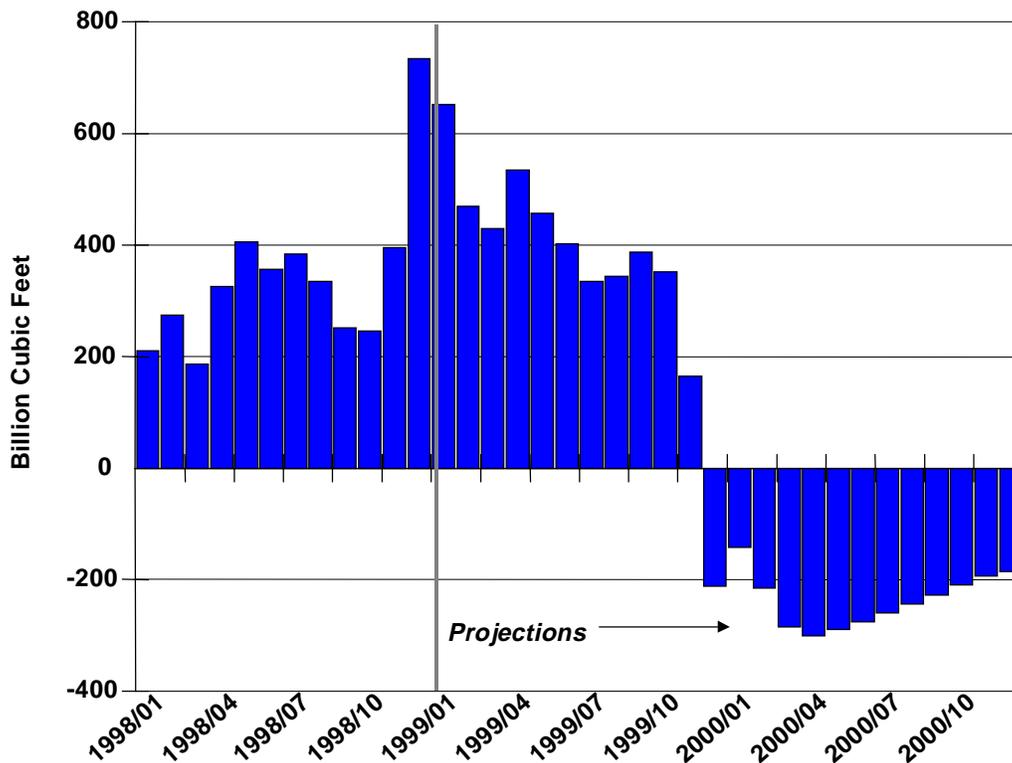


Relatively strong gas prices and weak overall demand in 1998 contributed to the significant excess supply situation as 1998 came to a close. Total natural gas in underground storage in December 1998 is estimated to have been about  650 billion cubic feet, or 10 percent, higher than  the end of 1997 storage (Figure 21), with each of the three gas-consuming and gas-producing regions holding more gas in storage than they did a year ago.   Gas storage is likely to  maintain an edge over year-ago levels through most of 1999, unless extremely cold weather occurs in the first quarter.  But by the fourth quarter of 1999, gas storage is

expected to finally fall below the extremely high levels of the same period in 1998, under normal winter weather assumptions.

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 estimated to have risen by only 0.5 percent in 1998 from 1997 levels, reflecting both the demand limitations and high levels of storage.  Dry gas production growth in 1999 and 2000 is expected to be minimal, particularly in 1999.  Given the extent of the current surplus, a decline in production in 1999 seems quite possible.

Natural gas net imports are estimated to have increased by 2.6 percent in 1998 compared to imports the previous  year, and are forecast to increase by another 3.4 percent in 1999, and by about 7.9 percent in 2000.  The additional expansion of the Transcanada pipeline in 1999 will add another 450 million cubic feet per day in November of that year.  The new Alliance pipeline to the U.S. Midwest is expected to add an additional 1.3 billion cubic feet per day in November of 2000. The ability of Canadian producers to fill the new pipelines will depend on storage and drilling levels in Canada.

# *U.S. Coal Demand and Supply*

**Figure 22.  Annual Change in U.S. Coal Demand**
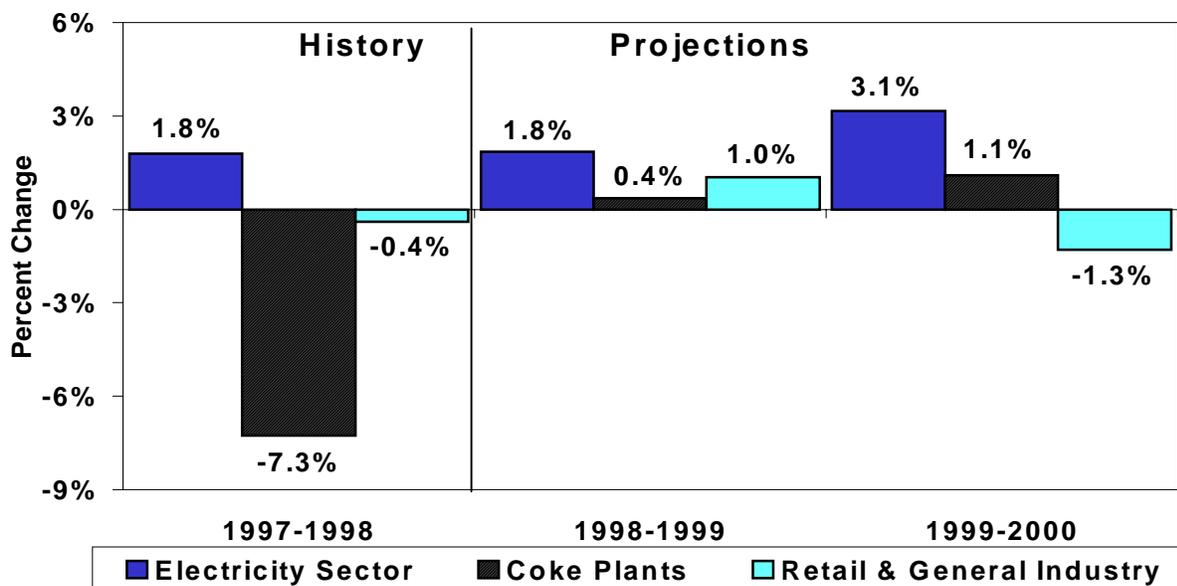


Total coal demand is expected to increase by 1.7 percent in 1999 and 2.8 percent in 2000 compared to 1.4 percent growth in 1998 (Table 9 and Figure 22).  Coal demand by the electricity sector (including independent power producers) grew by 1.8 percent (to 938 million short tons) in 1998, largely due to the very hot summer.  Growth in electricity demand (1.1 percent in 1999 and 1.9 percent in 2000), combined with a return to normal levels of hydroelectric generation, will

provide the impetus for continued growth in coal demand by the electricity sector.  This sector currently consumes nearly 90 percent (89.9 percent in 1998) of all coal used in the United States.

Coal carbonized (consumed) by coke plants fell 7.3 percent in 1998 to 28.0 million short tons.  Demand for coal at coke plants is expected to remain below 29 million short tons 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.   Growth in coke plant coal consumption is obviated 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 6.1 percent in 1998, and it accounted for 44 percent of all raw steel produced in the United States.  Coal-based raw steel production declined 1.1 percent in 1998 and it is expected to average only 0.4 percent growth over the forecast period.

Demand for coal by the retail and general industry sectors is projected at 77.5 million short tons in 1999, a 1.0 percent increase from 1998 demand.  In 2000, demand is expected to be 76.5 million short tons.

U.S. coal exports are expected to continue to weaken as the lower-priced coals from Australia and South Africa, as well as the growing coal export industries of Indonesia, Venezuela, and Colombia, grab a larger share of the market.  Steam coal exports will bear the brunt of the export decline, while metallurgical exports will be buoyed somewhat by the demand for the higher quality U.S. coals. Exports are projected to be 77.7 million short tons in 1999 (a 1.2 percent decrease) and 74.9 million short tons in 2000 (Table 9).

Coal imports grew by 7.8 percent in 1998.  The continued strength of the dollar, coupled with increased demands for low sulfur compliance coal, and the impending CAAA (Clean Air Act Amendments) Phase II emission requirements will provide the impetus for continued growth of coal imports.  Imports are forecast to increase by 7.1 percent in 1999 to 8.6 million short tons, and grow an additional 4.3 percent in 2000.

A record 1,100.5 million short tons of coal was produced in 1998.  Production is expected to grow by 1.4 percent in 1999 and 1.8 percent in 2000, with annual output reaching 1,115.8 million short tons in 1999.  Production is projected to be 1136.4 million short tons in 2000.  Production in the Western region should continue to rise significantly over the forecast period (2.9 percent in 1999 and 5.0 percent in 2000).  The Western region became the nation's largest coal producer in 1998 surpassing the Appalachian region.  Production in the Appalachian region is expected  to increase by 1.4 percent in 1999 but increase by only 0.1 percent in 2000.  Interior region production is projected to exhibit an average decline of 2.8 percent over the forecast period.

# U.S. Electricity Demand and Supply

**Figure 23.  U. S. Electricity Demand**
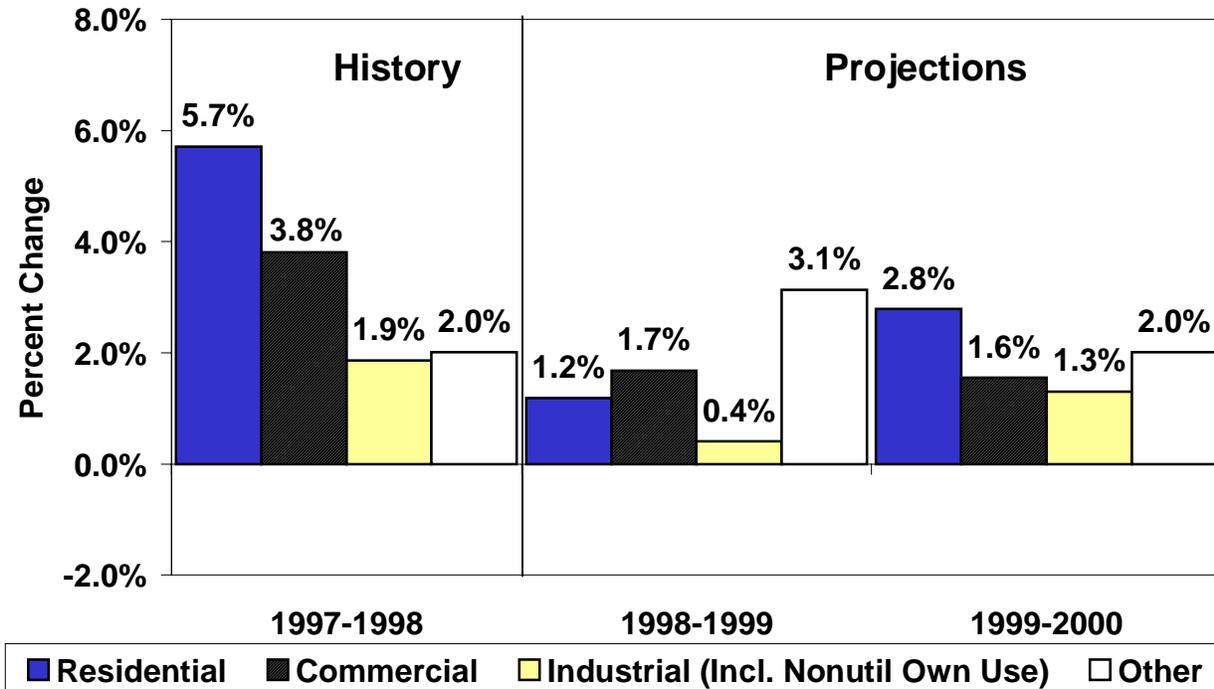


In an otherwise robust year for electricity demand, the fourth quarter of 1998 generated some deceleration in growth.  Our current estimates, based primarily on weather statistics and short-term reports on electricity output, indicate that fourth quarter 1998 electricity demand was about 0.7 percent above fourth quarter 1997 levels.  For the year, electricity demand was about 3.7 percent above the 1997 level, with summer cooling demand growth the primary impetus. Assuming normal weather, the outlook for 1999 is modest growth overall (1.1 percent), with very weak or negative growth in the spring and summer.  For the extended outlook through 2000, electricity demand is expected to grow by 1.9 percent, an acceleration due to assumed normal weather conditions, but somewhat below trend as the economy continues to slow.

As in the case of natural gas and heating oil, a boost to electricity demand in the first quarter of 1999 is expected to arise from higher heating demand, especially in the residential and commercial sectors. However, the industrial sales growth rate is likely to tail off through the first three-quarter of 1999 (Figure 23).   For 2000, industrial demand is expected to increase starting in the fourth quarter of 1999 and continue to grow through the year, despite the slowing economy.

Significant differences in the electricity supply profile in 1999 are expected. Because much of the electricity demand growth in 1998 occurred during the

spring and summer months, and because most of the decline in availability of hydroelectric power this year occurred in the Pacific region, natural gas has played a relatively large role in meeting incremental demand in 1998. In 1999, with most of the electricity demand growth expected to take place in the winter, we expect to see a much smaller role for natural gas and a much larger incremental role for coal (Figure 24). It also seems likely that oil will continue to gain share as a fuel source in electric power generation in 1999 beyond the large gains made in 1998, as the cost of oil remains lower than in 1998. Growth in electricity oil generation is expected to be flat or negative in 2000, as oil prices rise.

**Figure 24. Electricity Generation by Fuel**
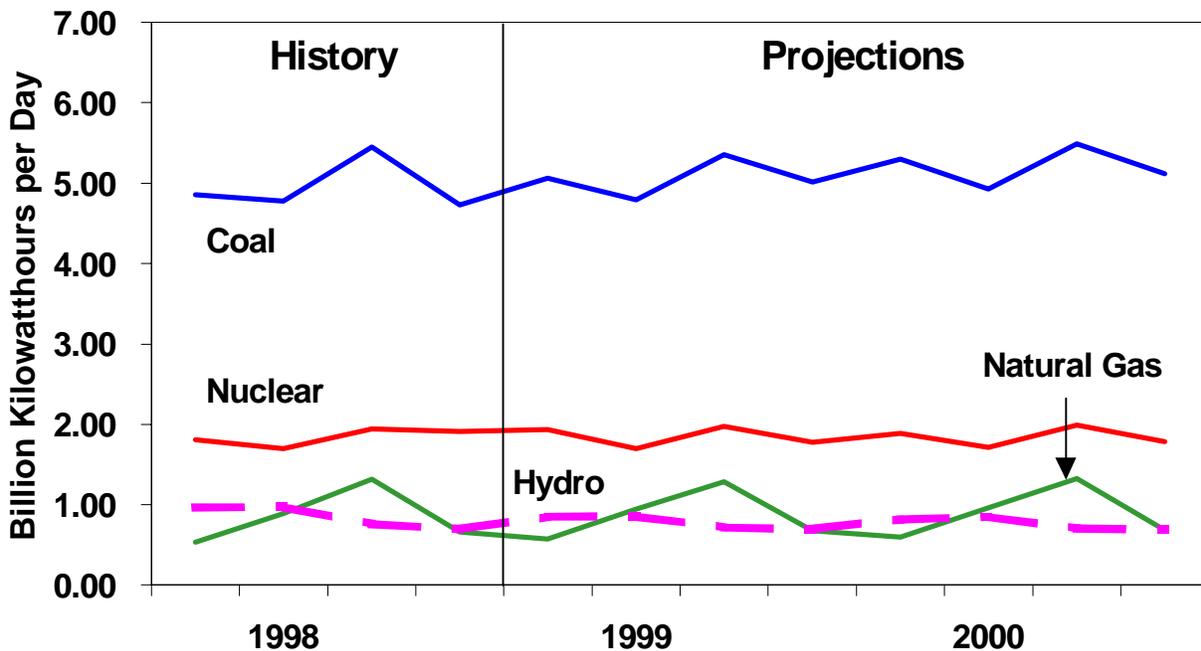
# U.S. Renewable Energy Demand

**Figure 25.  Renewable Energy Use for Electricity**
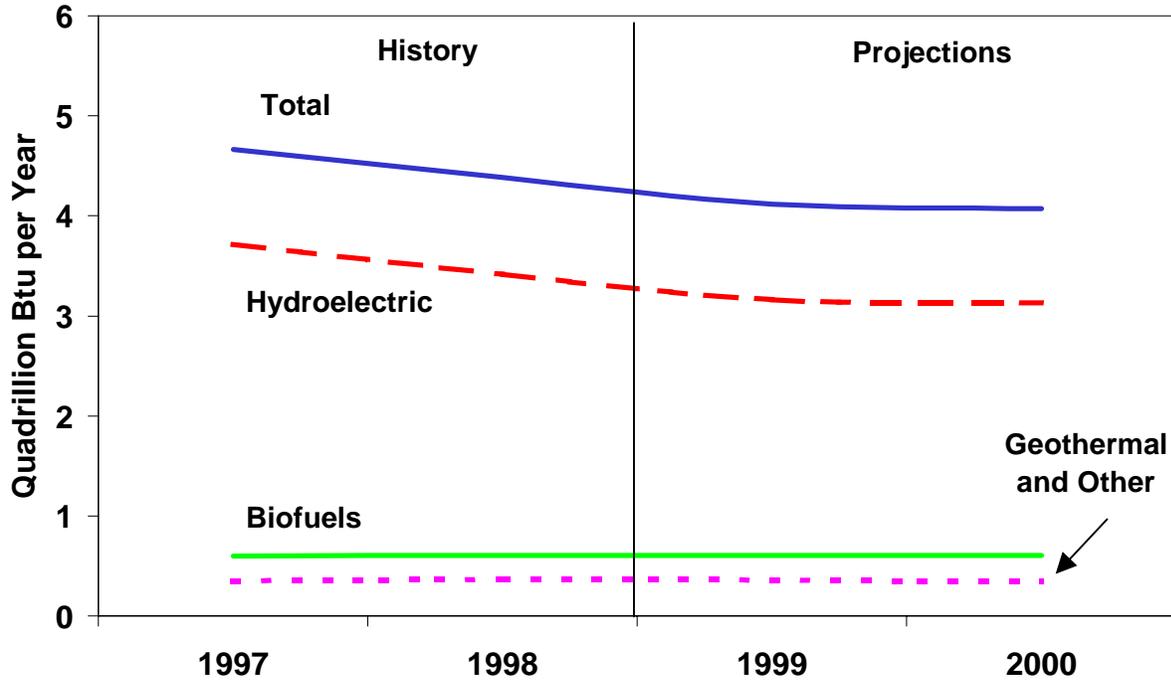


Total renewable energy demand, as defined here, includes minor non-marketed components (that is, amounts which are neither bought nor sold, either directly or indirectly as inputs to marketed energy).   The Energy Information Administration does not estimate or project total consumption of non-marketed renewable energy.

Renewable energy use in the United States amounted to about 7.1 quadrillion Btu (quads), or about 7.6 percent of total domestic gross energy demand, in 1997 (Tables HL1 and 11).  In 1998, use of renewables is estimated to have decreased by about 3.6 percent due to a decline in hydroelectric generation.   In 1999, renewables use is expected to decrease by another of 3.6 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 (Figure 25).  In 2000, renewables use is expected to remain at 1999 levels.

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 25), a significant and growing portion of renewables use occurs at nonutility generating facilities.

Most of the nonutility use of renewables involves biofuels, principally wood and wood by-products.

**Figure 26.  Renewable Energy Use by Sector**
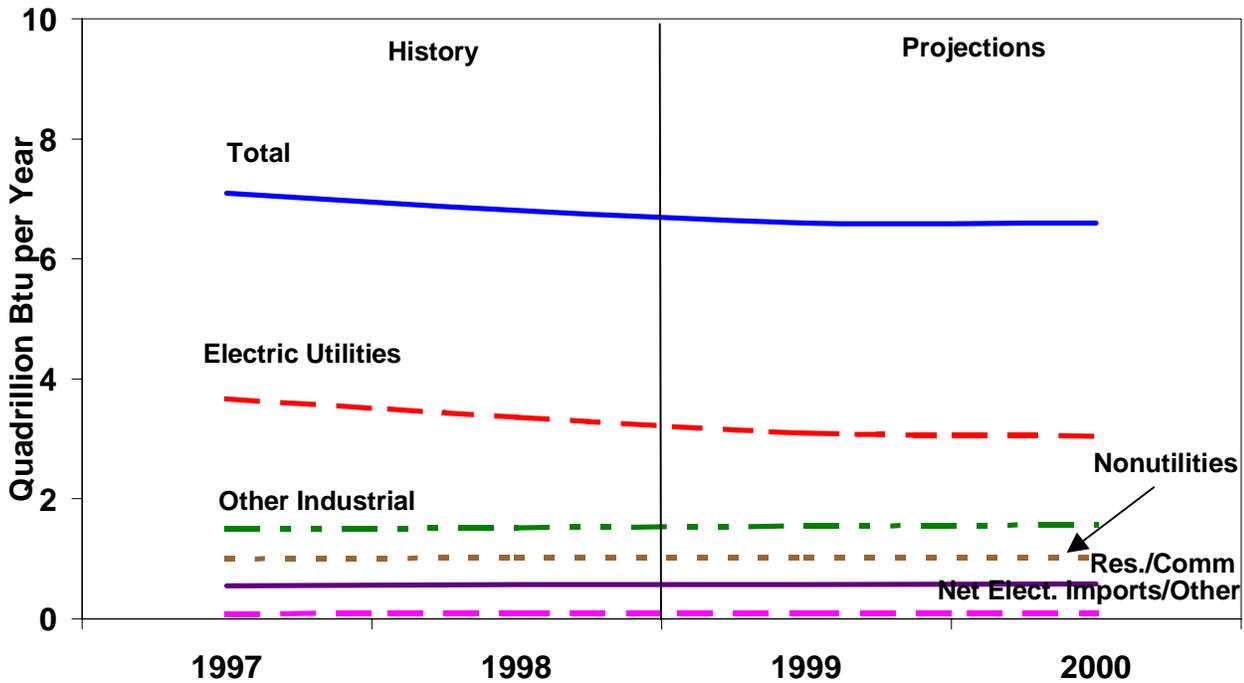


Currently, aside from power generation, the most significant area of renewables use is in the industrial sector, accounting for 21 percent of the total in 1997.  This component is principally biofuels.

Renewables use in the combined residential and commercial sector, at about 0.6 quadrillion Btu in 1997 (Figure 26), generally accounts for about 8 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 27. Macro Sensitivities**
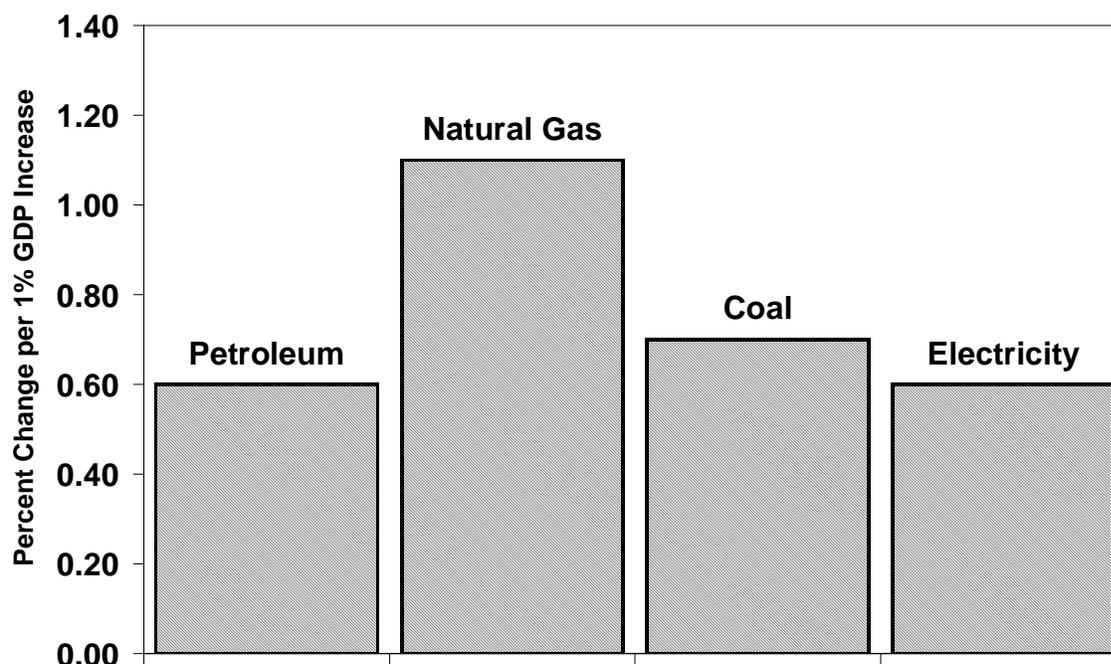


The petroleum demand and supply outlook for the mid-price case is based on assumed normal temperatures and GDP growth of 2.3 percent per year in 1999 and 1.7 percent in 2000. To enhance the usefulness of the mid-case forecasts, sensitivities of energy demand and supply are also derived, using alternative macroeconomic, price and weather assumptions. Plausible macroeconomic and weather-related petroleum demand sensitivities are illustrated in Figures 27 and 28 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 27). 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.

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 28).  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.

**Figure 28.  Weather Sensitivities**
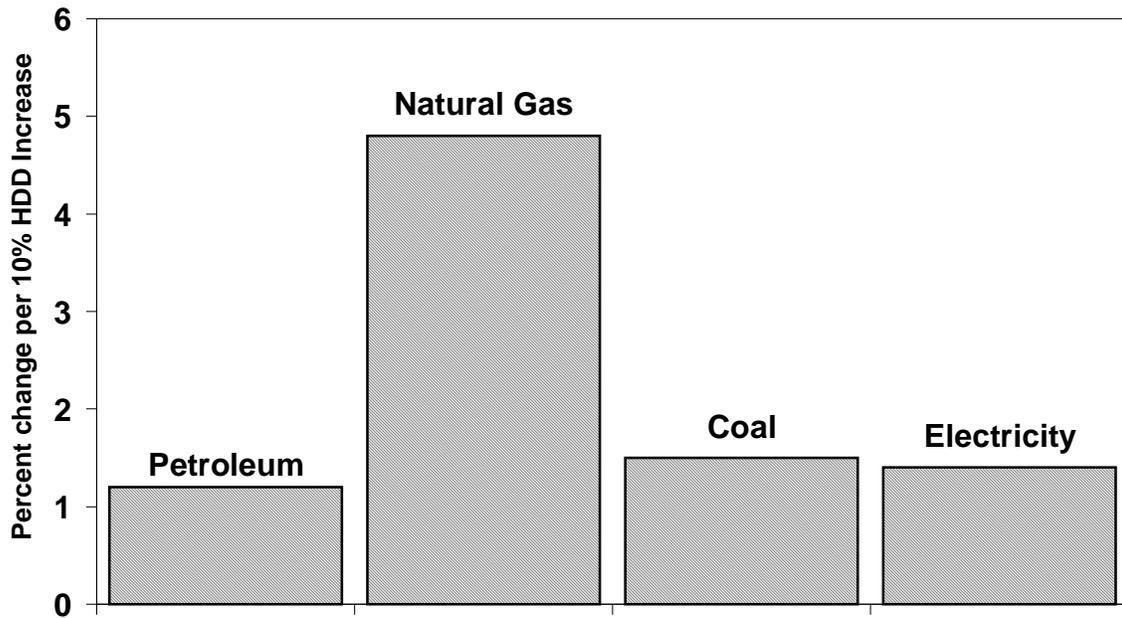


A 10 percent increase in cooling degree-days increases summer petroleum demand by about 0.1 percent, other fuels by 1.4 percent.

A $1-per-barrel increase in crude oil prices boosts domestic oil supply (crude oil and natural gas liquids production) by about 105,000 barrels per day.

# 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 prices for gasoline reported in the *Short-term Energy Outlook* are derived from the Energy Information Administration (EIA) form EIA-878, "Motor Gasoline Price Survey." The two series are: 1) average retail price of regular unleaded motor gasoline, self-service; 2) average retail price for all grades of motor gasoline, self-service. Both price series are for cash transactions. The historical values for these prices are reported on Table 16 of EIA's *Weekly Petroleum Status Report.*

**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 stored in bonded warehouses.

## 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, doctor and dentist's 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,

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photovoltaic, and solar thermal energy.  Includes estimates for renewable energy sources used in the residential, commercial and industrial sectors.

## 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 Appalachian region States are**: Alabama, Georgia, Eastern Kentucky, Maryland, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia.

**The Interior region States are:** 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

| | 1998 | | | | 1999 | | | | 2000 | | | | Year | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1998 | 1999 | 2000 |
| **Macroeconomic** [a] | | | | | | | | | | | | | | | |
| Real Gross Domestic Product (billion chained 1992 dollars - SAAR) ............ | **7465** | **7499** | **7570** | *7632* | *7663* | *7687* | *7731* | *7773* | *7794* | *7829* | *7863* | *7898* | **7541** | *7714* | *7846* |
| Percentage Change from Prior Year.............. | **4.2** | **3.6** | **3.5** | *3.6* | *2.7* | *2.5* | *2.1* | *1.9* | *1.7* | *1.9* | *1.7* | *1.6* | **3.7** | *2.3* | *1.7* |
| Annualized Percent Change from Prior Quarter.......................... | **5.4** | **1.8** | **3.8** | *3.3* | *1.6* | *1.2* | *2.3* | *2.2* | *1.1* | *1.8* | *1.7* | *1.8* | | | |
| GDP Implicit Price Deflator (Index, 1992=1.000) ..................................... | **1.123** | **1.126** | **1.128** | *1.131* | *1.137* | *1.142* | *1.148* | *1.154* | *1.162* | *1.168* | *1.173* | *1.179* | **1.127** | *1.145* | *1.170* |
| Percentage Change from Prior Year.............. | **1.2** | **1.0** | **0.9** | *0.9* | *1.2* | *1.5* | *1.8* | *2.0* | *2.2* | *2.2* | *2.2* | *2.2* | **1.0** | *1.6* | *2.2* |
| Real Disposable Personal Income (billion chained 1992 Dollars - SAAR) ........... | **5287** | **5322** | **5362** | *5403* | *5437* | *5465* | *5513* | *5544* | *5585* | *5619* | *5635* | *5658* | **5343** | *5490* | *5624* |
| Percentage Change from Prior Year.............. | **3.0** | **3.0** | **3.2** | *3.2* | *2.8* | *2.7* | *2.8* | *2.6* | *2.7* | *2.8* | *2.2* | *2.1* | **3.1** | *2.7* | *2.5* |
| Manufacturing Production (Index, 1992=1.000) ..................................... | **1.338** | **1.347** | **1.349** | *1.360* | *1.372* | *1.376* | *1.381* | *1.388* | *1.398* | *1.407* | *1.414* | *1.420* | **1.349** | *1.379* | *1.410* |
| Percentage Change from Prior Year.............. | **6.0** | **5.0** | **3.2** | *2.2* | *2.5* | *2.2* | *2.4* | *2.0* | *1.9* | *2.2* | *2.4* | *2.4* | **4.1** | *2.3* | *2.2* |
| OECD Economic Growth (percent) [b] ........... | | | | | | | | | | | | | **3.0** | *2.6* | *2.4* |
| **Weather** [c] | | | | | | | | | | | | | | | |
| Heating Degree-Days | | | | | | | | | | | | | | | |
| U.S. ....................................................... | **1972** | **480** | **68** | *1472* | *2327* | *524* | *89* | *1636* | *2354* | *524* | *89* | *1636* | **3992** | *4576* | *4603* |
| New England ........................................... | **2766** | **769** | **203** | *2187* | *3267* | *915* | *171* | *2269* | *3306* | *915* | *171* | *2269* | **5925** | *6621* | *6660* |
| Middle Atlantic ........................................ | **2461** | **570** | **106** | *1845* | *2993* | *716* | *105* | *2026* | *3028* | *716* | *105* | *2026* | **4982** | *5839* | *5875* |
| U.S. Gas-Weighted ................................. | **2078** | **548** | **66** | *1528* | *2426* | *539* | *81* | *1686* | *2454* | *539* | *81* | *1686* | **4220** | *4732* | *4760* |
| Cooling Degree-Days (U.S.) ...................... | **25** | **399** | **865** | *67* | *30* | *334* | *758* | *72* | *30* | *334* | *758* | *72* | **1356** | *1193* | *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. The Czech Republic, Hungary, Mexico, Poland, and South Korea are all members of OECD, but are not yet included in our OECD estimates.

[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 CONTROL1298.

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

| | 1998 | | | | 1999 | | | | 2000 | | | | Year | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1998 | 1999 | 2000 |
| **Macroeconomic** [a] | | | | | | | | | | | | | | | |
| Real Fixed Investment | | | | | | | | | | | | | | | |
| (billion chained 1992 dollars-SAAR) ....... | **1225** | **1264** | **1269** | *1297* | *1306* | *1309* | *1311* | *1318* | *1331* | *1334* | *1331* | *1332* | **1264** | *1311* | *1332* |
| Real Exchange Rate | | | | | | | | | | | | | | | |
| (index)...................................................... | **1.142** | **1.161** | **1.181** | *1.120* | *1.130* | *1.119* | *1.109* | *1.102* | *1.096* | *1.091* | *1.086* | *1.082* | **1.151** | *1.115* | *1.089* |
| Business Inventory Change | | | | | | | | | | | | | | | |
| (billion chained 1992 dollars-SAAR) ....... | **30.1** | **23.9** | **21.1** | *3.0* | *4.3* | *-0.5* | *-0.5* | *-1.9* | *-6.7* | *-3.3* | *0.5* | *0.9* | **19.5** | *0.4* | *-2.1* |
| Producer Price Index | | | | | | | | | | | | | | | |
| (index, 1982=1.000).................................. | **1.251** | **1.249** | **1.243** | *1.238* | *1.242* | *1.248* | *1.254* | *1.260* | *1.270* | *1.276* | *1.280* | *1.286* | **1.245** | *1.251* | *1.278* |
| Consumer Price Index | | | | | | | | | | | | | | | |
| (index, 1982-1984=1.000)......................... | **1.620** | **1.628** | **1.635** | *1.644* | *1.657* | *1.667* | *1.678* | *1.690* | *1.704* | *1.716* | *1.727* | *1.739* | **1.632** | *1.673* | *1.722* |
| Petroleum Product Price Index | | | | | | | | | | | | | | | |
| (index, 1982=1.000).................................. | **0.541** | **0.536** | **0.503** | *0.480* | *0.464* | *0.486* | *0.496* | *0.503* | *0.531* | *0.548* | *0.553* | *0.549* | **0.515** | *0.487* | *0.545* |
| Non-Farm Employment | | | | | | | | | | | | | | | |
| (millions)................................................. | **124.8** | **125.5** | **126.1** | *126.7* | *126.9* | *127.4* | *128.0* | *128.6* | *129.0* | *129.3* | *129.5* | *129.9* | **125.8** | *127.7* | *129.4* |
| Commercial Employment | | | | | | | | | | | | | | | |
| (millions)................................................. | **85.7** | **86.3** | **87.0** | *87.6* | *88.0* | *88.5* | *89.2* | *89.9* | *90.1* | *90.4* | *90.7* | *91.1* | **86.7** | *88.9* | *90.6* |
| Total Industrial Production | | | | | | | | | | | | | | | |
| (index, 1992=1.000)................................ | **1.303** | **1.313** | **1.317** | *1.324* | *1.334* | *1.337* | *1.342* | *1.348* | *1.357* | *1.365* | *1.372* | *1.378* | **1.314** | *1.340* | *1.368* |
| Housing Stock | | | | | | | | | | | | | | | |
| (millions)................................................. | **113.7** | **113.9** | **114.1** | *114.4* | *114.8* | *115.1* | *115.4* | *115.7* | *116.1* | *116.4* | *116.7* | *117.0* | **114.0** | *115.2* | *116.5* |
| | | | | | | | | | | | | | | | |
| **Miscellaneous** | | | | | | | | | | | | | | | |
| Gas Weighted Industrial Production | | | | | | | | | | | | | | | |
| (index, 1992=1.000)................................ | **1.175** | **1.171** | **1.161** | *1.152* | *1.157* | *1.163* | *1.170* | *1.175* | *1.185* | *1.195* | *1.203* | *1.208* | **1.165** | *1.166* | *1.198* |
| Vehicle Miles Traveled [b] | | | | | | | | | | | | | | | |
| (million miles/day) .................................. | **6580** | **7316** | **7533** | *7039* | *6819* | *7518* | *7704* | *7227* | *6997* | *7692* | *7861* | *7377* | **7119** | *7319* | *7483* |
| Vehicle Fuel Efficiency | | | | | | | | | | | | | | | |
| (index, 1996=1.000)................................. | **0.994** | **1.019** | **1.002** | *1.001* | *0.995* | *1.013* | *1.017* | *1.016* | *1.003* | *1.018* | *1.020* | *1.020* | **1.004** | *1.010* | *1.016* |
| Real Vehicle Fuel Cost | | | | | | | | | | | | | | | |
| (cents per mile)....................................... | **3.36** | **3.17** | **3.10** | *3.11* | *2.99* | *3.06* | *3.03* | *3.10* | *3.16* | *3.17* | *3.12* | *3.17* | **3.18** | *3.04* | *3.16* |
| Air Travel Capacity | | | | | | | | | | | | | | | |
| (mill. available ton-miles/day)................. | **423.2** | **438.8** | **441.8** | *430.7* | *432.2* | *451.3* | *465.0* | *457.9* | *453.2* | *470.9* | *487.5* | *476.7* | **433.7** | *451.7* | *472.1* |
| Aircraft Utilization | | | | | | | | | | | | | | | |
| (mill. revenue ton-miles/day) .................. | **237.5** | **258.9** | **261.4** | *254.3* | *250.7* | *267.1* | *281.1* | *264.9* | *261.0* | *278.2* | *292.8* | *276.7* | **253.1** | *266.0* | *277.2* |
| Airline Ticket Price Index | | | | | | | | | | | | | | | |
| (index, 1982-1984=1.000)........................ | **2.058** | **2.053** | **2.069** | *2.100* | *2.133* | *2.139* | *2.148* | *2.181* | *2.219* | *2.230* | *2.241* | *2.275* | **2.070** | *2.150* | *2.241* |
| Raw Steel Production | | | | | | | | | | | | | | | |
| (millions tons) ........................................ | **28.75** | **27.87** | **26.57** | *25.83* | *27.10* | *26.79* | *26.35* | *26.90* | *27.99* | *27.41* | *26.77* | *27.25* | **108.71** | *107.14* | *109.41* |

[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 CONTROL1298.

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

(Million Barrels per Day, Except OECD Commercial Stocks)

| | 1998 1st | 1998 2nd | 1998 3rd | 1998 4th | 1999 1st | 1999 2nd | 1999 3rd | 1999 4th | 2000 1st | 2000 2nd | 2000 3rd | 2000 4th | Year 1998 | Year 1999 | Year 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Demand** [a] | | | | | | | | | | | | | | | |
| OECD | | | | | | | | | | | | | | | |
| U.S. (50 States) | 18.3 | 18.4 | 19.0 | 19.0 | 19.2 | 19.0 | 19.3 | 19.5 | 19.5 | 19.3 | 19.6 | 19.8 | 18.7 | 19.2 | 19.5 |
| U.S. Territories | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Canada | 1.9 | 1.8 | 1.9 | 2.0 | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 1.9 | 2.1 | 2.1 | 1.9 | 2.0 | 2.0 |
| Europe | 14.9 | 14.1 | 14.6 | 14.9 | 15.1 | 14.4 | 14.8 | 15.2 | 15.3 | 14.6 | 15.1 | 15.4 | 14.6 | 14.9 | 15.1 |
| Japan | 6.2 | 5.0 | 5.3 | 5.8 | 6.2 | 5.0 | 5.3 | 5.9 | 6.2 | 5.0 | 5.4 | 5.9 | 5.6 | 5.6 | 5.6 |
| 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 | 0.9 | 1.0 | 1.0 |
| Total OECD | 42.3 | 40.5 | 42.0 | 42.9 | 43.5 | 41.4 | 42.6 | 43.8 | 44.2 | 42.0 | 43.3 | 44.5 | 41.9 | 42.8 | 43.5 |
| Non-OECD | | | | | | | | | | | | | | | |
| Former Soviet Union | 4.7 | 4.3 | 4.1 | 4.5 | 4.7 | 4.2 | 4.1 | 4.5 | 4.7 | 4.2 | 4.1 | 4.5 | 4.4 | 4.4 | 4.4 |
| Europe | 1.6 | 1.4 | 1.4 | 1.5 | 1.7 | 1.4 | 1.4 | 1.6 | 1.7 | 1.5 | 1.5 | 1.6 | 1.5 | 1.5 | 1.6 |
| China | 4.0 | 4.1 | 4.1 | 4.2 | 4.2 | 4.3 | 4.3 | 4.4 | 4.5 | 4.5 | 4.6 | 4.6 | 4.1 | 4.3 | 4.6 |
| Other Asia | 8.5 | 8.4 | 8.3 | 9.4 | 8.5 | 8.5 | 8.3 | 9.6 | 8.6 | 8.6 | 8.5 | 9.8 | 8.7 | 8.7 | 8.9 |
| Other Non-OECD | 13.2 | 13.6 | 13.2 | 13.5 | 13.5 | 13.9 | 13.6 | 13.9 | 13.9 | 14.3 | 14.0 | 14.3 | 13.4 | 13.7 | 14.1 |
| Total Non-OECD | 32.1 | 31.7 | 31.1 | 33.1 | 32.6 | 32.3 | 31.8 | 33.9 | 33.4 | 33.2 | 32.7 | 34.9 | 32.0 | 32.7 | 33.6 |
| Total World Demand | 74.4 | 72.2 | 73.1 | 76.1 | 76.2 | 73.7 | 74.4 | 77.7 | 77.6 | 75.2 | 76.0 | 79.4 | 74.0 | 75.5 | 77.1 |
| **Supply** [b] | | | | | | | | | | | | | | | |
| OECD | | | | | | | | | | | | | | | |
| U.S. (50 States) | 9.5 | 9.4 | 9.2 | 9.4 | 9.4 | 9.3 | 9.2 | 9.3 | 9.1 | 9.1 | 9.1 | 9.0 | 9.4 | 9.3 | 9.1 |
| Canada | 2.7 | 2.6 | 2.7 | 2.7 | 2.7 | 2.7 | 2.8 | 2.8 | 2.8 | 2.8 | 2.9 | 2.9 | 2.7 | 2.8 | 2.8 |
| North Sea [c] | 6.4 | 6.2 | 5.9 | 6.3 | 6.4 | 6.2 | 6.4 | 6.8 | 6.8 | 6.5 | 6.7 | 7.1 | 6.2 | 6.5 | 6.8 |
| Other OECD | 1.6 | 1.6 | 1.6 | 1.6 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.6 | 1.7 | 1.7 |
| Total OECD | 20.2 | 19.8 | 19.4 | 20.1 | 20.2 | 19.9 | 20.1 | 20.6 | 20.4 | 20.1 | 20.4 | 20.7 | 19.9 | 20.2 | 20.4 |
| Non-OECD | | | | | | | | | | | | | | | |
| OPEC | 30.9 | 30.7 | 30.0 | 30.4 | 30.4 | 30.5 | 30.7 | 30.8 | 30.8 | 30.9 | 31.0 | 31.2 | 30.5 | 30.6 | 31.0 |
| Former Soviet Union | 7.3 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.3 | 7.3 | 7.3 | 7.3 | 7.4 | 7.2 | 7.2 | 7.3 |
| China | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 |
| Mexico | 3.6 | 3.6 | 3.5 | 3.5 | 3.5 | 3.6 | 3.6 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.5 | 3.6 | 3.7 |
| Other Non-OECD | 10.7 | 10.7 | 10.7 | 10.7 | 10.8 | 10.8 | 10.9 | 10.9 | 10.9 | 11.1 | 11.2 | 11.3 | 10.7 | 10.8 | 11.1 |
| Total Non-OECD | 55.6 | 55.3 | 54.6 | 55.0 | 55.0 | 55.2 | 55.5 | 55.8 | 55.8 | 56.0 | 56.4 | 56.8 | 55.1 | 55.4 | 56.3 |
| Total World Supply | 75.8 | 75.1 | 74.0 | 75.1 | 75.2 | 75.1 | 75.6 | 76.4 | 76.2 | 76.2 | 76.7 | 77.5 | 75.0 | 75.6 | 76.6 |
| Stock Changes | | | | | | | | | | | | | | | |
| Net Stock Withdrawals or Additions (-) | | | | | | | | | | | | | | | |
| U.S. (50 States including SPR) | -0.3 | -0.7 | 0.0 | 0.2 | 0.7 | -0.5 | -0.3 | 0.4 | 0.6 | -0.6 | -0.3 | 0.5 | -0.2 | 0.1 | 0.1 |
| Other | -1.0 | -2.2 | -0.8 | 0.8 | 0.2 | -0.9 | -0.9 | 0.9 | 0.8 | -0.4 | -0.4 | 1.4 | -0.8 | -0.2 | 0.4 |
| Total Stock Withdrawals | -1.4 | -2.9 | -0.8 | 1.0 | 1.0 | -1.4 | -1.1 | 1.3 | 1.5 | -0.9 | -0.7 | 1.9 | -1.0 | 0.0 | 0.4 |
| OECD Comm. Stocks, End (bill. bbls.) | 2.7 | 2.9 | 2.9 | 2.9 | 2.8 | 2.9 | 2.9 | 2.9 | 2.8 | 2.8 | 2.9 | 2.8 | 2.9 | 2.9 | 2.8 |
| Non-OPEC Supply | 44.9 | 44.4 | 44.0 | 44.7 | 44.8 | 44.6 | 44.9 | 45.6 | 45.4 | 45.3 | 45.7 | 46.2 | 44.5 | 45.0 | 45.7 |
| Net Exports from Former Soviet Union | 2.6 | 2.9 | 3.1 | 2.7 | 2.5 | 3.0 | 3.1 | 2.8 | 2.6 | 3.0 | 3.2 | 2.9 | 2.8 | 2.8 | 2.9 |

[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. The Czech Republic, Hungary, Mexico, Poland, and South Korea are all members of OECD, but are not yet included in our OECD estimates.

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)

| | 1998 | | | | 1999 | | | | 2000 | | | | Year | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1998 | 1999 | 2000 |
| **Imported Crude Oil** [a] (dollars per barrel) | **13.44** | **12.39** | **11.88** | *10.73* | *10.01* | *11.09* | *11.41* | *12.41* | *13.08* | *13.75* | *13.83* | *14.25* | **12.09** | *11.26* | *13.74* |
| **Natural Gas Wellhead** (dollars per thousand cubic feet) | **1.88** | **1.92** | **1.91** | *1.86* | *1.84* | *1.62* | *1.74* | *2.13* | *2.23* | *1.93* | *1.98* | *2.28* | **1.89** | *1.83* | *2.11* |
| **Petroleum Products** | | | | | | | | | | | | | | | |
| Gasoline Retail [b] (dollars per gallon) | | | | | | | | | | | | | | | |
| All Grades | **1.10** | **1.10** | **1.07** | *1.03* | *1.00* | *1.08* | *1.09* | *1.07* | *1.10* | *1.15* | *1.16* | *1.13* | **1.07** | *1.06* | *1.14* |
| Regular Unleaded | **1.05** | **1.05** | **1.03** | *0.99* | *0.95* | *1.04* | *1.05* | *1.03* | *1.06* | *1.12* | *1.13* | *1.10* | **1.03** | *1.02* | *1.10* |
| No. 2 Diesel Oil, Retail (dollars per gallon) | **1.08** | **1.05** | **1.02** | *1.01* | *0.98* | *1.00* | *1.01* | *1.07* | *1.06* | *1.07* | *1.07* | *1.11* | **1.04** | *1.01* | *1.08* |
| No. 2 Heating Oil, Wholesale (dollars per gallon) | **0.47** | **0.43** | **0.40** | *0.38* | *0.38* | *0.39* | *0.40* | *0.47* | *0.48* | *0.48* | *0.49* | *0.52* | **0.42** | *0.41* | *0.50* |
| No. 2 Heating Oil, Retail (dollars per gallon) | **0.92** | **0.85** | **0.77** | *0.79* | *0.81* | *0.79* | *0.76* | *0.86* | *0.90* | *0.89* | *0.86* | *0.92* | **0.85** | *0.82* | *0.90* |
| No. 6 Residual Fuel Oil, Retail [c] (dollars per barrel) | **13.56** | **13.22** | **12.31** | *11.71* | *12.25* | *11.79* | *11.41* | *13.12* | *14.29* | *13.51* | *13.11* | *14.25* | **12.69** | *12.15* | *13.81* |
| **Electric Utility Fuels** | | | | | | | | | | | | | | | |
| Coal (dollars per million Btu) | **1.26** | **1.26** | **1.26** | *1.25* | *1.25* | *1.26* | *1.24* | *1.23* | *1.23* | *1.24* | *1.22* | *1.21* | **1.26** | *1.25* | *1.23* |
| Heavy Fuel Oil [d] (dollars per million Btu) | **2.12** | **2.17** | **2.05** | *1.94* | *1.95* | *1.94* | *1.87* | *2.17* | *2.26* | *2.21* | *2.14* | *2.35* | **2.07** | *1.97* | *2.24* |
| Natural Gas (dollars per million Btu) | **2.61** | **2.46** | **2.31** | *2.31* | *2.56* | *2.22* | *2.29* | *2.73* | *2.96* | *2.55* | *2.56* | *2.90* | **2.39** | *2.40* | *2.69* |
| **Other Residential** | | | | | | | | | | | | | | | |
| Natural Gas (dollars per thousand cubic feet) | **6.39** | **7.33** | **8.90** | *6.72* | *6.68* | *7.11* | *8.63* | *6.61* | *6.83* | *7.60* | *8.94* | *7.27* | **6.84** | *6.86* | *7.22* |
| Electricity (cents per kilowatthour) | **7.93** | **8.42** | **8.54** | *7.89* | *7.57* | *8.24* | *8.51* | *8.06* | *7.58* | *8.22* | *8.50* | *8.02* | **8.22** | *8.10* | *8.09* |

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

[b] Average self-service cash prices.

[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 third quarter of 1998.  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)

| | 1998 | | | | 1999 | | | | 2000 | | | | Year | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1998 | 1999 | 2000 |
| **Supply** | | | | | | | | | | | | | | | |
| Crude Oil Supply | | | | | | | | | | | | | | | |
| Domestic Production [a] | 6.48 | 6.39 | 6.22 | 6.37 | 6.39 | 6.29 | 6.22 | 6.27 | 6.11 | 6.09 | 6.05 | 6.01 | 6.36 | 6.29 | 6.06 |
| Alaska | 1.23 | 1.17 | 1.13 | 1.16 | 1.16 | 1.10 | 1.06 | 1.10 | 1.02 | 1.02 | 1.01 | 1.01 | 1.17 | 1.11 | 1.01 |
| Lower 48 | 5.25 | 5.22 | 5.10 | 5.20 | 5.23 | 5.19 | 5.16 | 5.17 | 5.09 | 5.07 | 5.04 | 5.00 | 5.19 | 5.19 | 5.05 |
| Net Imports (including SPR) [b] | 7.81 | 8.61 | 8.89 | 8.42 | 7.69 | 8.76 | 8.94 | 8.38 | 8.12 | 9.09 | 9.30 | 8.84 | 8.44 | 8.45 | 8.84 |
| 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 (-) | 0.00 | 0.00 | 0.00 | -0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 | 0.00 | 0.00 |
| Other Stock Withdrawn or Added (-) | -0.35 | 0.04 | 0.25 | -0.28 | 0.06 | -0.03 | 0.09 | 0.01 | 0.06 | -0.02 | 0.06 | 0.02 | -0.08 | 0.03 | 0.03 |
| Product Supplied and Losses | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | 0.00 | -0.01 | -0.01 |
| Unaccounted-for Crude Oil | 0.38 | 0.11 | -0.03 | 0.07 | 0.22 | 0.23 | 0.23 | 0.22 | 0.22 | 0.23 | 0.23 | 0.23 | 0.13 | 0.22 | 0.23 |
| Total Crude Oil Supply | 14.32 | 15.14 | 15.34 | 14.51 | 14.36 | 15.24 | 15.47 | 14.87 | 14.50 | 15.38 | 15.63 | 15.09 | 14.83 | 14.99 | 15.15 |
| Other Supply | | | | | | | | | | | | | | | |
| NGL Production | 1.85 | 1.80 | 1.67 | 1.76 | 1.78 | 1.77 | 1.79 | 1.79 | 1.80 | 1.80 | 1.79 | 1.80 | 1.77 | 1.78 | 1.80 |
| Other Hydrocarbon and Alcohol Inputs | 0.34 | 0.36 | 0.38 | 0.37 | 0.37 | 0.34 | 0.35 | 0.37 | 0.38 | 0.36 | 0.37 | 0.37 | 0.36 | 0.36 | 0.37 |
| Crude Oil Product Supplied | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.01 | 0.01 |
| Processing Gain | 0.83 | 0.84 | 0.89 | 0.88 | 0.82 | 0.87 | 0.88 | 0.86 | 0.81 | 0.88 | 0.90 | 0.86 | 0.86 | 0.86 | 0.86 |
| Net Product Imports [c] | 0.93 | 1.04 | 0.99 | 0.98 | 1.19 | 1.23 | 1.14 | 1.16 | 1.44 | 1.38 | 1.26 | 1.19 | 0.98 | 1.18 | 1.32 |
| Product Stock Withdrawn or Added (-) [d] | 0.03 | -0.75 | -0.24 | 0.52 | 0.68 | -0.46 | -0.34 | 0.44 | 0.54 | -0.54 | -0.38 | 0.46 | -0.11 | 0.08 | 0.02 |
| Total Supply | 18.30 | 18.43 | 19.03 | 19.03 | 19.21 | 19.00 | 19.30 | 19.50 | 19.48 | 19.26 | 19.58 | 19.78 | 18.70 | 19.25 | 19.53 |
| **Demand** | | | | | | | | | | | | | | | |
| Motor Gasoline | 7.77 | 8.21 | 8.49 | 8.30 | 8.04 | 8.49 | 8.56 | 8.40 | 8.18 | 8.64 | 8.70 | 8.54 | 8.20 | 8.37 | 8.52 |
| Jet Fuel | 1.55 | 1.55 | 1.54 | 1.61 | 1.60 | 1.55 | 1.60 | 1.64 | 1.62 | 1.59 | 1.64 | 1.67 | 1.56 | 1.60 | 1.63 |
| Distillate Fuel Oil | 3.58 | 3.37 | 3.39 | 3.48 | 3.82 | 3.45 | 3.39 | 3.63 | 3.89 | 3.50 | 3.44 | 3.68 | 3.46 | 3.57 | 3.63 |
| Residual Fuel Oil | 0.81 | 0.81 | 0.89 | 0.80 | 1.04 | 0.88 | 0.89 | 0.90 | 1.05 | 0.86 | 0.87 | 0.88 | 0.83 | 0.93 | 0.91 |
| Other Oils [e] | 4.62 | 4.49 | 4.71 | 4.84 | 4.70 | 4.63 | 4.86 | 4.93 | 4.73 | 4.68 | 4.93 | 5.01 | 4.67 | 4.78 | 4.84 |
| Total Demand | 18.32 | 18.43 | 19.03 | 19.03 | 19.21 | 19.00 | 19.30 | 19.50 | 19.48 | 19.26 | 19.58 | 19.78 | 18.71 | 19.25 | 19.53 |
| Total Petroleum Net Imports | 8.74 | 9.66 | 9.88 | 9.40 | 8.89 | 9.99 | 10.08 | 9.54 | 9.56 | 10.47 | 10.56 | 10.03 | 9.42 | 9.63 | 10.16 |
| **Closing Stocks** (million barrels) | | | | | | | | | | | | | | | |
| Crude Oil (excluding SPR) | 336 | 333 | 310 | 336 | 330 | 333 | 325 | 324 | 319 | 321 | 315 | 313 | 336 | 324 | 313 |
| Total Motor Gasoline | 215 | 221 | 207 | 209 | 209 | 205 | 205 | 207 | 209 | 203 | 202 | 206 | 209 | 207 | 206 |
| Finished Motor Gasoline | 166 | 178 | 165 | 166 | 164 | 164 | 163 | 165 | 166 | 163 | 161 | 164 | 166 | 165 | 164 |
| Blending Components | 49 | 44 | 43 | 43 | 45 | 41 | 42 | 41 | 43 | 40 | 41 | 41 | 43 | 41 | 41 |
| Jet Fuel | 43 | 44 | 46 | 45 | 42 | 41 | 43 | 45 | 42 | 43 | 46 | 45 | 45 | 45 | 45 |
| Distillate Fuel Oil | 124 | 139 | 153 | 151 | 112 | 122 | 136 | 139 | 105 | 118 | 135 | 140 | 151 | 139 | 140 |
| Residual Fuel Oil | 41 | 40 | 40 | 42 | 32 | 38 | 39 | 42 | 33 | 38 | 39 | 42 | 42 | 42 | 42 |
| Other Oils [e] | 265 | 313 | 334 | 285 | 275 | 306 | 321 | 270 | 265 | 301 | 316 | 263 | 285 | 270 | 263 |
| Total Stocks (excluding SPR) | 1025 | 1090 | 1089 | 1067 | 1000 | 1045 | 1068 | 1027 | 972 | 1023 | 1053 | 1008 | 1067 | 1027 | 1008 |
| Crude Oil in SPR | 563 | 563 | 563 | 569 | 569 | 569 | 569 | 569 | 569 | 569 | 569 | 569 | 569 | 569 | 569 |
| Total Stocks (including SPR) | 1588 | 1654 | 1653 | 1636 | 1569 | 1613 | 1637 | 1595 | 1541 | 1592 | 1621 | 1577 | 1636 | 1595 | 1577 |

[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.

## 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................................... | 6.31 | 5.56 | 0.75 | 0.09 | 0.66 |
| Lower 48 States ............................ | 5.29 | 4.56 | 0.72 | 0.08 | 0.64 |
| Alaska ........................................... | 1.02 | 1.00 | 0.03 | 0.01 | 0.01 |

Note:  Components provided are for the fourth quarter 2000. 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)

| | 1998 | | | | 1999 | | | | 2000 | | | | Year | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1998 | 1999 | 2000 |
| **Supply** | | | | | | | | | | | | | | | |
| Total Dry Gas Production........................... | 4.72 | 4.70 | 4.76 | 4.78 | 4.73 | 4.71 | 4.77 | 4.79 | 4.76 | 4.72 | 4.77 | 4.80 | 18.95 | 18.99 | 19.05 |
| Net Imports ................................. | 0.75 | 0.71 | 0.75 | 0.77 | 0.76 | 0.73 | 0.74 | 0.80 | 0.82 | 0.78 | 0.79 | 0.86 | 2.97 | 3.03 | 3.25 |
| Supplemental Gaseous Fuels ................... | 0.03 | 0.02 | 0.03 | 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.................................. | 5.50 | 5.43 | 5.53 | 5.58 | 5.52 | 5.47 | 5.53 | 5.63 | 5.62 | 5.53 | 5.59 | 5.69 | 22.04 | 22.14 | 22.42 |
| | | | | | | | | | | | | | | | |
| Underground Working Gas Storage | | | | | | | | | | | | | | | |
| Opening ................................................. | 6.52 | 5.52 | 6.44 | 7.28 | 7.17 | 5.91 | 6.79 | 7.61 | 6.97 | 5.57 | 6.47 | 7.32 | 6.52 | 7.17 | 6.97 |
| Closing................................................... | 5.52 | 6.44 | 7.28 | 7.17 | 5.91 | 6.79 | 7.61 | 6.97 | 5.57 | 6.47 | 7.32 | 6.71 | 7.17 | 6.97 | 6.71 |
| Net Withdrawals................................... | 1.00 | -0.92 | -0.84 | 0.11 | 1.26 | -0.89 | -0.82 | 0.64 | 1.40 | -0.90 | -0.86 | 0.61 | -0.65 | 0.20 | 0.26 |
| | | | | | | | | | | | | | | | |
| Total Supply ................................................. | 6.49 | 4.51 | 4.69 | 5.69 | 6.78 | 4.58 | 4.71 | 6.27 | 7.02 | 4.63 | 4.74 | 6.30 | 21.39 | 22.34 | 22.68 |
| | | | | | | | | | | | | | | | |
| Balancing Item [a] ......................................... | 0.16 | 0.18 | -0.06 | -0.28 | 0.35 | 0.31 | -0.18 | -0.58 | 0.37 | 0.32 | -0.14 | -0.56 | -0.01 | -0.09 | -0.01 |
| | | | | | | | | | | | | | | | |
| Total Primary Supply.................................... | 6.65 | 4.69 | 4.63 | 5.41 | 7.13 | 4.90 | 4.54 | 5.69 | 7.39 | 4.95 | 4.60 | 5.74 | 21.38 | 22.26 | 22.67 |
| | | | | | | | | | | | | | | | |
| **Demand** | | | | | | | | | | | | | | | |
| Lease and Plant Fuel ................................. | 0.31 | 0.31 | 0.31 | 0.32 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.30 | 0.31 | 0.31 | 1.25 | 1.24 | 1.23 |
| Pipeline Use................................................. | 0.23 | 0.16 | 0.16 | 0.19 | 0.23 | 0.16 | 0.15 | 0.19 | 0.24 | 0.16 | 0.15 | 0.19 | 0.74 | 0.74 | 0.75 |
| Residential ................................................. | 2.13 | 0.78 | 0.36 | 1.28 | 2.41 | 0.82 | 0.34 | 1.40 | 2.50 | 0.83 | 0.35 | 1.42 | 4.55 | 4.97 | 5.09 |
| Commercial.................................................. | 1.21 | 0.57 | 0.47 | 0.84 | 1.38 | 0.64 | 0.46 | 0.91 | 1.45 | 0.65 | 0.47 | 0.93 | 3.09 | 3.40 | 3.50 |
| Industrial (Incl. Cogenerators).................... | 2.24 | 1.97 | 1.99 | 2.10 | 2.22 | 2.02 | 1.99 | 2.17 | 2.29 | 2.03 | 1.99 | 2.18 | 8.29 | 8.40 | 8.49 |
| Cogenerators ......................................... | 0.51 | 0.49 | 0.54 | 0.60 | 0.53 | 0.50 | 0.55 | 0.61 | 0.54 | 0.51 | 0.56 | 0.63 | 2.14 | 2.19 | 2.23 |
| Electricity Production | | | | | | | | | | | | | | | |
| Electric Utilities ........................................ | 0.50 | 0.86 | 1.29 | 0.64 | 0.54 | 0.90 | 1.24 | 0.65 | 0.57 | 0.92 | 1.28 | 0.66 | 3.28 | 3.32 | 3.42 |
| Nonutilities (Excl. Cogen.) [b] ...................... | 0.04 | 0.04 | 0.05 | 0.05 | 0.04 | 0.04 | 0.05 | 0.05 | 0.05 | 0.04 | 0.05 | 0.05 | 0.18 | 0.18 | 0.19 |
| Total Demand............................................. | 6.65 | 4.69 | 4.63 | 5.41 | 7.13 | 4.90 | 4.54 | 5.69 | 7.39 | 4.95 | 4.60 | 5.74 | 21.38 | 22.26 | 22.67 |

[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)

| | 1998 1st | 1998 2nd | 1998 3rd | 1998 4th | 1999 1st | 1999 2nd | 1999 3rd | 1999 4th | 2000 1st | 2000 2nd | 2000 3rd | 2000 4th | Year 1998 | Year 1999 | Year 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Supply** | | | | | | | | | | | | | | | |
| Production | **279.2** | **271.6** | **276.0** | *273.7* | *286.7* | *269.6* | *274.4* | *285.2* | *293.3* | *276.7* | *279.6* | *286.8* | **1100.5** | *1115.8* | *1136.4* |
| Appalachia | **119.1** | **111.6** | **110.3** | *114.8* | *120.6* | *114.5* | *109.3* | *117.6* | *121.7* | *115.6* | *109.0* | *116.2* | **455.8** | *462.0* | *462.5* |
| Interior | **41.0** | **41.5** | **41.2** | *41.4* | *40.3* | *37.6* | *40.9* | *41.3* | *39.5* | *36.9* | *39.9* | *39.6* | **165.1** | *160.1* | *155.9* |
| Western | **119.1** | **118.5** | **124.5** | *117.5* | *125.7* | *117.5* | *124.2* | *126.3* | *132.1* | *124.2* | *130.7* | *130.9* | **479.7** | *493.7* | *518.0* |
| Primary Stock Levels [a] | | | | | | | | | | | | | | | |
| Opening | **34.0** | **41.0** | **38.3** | *34.2* | *34.1* | *39.4* | *38.4* | *31.5* | *30.6* | *36.7* | *37.0* | *29.9* | **34.0** | *34.1* | *30.6* |
| Closing | **41.0** | **38.3** | **34.2** | *34.1* | *39.4* | *38.4* | *31.5* | *30.6* | *36.7* | *37.0* | *29.9* | *29.6* | **34.1** | *30.6* | *29.6* |
| Net Withdrawals | **-7.0** | **2.7** | **4.2** | *(S)* | *-5.2* | *1.0* | *6.9* | *0.9* | *-6.0* | *-0.3* | *7.1* | *0.3* | **-0.2** | *3.5* | *1.1* |
| Imports | **1.8** | **2.2** | **2.1** | *1.9* | *2.1* | *2.2* | *2.2* | *2.2* | *2.2* | *2.2* | *2.2* | *2.3* | **8.1** | *8.6* | *9.0* |
| Exports | **18.3** | **20.5** | **19.7** | *20.1* | *19.0* | *19.4* | *19.7* | *19.6* | *18.1* | *18.8* | *19.0* | *18.9* | **78.6** | *77.7* | *74.9* |
| Total Net Domestic Supply | **255.7** | **256.0** | **262.6** | *255.5* | *264.6* | *253.3* | *263.7* | *268.6* | *271.3* | *259.8* | *270.0* | *270.5* | **1029.8** | *1050.2* | *1071.6* |
| Secondary Stock Levels [b] | | | | | | | | | | | | | | | |
| Opening | **101.4** | **114.1** | **124.7** | *111.3* | *114.3* | *117.6* | *122.9* | *109.1* | *113.8* | *111.9* | *117.8* | *104.3* | **101.4** | *114.3* | *113.8* |
| Closing | **114.1** | **124.7** | **111.3** | *114.3* | *117.6* | *122.9* | *109.1* | *113.8* | *111.9* | *117.8* | *104.3* | *105.9* | **114.3** | *113.8* | *105.9* |
| Net Withdrawals | **-12.7** | **-10.6** | **13.5** | *-3.0* | *-3.3* | *-5.3* | *13.7* | *-4.7* | *1.9* | *-5.9* | *13.5* | *-1.6* | **-12.9** | *0.5* | *7.9* |
| Waste Coal Supplied to IPPs [c] | **2.5** | **2.5** | **2.5** | *2.5* | *2.6* | *2.6* | *2.6* | *2.6* | *2.8* | *2.8* | *2.8* | *2.8* | **10.0** | *10.6* | *11.2* |
| Total Supply | **245.5** | **247.8** | **278.5** | *254.9* | *263.9* | *250.7* | *280.1* | *266.6* | *276.1* | *256.8* | *286.3* | *271.6* | **1026.8** | *1061.3* | *1090.7* |
| **Demand** | | | | | | | | | | | | | | | |
| Coke Plants | **6.9** | **6.9** | **7.1** | *7.0* | *7.2* | *6.9* | *6.8* | *7.1* | *7.2* | *7.1* | *6.9* | *7.2* | **28.0** | *28.1* | *28.4* |
| Electricity Production | | | | | | | | | | | | | | | |
| Electric Utilities | **220.5** | **218.7** | **252.8** | *221.4* | *229.5* | *219.1* | *248.6* | *232.1* | *241.4* | *224.9* | *254.5* | *237.0* | **913.4** | *929.2* | *957.8* |
| Nonutilities (Excl. Cogen.) [d] | **6.2** | **6.2** | **6.2** | *6.2* | *6.6* | *6.6* | *6.6* | *6.6* | *7.0* | *7.0* | *7.0* | *7.0* | **25.0** | *26.5* | *28.0* |
| Retail and General Industry [e] | **20.1** | **18.3** | **18.0** | *20.3* | *20.6* | *18.1* | *18.1* | *20.8* | *20.5* | *17.8* | *17.8* | *20.5* | **76.8** | *77.5* | *76.5* |
| Total Demand | **253.8** | **250.2** | **284.2** | *255.0* | *263.9* | *250.7* | *280.1* | *266.6* | *276.1* | *256.8* | *286.3* | *271.6* | **1043.2** | *1061.3* | *1090.7* |
| Discrepancy [f] | **-8.3** | **-2.3** | **-5.7** | *0.0* | *0.0* | *0.0* | *0.0* | *0.0* | *0.0* | *0.0* | *0.0* | *0.0* | **-16.3** | *0.0* | *0.0* |

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

[b] Secondary stocks are held by users.

[c] Estimated independent power producers (IPPs) consumption of waste coal for 1994 is 7.9 million tons, 8.5 million tons in 1995, and 8.8 million tons in 1996.

[d] Consumption of coal by 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 third quarter 1998 are estimates.

[e] 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.

[f] The discrepancy reflects an unaccounted-for shipper and receiver reporting difference, assumed to be zero in the forecast period.

(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)

| | 1998 | | | | 1999 | | | | 2000 | | | | Year | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1st | 2nd | 3rd | 4th | 1998 | 1999 | 2000 |
| **Supply** | | | | | | | | | | | | | | | |
| Net Utility Generation | | | | | | | | | | | | | | | |
| Coal........................... | 437.0 | 434.9 | 501.3 | 435.1 | 455.5 | 436.1 | 492.8 | 461.2 | 481.9 | 448.3 | 504.8 | 470.7 | 1808.3 | 1845.7 | 1905.7 |
| Petroleum................... | 20.9 | 28.5 | 37.3 | 23.8 | 32.9 | 30.7 | 35.9 | 27.9 | 33.7 | 28.9 | 33.7 | 26.6 | 110.5 | 127.4 | 123.0 |
| Natural Gas................. | 47.9 | 80.7 | 120.8 | 60.7 | 51.3 | 85.8 | 118.4 | 61.7 | 54.1 | 87.8 | 122.3 | 62.8 | 310.2 | 317.3 | 327.0 |
| Nuclear....................... | 162.6 | 154.7 | 179.1 | 175.6 | 174.3 | 154.5 | 181.4 | 163.5 | 171.8 | 155.9 | 183.0 | 164.4 | 672.0 | 673.6 | 675.1 |
| Hydroelectric.............. | 86.7 | 88.6 | 69.7 | 64.0 | 76.5 | 77.9 | 65.6 | 64.0 | 74.3 | 77.2 | 64.7 | 64.1 | 309.0 | 284.0 | 280.4 |
| Geothermal and Other [a] | 1.9 | 1.4 | 1.9 | 2.0 | 1.8 | 1.7 | 1.7 | 1.7 | 1.6 | 1.5 | 1.6 | 1.5 | 7.2 | 6.9 | 6.2 |
| Subtotal..................... | 757.0 | 789.0 | 910.0 | 761.2 | 792.3 | 786.7 | 895.9 | 780.1 | 817.3 | 799.6 | 910.2 | 790.2 | 3217.2 | 3255.0 | 3317.3 |
| Nonutility Generation [b] | | | | | | | | | | | | | | | |
| Coal........................... | 14.9 | 14.3 | 15.5 | 17.4 | 15.1 | 14.4 | 15.7 | 17.6 | 15.3 | 14.6 | 15.9 | 17.8 | 62.0 | 62.8 | 63.7 |
| Petroleum................... | 3.9 | 3.8 | 4.1 | 4.6 | 4.0 | 3.9 | 4.2 | 4.7 | 4.1 | 4.0 | 4.3 | 4.8 | 16.4 | 16.8 | 17.2 |
| Natural Gas................. | 49.8 | 47.7 | 51.9 | 58.1 | 50.9 | 48.7 | 53.0 | 59.4 | 51.9 | 49.8 | 54.1 | 60.6 | 207.6 | 212.0 | 216.5 |
| Other Gaseous Fuels [c] | 3.0 | 2.9 | 3.1 | 3.5 | 2.9 | 2.8 | 3.1 | 3.4 | 2.9 | 2.7 | 3.0 | 3.3 | 12.5 | 12.2 | 11.9 |
| Hydroelectric.............. | 4.2 | 4.0 | 4.3 | 4.9 | 4.3 | 4.1 | 4.5 | 5.0 | 4.5 | 4.3 | 4.7 | 5.2 | 17.4 | 18.0 | 18.7 |
| Geothermal and Other [d] | 17.9 | 17.1 | 18.6 | 20.8 | 17.8 | 17.0 | 18.5 | 20.8 | 17.7 | 17.0 | 18.5 | 20.7 | 74.4 | 74.1 | 73.9 |
| Subtotal..................... | 93.6 | 89.7 | 97.6 | 109.3 | 95.0 | 91.0 | 99.1 | 110.9 | 96.4 | 92.4 | 100.5 | 112.6 | 390.3 | 396.0 | 401.9 |
| Total Generation............. | 850.6 | 878.7 | 1007.7 | 870.5 | 887.3 | 877.7 | 994.9 | 891.0 | 913.8 | 892.0 | 1010.7 | 902.8 | 3607.5 | 3651.0 | 3719.2 |
| Net Imports [e] ............... | 5.8 | 6.9 | 10.9 | 7.3 | 6.8 | 7.9 | 11.2 | 7.8 | 7.1 | 8.4 | 11.3 | 8.1 | 31.0 | 33.7 | 34.8 |
| Total Supply ................... | 856.4 | 885.6 | 1018.6 | 877.9 | 894.1 | 885.6 | 1006.1 | 898.8 | 920.8 | 900.3 | 1022.0 | 910.8 | 3638.5 | 3684.6 | 3754.0 |
| Losses and Unaccounted for [f] ...... | 48.1 | 75.7 | 56.6 | 61.7 | 47.3 | 73.5 | 64.3 | 65.7 | 48.5 | 74.8 | 65.4 | 66.6 | 242.1 | 250.8 | 255.3 |
| **Demand** | | | | | | | | | | | | | | | |
| Electric Utility Sales | | | | | | | | | | | | | | | |
| Residential ................. | 275.8 | 250.7 | 348.8 | 257.6 | 298.5 | 253.3 | 329.6 | 264.7 | 310.5 | 259.9 | 337.5 | 270.3 | 1132.8 | 1146.2 | 1178.2 |
| Commercial................. | 217.4 | 230.9 | 271.7 | 228.1 | 229.3 | 231.9 | 269.3 | 233.4 | 236.7 | 235.2 | 272.2 | 234.8 | 948.1 | 964.0 | 979.0 |
| Industrial ................... | 252.2 | 266.3 | 274.2 | 259.7 | 253.9 | 264.0 | 274.1 | 263.1 | 258.8 | 266.5 | 277.1 | 266.1 | 1052.5 | 1055.0 | 1068.5 |
| Other......................... | 23.7 | 24.3 | 26.5 | 24.9 | 25.2 | 24.7 | 27.2 | 25.4 | 26.0 | 25.2 | 27.7 | 25.8 | 99.5 | 102.6 | 104.6 |
| Subtotal..................... | 769.1 | 772.3 | 921.1 | 770.4 | 807.0 | 773.9 | 900.3 | 786.6 | 831.9 | 786.8 | 914.5 | 797.1 | 3232.8 | 3267.8 | 3330.3 |
| Nonutility Gen. for Own Use [b] .... | 39.2 | 37.6 | 40.9 | 45.8 | 39.8 | 38.1 | 41.5 | 46.5 | 40.4 | 38.7 | 42.1 | 47.2 | 163.6 | 166.0 | 168.5 |
| Total Demand............. | 808.3 | 809.9 | 962.0 | 816.2 | 846.8 | 812.1 | 941.8 | 833.1 | 872.3 | 825.5 | 956.6 | 844.2 | 3396.4 | 3433.8 | 3498.7 |
| Memo: | | | | | | | | | | | | | | | |
| Nonutility Sales to Electric Utilities [b] ......................... | 54.4 | 52.1 | 56.7 | 63.5 | 55.2 | 52.9 | 57.5 | 64.4 | 56.0 | 53.7 | 58.4 | 65.4 | 226.7 | 230.1 | 233.4 |

[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 | | |
|---|---|---|---|---|---|---|---|
| | **1997** | **1998** | **1999** | **2000** | **1997-1998** | **1998-1999** | **1999-2000** |
| **Electric Utilities** | | | | | | | |
| Hydroelectric Power [a] ................................. | **3.530** | **3.235** | *2.973* | *2.935* | **-8.4** | *-8.1* | *-1.3* |
| Geothermal, Solar and Wind Energy [b] ........ | **0.115** | **0.109** | *0.103* | *0.087* | **-5.2** | *-5.5* | *-15.5* |
| Biofuels [c] .................................................. | **0.021** | **0.021** | *0.021* | *0.021* | **0.0** | *0.0* | *0.0* |
| Total ........................................................... | **3.665** | **3.365** | *3.097* | *3.043* | **-8.2** | *-8.0* | *-1.7* |
| **Nonutility Power Generators** | | | | | | | |
| Hydroelectric Power [a] ................................. | **0.185** | **0.179** | *0.186* | *0.193* | **-3.2** | *3.9* | *3.8* |
| Geothermal, Solar and Wind Energy [b] ........ | **0.235** | **0.253** | *0.254* | *0.255* | **7.7** | *0.4* | *0.4* |
| Biofuels [c] .................................................. | **0.578** | **0.585** | *0.582* | *0.579* | **1.2** | *-0.5* | *-0.5* |
| Total........................................................... | **0.998** | **1.018** | *1.022* | *1.027* | **2.0** | *0.4* | *0.5* |
| Total Power Generation.................................. | **4.663** | **4.383** | *4.119* | *4.070* | **-6.0** | *-6.0* | *-1.2* |
| **Other Sectors** [d] | | | | | | | |
| Residential and Commercial [e] ..................... | **0.553** | **0.568** | *0.574* | *0.583* | **2.7** | *1.1* | *1.6* |
| Industrial [f] ................................................. | **1.498** | **1.515** | *1.542* | *1.569* | **1.1** | *1.8* | *1.8* |
| Transportation [g] ........................................ | **0.087** | **0.094** | *0.091* | *0.094* | **8.0** | *-3.2* | *3.3* |
| Total........................................................... | **2.138** | **2.177** | *2.207* | *2.246* | **1.8** | *1.4* | *1.8* |
| Net Imported Electricity [h] ............................ | **0.297** | **0.252** | *0.274* | *0.283* | **-15.2** | *8.7* | *3.3* |
| Total Renewable Energy Demand.................. | **7.098** | **6.812** | *6.600* | *6.599* | **-4.0** | *-3.1* | *0.0* |

[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] Renewable energy includes minor components of non-marketed renewable energy, which is renewable energy that is neither bought nor sold, either directly or indirectly as inputs to marketed energy. The Energy Information Administration does not estimate or project total consumption of non-marketed renewable energy. SPR: Strategic Petroleum Reserve.

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

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

[g] Ethanol blended into gasoline.

[h] 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 | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
| **Real Gross Domestic Product (GDP)** | | | | | | | | | | | | | | | |
| (billion chained 1992 dollars)......................... | 5488 | 5649 | 5865 | 6062 | 6136 | 6079 | 6244 | 6390 | 6611 | 6762 | 6995 | 7270 | 7541 | *7714* | *7846* |
| Imported Crude Oil Price [a] | | | | | | | | | | | | | | | |
| (nominal dollars per barrel)............................ | 14.00 | 18.13 | 14.57 | 18.08 | 21.75 | 18.70 | 18.20 | 16.14 | 15.52 | 17.14 | 20.61 | 18.57 | 12.09 | *11.26* | *13.74* |
| **Petroleum Supply** | | | | | | | | | | | | | | | |
| Crude Oil Production [b] | | | | | | | | | | | | | | | |
| (million barrels per day).................................. | 8.68 | 8.35 | 8.14 | 7.61 | 7.36 | 7.42 | 7.17 | 6.85 | 6.66 | 6.56 | 6.46 | 6.45 | 6.36 | *6.29* | *6.06* |
| Total Petroleum Net Imports (including SPR) | | | | | | | | | | | | | | | |
| (million barrels per day).................................. | 5.44 | 5.91 | 6.59 | 7.20 | 7.16 | 6.63 | 6.94 | 7.62 | 8.05 | 7.89 | 8.50 | 9.16 | 9.42 | *9.63* | *10.16* |
| **Energy Demand** | | | | | | | | | | | | | | | |
| World Petroleum | | | | | | | | | | | | | | | |
| (million barrels per day).................................. | 61.8 | 63.1 | 64.9 | 65.9 | 66.0 | 66.6 | 66.8 | 67.0 | 68.3 | 69.9 | 71.5 | 73.2 | 74.0 | 75.5 | 77.1 |
| U.S. Petroleum | | | | | | | | | | | | | | | |
| (million barrels per day).................................. | 16.33 | 16.72 | 17.34 | 17.37 | 17.04 | 16.77 | 17.10 | 17.24 | 17.72 | 17.72 | 18.31 | 18.62 | 18.71 | *19.25* | *19.53* |
| Natural Gas | | | | | | | | | | | | | | | |
| (trillion cubic feet)........................................... | 16.22 | 17.21 | 18.03 | 18.80 | 18.72 | 19.03 | 19.54 | 20.28 | 20.71 | 21.58 | 21.96 | 21.97 | 21.38 | *22.26* | *22.67* |
| Coal | | | | | | | | | | | | | | | |
| (million short tons)......................................... | 797 | 830 | 877 | 891 | 897 | 898 | 907 | 944 | 951 | 962 | 1006 | 1029 | 1043 | *1061* | *1091* |
| Electricity (billion kilowatthours) | | | | | | | | | | | | | | | |
| Utility Sales [c] ............................................... | 2369 | 2457 | 2578 | 2647 | 2713 | 2762 | 2763 | 2861 | 2935 | 3013 | 3098 | 3115 | 3233 | *3268* | *3330* |
| Nonutility Own Use [d] .................................... | NA | NA | NA | 97 | 113 | 122 | 137 | 138 | 150 | 158 | 158 | 161 | 164 | *166* | *168* |
| Total............................................................... | 2369 | 2457 | 2578 | 2744 | 2826 | 2884 | 2901 | 2999 | 3085 | 3171 | 3256 | 3276 | 3396 | *3434* | *3499* |
| Total Energy Demand [e] | | | | | | | | | | | | | | | |
| (quadrillion Btu) ............................................ | NA | NA | NA | NA | 84.2 | 84.3 | 85.6 | 87.4 | 89.3 | 90.9 | 93.9 | 94.3 | 94.3 | *96.4* | *98.1* |
| Total Energy Demand per Dollar of GDP | | | | | | | | | | | | | | | |
| (thousand Btu per 1992 Dollar)...................... | NA | NA | NA | NA | 13.72 | 13.86 | 13.71 | 13.68 | 13.50 | 13.45 | 13.43 | 12.97 | 12.50 | *12.50* | *12.50* |

[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*, 1997, DOE/EIA-0384(97) (AER), Table 1.1. Prior to 1990, some components of renewable energy consumption, particularly relating to consumption at nonutility electric generating facilities, were not available. For those years, a less compehensive measure of total energy demand can be found in EIA's AER. 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 CONTROL1298.

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

| | Year | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
| **Macroeconomic** | | | | | | | | | | | | | | | |
| Real Gross Domestic Product (billion chained 1992 dollars) | 5488 | 5649 | 5865 | 6062 | 6136 | 6079 | 6244 | 6390 | 6611 | 6762 | 6995 | 7270 | 7541 | 7714 | 7846 |
| GDP Implicit Price Deflator (Index, 1992=1.000) | 0.806 | 0.831 | 0.861 | 0.897 | 0.936 | 0.973 | 1.000 | 1.026 | 1.051 | 1.075 | 1.095 | 1.116 | 1.127 | 1.145 | 1.170 |
| Real Disposable Personal Income (billion chained 1992 Dollars) | 4077 | 4155 | 4325 | 4412 | 4490 | 4484 | 4605 | 4667 | 4773 | 4906 | 5043 | 5183 | 5343 | 5490 | 5624 |
| Manufacturing Production (Index, 1987=1.000) | 0.881 | 0.928 | 0.971 | 0.990 | 0.985 | 0.962 | 1.000 | 1.037 | 1.099 | 1.159 | 1.214 | 1.296 | 1.349 | 1.379 | 1.410 |
| Real Fixed Investment (billion chained 1992 dollars) | 805 | 799 | 818 | 832 | 806 | 741 | 783 | 843 | 916 | 966 | 1051 | 1138 | 1264 | 1311 | 1332 |
| Real Exchange Rate (Index, 1990=1.000) | NA | NA | NA | NA | 0.999 | 1.007 | 1.013 | 1.057 | 1.033 | 0.961 | 1.017 | 1.104 | 1.151 | 1.115 | 1.089 |
| Business Inventory Change (billion chained 1992 dollars) | -4.2 | 5.1 | 9.5 | 19.2 | 6.6 | -6.1 | -9.2 | 6.1 | 11.1 | 11.2 | 12.0 | 20.1 | 19.5 | 0.4 | -2.1 |
| Producer Price Index (index, 1982=1.000) | 1.002 | 1.028 | 1.069 | 1.122 | 1.163 | 1.165 | 1.172 | 1.189 | 1.205 | 1.248 | 1.277 | 1.276 | 1.245 | 1.251 | 1.278 |
| Consumer Price Index (index, 1982-1984=1.000) | 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 | 1.673 | 1.722 |
| Petroleum Product Price Index (index, 1982=1.000) | 0.532 | 0.568 | 0.539 | 0.612 | 0.748 | 0.671 | 0.647 | 0.620 | 0.591 | 0.608 | 0.701 | 0.680 | 0.515 | 0.487 | 0.545 |
| Non-Farm Employment (millions) | 99.3 | 102.0 | 105.2 | 107.9 | 109.4 | 108.3 | 108.6 | 110.7 | 114.1 | 117.2 | 119.6 | 122.7 | 125.8 | 127.7 | 129.4 |
| Commercial Employment (millions) | 62.9 | 65.2 | 67.8 | 70.0 | 71.3 | 70.8 | 71.2 | 73.2 | 76.1 | 78.8 | 81.1 | 83.9 | 86.7 | 88.9 | 90.6 |
| Total Industrial Production (index, 1987=1.000) | 0.890 | 0.931 | 0.974 | 0.991 | 0.990 | 0.970 | 1.000 | 1.034 | 1.091 | 1.144 | 1.196 | 1.267 | 1.314 | 1.340 | 1.368 |
| Housing Stock (millions) | 98.0 | 99.8 | 101.6 | 102.9 | 103.5 | 104.5 | 105.5 | 106.8 | 108.2 | 109.6 | 111.0 | 112.5 | 114.0 | 115.2 | 116.5 |
| **Weather** [a] | | | | | | | | | | | | | | | |
| Heating Degree-Days | | | | | | | | | | | | | | | |
| U.S. | 4295 | 4334 | 4653 | 4726 | 4016 | 4200 | 4441 | 4700 | 4483 | 4531 | 4713 | 4542 | 3992 | 4576 | 4603 |
| New England | 6517 | 6546 | 6715 | 6887 | 5848 | 5960 | 6844 | 6728 | 6672 | 6559 | 6679 | 6662 | 5925 | 6621 | 6660 |
| Middle Atlantic | 5665 | 5699 | 6088 | 6134 | 4998 | 5177 | 5964 | 5948 | 5934 | 5831 | 5986 | 5809 | 4982 | 5839 | 5875 |
| U.S. Gas-Weighted | 4442 | 4391 | 4804 | 4856 | 4139 | 4337 | 4458 | 4754 | 4659 | 4707 | 5040 | 4886 | 4220 | 4732 | 4760 |
| Cooling Degree-Days (U.S.) | 1249 | 1269 | 1283 | 1156 | 1260 | 1331 | 1040 | 1218 | 1220 | 1293 | 1180 | 1156 | 1356 | 1193 | 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 CONTROL1298.

## Table A3.  Annual International Petroleum Supply and Demand Balance

(Millions Barrels per Day, Except OECD Commercial Stocks)

| | Year | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
| **Demand** [a] | | | | | | | | | | | | | | | |
| OECD | | | | | | | | | | | | | | | |
| U.S. (50 States) | 16.3 | 16.7 | 17.3 | 17.4 | 17.0 | 16.8 | 17.1 | 17.2 | 17.7 | 17.7 | 18.3 | 18.6 | 18.7 | *19.2* | *19.5* |
| Europe [b] | 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 | *14.9* | *15.1* |
| Japan | 4.4 | 4.5 | 4.8 | 5.0 | 5.1 | 5.3 | 5.4 | 5.4 | 5.7 | 5.7 | 5.9 | 5.7 | 5.6 | *5.6* | *5.6* |
| Other OECD | 2.5 | 2.5 | 2.6 | 2.7 | 2.7 | 2.7 | 2.7 | 2.8 | 2.9 | 3.0 | 3.0 | 3.0 | 3.0 | *3.1* | *3.2* |
| Total OECD | 35.3 | 36.0 | 37.1 | 37.6 | 37.5 | 38.1 | 38.8 | 39.0 | 39.9 | 40.6 | 41.4 | 41.8 | 41.9 | *42.8* | *43.5* |
| Non-OECD | | | | | | | | | | | | | | | |
| Former Soviet Union | 9.0 | 9.0 | 8.9 | 8.7 | 8.4 | 8.3 | 6.8 | 5.6 | 4.8 | 4.6 | 4.4 | 4.4 | 4.4 | *4.4* | *4.4* |
| Europe | 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 | *1.5* | *1.6* |
| China | 2.0 | 2.1 | 2.3 | 2.4 | 2.3 | 2.5 | 2.7 | 3.0 | 3.1 | 3.3 | 3.5 | 3.9 | 4.1 | *4.3* | *4.6* |
| Other Asia | 3.8 | 4.1 | 4.4 | 4.9 | 5.3 | 5.7 | 6.2 | 6.8 | 7.3 | 7.9 | 8.3 | 8.8 | 8.7 | *8.7* | *8.9* |
| Other Non-OECD | 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 | *13.7* | *14.1* |
| Total Non-OECD | 26.5 | 27.1 | 27.7 | 28.3 | 28.5 | 28.5 | 28.0 | 28.1 | 28.4 | 29.4 | 30.1 | 31.4 | 32.0 | *32.7* | *33.6* |
| Total World Demand | 61.8 | 63.1 | 64.9 | 66.0 | 66.0 | 66.6 | 66.8 | 67.0 | 68.3 | 69.9 | 71.5 | 73.2 | 74.0 | *75.5* | *77.1* |
| **Supply** [c] | | | | | | | | | | | | | | | |
| OECD | | | | | | | | | | | | | | | |
| U.S. (50 States) | 11.0 | 10.7 | 10.5 | 9.9 | 9.7 | 9.9 | 9.8 | 9.6 | 9.4 | 9.4 | 9.4 | 9.5 | 9.4 | *9.3* | *9.1* |
| Canada | 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 | *2.8* | *2.8* |
| North Sea [d] | 3.8 | 3.8 | 3.8 | 3.7 | 3.9 | 4.1 | 4.5 | 4.8 | 5.5 | 5.9 | 6.3 | 6.2 | 6.2 | *6.5* | *6.8* |
| Other OECD | 1.4 | 1.4 | 1.5 | 1.4 | 1.5 | 1.5 | 1.4 | 1.4 | 1.5 | 1.5 | 1.5 | 1.6 | 1.6 | *1.7* | *1.7* |
| Total OECD | 17.9 | 17.9 | 17.8 | 17.1 | 17.1 | 17.5 | 17.9 | 18.0 | 18.7 | 19.2 | 19.7 | 19.9 | 19.9 | *20.2* | *20.4* |
| Non-OECD | | | | | | | | | | | | | | | |
| OPEC | 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 | *30.6* | *31.0* |
| Former Soviet Union | 12.3 | 12.5 | 12.5 | 12.1 | 11.4 | 10.4 | 8.9 | 8.0 | 7.3 | 7.1 | 7.1 | 7.1 | 7.2 | *7.2* | *7.3* |
| China | 2.6 | 2.7 | 2.7 | 2.8 | 2.8 | 2.8 | 2.8 | 2.9 | 2.9 | 3.0 | 3.1 | 3.2 | 3.2 | *3.2* | *3.2* |
| Mexico | 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* | *3.7* |
| Other Non-OECD | 6.8 | 11.3 | 7.3 | 7.7 | 8.0 | 8.1 | 8.4 | 8.7 | 9.2 | 9.9 | 10.2 | 10.4 | 10.7 | *10.8* | *11.1* |
| Total Non-OECD | 43.9 | 44.6 | 47.0 | 48.9 | 49.7 | 49.1 | 49.1 | 49.4 | 49.6 | 50.7 | 52.0 | 54.1 | 55.1 | *55.4* | *56.3* |
| Total World Supply | 61.8 | 62.5 | 64.8 | 65.9 | 66.8 | 66.7 | 67.0 | 67.4 | 68.3 | 69.9 | 71.8 | 74.0 | 75.0 | *75.6* | *76.6* |
| Total Stock Withdrawals | 0.0 | 0.6 | 0.1 | 0.0 | -0.8 | -0.1 | -0.2 | -0.3 | 0.1 | 0.1 | -0.2 | -0.8 | -1.0 | *0.0* | *0.4* |
| OECD Comm. Stocks, End (bill. bbls.) | 2.7 | 2.7 | 2.6 | 2.6 | 2.7 | 2.7 | 2.7 | 2.8 | 2.8 | 2.7 | 2.7 | 2.7 | 2.9 | *2.9* | *2.8* |
| Net Exports from Former Soviet Union | 3.4 | 3.5 | 3.6 | 3.4 | 3.0 | 2.1 | 2.1 | 2.3 | 2.4 | 2.5 | 2.7 | 2.7 | 2.8 | *2.8* | *2.9* |

[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.  The Czech Republic, Hungary, Mexico, Poland, and South Korea are all members of OECD, but are not yet included in our OECD estimates.

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)

| | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Imported Crude Oil** [a] | | | | | | | | | | | | | | | |
| (dollars per barrel) | 14.00 | 18.13 | 14.57 | 18.08 | 21.75 | 18.70 | 18.20 | 16.14 | 15.52 | 17.14 | 20.61 | 18.57 | 12.09 | 11.26 | 13.74 |
| **Natural Gas Wellhead** | | | | | | | | | | | | | | | |
| (dollars per thousand cubic feet) | 1.94 | 1.66 | 1.69 | 1.69 | 1.71 | 1.64 | 1.74 | 2.04 | 1.85 | 1.55 | 2.16 | 2.32 | 1.89 | 1.83 | 2.11 |
| **Petroleum Products** | | | | | | | | | | | | | | | |
| Gasoline Retail [b] (dollars per gallon) | | | | | | | | | | | | | | | |
| All Grades | 0.88 | 0.91 | 0.92 | 1.02 | 1.17 | 1.15 | 1.14 | 1.13 | 1.13 | 1.16 | 1.25 | 1.24 | 1.07 | 1.06 | 1.14 |
| Reguler Unleaded | 0.88 | 0.91 | 0.91 | 0.99 | 1.13 | 1.10 | 1.09 | 1.07 | 1.08 | 1.11 | 1.20 | 1.20 | 1.03 | 1.02 | 1.10 |
| No. 2 Diesel Oil, Retail | | | | | | | | | | | | | | | |
| (dollars per gallon) | 0.88 | 0.93 | 0.91 | 0.99 | 1.16 | 1.12 | 1.10 | 1.11 | 1.11 | 1.11 | 1.23 | 1.19 | 1.04 | 1.01 | 1.08 |
| No. 2 Heating Oil, Wholesale | | | | | | | | | | | | | | | |
| (dollars per gallon) | 0.49 | 0.53 | 0.47 | 0.56 | 0.70 | 0.62 | 0.58 | 0.54 | 0.51 | 0.51 | 0.64 | 0.59 | 0.42 | 0.41 | 0.50 |
| No. 2 Heating Oil, Retail | | | | | | | | | | | | | | | |
| (dollars per gallon) | 0.84 | 0.80 | 0.81 | 0.90 | 1.06 | 1.02 | 0.93 | 0.91 | 0.89 | 0.87 | 0.99 | 0.99 | 0.85 | 0.82 | 0.90 |
| No. 6 Residual Fuel Oil, Retail [c] | | | | | | | | | | | | | | | |
| (dollars per barrel) | 14.46 | 17.76 | 14.04 | 16.20 | 18.66 | 14.32 | 14.21 | 14.00 | 14.79 | 16.49 | 18.97 | 17.80 | 12.69 | 12.15 | 13.81 |
| **Electric Utility Fuels** | | | | | | | | | | | | | | | |
| Coal | | | | | | | | | | | | | | | |
| (dollars per million Btu) | 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 | 1.25 | 1.23 |
| Heavy Fuel Oil [d] | | | | | | | | | | | | | | | |
| (dollars per million Btu) | 2.40 | 2.98 | 2.41 | 2.85 | 3.22 | 2.49 | 2.46 | 2.36 | 2.40 | 2.60 | 3.01 | 2.79 | 2.07 | 1.97 | 2.24 |
| Natural Gas | | | | | | | | | | | | | | | |
| (dollars per million Btu) | 2.35 | 2.24 | 2.26 | 2.36 | 2.32 | 2.15 | 2.33 | 2.56 | 2.23 | 1.98 | 2.64 | 2.76 | 2.39 | 2.40 | 2.69 |
| **Other Residential** | | | | | | | | | | | | | | | |
| Natural Gas | | | | | | | | | | | | | | | |
| (dollars per thousand cubic feet) | 5.83 | 5.55 | 5.47 | 5.64 | 5.80 | 5.82 | 5.89 | 6.17 | 6.41 | 6.06 | 6.35 | 6.95 | 6.84 | 6.86 | 7.22 |
| Electricity | | | | | | | | | | | | | | | |
| (cents per kilowatthour) | 7.4 | 7.4 | 7.5 | 7.6 | 7.8 | 8.1 | 8.2 | 8.3 | 8.4 | 8.4 | 8.4 | 8.5 | 8.2 | 8.1 | 8.1 |

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

[b] Average self-service cash prices.

[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)

| | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Supply** | | | | | | | | | | | | | | | |
| Crude Oil Supply | | | | | | | | | | | | | | | |
| Domestic Production [a] | 8.68 | 8.35 | 8.14 | 7.61 | 7.36 | 7.42 | 7.17 | 6.85 | 6.66 | 6.56 | 6.46 | 6.45 | 6.36 | *6.29* | *6.06* |
| Alaska | 1.87 | 1.96 | 2.02 | 1.87 | 1.77 | 1.80 | 1.71 | 1.58 | 1.56 | 1.48 | 1.39 | 1.30 | 1.17 | *1.11* | *1.01* |
| Lower 48 | 6.81 | 6.39 | 6.12 | 5.74 | 5.58 | 5.62 | 5.46 | 5.26 | 5.10 | 5.08 | 5.07 | 5.16 | 5.19 | *5.19* | *5.05* |
| Net Imports (including SPR) [b] | 4.02 | 4.52 | 4.95 | 5.70 | 5.79 | 5.67 | 5.99 | 6.69 | 6.96 | 7.14 | 7.40 | 8.12 | 8.44 | *8.45* | *8.84* |
| 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) | -0.08 | -0.12 | 0.00 | -0.09 | 0.02 | -0.01 | 0.01 | -0.06 | -0.02 | 0.09 | 0.05 | -0.06 | -0.08 | *0.03* | *0.03* |
| Product Supplied and Losses | -0.05 | -0.03 | -0.04 | -0.03 | -0.02 | -0.02 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | 0.00 | 0.00 | *-0.01* | *-0.01* |
| Unaccounted-for Crude Oil | 0.14 | 0.14 | 0.20 | 0.20 | 0.26 | 0.20 | 0.26 | 0.17 | 0.27 | 0.19 | 0.22 | 0.14 | 0.13 | *0.22* | *0.23* |
| Total Crude Oil Supply | 12.72 | 12.85 | 13.25 | 13.40 | 13.41 | 13.30 | 13.41 | 13.61 | 13.87 | 13.97 | 14.19 | 14.66 | 14.83 | *14.99* | *15.15* |
| Other Supply | | | | | | | | | | | | | | | |
| NGL Production | 1.55 | 1.59 | 1.62 | 1.55 | 1.56 | 1.66 | 1.70 | 1.74 | 1.73 | 1.76 | 1.83 | 1.82 | 1.77 | *1.78* | *1.80* |
| Other Hydrocarbon and Alcohol Inputs | 0.11 | 0.12 | 0.11 | 0.11 | 0.13 | 0.15 | 0.20 | 0.25 | 0.26 | 0.30 | 0.31 | 0.34 | 0.36 | *0.36* | *0.37* |
| Crude Oil Product Supplied | 0.05 | 0.03 | 0.04 | 0.03 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | *0.01* | *0.01* |
| Processing Gain | 0.62 | 0.64 | 0.66 | 0.66 | 0.70 | 0.71 | 0.77 | 0.76 | 0.77 | 0.77 | 0.84 | 0.85 | 0.86 | *0.86* | *0.86* |
| Net Product Imports [c] | 1.41 | 1.39 | 1.63 | 1.50 | 1.38 | 0.96 | 0.94 | 0.93 | 1.09 | 0.75 | 1.10 | 1.04 | 0.98 | *1.18* | *1.32* |
| Product Stock Withdrawn | -0.12 | 0.09 | 0.03 | 0.13 | -0.14 | -0.04 | 0.06 | -0.05 | 0.00 | 0.15 | 0.03 | -0.09 | -0.11 | *0.08* | *0.02* |
| Total Supply | 16.33 | 16.72 | 17.33 | 17.37 | 17.05 | 16.76 | 17.10 | 17.25 | 17.72 | 17.72 | 18.31 | 18.62 | 18.70 | *19.25* | *19.53* |
| **Demand** | | | | | | | | | | | | | | | |
| Motor Gasoline [d] | 6.94 | 7.19 | 7.36 | 7.40 | 7.31 | 7.23 | 7.38 | 7.48 | 7.60 | 7.79 | 7.89 | 8.02 | 8.20 | *8.37* | *8.52* |
| Jet Fuel | 1.31 | 1.38 | 1.45 | 1.49 | 1.52 | 1.47 | 1.45 | 1.47 | 1.53 | 1.51 | 1.58 | 1.60 | 1.56 | *1.60* | *1.63* |
| Distillate Fuel Oil | 2.91 | 2.98 | 3.12 | 3.16 | 3.02 | 2.92 | 2.98 | 3.04 | 3.16 | 3.21 | 3.37 | 3.44 | 3.46 | *3.57* | *3.63* |
| Residual Fuel Oil | 1.42 | 1.26 | 1.38 | 1.37 | 1.23 | 1.16 | 1.09 | 1.08 | 1.02 | 0.85 | 0.85 | 0.80 | 0.83 | *0.93* | *0.91* |
| Other Oils [e] | 3.75 | 3.90 | 4.03 | 3.95 | 3.95 | 3.99 | 4.20 | 4.17 | 4.41 | 4.36 | 4.63 | 4.77 | 4.67 | *4.78* | *4.84* |
| Total Demand | 16.33 | 16.72 | 17.34 | 17.37 | 17.04 | 16.77 | 17.10 | 17.24 | 17.72 | 17.72 | 18.31 | 18.62 | 18.71 | *19.25* | *19.53* |
| Total Petroleum Net Imports | 5.44 | 5.91 | 6.59 | 7.20 | 7.16 | 6.63 | 6.94 | 7.62 | 8.05 | 7.89 | 8.50 | 9.16 | 9.42 | *9.63* | *10.16* |
| Closing Stocks (million barrels) | | | | | | | | | | | | | | | |
| Crude Oil (excluding SPR) | 331 | 349 | 330 | 341 | 323 | 325 | 318 | 335 | 337 | 303 | 284 | 305 | 336 | *324* | *313* |
| Total Motor Gasoline | 233 | 226 | 228 | 213 | 220 | 219 | 216 | 226 | 215 | 202 | 195 | 210 | 209 | *207* | *206* |
| Jet Fuel | 50 | 50 | 44 | 41 | 52 | 49 | 43 | 40 | 47 | 40 | 40 | 44 | 45 | *45* | *45* |
| Distillate Fuel Oil | 155 | 134 | 124 | 106 | 132 | 144 | 141 | 141 | 145 | 130 | 127 | 138 | 151 | *139* | *140* |
| Residual Fuel Oil | 47 | 47 | 45 | 44 | 49 | 50 | 43 | 44 | 42 | 37 | 46 | 40 | 42 | *42* | *42* |
| Other Oils [f] | 265 | 260 | 267 | 257 | 261 | 267 | 263 | 273 | 275 | 258 | 250 | 259 | 285 | *270* | *263* |

[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 | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
| **Supply** | | | | | | | | | | | | | | | |
| Total Dry Gas Production............................. | 16.06 | 16.62 | 17.10 | 17.31 | 17.81 | 17.70 | 17.84 | 18.10 | 18.82 | 18.60 | 18.79 | 18.90 | 18.95 | *18.99* | *19.05* |
| Net Imports ................................................. | 0.69 | 0.94 | 1.22 | 1.27 | 1.45 | 1.64 | 1.92 | 2.21 | 2.46 | 2.69 | 2.78 | 2.84 | 2.97 | *3.03* | *3.25* |
| Supplemental Gaseous Fuels ...................... | 0.11 | 0.10 | 0.10 | 0.11 | 0.12 | 0.11 | 0.12 | 0.12 | 0.11 | 0.11 | 0.11 | 0.10 | 0.12 | *0.13* | *0.13* |
| Total New Supply ..................................... | 16.86 | 17.66 | 18.42 | 18.69 | 19.38 | 19.45 | 19.88 | 20.42 | 21.39 | 21.40 | 21.69 | 21.84 | 22.04 | *22.14* | *22.42* |
| | | | | | | | | | | | | | | | |
| Total  Underground Storage | | | | | | | | | | | | | | | |
| Opening ..................................................... | 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 | *7.17* | *6.97* |
| Closing........................................................ | 6.57 | 6.55 | 6.65 | 6.33 | 6.94 | 6.78 | 6.64 | 6.65 | 6.97 | 6.50 | 6.51 | 6.52 | 7.17 | *6.97* | *6.71* |
| Net Withdrawals........................................ | -0.12 | 0.02 | -0.10 | 0.33 | -0.61 | 0.16 | 0.14 | -0.01 | -0.32 | 0.46 | -0.01 | -0.01 | -0.65 | *0.20* | *0.26* |
| | | | | | | | | | | | | | | | |
| Total Supply ................................................. | 16.74 | 17.68 | 18.32 | 19.02 | 18.77 | 19.61 | 20.02 | 20.42 | 21.08 | 21.86 | 21.68 | 21.84 | 21.39 | *22.34* | *22.68* |
| | | | | | | | | | | | | | | | |
| Balancing Item [a] ....................................... | -0.52 | -0.47 | -0.29 | -0.22 | -0.05 | -0.58 | -0.47 | -0.14 | -0.37 | -0.28 | 0.29 | 0.13 | -0.01 | *-0.09* | *-0.01* |
| | | | | | | | | | | | | | | | |
| Total Primary Supply...................................... | 16.22 | 17.21 | 18.03 | 18.80 | 18.72 | 19.03 | 19.54 | 20.28 | 20.71 | 21.58 | 21.96 | 21.97 | 21.38 | *22.26* | *22.67* |
| | | | | | | | | | | | | | | | |
| **Demand** | | | | | | | | | | | | | | | |
| Lease and Plant Fuel .................................... | 0.92 | 1.15 | 1.10 | 1.07 | 1.24 | 1.13 | 1.17 | 1.17 | 1.12 | 1.22 | 1.25 | 1.20 | 1.25 | *1.24* | *1.23* |
| Pipeline Use.................................................. | 0.49 | 0.52 | 0.61 | 0.63 | 0.66 | 0.60 | 0.59 | 0.62 | 0.69 | 0.70 | 0.71 | 0.75 | 0.74 | *0.74* | *0.75* |
| Residential .................................................... | 4.31 | 4.31 | 4.63 | 4.78 | 4.39 | 4.56 | 4.69 | 4.96 | 4.85 | 4.85 | 5.24 | 4.98 | 4.55 | *4.97* | *5.09* |
| Commercial.................................................... | 2.32 | 2.43 | 2.67 | 2.72 | 2.62 | 2.73 | 2.80 | 2.86 | 2.90 | 3.03 | 3.16 | 3.22 | 3.09 | *3.40* | *3.50* |
| Industrial (Incl. Nonutilities)......................... | 5.58 | 5.95 | 6.38 | 6.82 | 7.02 | 7.23 | 7.53 | 7.98 | 8.17 | 8.58 | 8.87 | 8.84 | 8.47 | *8.58* | *8.68* |
| Cogenerators [b] ...................................... | NA | NA | NA | NA | 1.30 | 1.41 | 1.70 | 1.80 | 1.98 | 2.18 | 2.30 | 2.16 | 2.14 | *2.19* | *2.23* |
| Other Nonutil. Gen. [b] .............................. | NA | NA | NA | NA | 0.09 | 0.16 | 0.18 | 0.22 | 0.16 | 0.17 | 0.16 | 0.18 | 0.18 | *0.18* | *0.19* |
| Electric Utilities ............................................ | 2.60 | 2.84 | 2.64 | 2.79 | 2.79 | 2.79 | 2.77 | 2.68 | 2.99 | 3.20 | 2.73 | 2.97 | 3.28 | *3.32* | *3.42* |
| Total Demand............................................... | 16.22 | 17.21 | 18.03 | 18.80 | 18.72 | 19.03 | 19.54 | 20.28 | 20.71 | 21.58 | 21.96 | 21.97 | 21.38 | *22.26* | *22.67* |

[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)

| | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Supply** | | | | | | | | | | | | | | | |
| Production | 890.3 | 918.8 | 950.3 | 980.7 | 1029.1 | 996.0 | 997.5 | 945.4 | 1033.5 | 1033.0 | 1063.9 | 1089.9 | 1100.5 | 1115.8 | 1136.4 |
| Appalachia | NA | NA | NA | 464.8 | 489.0 | 457.8 | 456.6 | 409.7 | 445.4 | 434.9 | 451.9 | 467.8 | 455.8 | 462.0 | 462.5 |
| Interior | NA | NA | NA | 198.1 | 205.8 | 195.4 | 195.7 | 167.2 | 179.9 | 168.5 | 172.8 | 170.9 | 165.1 | 160.1 | 155.9 |
| Western | NA | NA | NA | 317.9 | 334.3 | 342.8 | 345.3 | 368.5 | 408.3 | 429.6 | 439.1 | 451.3 | 479.7 | 493.7 | 518.0 |
| Primary Stock Levels [a] | | | | | | | | | | | | | | | |
| Opening | 33.1 | 32.1 | 28.3 | 30.4 | 29.0 | 33.4 | 33.0 | 34.0 | 25.3 | 33.2 | 34.4 | 28.6 | 34.0 | 34.1 | 30.6 |
| Closing | 32.1 | 28.3 | 30.4 | 29.0 | 33.4 | 33.0 | 34.0 | 25.3 | 33.2 | 34.4 | 28.6 | 34.0 | 34.1 | 30.6 | 29.6 |
| Net Withdrawals | 1.0 | 3.8 | -2.1 | 1.4 | -4.4 | 0.4 | -1.0 | 8.7 | -7.9 | -1.2 | 5.8 | -5.3 | -0.2 | 3.5 | 1.1 |
| Imports | 2.2 | 1.7 | 2.1 | 2.9 | 2.7 | 3.4 | 3.8 | 7.3 | 7.6 | 7.2 | 7.1 | 7.5 | 8.1 | 8.6 | 9.0 |
| Exports | 85.5 | 79.6 | 95.0 | 100.8 | 105.8 | 109.0 | 102.5 | 74.5 | 71.4 | 88.5 | 90.5 | 83.5 | 78.6 | 77.7 | 74.9 |
| Total Net Domestic Supply | 808.0 | 844.7 | 855.3 | 884.2 | 921.6 | 890.9 | 897.8 | 886.9 | 961.8 | 950.4 | 986.3 | 1008.5 | 1029.8 | 1050.2 | 1071.6 |
| Secondary Stock Levels [b] | | | | | | | | | | | | | | | |
| Opening | 170.2 | 175.2 | 185.5 | 158.4 | 146.1 | 168.2 | 167.7 | 163.7 | 120.5 | 136.1 | 134.6 | 123.0 | 101.4 | 114.3 | 113.8 |
| Closing | 175.2 | 185.5 | 158.4 | 146.1 | 168.2 | 167.7 | 163.7 | 120.5 | 136.1 | 134.6 | 123.0 | 101.4 | 114.3 | 113.8 | 105.9 |
| Net Withdrawals | -5.0 | -10.2 | 27.0 | 12.3 | -22.1 | 0.5 | 4.0 | 43.2 | -15.7 | 1.5 | 11.7 | 21.6 | -12.9 | 0.5 | 7.9 |
| Waste Coal Supplied to IPPs [c] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 7.9 | 8.5 | 8.8 | 8.1 | 10.0 | 10.6 | 11.2 |
| Total Supply | 803.1 | 834.4 | 882.3 | 896.5 | 899.4 | 891.4 | 901.8 | 930.2 | 954.0 | 960.4 | 1006.7 | 1038.2 | 1026.8 | 1061.3 | 1090.7 |
| **Demand** | | | | | | | | | | | | | | | |
| Coke Plants | 35.9 | 37.0 | 41.9 | 40.5 | 38.9 | 33.9 | 32.4 | 31.3 | 31.7 | 33.0 | 31.7 | 30.2 | 28.0 | 28.1 | 28.4 |
| Electricity Production | | | | | | | | | | | | | | | |
| Electric Utilities | 685.1 | 717.9 | 758.4 | 766.9 | 773.5 | 772.3 | 779.9 | 813.5 | 817.3 | 829.0 | 874.7 | 900.4 | 913.4 | 929.2 | 957.8 |
| Nonutilities (Excl. Cogen.) [d] | NA | NA | NA | 0.9 | 1.6 | 10.2 | 14.8 | 17.8 | 20.9 | 21.2 | 22.2 | 21.6 | 25.0 | 26.5 | 28.0 |
| Retail and General Industry [e] | 75.6 | 75.2 | 76.3 | 82.3 | 83.1 | 81.5 | 80.2 | 81.1 | 81.2 | 78.9 | 76.9 | 77.1 | 76.8 | 77.5 | 76.5 |
| Total Demand | 796.6 | 830.0 | 876.5 | 890.6 | 897.1 | 897.8 | 907.3 | 943.7 | 951.1 | 962.0 | 1005.6 | 1029.2 | 1043.2 | 1061.3 | 1090.7 |
| Discrepancy [f] | 6.5 | 4.4 | 5.8 | 5.9 | 2.4 | -6.4 | -5.4 | -13.5 | 2.9 | -1.6 | 1.2 | 9.0 | -16.3 | 0.0 | 0.0 |

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

[b] Secondary stocks are held by users.

[c] Estimated independent power producers (IPPs) consumption of waste coal for 1994 is 7.9 million tons, 8.5 million tons in 1995, and 8.8 million tons in 1996.

[d] Consumption of coal by 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 third quarter 1998 are estimates.

[e] 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.

[f] The discrepancy reflects an unaccounted-for shipper and receiver reporting difference, assumed to be zero in the forecast period. Prior to 1994, discrepancy may include some waste coal supplied to IPPs that has not been specifically identified.

(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 A8.  Annual U.S. Electricity Supply and Demand
(Billion Kilowatthours)

| | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Supply** | | | | | | | | | | | | | | | |
| Net Utility Generation | | | | | | | | | | | | | | | |
| Coal | 1385.8 | 1463.8 | 1540.7 | 1553.7 | 1559.6 | 1551.2 | 1575.9 | 1639.2 | 1635.5 | 1652.9 | 1737.5 | 1787.8 | 1808.3 | 1845.7 | 1905.7 |
| Petroleum | 136.6 | 118.5 | 148.9 | 158.3 | 117.0 | 111.5 | 88.9 | 99.5 | 91.0 | 60.8 | 67.3 | 77.8 | 110.5 | 127.4 | 123.0 |
| Natural Gas | 248.5 | 272.6 | 252.8 | 266.6 | 264.1 | 264.2 | 263.9 | 258.9 | 291.1 | 307.3 | 262.7 | 283.6 | 310.2 | 317.3 | 327.0 |
| Nuclear | 414.0 | 455.3 | 527.0 | 529.4 | 576.9 | 612.6 | 618.8 | 610.3 | 640.4 | 673.4 | 674.7 | 628.6 | 672.0 | 673.6 | 675.1 |
| Hydroelectric | 290.8 | 249.7 | 222.9 | 265.1 | 279.9 | 275.5 | 239.6 | 265.1 | 243.7 | 293.7 | 328.0 | 337.2 | 309.0 | 284.0 | 280.4 |
| Geothermal and Other [a] | 11.5 | 12.3 | 12.0 | 11.3 | 10.7 | 10.1 | 10.2 | 9.6 | 8.9 | 6.4 | 7.2 | 7.5 | 7.2 | 6.9 | 6.2 |
| Subtotal | 2487.3 | 2572.1 | 2704.3 | 2784.3 | 2808.2 | 2825.0 | 2797.2 | 2882.5 | 2910.7 | 2994.5 | 3077.4 | 3122.5 | 3217.2 | 3255.0 | 3317.3 |
| Nonutility Generation [b] | NA | NA | NA | 187.0 | 221.5 | 253.3 | 301.8 | 325.2 | 354.9 | 375.9 | 382.4 | 384.7 | 390.3 | 396.0 | 401.9 |
| Total Generation | NA | NA | NA | 2971.3 | 3029.6 | 3078.3 | 3099.0 | 3207.8 | 3265.6 | 3370.4 | 3459.9 | 3507.2 | 3607.5 | 3651.0 | 3719.2 |
| Net Imports | 35.9 | 46.3 | 31.8 | 11.0 | 2.0 | 22.3 | 28.3 | 28.4 | 44.6 | 37.6 | 38.0 | 36.6 | 31.0 | 33.7 | 34.8 |
| Total Supply | NA | NA | NA | 2982.3 | 3031.6 | 3100.6 | 3127.3 | 3236.2 | 3310.3 | 3408.0 | 3497.9 | 3543.8 | 3638.5 | 3684.6 | 3754.0 |
| Losses and Unaccounted for [c] | NA | NA | NA | 238.3 | 205.8 | 216.9 | 226.6 | 237.0 | 225.5 | 236.8 | 242.3 | 267.7 | 242.1 | 250.8 | 255.3 |
| **Demand** | | | | | | | | | | | | | | | |
| Electric Utility Sales | | | | | | | | | | | | | | | |
| Residential | 819.1 | 850.4 | 892.9 | 905.5 | 924.0 | 955.4 | 935.9 | 994.8 | 1008.5 | 1042.5 | 1082.5 | 1071.6 | 1132.8 | 1146.2 | 1178.2 |
| Commercial | 630.5 | 660.4 | 699.1 | 725.9 | 751.0 | 765.7 | 761.3 | 794.6 | 820.3 | 862.7 | 887.4 | 913.3 | 948.1 | 964.0 | 979.0 |
| Industrial | 830.5 | 858.2 | 896.5 | 925.7 | 945.5 | 946.6 | 972.7 | 977.2 | 1008.0 | 1012.7 | 1030.4 | 1032.5 | 1052.5 | 1055.0 | 1068.5 |
| Other | 88.6 | 88.2 | 89.6 | 89.8 | 92.0 | 94.3 | 93.4 | 94.9 | 97.8 | 95.4 | 97.5 | 97.5 | 99.5 | 102.6 | 104.6 |
| Subtotal | 2368.8 | 2457.3 | 2578.1 | 2646.8 | 2712.6 | 2762.0 | 2763.4 | 2861.5 | 2934.6 | 3013.3 | 3097.8 | 3114.9 | 3232.8 | 3267.8 | 3330.3 |
| Nonutility Own Use [b] | NA | NA | NA | 97.2 | 113.2 | 121.7 | 137.3 | 137.8 | 150.2 | 158.0 | 157.8 | 161.2 | 163.6 | 166.0 | 168.5 |
| Total Demand | NA | NA | NA | 2744.0 | 2825.8 | 2883.7 | 2900.7 | 2999.2 | 3084.8 | 3171.3 | 3255.6 | 3276.1 | 3396.4 | 3433.8 | 3498.7 |
| **Memo:** | | | | | | | | | | | | | | | |
| Nonutility Sales | | | | | | | | | | | | | | | |
| to Electric Utilities [d] | 39.9 | 50.0 | 68.0 | 89.8 | 108.2 | 131.6 | 164.4 | 187.5 | 204.7 | 217.9 | 224.6 | 223.5 | 226.7 | 230.1 | 233.4 |

[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 (Annual Nonutility Power Producer Report ) 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.

[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 report: *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.