

Short-Term Energy Outlook (Year 2006)

DOE/EIA

Overview

Sharp increases in energy prices and hurricane-related supply losses in oil and natural gas dominated the news in U.S. energy markets in 2005.

While demand generally drove 2004 energy prices higher, in 2005 the price increases were more the result of supply concerns because of the hurricane losses, as well as the reduction in world oil spare capacity, which fell to its lowest level in over three decades. Indeed, as U.S. spot prices of crude oil and natural gas increased an average of 36 and 47 percent, respectively, total U.S. energy demand remained flat this year, despite a relatively healthy economic growth rate of more than 3 percent. Similarly, world oil prices climbed throughout the year despite slower demand growth in both China and the United States.

In 2006, total domestic energy demand is projected to increase at an annual rate of about 2.0 percent, despite continued concerns about tight supplies and projected high prices for oil and natural gas. Recent declines in petroleum product prices (especially gasoline and diesel) due to mild weather and ongoing hurricane recovery efforts have caused us to lower our petroleum price forecasts for the next few months. However, prices for crude oil, petroleum products, and natural gas are projected to remain high through 2006 because of continuing tight international supplies and hurricane-induced supply losses. For example, the price of West Texas Intermediate (WTI) crude oil is projected to average \$57 per barrel in 2005 and \$63 per barrel in 2006.

Retail regular gasoline prices are projected to average \$2.27 per gallon in 2005 and \$2.41 in 2006. Henry Hub natural gas prices are estimated to average \$8.88 per thousand cubic feet (mcf) in 2005 and \$9.30 per mcf in 2006.

해외정보

Price Summary

		Year			Percent Change		
	2003	2004	2005	2006	03-04	04-05	05-06
WTI Crude ^a (\$/barrel)	31.12	41.44	56.54	63.33	33.2	36.4	12.0
Gasoline ^b (\$/gal)	1.56	1.85	2.27	2.42	18.8	22.6	6.4
Diesel ^c (\$/gal)	1.50	1.81	2.41	2.54	20.3	33.3	5.3
Heating Oil ^d (\$/gal)	1.36	1.54	2.03	2.25	13.5	31.7	11.2
Natural Gas ^d (\$/mcf)	9.51	10.74	12.77	14.52	12.9	18.9	13.7

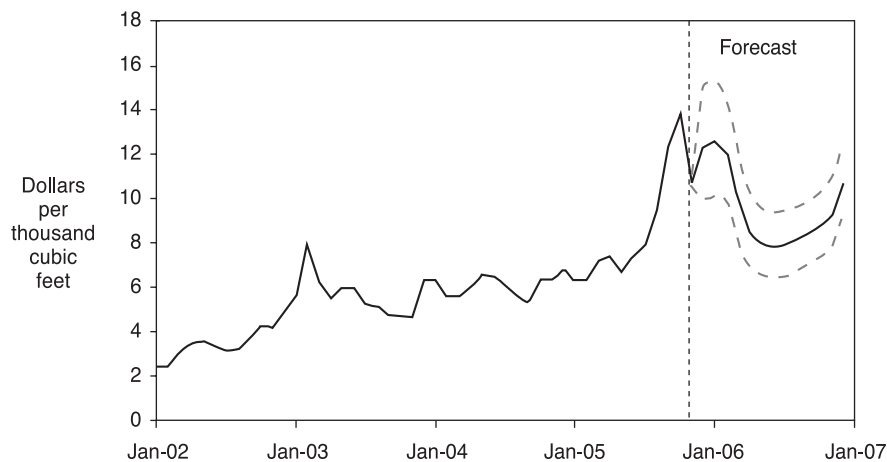
a West Texas Intermediate.

b Average regular pump price.

c On-highway retail.

d Residential average.

Source: EIA, Short-Term Energy Outlook, December 2005

Natural Gas Henry Hub Spot Prices
(Base Case and 95% Confidence Interval*)* The confidence intervals show ± 2 standard errors based on the properties of the model.

Source: EIA, Short-Term Energy Outlook, December 2005

Hurricane Recovery

As of the beginning of December, some 36 percent of normal daily Federal Gulf of Mexico oil production and approximately 29 percent of Federal Gulf of Mexico natural gas production remain shut-

1) BP's Thunderhorse platform (250,000 bb/d capacity) was damaged in July 2005 during Hurricane Dennis and is not expected to return to production until the second half of 2006. Thunderhorse capacity is not included in the "normal" base for comparing pre-and post Hurricane Katrina and Rita damage

in due to Hurricanes Katrina and Rita¹. In Louisiana, shut-in on-shore oil and natural gas production is down to about 40 percent of pre-hurricane capacity and is projected to be fully restored by the end of March 2006. In the Gulf of Mexico region, refinery shutdowns at the beginning of December totaled 804,000 barrels per day. While two refineries in New Orleans and one in Houston remain out of service today, all three are projected to be operating by the end of February 2006.

The supply of natural gas has been disrupted because of hurricane damage to production platforms, subsea pipelines, and natural gas processing plants. However, the interconnectivity of the natural gas gathering system has helped speed the recovery of shut-in production as suppliers reroute gas flow around damaged pipelines to active processing plants. Consequently, in this Outlook we have accelerated the recovery of the natural gas supply system from our November Outlook prediction. We now expect shut-in Federal Gulf of Mexico natural gas production to fall to 0.66 billion cubic feet (bcf) per day (6.5 percent of pre-hurricane Gulf production) by March 2006.

Gulf crude oil production has also improved, albeit at a slower pace than natural gas. The majority of platform repairs are projected to be completed by the end of 2005, although some of the largest oil platforms damaged by the hurricanes are projected to remain out of service through the second quarter of 2006. Crude oil production is projected to continue to recover at a slightly faster pace than previously predicted. We forecast a gradual increase in Federal Gulf of Mexico crude oil production as shut-in production declines from about 504,000 barrels per day (bbl/d) in December to about 297,000 bbl/d by March 2006 (19 percent of its June 2005 level).

Winter Heating Expenditures

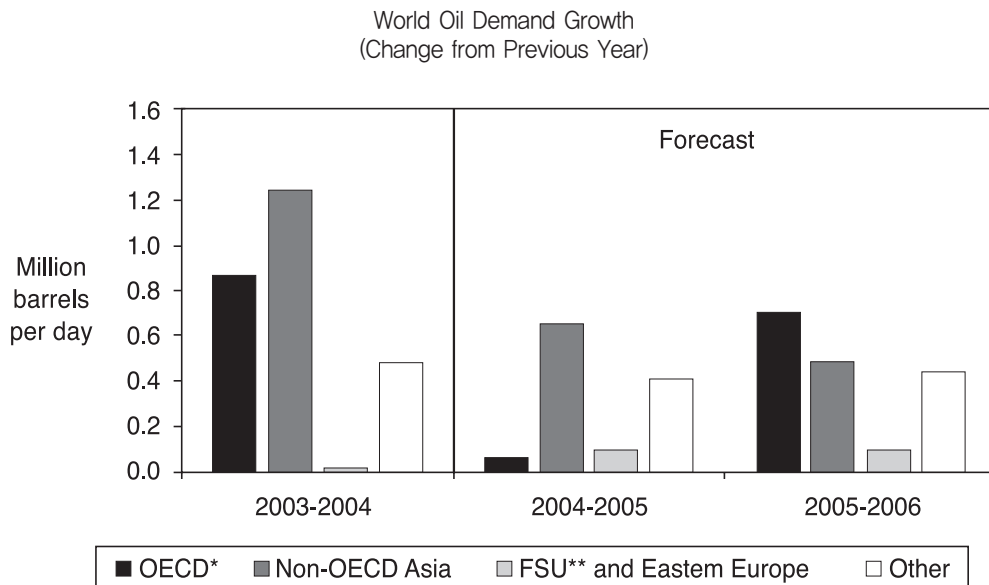
Relatively warmer October and November weather across most of the United States has led us to reduce slightly the winter heating expenditures we projected in the November Outlook. This slight reduction applies to all fuels and most regions. However, 2005/2006 winter residential space-heating expenditures are still projected to be higher relative to the winter of 2004-05 because of higher energy prices. On average, households heating primarily with natural gas likely will spend \$281 (38 percent) more for fuel this winter than last winter. Households heating primarily with heating oil can expect to pay, on average, \$255 (21 percent) more this winter than last. Households heating primarily with propane can expect to pay, on average, \$167 (15 percent) more this winter than last. Households heating primarily with electricity can expect to pay, on average, \$46 (7 percent) more. Should colder

weather prevail, expenditures could be significantly higher. These averages provide a broad guide to changes from last winter, but fuel expenditures for individual households are highly dependent on local weather conditions, the size and efficiency of individual homes and their heating equipment, and thermostat settings.

Global Petroleum Markets

Many of the same factors that drove world oil markets in 2005, such as low Organization of the Petroleum Exporting Countries (OPEC) spare oil production capacity and rapid world oil demand growth, will continue to affect markets in 2006. Other factors are less certain, such as the frequency and intensity of hurricanes, other extreme weather, and geopolitical instability.

Worldwide petroleum demand growth in 2005 is projected to slow from 2004 levels, due largely to slower growth in China and the United States. However, world oil demand is estimated to increase by about 1.7 million bbl/d in 2006, up from 1.2 million bbl/d in 2005, led by an oil demand recovery in the United States.



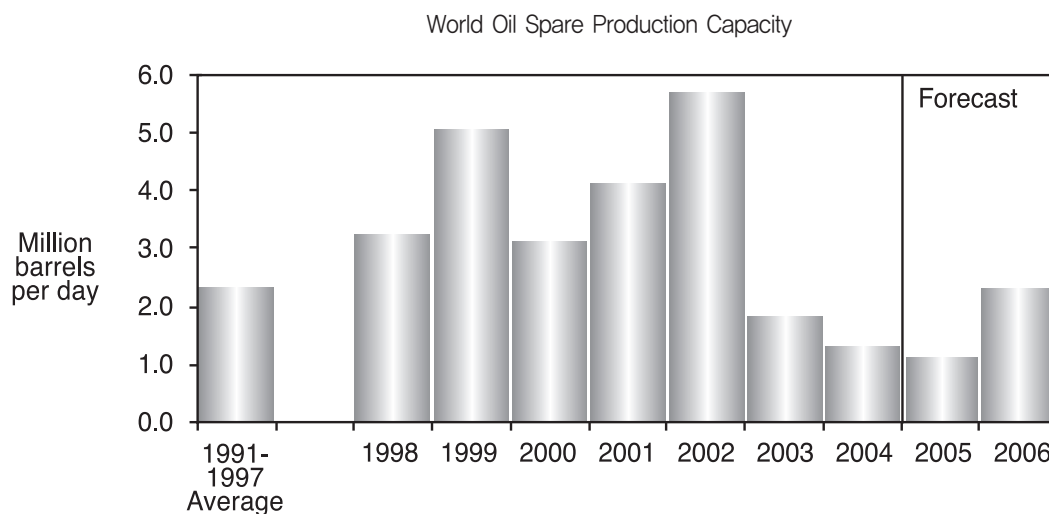
* Countries belonging to Organization of Economic Cooperation and Development

** Former Soviet Union

Source: EIA, Short-Term Energy Outlook, December 2005

Non-OPEC supply outside of the United States is estimated to grow by a net of some 800,000 bbl/d in 2006. New production of around 400,000 bbl/d is estimated to come online from the Caspian region (Azerbaijan and Kazakhstan), with additional projected increases of 450,000 bbl/d from the Western Hemisphere (particularly Canada and Brazil) and 150,000 bbl/d from West Africa. Conversely, natural production declines at mature fields in the North Sea, Mexico, and the Middle East will dampen this supply growth. Additional capacity increases are projected in OPEC members such as Nigeria, Saudi Arabia, and the United Arab Emirates.

As non-OPEC and OPEC supplies increase, world spare oil production capacity will likely increase during 2006, despite a growth in world oil demand. Overall, 2006 will likely see a 1-million-bbl/d increase in spare oil production capacity (to 2.0–2.5 million bbl/d)



Source: EIA, Short-Term Energy Outlook, December 2005

U.S. Petroleum Markets

Total U.S. petroleum demand in 2005 is projected to average 20.6 million bbl/d (0.5 percent less than the 2004 level) because of hurricane-related disruptions and higher prices. Petroleum demand in 2006 is estimated to average 21.1 million bbl/d, 2.3 percent more than in 2005.

Total U.S. refinery output this year is projected to decline by about 0.3 percent compared with

2004 because of hurricane outages. A warmer-than-normal October and an increase in product imports continue to keep total product inventories at levels close to the average of the last few years. Current distillate fuel and jet fuel inventories remain above last year's levels, but motor gasoline and residual fuel oil inventories continue to lag behind.

U.S. Natural Gas Markets

Because prices remain high, 2005 total natural gas demand will likely remain at about 2004 levels, then increase by 1.0 percent in 2006, assuming a return to normal weather and expected reactivation of damaged industrial plants in the Gulf of Mexico region. Residential demand is projected to decline by about 1.7 percent in 2005 mostly in response to relatively weak heating-related demand during the latter part of last winter, while industrial demand is estimated to decline by 7.5 percent in 2005 due to the much higher prices for natural gas as a fuel or feedstock. By 2006, both end-use sectors are expected to recover somewhat, with residential demand projected to increase 2.4 percent from 2005 levels and industrial demand to increase by 4.6 percent.

Domestic dry natural gas production in 2005 is estimated to decline by 3.8 percent, due mainly to the hurricane-induced infrastructure disruptions in the Gulf of Mexico, then increase by 4.8 percent in 2006. Total liquefied natural gas (LNG) net imports for 2005 are estimated to remain at their 2004 level of approximately 650 bcf, then increase in 2006 to an average of about 1,000 bcf.

On November 30, working gas in storage stood at an estimated 3,170 bcf, a level 74 bcf below 1 year ago but 6.3 percent above the 5-year average and about 150 bcf above the level projected in last month's Outlook. End-of-year storage levels are estimated to be 8.9 percent lower at end-2005 than they were at end-2004. Natural gas storage levels at the end of 2006 will likely match the 2005 level. Hurricane-related natural gas production losses have reduced the amount of natural gas available for the market, which increases the projected requirement for withdrawals of gas from underground storage this winter.

Electricity Demand

Weather conditions and continuing economic growth are estimated to increase electricity demand by 3.5 percent in 2005 and an additional 1.2 percent in 2006. Year-over-year electricity demand

growth rates are estimated to be particularly strong, as cooling and heating demands likely will be higher than in the mild third and fourth quarters of 2004. When compared to 2004 figures, regional residential demand in 2005 rose in nine of the ten regions (Alaska and Hawaii, treated as one region, is the exception). Commercial demands increased across all ten regions, but industrial demands fell in the three regions along the East Coast. Estimated 2005 prices for delivered electricity across all end uses range from 6.2 cents per kilowatt hour (kwh) in the East South Central region to 11.8 cents per kwh in New England. In response to higher utility fuel prices, average electricity prices for all end uses are projected to rise by 10.8 percent in New England and 8.7 percent in West South Central, but by 6.4 percent or less in all other regions in 2005 compared with 2004.

Power Sector Demand for Coal

In 2005, electric power sector demand for coal is projected to increase by 2.4 percent and by 1.7 percent in 2006. Power sector demand for coal continues to increase in response to higher oil and particularly natural gas prices. U.S. coal production is projected to grow by 0.8 percent in 2005 and by an additional 3.9 percent in 2006. Coal prices to the electric power sector increased significantly in the first half of this year, growing by 15.3 percent compared with the first half of 2004. These price increases are attributed to low coal inventories (caused by high demand and transportation problems) and increased transportation costs. The price of coal to the power sector is projected to rise throughout the forecast period, although at a lower rate than in the first half of 2005. More specifically, coal prices are projected to rise by an average 13.2 percent in 2005 and by an additional 5.0 percent in 2006, increasing from \$1.35 per million Btu in 2004 to \$1.61 per million Btu in 2006.