

Short-Term Energy Outlook

September 9, 2008 Release

Highlights

- The monthly average price of West Texas Intermediate (WTI) crude oil decreased from over \$133 per barrel in June and July to about \$117 per barrel in August, reflecting expectations of a slowdown in world petroleum demand growth. WTI, which averaged \$72 per barrel in 2007, is projected to average \$116 per barrel in 2008. Projected stronger growth in world petroleum demand is expected to increase the annual average WTI price to \$126 per barrel in 2009.
- The weekly price of regular-grade gasoline, which peaked at \$4.11 per gallon on July 14, averaged \$3.65 per gallon on September 8. Annual average retail gasoline and diesel prices in 2008 are projected to be \$3.61 and \$4.09 per gallon, respectively, compared with \$2.81 for gasoline and \$2.88 for diesel in 2007. Following the expected increase in the annual average crude oil price, gasoline and diesel prices are projected to average \$3.88 and \$4.26 per gallon, respectively, in 2009.
- The Henry Hub natural gas spot price averaged \$7.17 per thousand cubic feet (Mcf) in 2007 and is expected to average about \$9.70 per Mcf in 2008 and \$8.55 per Mcf in 2009.
- Residential heating oil prices during the upcoming heating season (October through March) are projected to average \$4.13 per gallon, an increase of about 25 percent over last heating season. Residential natural gas prices over the same period are projected to average \$14.93 per Mcf compared with \$12.72 per Mcf during the last heating season, an increase of about 17 percent.
- Heating fuel expenditures for the average household using oil as its primary heating fuel are expected to increase by \$585 (30 percent) over last winter. The corresponding average expenditure increases for households heated with natural gas and propane are \$162 (19 percent) and \$217 (13 percent), respectively.

Global Petroleum

Overview. Sluggish Organization for Economic Cooperation and Development (OECD) consumption and prospects for increased supplies from producers outside of the Organization of the Petroleum Exporting Countries (OPEC) in the coming year have weakened market conditions. Lower demand for OPEC oil and a rebound in global surplus production capacity is expected to provide the market with a potential cushion against supply disappointments over the near term. Sentiment that a slowdown in the global economy will dampen world oil consumption growth appears to be overshadowing supply concerns stemming from geopolitical events and the absence of normal inventory build in the OECD countries through mid-2008. The disruption of Caspian export flows in August, continued tensions between Russia and Georgia, and Hurricane Gustav all failed to raise prices.

The future price path will be influenced by the pace of world gross domestic product (GDP) growth and OPEC behavior. OPEC met on September 9 in Vienna to review market conditions. EIA expects that OPEC will continue to assess market conditions in the months ahead, and will lower crude oil production over the next few quarters in order to prevent a sharp decline in prices. The main upside price risk is that the slowdown in global oil demand growth is temporary and that demand will recover. Important downside price risks include weaker demand growth due to the lagged impact of higher oil prices, weaker economic activity than anticipated, or the absence of a substantial reduction in OPEC crude oil production.

Consumption. After rising by about 370,000 barrels per day (bbl/d) during the first half of 2008, global oil consumption is projected to rise by about 970,000 bbl/d in the second half of 2008 and by 920,000 bbl/d in all of 2009 compared with year-earlier levels. Sluggish growth in consumption during the first half of 2008 was driven in large part by a 930,000-bbl/d decline in U.S. consumption. Declines in U.S. oil consumption are not expected to be as large in the second half of this year due to both relatively weak consumption in the second half of last year and the price declines over the past several months. The global oil consumption growth projections for the third and fourth quarters of 2008 represent a 130,000-bbl/d downward revision from last month's *Outlook*, mainly reflecting weaker demand in OECD countries.

Reports indicate that China plans to halt imports of selected products in September to draw down stocks built up before the Olympics. Moderation in China's demand, however, is expected to be temporary, as sustained economic growth is expected to support oil consumption growth. Over both years, lower OECD consumption is expected to be more than offset by continued non-OECD consumption growth, led by China, the Middle East, Latin America, and India ([World Oil Consumption](#)).

Non-OPEC Supply. The non-OPEC oil supply situation is expected to improve through the end of next year. If new projects come online as now anticipated, total non-OPEC supply is projected to rise by about 300,000 bbl/d in the second half of 2008 and by about 900,000 bbl/d in 2009 compared with year-earlier levels. This compares with a 280,000-bbl/d decline in non-OPEC supply recorded during the first half of 2008. Non-OPEC supply growth through 2009 is expected to be led by the United States, Brazil, and Azerbaijan ([Non-OPEC Oil Production Growth](#)). The combination of possible additional delays in key projects, heightened risks to Caspian export flows, potential impacts from hurricanes over the next few months, and the risk of weaker production trends in Russia, Mexico, and the North Sea could dampen non-OPEC supply growth, leading to both higher demand for OPEC oil and higher prices than currently projected.

OPEC Supply. OPEC crude oil production is expected to increase to 32.9 million bbl/d during the third quarter of 2008, up from 32.3 million bbl/d in the second quarter. The forecast assumes that Saudi Arabia will maintain its July 9.7-million-bbl/d production level in August and September, representing a 400,000-bbl/d rise from second quarter levels. Amid weaker market conditions and declining prices, OPEC met in Vienna on September 9 to review market conditions and consider revising its production strategy.

OPEC crude oil production is projected to drop back to about 32.8 million bbl/d in the fourth quarter of 2008 and continue to decline to an average of 32.1 million bbl/d in 2009, keeping OECD inventories near 5-year average levels measured in days of forward consumption. Lower crude oil production, combined with planned increases in OPEC total liquids production capacity, suggests OPEC surplus crude production capacity could increase from 1.2 million bbl/d currently to about 3 million bbl/d by the end of next year ([OPEC Surplus Oil Production Capacity](#)).

Inventories. Revised data indicate OECD commercial inventories during the second quarter of 2008 declined by 120,000 bbl/d, well below the average build of 910,000 bbl/d during this time of year. At the end of the second quarter, estimated OECD commercial inventories stood at 2.56 billion barrels, equal to about 53 days of forward consumption, which is close to normal levels ([Days of Supply of OECD Commercial Stocks](#)). OECD commercial inventories are projected to rise by 90,000 bbl/d in the third quarter compared with the average seasonal build of 450,000 bbl/d, which, due to falling OECD consumption, would leave OECD commercial inventories at near-normal levels in terms of days of supply at the end of the third quarter.

U.S. Petroleum

Consumption. Total U.S. petroleum and other liquids consumption is projected to decline by 610,000 bbl/d, or about 3 percent, in 2008 based on prospects for a weaker economy and high crude oil and product prices continuing into 2009 ([U.S. Petroleum Products Consumption Growth](#)). Preliminary July and August 2008 weekly survey data indicate that year-over-year declines in total consumption, which began in August 2007, have narrowed since earlier this year. During the first 6 months of 2008, total petroleum consumption fell by an average of 930,000 bbl/d compared with consumption during the same period in 2007. During July and August, the year-over-year declines averaged 660,000 bbl/d. For the rest of the year (September through December), the year-to-year decline in consumption is projected to narrow to an average of about 130,000 bbl/d.

Supply. In 2008, total domestic crude oil output is projected to average 5.13 million bbl/d, up slightly from the 2007 average of 5.06 million bbl/d ([U.S. Crude Oil Production](#)). Production growth in the lower-48 region is expected to more than offset declines in Alaskan output. This projection includes an assumption of hurricane-induced outages of about 14.5 million barrels for the offshore region in 2008 (see [Hurricane Outlook](#)). In 2009, total crude oil production is projected to increase to 5.42 million bbl/d, mostly because of the Thunder Horse and Tahiti platforms coming on-stream in late 2008 and 2009, respectively. Fuel ethanol production is projected to increase from an annual average of 430,000 bbl/d in 2007 to 590,000 bbl/d in 2008 and to 660,000 bbl/d in 2009. Because of declining petroleum consumption and growing ethanol production, total net imports of petroleum are expected to fall by 740,000 bbl/d in 2008 and by a further 460,000 bbl/d in 2009.

Prices. WTI crude oil prices, which averaged \$72 per barrel in 2007 ([Crude Oil Prices](#)), are projected to average \$116 per barrel in 2008 and \$126 per barrel in 2009. Regular-grade motor gasoline retail prices, which averaged \$2.81 per gallon in 2007, are projected to rise to an average of \$3.61 per gallon this year and \$3.88 per gallon in 2009. This forecast projects continuing weak gasoline margins because of the decline in gasoline consumption and growth in ethanol use. Diesel fuel retail prices in 2008 are projected to average \$4.09 per gallon, up from \$2.88 per gallon in 2007, and increase to an average of \$4.26 per gallon in 2009. Diesel prices reflect continuing strength in demand, particularly in emerging global markets, which has significantly increased the margins between diesel prices and crude oil costs from their 2007 level.

Natural Gas

Consumption. Total natural gas consumption is expected to increase by 2.7 percent in 2008 and by 2.2 percent in 2009 ([Total U.S. Natural Gas Consumption Growth](#)).

Consumption growth is expected in all sectors during the forecast period, led by the residential and commercial sectors in 2008 and electric power in 2009. Despite higher prices through the first half of 2008, natural gas consumption in the industrial sector increased by 3.7 percent compared with the corresponding period in 2007.

Consumption in the industrial sector is expected to increase by 1.6 percent in 2008 and by 1.4 percent in 2009. However, fragile domestic economic conditions add significant uncertainty to the forecast.

Production and Imports. Total U.S. marketed natural gas production is expected to increase by 7.8 percent in 2008 and by 3.8 percent in 2009. Strong year-over-year production growth has been led by the development of onshore fields, particularly in Texas and Wyoming, where production increased by 16 and 12 percent, respectively, during the first 6 months of 2008 relative to year-ago levels. The increase in lower-48 production excluding the Federal Gulf of Mexico (GOM) has more than offset the year-over-year decline of almost 3 percent during the first half of 2008 in Federal GOM production. Federal GOM production in 2008 is projected to be slightly lower than in 2007, followed by a 4.3 percent increase in 2009. Production in the lower-48 non-Gulf region is expected to increase by 9.5 percent in 2008 and by 3.8 percent in 2009, though the projection of supply growth next year remains subject to expectations about natural gas prices.

U.S. imports of liquefied natural gas (LNG) have been severely hampered by global LNG demand growth and higher relative prices in the Asia-Pacific region and Europe. For 2008, LNG imports are expected to total about 350 billion cubic feet (Bcf), a decline of more than 50 percent, or 420 Bcf, from 2007, and then to total about 450 Bcf in 2009 as new global LNG supply is added to the market.

Inventories. On August 29, 2008, working natural gas in storage was 2,847 Bcf ([U.S. Working Natural Gas in Storage](#)). Current inventories are now 102 Bcf above the 5-year average (2003–2007) and 148 Bcf below the level during the corresponding week last year.

Prices. The Henry Hub spot price averaged \$8.49 per Mcf in August, \$2.96 per Mcf below the average spot price in July. Mild temperatures, increasing production, and lower oil prices all contributed to the price decline. Cooling degree-days in August were 4 percent below normal and 14 percent below the 5-year average. In the near term, potential hurricane disruptions present the greatest uncertainty in the price

forecast. September has historically been the peak month for hurricane activity, and EIA's current *Outlook* assumptions include shut-in production of 65 Bcf for the remainder of the season attributable to Gulf Coast storms. Nevertheless, continued growth in onshore production is expected to limit any large and sustained increases in the natural gas spot price. On an annual basis, the Henry Hub spot price is expected to average about \$9.71 per Mcf in 2008 and \$8.55 per Mcf in 2009, a decline of \$0.33 and \$0.46 per Mcf, respectively, from the previous forecast.

Electricity

Consumption. As noted above, August 2008 was much cooler than in recent years ([U.S. Summer Cooling Degree-Days](#)), with particularly mild temperatures in the Midwest region. The projected growth in electricity consumption during 2008 has been lowered from last month's *Outlook* to 0.8 percent ([U.S. Total Electricity Consumption](#)).

Prices. Some utilities increased electricity rates beginning in July and more increases are expected in the upcoming months. Average U.S. residential electricity prices are projected to increase by 5.7 percent in 2008 and by 9.5 percent in 2009 ([U.S. Residential Electricity Prices](#)).

Coal

Consumption. Electric-power-sector coal consumption grew by 1.9 percent in 2007. Although first-quarter 2008 electric-power-sector coal consumption grew by about 2 percent compared with first-quarter 2007, slow growth in total electricity consumption is expected to limit growth in the sector to just 0.7 percent in 2008. In 2009, a small increase in electricity consumption, combined with projected increases from other generation sources (nuclear, natural gas, hydroelectric, and wind), will lead to a very slight decline in electric-power-sector coal consumption ([U.S. Coal Consumption Growth](#)).

Production and Inventories. U.S. coal production ([U.S. Annual Coal Production](#)) fell by 1.4 percent in 2007. Growth in both domestic consumption and particularly in exports is expected to contribute to a 2.9-percent increase in coal production in 2008. Secondary (consumer-held) coal stocks, which grew to 159 million short tons in 2007, are expected to remain stable in 2008 and grow by an average of 2.8 percent in 2009.

Exports. In the first half of 2008, U.S. coal exports increased by 13 million short tons, or 50 percent, over first-half 2007 shipments. Strong global demand for coal, combined with supply disruptions in several key coal exporting countries (Australia,

South Africa, and China), were the primary factors behind the increase in U.S. coal exports. Although the supply disruptions have ended, continued robust worldwide demand for coal is projected to lead to an overall 45-percent increase in U.S. coal exports in 2008. Coal exports are projected to be 86.5 million short tons in 2009.