Independent Statistics & Analysis
U.S. Energy Information Administration

May 2021

Short-Term Energy Outlook

Forecast highlights

Global liquid fuels

- The May *Short-Term Energy Outlook* (STEO) remains subject to heightened levels of uncertainty because responses to COVID-19 continue to evolve. Economic activity has increased significantly after reaching multiyear lows in the second quarter of 2020. The increase in economic activity and easing of COVID-19-related restrictions have contributed to rising energy use. U.S. gross domestic product (GDP) declined by 3.5% in 2020 from 2019 levels. This STEO assumes U.S. GDP will grow by 6.2% in 2021 and by 4.3% in 2022. The U.S. macroeconomic assumptions in this outlook are based on forecasts by IHS Markit. Our forecast assumes continuing economic growth and increasing mobility with easing COVID-19-related restrictions, and any developments that would cause deviations from these assumptions would likely cause energy consumption and prices to deviate from our forecast.

- We completed modeling and analysis for this report before the temporary closure of the Colonial Pipeline on May 7 as a result of a cyberattack. Although effects of the outage are not reflected in this report, we are closely following supply and price developments related to the outage. Updates related to the outage will be reflected in *Today in Energy*, *This Week in Petroleum*, and the *Weekly Petroleum Status Report* as they become available.

- Brent crude oil spot prices averaged $65 per barrel (b) in April, unchanged from the average in March. Brent prices were steady in April as market participants considered diverging trends in global COVID-19 cases. In some regions, notably the United States, oil demand is rising as both COVID-19 vaccination rates and economic activity increase. In other regions, notably India, oil demand is declining because of a sharp rise in COVID-19 cases. EIA forecasts that Brent prices will average $65/b in the second quarter of 2021, $61/b during the second half of 2021, and $61/b in 2022.

- We estimate that the world consumed 96.2 million barrels per day (b/d) of petroleum and liquid fuels in April, an increase of 15.8 million b/d from April 2020 but 4.0 million b/d less than April 2019 levels. We forecast that global consumption of petroleum and liquid fuels will average 97.7 million b/d for all of 2021, which is a 5.4 million b/d increase from 2020. We forecast that consumption of petroleum and liquid fuels will increase by 3.7 million b/d in 2022 to average 101.4 million b/d.

Note: EIA completed modeling and analysis for this report on Thursday May 6, 2021

- We expect that gasoline consumption in the United States will average almost 9.0 million b/d this summer (April–September), which is 1.2 million b/d more than last summer but almost 0.6 million b/d less than summer 2019. We increased our summer gasoline consumption forecast by 0.1 million b/d from last month based on weekly data that suggested more gasoline consumption than we had previously forecast. The increase also reflects IHS Markit's increased employment forecast. For all of 2021, we forecast that U.S. gasoline consumption will average 8.7 million b/d, which is up from 2020 (8.0 million b/d) but down from 2019 (9.3 million b/d).

- According to our most recent data, U.S. crude oil production averaged 9.9 million b/d in February 2021, which was down by 1.2 million b/d from January. In February, cold temperatures caused significant declines in crude oil production in Texas, as well as smaller declines in other states. We estimate that production outages were generally limited to February and that U.S. crude oil production rose to 10.9 million b/d in March and to almost 11.0 million b/d in April. Because the average price of West Texas Intermediate crude oil remains above $55/b in our forecast, we expect producers will drill and complete enough wells in the coming months to offset declines at existing wells. In addition, new projects in the Federal Offshore Gulf of Mexico contribute to rising production in the forecast. U.S. crude oil production in the forecast averages 11.3 million b/d in the fourth quarter of 2021 and then rises to average 11.8 million b/d in 2022.

Natural Gas

- In April, the natural gas spot price at Henry Hub averaged $2.66 per million British thermal units (MMBtu), which is slightly higher than the March average of $2.62/MMBtu. We expect the Henry Hub spot price will average $2.78/MMBtu in the second quarter of 2021 and will average $3.05/MMBtu for all of 2021, which is up from the 2020 average of $2.03/MMBtu. We expect natural gas prices will rise this year, primarily as a result of two factors: growth in liquefied natural gas (LNG) exports and rising domestic natural gas consumption in the residential, commercial, and industrial sectors. In 2022, we expect the Henry Hub price will fall to an average $3.02/MMBtu amid slowing growth in LNG exports and rising production.

- We expect that U.S. consumption of natural gas will average 82.6 billion cubic feet per day (Bcf/d) in 2021, down 0.7% from 2020. U.S. natural gas consumption declines in the forecast, in part, because electric power generators switch to coal from natural as a result of rising natural gas prices. In 2021, we expect residential and commercial natural gas consumption together will rise by 1.0 Bcf/d from 2020 and industrial consumption will rise by 0.8 Bcf/d from 2020. Rising consumption outside of the power sector results from expanding economic activity and colder temperatures in 2021 compared with 2020. We expect U.S. natural gas consumption will average 82.5 Bcf/d in 2022.

- We estimate that natural gas inventories ended April 2021 at almost 2.0 trillion cubic feet (Tcf), which is 3% lower than the five-year (2016–20) average. Natural gas withdrawals from storage during the winter of 2020–21 were higher than the five-year average, largely as a result of the cold February temperatures that contributed to a drop in natural gas production. We forecast that natural gas inventories will end the 2021 injection season (end of October) at more than 3.6 Tcf, which is 3% below the five-year average.

- We forecast that U.S. production of dry natural gas will average 91.1 Bcf/d in 2021, which is down 0.3% from 2020. Dry natural gas production fell by 6.0 Bcf/d in February to 86.3 Bcf/d because of cold weather that largely affected Texas. We estimate production increased to 91.3 Bcf/d in March. We expect relatively flat dry natural gas production in May ahead of production beginning to rise in mid-2021. We forecast dry natural gas production will reach 92.0 Bcf/d in the fourth quarter of 2021 and average 93.1 Bcf/d in 2022. The increase in production reflects sustained higher forecast prices for natural gas and crude oil compared with 2020.

- U.S. LNG exports set an all-time record in March 2021 at 10.5 Bcf/d and averaged 9.2 Bcf/d in April—the most exported LNG for those months since the United States began exporting it in 2016. Throughout 2020 and in January 2021, more than half of U.S. LNG exports went to Asia. However, in February and March 2021, more than half of U.S. LNG exports went to Europe as a result of spot natural gas prices in Europe reaching levels similar to spot natural gas prices in Asia. For May, we forecast a decline in U.S. LNG exports to 8.6 Bcf/d (more than 90% of baseload export capacity utilization) before exports rise above 9.0 Bcf/d in the summer months to meet summer peak demand in Europe and Asia. We expect LNG exports will average 9.2 Bcf/d in both 2021 and 2022, up from 6.5 Bcf/d in 2020. Flat LNG exports in 2022 reflect our expectation that limited new export capacity will come online during the forecast period.

Electricity, coal, renewables, and emissions

- We forecast that electricity consumption in the United States will increase by 2.2% in 2021 after falling 3.9% in 2020. We forecast electricity sales to the industrial sector will grow by 3.3% in 2021. We forecast that retail electricity sales to the residential sector will grow by 2.9% in 2021, which is primarily a result of colder temperatures in the first quarter of 2021 compared with the same period in 2020. We expect retail electricity sales to the commercial sector will increase by 1.4% in 2021. Much of the increased electricity consumption across the sectors reflects improving economic conditions in 2021. For 2022, we forecast that U.S. electricity consumption will grow by another 1.0%.

- We expect the share of electric power generated from natural gas in the United States will average 35% in both 2021 and 2022, down from 39% in 2020. The forecast share for natural gas as a generation fuel declines in response to an 85% increase in the average delivered natural gas price for electricity generators, from an average $2.39/MMBtu in 2020 to an average $4.41/MMBtu in 2021. As a result of the higher expected natural gas prices, the forecast share of generation from coal rises from 20% in 2020 to 24% this year and to 23% next year. New additions of solar and wind generating capacity contribute to our expectation that the renewables share of U.S. generation will rise from 20% in 2020 to 21% in 2021 and to 22% in 2022. The nuclear share of U.S. generation declines from 21% in 2020 to 20% in 2021 and to 19% in 2022 as a result of retiring capacity at some nuclear power plants.

- We forecast that planned additions to U.S. wind and solar generating capacity in 2021 and 2022 will contribute to rising electricity generation from those sources. We estimate that the U.S. electric power sector added 14.8 gigawatts (GW) of new wind capacity in 2020. We expect 15.9 GW of new wind capacity will come online in 2021 and 5.2 GW in 2022. Utility-scale solar capacity rose by an estimated 10.5 GW in 2020. Our forecast for added utility-scale solar capacity is 15.7 GW and 15.9 GW for 2021 and 2022, respectively. We expect significant solar capacity additions in Texas during the forecast period. In addition, about 5 GW of small-scale solar (systems less than 1 megawatt) will come online each year during the 2021–22 STEO forecast.

- We expect U.S. coal production to total 582 million short tons (MMst) in 2021, 43 MMst (8%) more than in 2020. The increase in coal production is primarily driven by rising use of coal for electricity generation in response to rising natural gas prices. Recent strikes in Appalachia metallurgical coal mines likely limited production increases in April, but we do not expect them to significantly affect production through the rest of 2021. In 2022, we expect coal production to grow by an additional 23 MMst (4%).

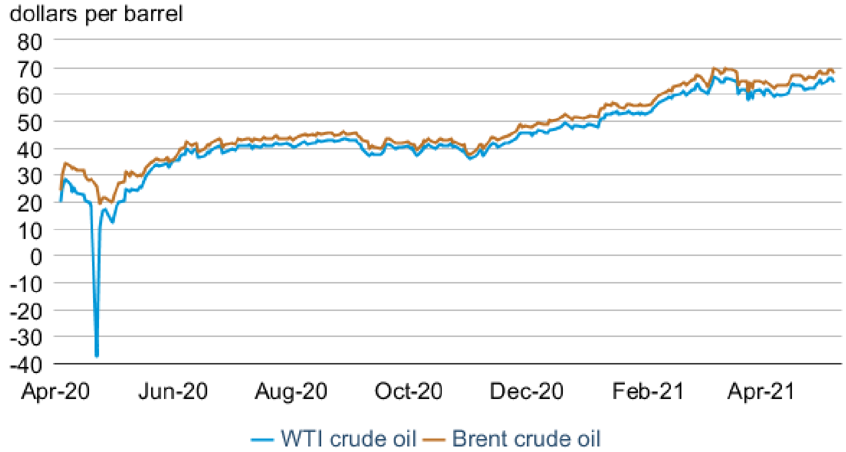
- We estimate that U.S. energy-related carbon dioxide (CO_2) emissions decreased by 11% in 2020 as a result of less energy consumption related to reduced economic activity and responses to COVID-19. In 2021, we forecast energy-related CO_2 emissions will increase about 6% from the 2020 level as economic activity increases and leads to rising energy use. We also expect energy-related CO_2 emissions to rise in 2022, but by a slower rate of 2%. We forecast that after declining by 19% in 2020, coal-related CO_2 emissions will rise by 17% in 2021 and then fall by 1% in 2022.

Petroleum and natural gas markets review

Crude oil

Prices: The front-month futures price for Brent crude oil settled at $68.09 per barrel (b) on May 6, 2021, up $3.23/b from April 1. The front-month futures price for West Texas Intermediate (WTI) crude oil for delivery at Cushing, Oklahoma, increased by $3.26/b during the same period, settling at $64.71 on May 6 **(Figure 1)**.

Figure 1. Crude oil front-month futures prices



Sources: CME Group and Intercontinental Exchange, as compiled by Bloomberg L.P.
Note: WTI=West Texas Intermediate.

After approaching a 2021 high in early March of almost $70/b, Brent crude oil prices declined to between $60/b and $65/b in mid-March through the first half of April. However, in the second half of April and into early May, crude oil prices began to rise, likely as a result of crude oil and petroleum product inventory draws and higher expectations for summer gasoline demand, particularly in the United States. The rise in oil prices was likely reinforced by macroeconomic indicators that pointed to continued economic recovery and led to price increases across a broad range of commodities, discussed in detail below. News of rising COVID-19 cases in India offset some of the expectation of rising demand globally, but India's increase in cases has not prevented crude oil prices from rising; they climbed to their monthly highs of $68.56/b for Brent and $65.01/b for WTI as of April 29. Oil market developments during the past month occurred against a backdrop of continuing production restraint from OPEC+, which likely contributed to some upward price pressure. However, we expect OPEC+ to begin increasing production in May, which is consistent with the production targets announced at its early April meeting. OPEC+ plans to revisit its production targets at the next meeting, scheduled for June 1.

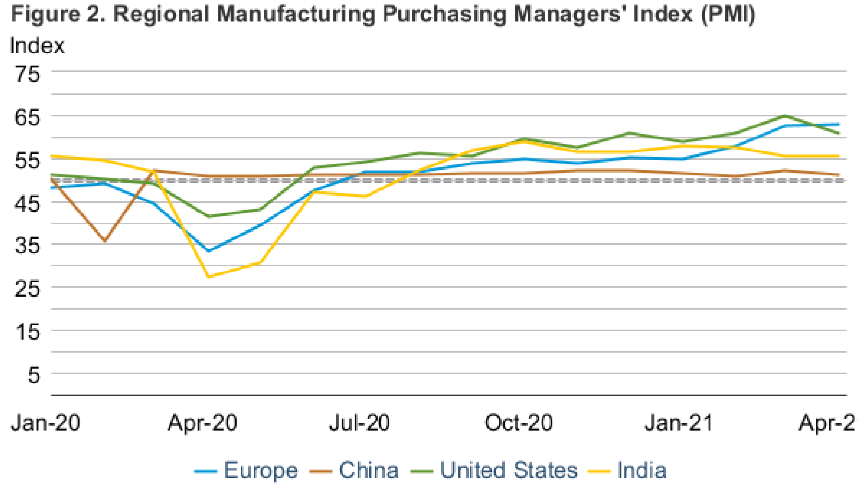
In the May STEO, we expect upward pressure on the Brent price to ease and the Brent price to decrease to average $65/b in the second quarter. This decrease comes as OPEC+ crude oil production rises to meet gradually increasing crude oil demand. We expect global consumption to average almost 97.0 million b/d in the second quarter, a 2.2 million b/d increase from the first quarter, before increasing to 98.9 million b/d in the third quarter and to 100.0 million b/d in the fourth quarter, which is largely unchanged from the April STEO.

Oil demand in Asia presents a downside risk to the forecast. India, the world's third largest consumer of oil, has rising COVID-19 cases. The degree to which the increase in cases will affect oil demand is currently unclear. We reduced oil consumption in India by 0.3 million b/d on average during the second quarter of 2021 from the April STEO. This forecast is highly uncertain, as future case counts and their effect on mobility is unclear.

We expect global oil production to continue to increase in the second half of the year to keep pace with rising demand. Increased production puts downward pressure on crude oil prices: the Brent price falls to $63/b in the third quarter and $60/b in the fourth quarter of 2021.

Commodity prices and manufacturing indexes: Purchasing managers' indexes (PMIs) for regional manufacturing in the United States and Europe remained firmly expansionary in April, suggesting increasing overall economic activity. PMIs are based on surveys sent to managerial staff of industry participants in the relevant country or region, in this case, within manufacturing sector companies. A PMI reading below 50 represents net expectations of a contraction in manufacturing activity, and a rating above 50 represents net expectations of manufacturing expansion. The PMI of the United States (data compiled by the Institute for Supply Management) decreased to 60.7 in April, down from its March high of 64.7, while Europe's PMI (data compiled by IHS Markit) increased to 62.9 in April from 62.5 in March **(Figure 2)**. The March 2021 PMI for the United States and the April 2021 PMI for Europe were the highest PMI index values for their respective regions since the pandemic began in early 2020, reflecting increased expectations for growing manufacturing activity in those regions.

Figure 2. Regional Manufacturing Purchasing Managers' Index (PMI)



Bloomberg L.P., IHS Markit, Institute for Supply Management

In Europe, the manufacturing PMI was less than 50 from January through June in 2020, and the United States' manufacturing PMI was less than 50 from March through May 2020. At 51.1 in April 2021, China's PMI was less than its November 2020 level (52.1) and was down from its March 2021 value of 51.9. China's PMI has historically trended closer to 50 than other regional PMIs. The increasing PMIs for the United States and Europe in March and April 2021 coincided with rising numbers of vaccinated persons, which has increased the available workforce who can return to work and leisure activities, stimulating demand for goods and services. The rising PMIs lend support to our expectation of rising oil consumption in the coming months.

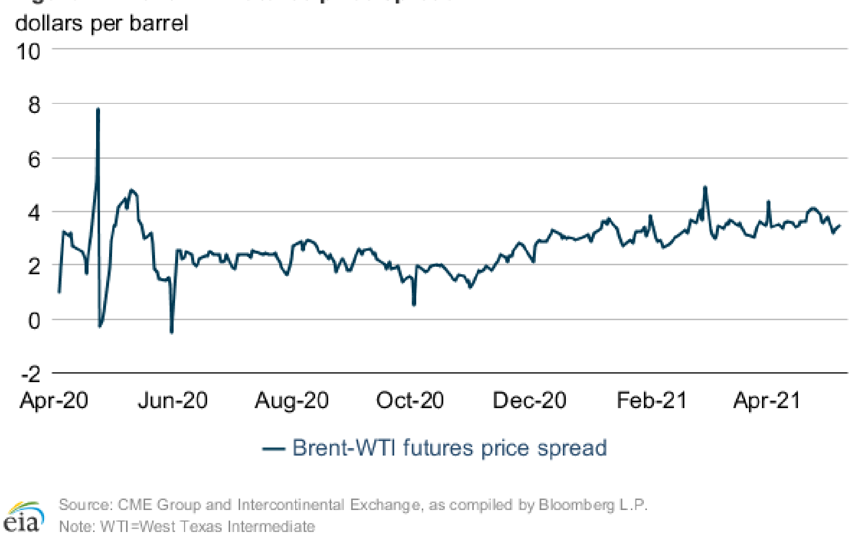
Similar to higher PMI manufacturing surveys, increases in non-energy commodity prices in April 2021 also suggest increases in economic growth. Commodity prices, including copper, lumber, grains, and agricultural goods, have all increased in response to increasing economic activity. In addition to rising demand, commodity prices are also affected by a lower supply because low demand in 2020 led wholesalers and retailers to adjust inventory levels to changing demand. As demand increases, prices will face upward pressure as long as supply chains are strained to meet higher levels of demand.

The renewed demands and strain on supply chains is also reflected in recent upward pressure on broad commodity price indexes. The S&P GSCI (formerly the Goldman Sachs Commodity Index) is an index of commodity prices, based on weighted indexes for energy, agricultural commodities, livestock, precious metals, and industrial metals. As of May 6, the S&P GSCI non-energy index, increased 18% from January 1, 2021 **(Figure 3)**. The majority of that growth occurred in April, as the sub-index started the month at just 4% above January 1. The upward pressure on non-energy commodities reflects more recent increases in economic activity, even as equities have shown steadier increases since the start of the year. Total returns on the S&P 500 have been showing steady growth since the start of 2021, posting record highs in April 2021. The S&P GSCI energy index has been increasing since mid-April, and during the first week of May, surpassed its previous highs from early March. The S&P GSCI energy index is largely weighted toward crude oil and petroleum products, although it also includes natural gas.

Figure 3. Energy vs nonenergy commodities and equities

Brent–WTI spread: The difference between Brent and WTI crude oil futures prices has been increasing on a monthly average basis since November 2020. In the past two months, the reduction in and subsequent return of U.S. crude oil production following outages resulting from widespread cold weather in February and lower Brent volumes resulting from production platform maintenance in the North Sea introduced increased volatility into the spread that has been gradually stabilizing at a wider level since March **(Figure 4)**.

Figure 4. Brent–WTI futures price spread



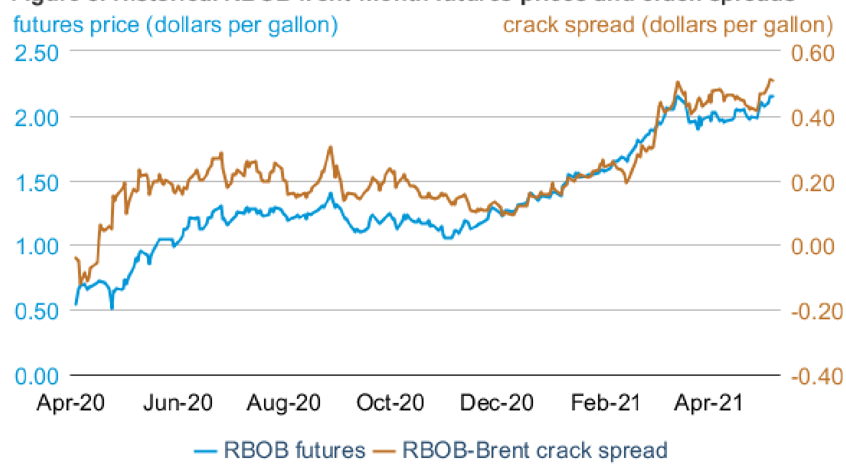
The Brent–WTI spread can reflect a wide range of factors, including the relative supply compared with demand for crude oils in their local markets—the U.S. Gulf Coast and Midwest for WTI and Northwest Europe for Brent. The spread also reflects the relative economics of shipping the two crude oils to refining markets around the world. The spread increased to more than $3/b on a monthly average basis beginning in January 2021. After averaging $3.38/b in

March, the April 2021 average Brent–WTI spread was $3.63/b, a $0.25/b monthly increase. Although the February weather events in U.S. producing regions appear to have increased volatility in the spread, the widening of the spread in March and April reflects both rising U.S. crude oil production and a longer-term widening of the spread since the fourth quarter of 2020. The spread between grades has widened each month, on average, since October 2020, after it narrowed to a monthly average of $1.68/b in October 2020, its lowest point since the pandemic began in early 2020.

Petroleum products

Gasoline prices: The front-month futures price of RBOB (the petroleum component of gasoline used in many parts of the country) settled at $2.11 per gallon (gal) on May 6, up 9 cents/gal from April 1 **(Figure 5)**. The RBOB–Brent crack spread (the difference between the price of RBOB and the price of Brent crude oil) increased by 1 cent/gal to settle at 49 cents/gal during the same period.

Figure 5. Historical RBOB front-month futures prices and crack spreads



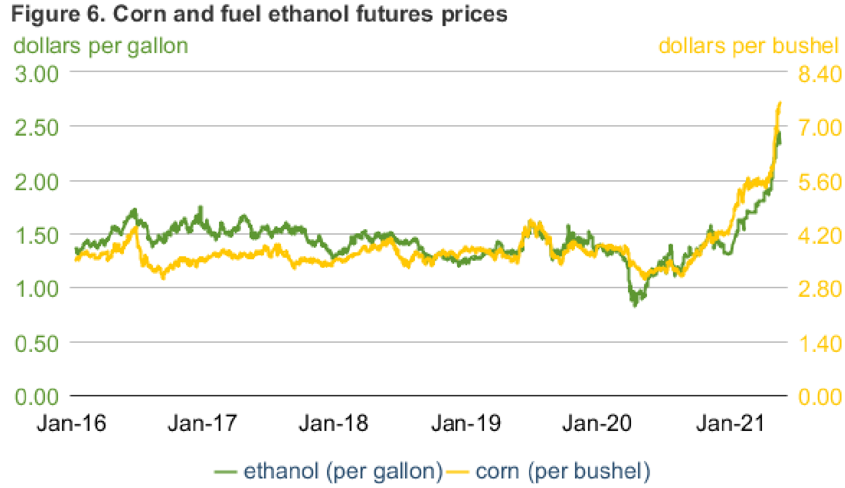
Source: CME Group, as compiled by Bloomberg L.P.
Note: RBOB is the petroleum component of gasoline used in many parts of the country.

The RBOB–Brent crack spread remains higher than average for this time of year, likely as a result of higher demand expectations, relatively low gasoline stocks, and higher ethanol costs. Gasoline stocks were relatively unchanged in April as the increase in consumption offset increases in production and net imports. We estimate the combined net imports of motor gasoline blending components and finished motor gasoline to be 173,000 b/d, which is higher than the five-year (2016–20) average, and we estimate production of 9.6 million b/d, the most on a monthly basis since February 2020. However, we also estimate that U.S. gasoline consumption increased to 8.8 million b/d in April, a 0.2 million b/d (2.3%) increase from March and the most gasoline consumption since February 2020. April's gasoline stocks ended the month 3% below the month's five-year (2016–20) average. We forecast that gasoline stocks will remain low through the rest of 2021 because of increased driving in upcoming months as a result of typical summer travel, higher numbers of people who are willing to travel as a result of increasing vaccination rates, and continued increases in employment.

Recently, record-high prices for Renewable Identification Number (RIN) credits have been another contributing factor to higher-than-average RBOB prices. RINs are the compliance mechanisms used for the Renewable Fuel Standard (RFS) program, which the U.S. Environmental Protection Agency (EPA) administers. In recent years, RIN prices have typically been at a level that only minimally affected RBOB prices. In recent months, however, RIN prices have increased sharply, resulting, in part, from uncertainty concerning Renewable Volume Obligations (RVO) for 2021 and increasing ethanol feedstock costs, which have led to higher ethanol prices relative to gasoline. The higher cost of RFS compliance for gasoline producers and importers as a result of higher RIN prices may pass through to affect RBOB prices.

Fuel ethanol and corn prices: The front-month futures price of fuel ethanol closed higher than $2.00/gal on April 14, 2021, for the first time since December 3, 2014. Fuel ethanol prices increased further throughout the remainder of April and settled at $2.34 on May 6, 2021, 23 cents/gal higher than the front-month RBOB contract **(Figure 6)**.

Figure 6. Corn and fuel ethanol futures prices



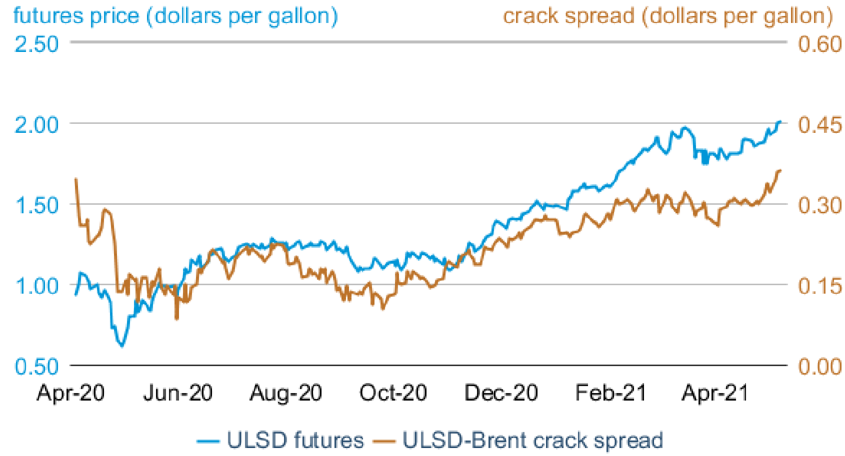
Source: CME Group, as compiled by Bloomberg L.P.
Note: About 2.8 bushels of corn go into each gallon of ethanol.

These higher fuel ethanol prices, which have contributed to higher RIN prices, are mostly the result of higher prices for corn, which is the feedstock for fuel ethanol. On May 6, the front-month futures price of corn closed at $7.60 per bushel, a 144% increase from $3.12 per bushel on the same day a year ago and its highest price since November 2012. Corn prices have been increasing, in part, because of factors unique to corn and grains, such as high demand in China, concerns of reduced supply in the United States as a result of cold weather in the Midwest, and lower production in Brazil as a result of hot and dry weather. Corn prices may also be increasing because of rising gasoline demand contributing to more demand for fuel ethanol blending and, therefore, more demand for corn as a feedstock.

Nevertheless, because some of the factors contributing to increased corn prices are separate from fuel ethanol demand, the fuel ethanol–corn crush spread (the difference between the price of fuel ethanol and the price of its corn inputs) has decreased and has been largely negative since November 2020. Before late 2020, the last time corn sold at a more-than 10 cent premium to fuel ethanol for at least 10 consecutive days was during the demand shock in March and April 2020. During that time, fuel ethanol production was disproportionately affected, falling by more than 45% in April 2020 compared with the previous year, but largely tracking decreases in motor gasoline demand. Whereas the negative economics of blending corn ethanol likely contributed to a decrease in fuel ethanol production in April 2020, RIN prices at that time were low. In 2021 however, some portion of the currently high RIN values is likely being captured by fuel ethanol producers to offset the high operating costs and support fuel ethanol production closer to typical seasonal levels compared with last year.

Ultra-low sulfur diesel prices: The front-month futures price for ultra-low sulfur diesel (ULSD) for delivery in New York Harbor settled at $1.99/gal on May 6, up 16 cents/gal from April 1 **(Figure 7)**. The ULSD–Brent crack spread (the difference between the price of ULSD and the price of Brent crude oil) increased 8 cents/gal, settling at 37 cents/gal during the same period.

Figure 7. Historical ULSD front-month futures prices and crack spreads



Source: CME Group, as compiled by Bloomberg L.P.
Note: ULSD=ultra-low sulfur diesel

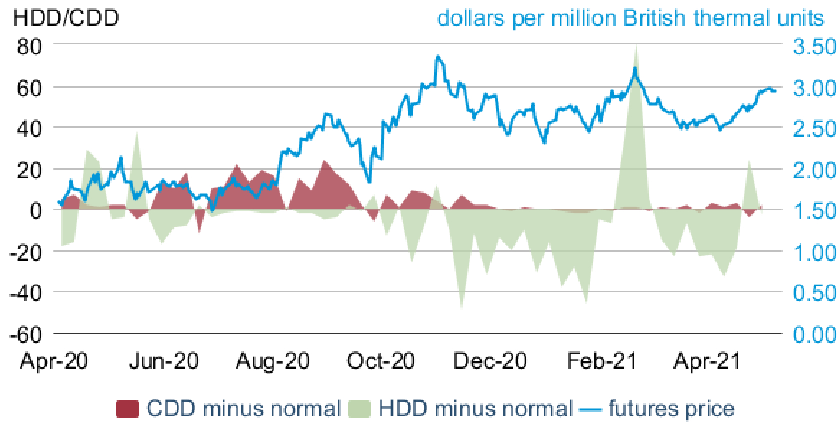
The ULSD–Brent crack spread increased in the first week of May to its highest level in more than a year because of increases in consumption and exports. We estimate that U.S. distillate consumption increased to almost 4.1 million b/d in April, which, if confirmed by monthly data, is the most U.S. distillate consumption since November 2019. The increase in demand is likely related to high freight demand, which we expect to continue as economic activity increases with improved vaccination and employment rates. We also estimate an increase in net exports during April to more than 0.8 million b/d, the most since September 2020, if confirmed by monthly data. The increases in U.S. consumption and exports contributed to a 9.5 million barrel (7%)

decrease in distillate stocks from March. This stock draw occurred despite an increase in distillate production.

Natural Gas

Prices: The front-month natural gas futures contract for delivery at the Henry Hub settled at \$2.93 per million British thermal units (MMBtu) on May 6, 2021, which was up 29 cents/MMBtu from April 1, 2021 **(Figure 8)**.

Figure 8. Natural gas front-month futures prices and actual minus historical average HDD and CDD

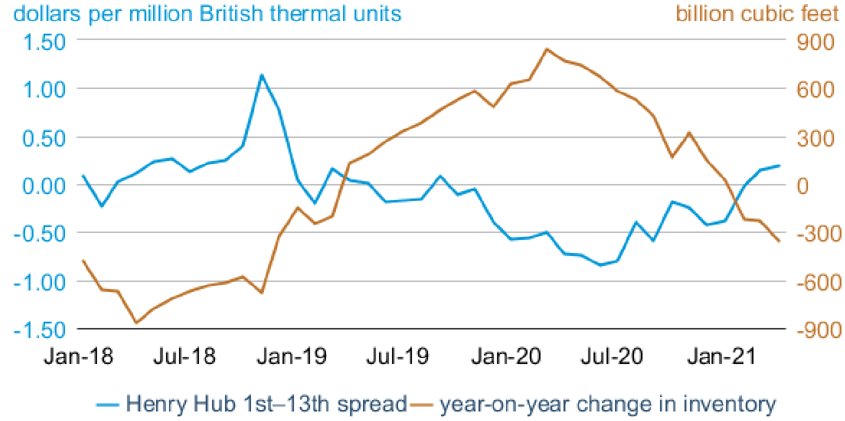


Sources: CME Group and National Oceanic and Atmospheric Administration, as compiled by Bloomberg L.P.
Note: HDD=heating degree days, CDD=cooling degree days.

The high levels of LNG exports have likely helped support natural gas prices. We estimate LNG exports of 9.2 million billion cubic feet per day (Bcf/d) in April, which is a decrease from the record 10.5 million Bcf/d of LNG exports in March but a 2.3 million Bcf/d (34%) increase from the previous 12-month average. April's natural gas stock builds were lower than the five-year (2016–20) average as a result of the high LNG exports, as well as lower production and seasonally-high consumption resulting from relatively cold temperatures during the week ending April 22.

Futures price spreads: The natural gas 1st–13th price spread averaged 19 cents per MMBtu in April, the highest backwardation (where near-term contract prices are higher than longer-dated ones) since December 2018 **(Figure 9)**. Often, the 1st–13th price spread increases when natural gas inventories decrease, and the price spread often decreases when inventories increase. For example, in June 2020, when inventories were 672 billion cubic feet (Bcf) greater than their year-ago levels, the 1st–13th price spread was decreasing and averaged -84 cents/MMBtu for the month. In April 2021, natural gas inventories ended the month 353 Bcf lower than in April 2020, mostly as a result of high heating demand and production outages in February as well as several months of high export demand. Inventory draws from December through March, including February's draw that was a record high for that month, have contributed to low natural gas inventories and generally increasing front-month price spreads.

Figure 9. Natural gas 1st–13th futures spread and year-on-year change in inventory



Source: CME Group, as complied by Bloomberg L.P.; U.S. Energy Information Administration
Note: Futures spreads are monthly averages.

We expect U.S. natural gas storage injections from April through October will be slightly less than, but close to, the five-year average injection rate for those months. In our forecast, natural gas inventories end October at 3,630 Bcf, which would be 122 Bcf (3%) less than the five-year average. We expect the slightly less-than-average storage injections to put some upward pressure on natural gas prices and that the third-quarter 2021 Henry Hub spot price will average $2.90/MMBtu as a result.

Notable forecast changes

- We increased our April and May U.S. gasoline consumption forecast by 140,000 b/d and 270,000 b/d, respectively. Overall, we revised up the summer (April–September) gasoline consumption forecast by 130,000 b/d from last month based on weekly data (which suggested gasoline consumption was higher than we had forecast) and IHS Markit's upward revision in the employment forecast.

- We forecast OPEC crude oil production will average 26.9 million b/d in 2021 and 28.5 million b/d in 2022, which are 0.2 million b/d and 0.4 million b/d higher, respectively, than last month's STEO. The higher forecast OPEC production mainly reflects our expectation that crude oil production in Iran will continue to increase, continuing the rising output trend that started in November 2020. Even though sanctions that target Iran's crude oil exports remain in place, crude oil exports from Iran have been rising since the end of 2020, driving up crude oil production.

- Our forecast are secondary coal inventories are lower by 26 MMst (22%) in 2021 and by 20 MMst (24%) in 2022 compared with our April forecast. Lower inventories reflect EIA's expectation that coal-fired electricity generation will increase at a faster rate than the forecast increase in coal production, which reflects a general decline in coal production capacity.