



Short-Term Energy Outlook

Forecast highlights

Global liquid fuels

- The September *Short-Term Energy Outlook* (STEO) remains subject to heightened levels of uncertainty related to the ongoing recovery from the COVID-19 pandemic. U.S. economic activity continues to rise after reaching multiyear lows in the second quarter of 2020 (2Q20). U.S. gross domestic product (GDP) declined by 3.4% in 2020 from 2019 levels. This STEO assumes U.S. GDP will grow by 6.0% in 2021 and by 4.4% 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. Any developments that would cause deviations from these assumptions would likely cause energy consumption and prices to deviate from our forecast.
- Brent crude oil spot prices averaged \$71 per barrel (b) in August, down \$4/b from July but up \$26/b from August 2020. Brent prices have risen over the past year as result of steady draws on global oil inventories, which averaged 1.8 million barrels per day (b/d) during the first half of 2021 (1H21). We expect Brent prices will remain near current levels for the remainder of 2021, averaging \$71/b during the fourth quarter of 2021 (4Q21). In 2022, we expect that growth in production from OPEC+, U.S. tight oil, and other non-OPEC countries will outpace slowing growth in global oil consumption and contribute to Brent prices declining to an annual average of \$66/b.
- More than 90% of crude oil production in the Federal Offshore Gulf of Mexico (GOM) was offline in late August following Hurricane Ida. As a result of the outage, GOM production averaged 1.5 million b/d in August, down 0.3 million b/d from July. We expect that crude oil production in the GOM will gradually come back online during September and average 1.2 million b/d for the month before returning to an average of 1.7 million b/d in 4Q21.
- Total U.S. crude oil production averaged 11.3 million b/d in June—the most recent [monthly historical data point](#). We forecast it will remain near that level through the end of 2021 before increasing to an average of 11.7 million b/d in 2022, driven by growth in onshore tight oil production. We expect growth will result from operators beginning to increase rig additions, offsetting production decline rates.

- We estimate that 98.4 million b/d of petroleum and liquid fuels was consumed globally in August, an increase of 5.7 million b/d from August 2020 but still 4.0 million b/d less than in August 2019. We forecast that global consumption of petroleum and liquid fuels will average 97.4 million b/d for all of 2021, which is a 5.0 million b/d increase from 2020, and by an additional 3.6 million b/d in 2022 to average 101.0 million b/d, almost even with 2019 levels.
- U.S. regular gasoline retail prices averaged \$3.16 per gallon (gal) in August, the [highest monthly average price since October 2014](#). Recent gasoline price increases reflect rising wholesale gasoline margins amid relatively low gasoline inventories. In addition, recent impacts from Hurricane Ida on several U.S. Gulf Coast refineries are adding upward price pressures in the near term. Estimated gasoline margins surpassed 70 cents/gal in late August. We expect margins will remain elevated in the coming weeks as refining operations as U.S. Gulf Coast remain disrupted. We forecast that retail gasoline prices will average \$3.14/gal in September before falling to \$2.91/gal, on average, in 4Q21. The expected drop in retail gasoline prices reflects our forecast that gasoline margins will decline from currently elevated levels, both as a result of rising refinery runs as operations return in the first half of September following Hurricane Ida and because of [typical seasonality](#).
- Propane net exports in our forecast average close to 1.2 million b/d for the remainder of 2021, reflecting elevated global demand for U.S. propane and reduced supply from other sources related to ongoing OPEC+ production cuts. In 1H22, we assume global production of propane and butanes will rise as OPEC+ countries increase crude oil production. We expect this increase will limit additional demand for U.S. propane exports, despite growing global propane demand, and keep U.S. net propane exports close to 1.2 million b/d in 2022.

Natural Gas

- In August, the natural gas spot price at Henry Hub averaged \$4.07 per million British thermal units (MMBtu), which is up from the July average of \$3.84/MMBtu. The August increase reflects hotter temperatures in August on average across the United States compared with July, which caused demand for natural gas in the electric power sector to be higher than expected. Prices rose further in late August when Hurricane Ida caused a decline in natural gas production in the GOM.
- Henry Hub spot prices in August were \$1.77/MMBtu higher than in August 2020. Steadily rising natural gas prices over the past year primarily reflects: growth in liquefied natural gas (LNG) exports, rising domestic natural gas consumption for sectors other than electric power, and relatively flat natural gas production. We expect the Henry Hub spot price will average \$4.00/MMBtu in 4Q21, as the factors that drove prices higher during August lessen. Forecast Henry Hub prices this winter reach a monthly average

peak of \$4.25/MMBtu in January and generally decline through 2022, averaging \$3.47/MMBtu for the year amid rising U.S. natural gas production and slowing growth in LNG exports.

- More than 90% of natural gas production in the GOM was offline in late August following Hurricane Ida. GOM production of marketed natural gas averaged 1.9 billion cubic feet per day (Bcf/d) in August, down 0.4 Bcf/d from July. We expect that natural gas production in the GOM will gradually come back online during the first half of September and average 1.5 Bcf/d for the month before returning to an average of 2.1 Bcf/d in 4Q21.
- We expect dry natural gas production will average 92.7 Bcf/d in the United States during 2H21—up from 91.7 Bcf/d in 1H21—and then rise to 95.4 Bcf/d in 2022, driven by natural gas and crude oil prices, which we expect to remain at levels that will support enough drilling to sustain production growth.
- We expect that U.S. consumption of natural gas will average 82.5 (Bcf/d) in 2021, down 0.9% from 2020. U.S. natural gas consumption declines in 2021, in part, because electric power generators switch to coal from natural gas as a result of higher natural gas prices. In 2021, we expect residential and commercial natural gas consumption combined will rise by 1.2 Bcf/d from 2020 and industrial consumption will rise by 0.6 Bcf/d from 2020. Rising natural gas consumption in sectors other than the electric power sector results from expanding economic activity and colder winter temperatures in 2021 compared with 2020. We expect U.S. natural gas consumption will average 82.6 Bcf/d in 2022, mostly unchanged from 2021.
- We estimate that U.S. natural gas inventories ended August 2021 at about 2.9 trillion cubic feet (Tcf), which is 7% lower than the five-year (2016–20) average for this time of year. [Injections into storage this summer have been below the previous five-year average](#), largely as a result of hot weather and high exports occurring amid relatively flat natural gas production. We forecast that inventories will end the 2021 injection season (end of October) at almost 3.6 Tcf, which would be 5% below the five-year average.

Electricity, coal, renewables, and emissions

- We expect the share of electricity generation produced by natural gas in the United States will average 35% in 2021 and 34% in 2022, down from 39% in 2020. In 2021, the forecast share for natural gas as a generation fuel declines in response to our expectation of a higher delivered natural gas price for electricity generators, which we forecast will average \$4.69/MMBtu in 2021 compared with \$2.39/MMBtu in 2020. The share of natural gas as a generation fuel also declines through 2022 because of expected increases in generation from renewable sources. As a result of the higher expected natural gas prices, the forecast share of electricity generation from coal rises from 20%

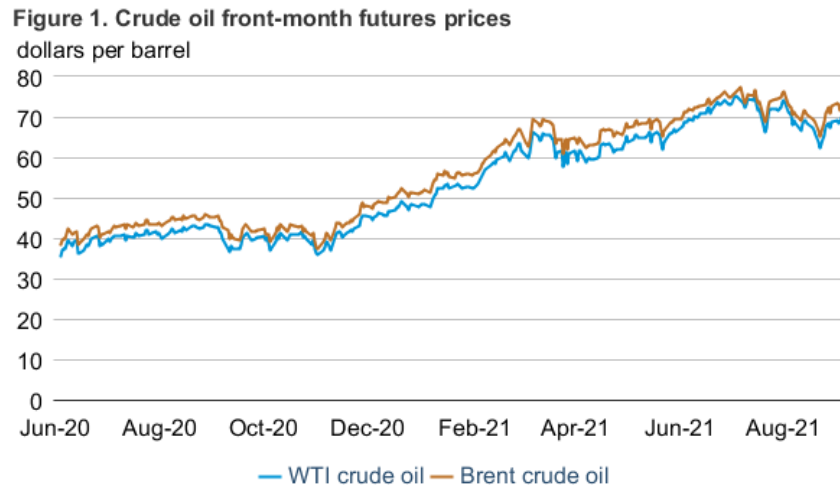
in 2020 to about 24% in both 2021 and 2022. New additions of solar and wind generating capacity are offset somewhat by reduced generation from hydropower this year, resulting in the forecast share of all renewables in U.S. electricity generation to average 20% in 2021, about the same as last year, before rising to 22% in 2022. The nuclear share of U.S. electricity 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 increase electricity generation from those sources. We estimate that the U.S. electric power sector added 14.7 gigawatts (GW) of [new wind capacity in 2020](#). We expect 17.6 GW of new wind capacity will come online in 2021 and 6.3 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 15.9 GW for 2021 and 16.3 GW for 2022. We expect significant [solar capacity additions in Texas](#) during the forecast period. In addition, we project that after increasing by 4.5 GW in 2020, small-scale solar capacity (systems less than 1 megawatt) will grow 5.8 GW and 5.7 GW in 2021 and 2022 respectively.
- Coal production in our forecast totals 601 million short tons (MMst) in 2021, 66 MMst more than in 2020. We expect demand for coal from the electric power sector to increase by 100 MMst in 2021 as a result of high natural gas prices, and coal exports to increase by 21 MMst. However, production is unlikely to match those increases in demand in the near term due to capacity constraints at coal mines and limited available transportation. In 2022, we expect coal production to increase by 47 MMst to 648 MMst, despite our forecast of declines in coal consumption, as the production and transportation constraints experienced in 2021 ease. Secondary inventories of coal at electric utilities decreased in 1H21, and we forecast this trend will continue into 2H21 and 2022.
- We estimate that U.S. energy-related carbon dioxide (CO₂) emissions [decreased by 11% in 2020](#) as a result of less energy consumption related to reduced economic activity and responses to COVID-19. For 2021, we forecast energy-related CO₂ emissions will increase about 8% from the 2020 level as economic activity increases and leads to rising energy use. We also expect energy-related CO₂ emissions to rise in 2022 but at a slower rate of 2%. We forecast that after declining by 19% in 2020, coal-related CO₂ emissions will rise by 22% in 2021 and then decrease by 2% in 2022. Short-term changes in energy-related CO₂ can be affected by temperature. A recent [STEO supplement](#) examines these dynamics.

Petroleum and natural gas markets review

Crude oil

Prices: The front-month futures price for Brent crude oil settled at \$73.03 per barrel (b) on September 2, 2021, up 14 cents/b from \$72.89/b on August 2. The front-month futures price for West Texas Intermediate (WTI) crude oil for delivery at Cushing, Oklahoma, decreased by \$1.27/b during the same period, settling at \$69.99/b on September 2 (**Figure 1**).



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

Brent and WTI prices both decreased in the first half of August. Increasing OPEC+ crude oil production and flattening global petroleum demand in response to rising COVID-19 cases contributed to the falling crude oil prices. Both benchmarks reached their low points of the month on August 20: Brent at \$65/b and WTI at \$62/b. Crude oil prices increased in the latter part of the month, and Brent prices are just above where they started August. On a monthly average basis, the Brent spot price in August decreased \$4/b compared with July. Although crude oil prices have been gradually increasing in the wake of the initial COVID-19-induced price decrease, August marks the fourth month since May 2020 in which the price has declined. This price decrease may reflect market concerns about the demand impacts of a possibly continuing COVID-19 pandemic and spread of the Delta variant.

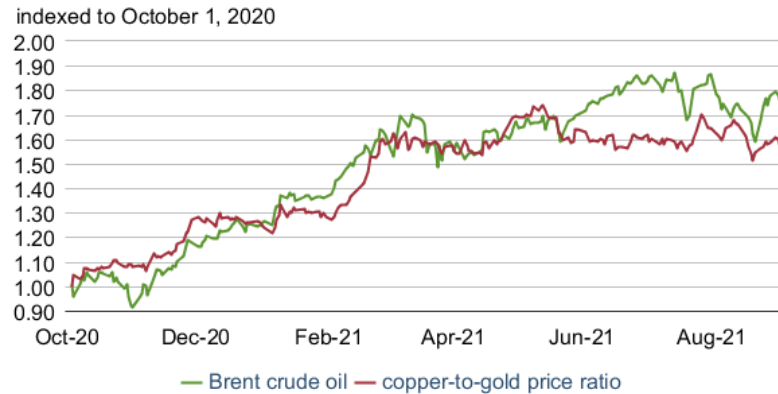
In the September STEO, our outlook for global oil markets is largely unchanged from last month, and we continue to expect Brent prices will average \$71/b in the fourth quarter of 2021 (4Q21) and \$66/b in 2022. One notable change is that we have revised global oil demand expectations down in 2021, accounting for reactions to the proliferation of the Delta variant. We decreased our oil demand expectations primarily in the middle months of 2021, and we reduced forecast global oil demand by an average of 0.5 million b/d in the 3Q21. We now expect global oil

demand to grow by 5.0 million b/d in 2021, down from expected growth of 5.3 million b/d in last month's forecast.

In the near term, the impact of Hurricane Ida on [U.S. offshore production](#), reported [incidents](#) at Mexican offshore facilities, and lower-than-expected production in several non-OPEC countries have contributed to lower crude oil production offsetting some of the price effects of lower-than-expected oil demand. How the market will continue to process news about further COVID-19 outbreaks, even in countries with rising numbers of vaccinated people, remains an important uncertainty in our forecast. The production decisions of OPEC+ given an evolving demand outlook will also be a key driver of oil price formation in the coming months. Our forecast assumes that OPEC+ will generally produce at a level that achieves a relatively balanced oil market.

Brent front-month price and copper-to-gold front-month price ratio: Lower crude oil prices in August reflect flattening global petroleum demand, likely driven by responses to rising COVID-19 cases and the spread of the Delta variant. The decline in global commodity prices was not limited to crude oil, however. The copper-to-gold ratio is a measure of the value of copper relative to the value of gold. Copper is a metal whose value increases during periods of growing industrial production and economic activity. Gold is a metal whose value can increase during periods of economic uncertainty or changes in inflation expectations. On August 19, the copper-to-gold ratio (indexed to October 1, 2020, the start of 4Q20) decreased to its lowest level since February 2021 (**Figure 2**). After rising mostly in tandem with crude oil prices through May 2021, the ratio weakened slightly over the summer, while crude oil prices continued rising through July. The weaker copper-to-gold ratio reflects lower global copper prices over the summer which declined primarily because of responses to rising COVID-19 cases globally. Unlike the copper-to-gold ratio, global crude oil prices were particularly elevated through the summer, reflecting sector-specific impacts on the global crude oil price that are unrelated to other commodities, such as the sustained OPEC+ crude oil production curtailment. However, the recent decreases in crude oil prices have brought its relative change compared to the beginning 4Q20 closer to the change in the copper-to-gold ratio, illustrating the role of macroeconomic demand factors in global commodities markets and the easing of the role of supply side factors that had supported crude oil prices earlier in the summer. Since the August 19 low point for both crude oil and the copper-to-gold ratio, positive reports of reduced COVID-19 cases in China and some other Asian countries have contributed to stronger expectations for global commodities demand, affecting both copper and oil prices.

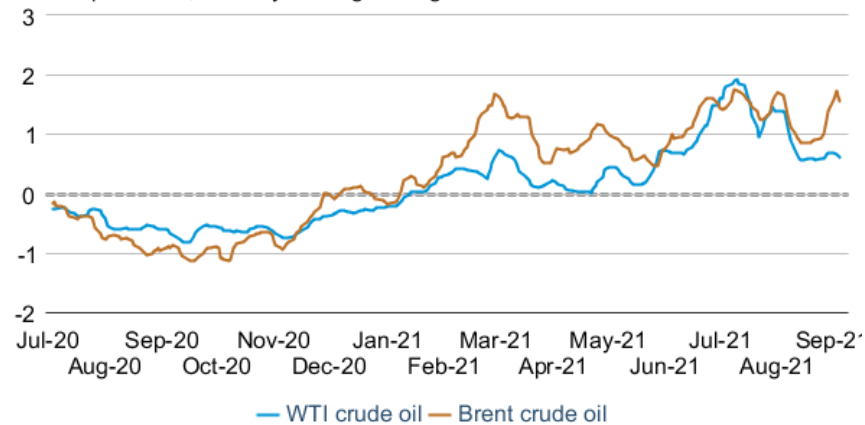
Figure 2. Brent front-month prices and copper-to-gold front-month price ratio



 CME Group and Intercontinental Exchange, as compiled by Bloomberg L.P.

Crude oil front-month to third-month futures price spread: On August 16, the five-day moving average spread between the front-month and third-month futures price for Brent crude oil fell to its lowest level since May 31, 2021 (**Figure 3**). Although concerns over rising COVID-19 cases introduced downward price pressure and increased volatility into the market in August, the sustained backwardation (when near-term prices are higher than longer-dated ones) in the 1-3 futures spreads indicate that the global petroleum complex is still relying on petroleum inventories to meet demand. High backwardation typically indicates market participants are selling crude oil from storage, resulting in stock draws. The spread for Brent averaged \$1.25/b in June and \$1.51/b in July, and rarely narrowed below \$1.30/b from mid-June through July. Global oil stocks draws from January through July averaged 1.7 million b/d, bolstered by draws of 2.7 million b/d in June. In August, the Brent 1-3 spread narrowed to less than 90 cents/b. Although the spread remained positive, the decrease likely reflected lower front-month crude oil prices due to temporarily lower demand expectations. We estimate net global stock draws in August were 1.6 million b/d, and we expect them to continue at 1.3 million b/d in September. In line with sustained inventory withdrawals, the Brent 1-3 spread widened back above \$1.00/b on August 25 and was \$1.56/b as of September 2. The WTI spread experienced a similarly rapid decline in mid-August, reaching its recent low of \$0.55/b on August 12, but unlike Brent, it has not increased as much later in the month and has remained below \$1.00/b as of September 2.

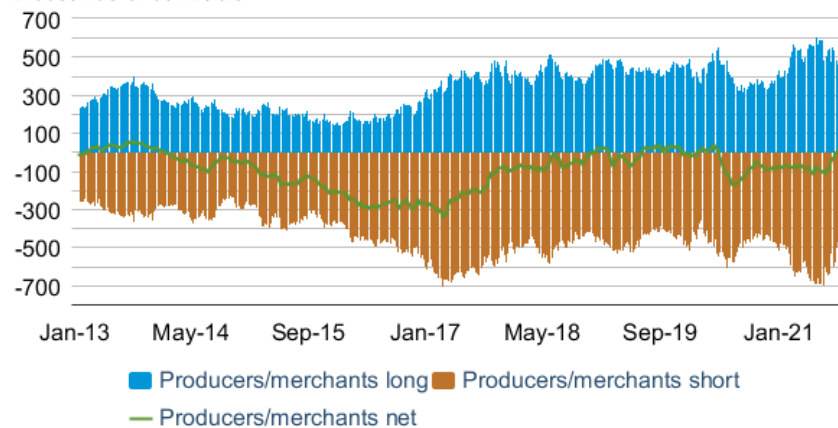
Figure 3. Crude oil front-month to third month futures price spread
dollars per barrel, five-day moving average



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

Producer/merchant open interest in WTI futures: Open interest in WTI futures by producers and merchants shifted to a net long position as of the August 24 Commitment of Traders report from the Commodity Futures Trading Commission (CFTC), and overall open interest from producers and merchants has decreased (**Figure 4**). The lower open interest reflects both an overall reduction in oil commodity futures trading by producers and merchants and a reduction in short positions. Producers and merchants is a CFTC category that include crude oil producers and refiners. These market participants often use futures as a means of financially hedging against crude oil price changes. The net producer/merchant position is often short.

Figure 4. Producer/merchant open interest in WTI futures contracts
thousands of contracts



Source: U.S. Commodity Futures Trading Commission, Commitment of Traders Report
Note: WTI=West Texas Intermediate

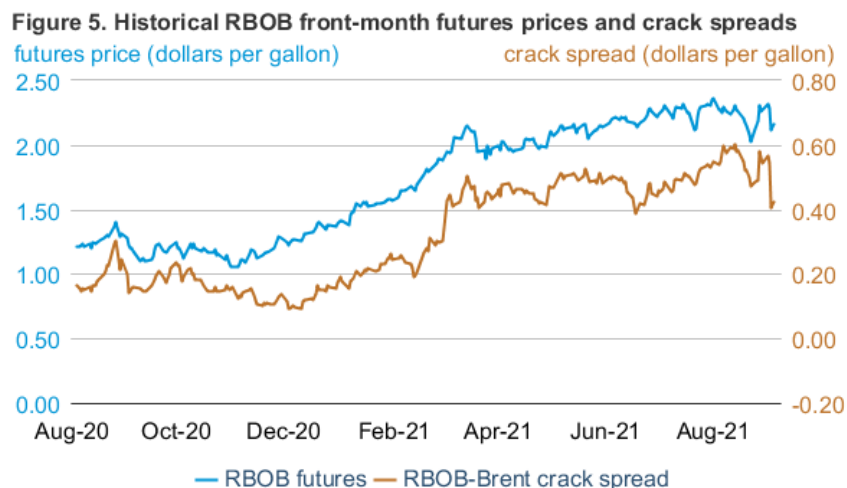
Reduced producer/merchant open interest may reflect an effort by certain upstream producers to reduce their hedged positions because of higher overall crude prices after experiencing particularly high financial losses on hedged crude oil production compared to unhedged barrels

in 1H21. Hedged crude oil can often account for relative losses compared to unhedged production when crude oil prices increase, because producers typically deploy hedges to mitigate downside price risks, but hedged barrels of crude oil do not benefit from any price increases. Because of relatively rapid price increases in 1H21, any barrels that producers hedged at a lower price point resulted in foregoing the benefits of crude oil's rapid price increases during that period.

Some upstream producers such as [Devon Energy](#), [Diamondback](#), and [Ovintiv](#) reported losses in their second-quarter financial filings because of hedging at around \$50/b. With WTI crude oil spot prices averaging \$66/b for the quarter, these companies reported losses on their hedged barrels, usually of around \$13/b compared with un-hedged barrels. We previously discussed the decreasing volume of net long positions by money managers in the [August STEO](#), and the decreasing availability of market participants with long positions corresponds with decreased volume of producer/merchant short positions, which had been above 600,000 contracts on a monthly average basis since January 2021, but have since decreased to about 415,000 contracts as of the August 24 report. Producer/merchant open interest in long positions has also decreased compared with earlier in the year, but the overall reduction in long contract volume has been relatively less, contributing to the shift in the net long contract volume to 25,000 contracts. The August 24 report also showed combined producer/merchant open interest had decreased to 856,000 contracts, its lowest volume so far in 2021.

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 \$2.16 per gallon (gal) on September 2, down 11 cents/gal from August 2 (**Figure 5**). The RBOB–Brent crack spread (the difference between the price of RBOB and the price of Brent crude oil) decreased by 11 cents/gal to settle at 42 cents/gal during the same period. The RBOB–Brent crack spread declined by 14 cents/gal on September 1 when the front-month RBOB contract rolled over to October delivery, which reflects winter grade gasoline that is cheaper for refineries to produce. In August, however, the RBOB–Brent crack spread averaged 55 cents/gal, the highest monthly average crack spread since July 2015.

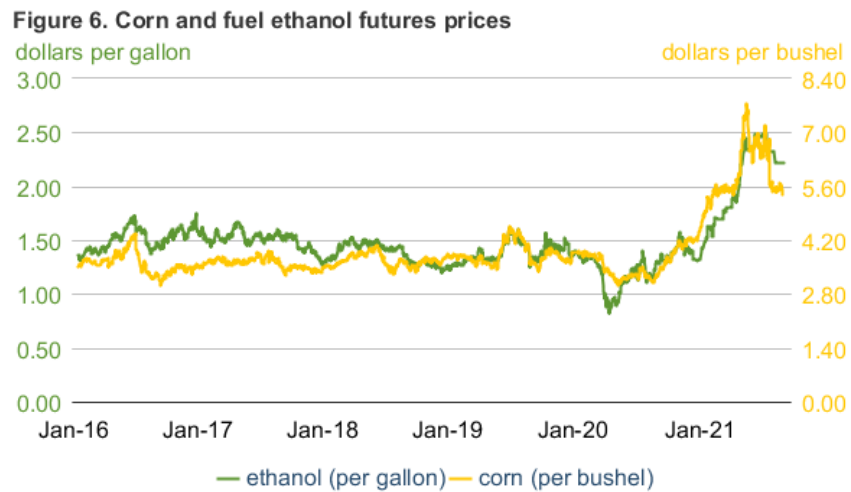


Source: Graph by EIA, based on data from CME Group, as compiled by Bloomberg L.P.
 Note: RBOB is the petroleum component of gasoline used in many parts of the country.

August’s high RBOB–Brent crack spread was likely a result of high summer driving demand, low gasoline stocks, refinery disruptions from Hurricane Ida, and relatively high ethanol costs. We estimate U.S. gasoline consumption averaged 9.4 million barrels per day (b/d) in August, which is 0.9 million b/d (10%) higher than in August 2020 but 0.4 million b/d (4%) lower than the August 2019 level. Several months of relatively high gasoline consumption during the summer driving months have combined with low gasoline production to contribute to low gasoline stocks. We estimate gasoline stocks ended August at 225.6 million barrels, the lowest end-of-August level since 2015. Furthermore, refinery disruptions from Hurricane Ida likely supported increased crack spreads at the end of August. The RBOB–Brent crack spread, which was 49 cents/gal on August 24, increased on August 25 and remained around 55 cents/gal through the end of the month. [At least nine refineries in Louisiana reduced or shut in operations](#) prior to Hurricane Ida, and we forecast refinery operations in the U.S. Gulf Coast will gradually restart operation over the first half of September. Because of the refinery disruptions, we expect monthly average refinery runs will be about 700,000 b/d lower in September than they would be without the disruptions. Lower refinery runs will likely contribute to continuing declines in gasoline stocks during September and support gasoline crack spreads in the coming weeks.

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. For most of the history of RFS, RIN prices have typically been at a level that only minimally affected RBOB prices. In late 2020 and 2021, however, RIN prices have been high in large part because of high biofuel feedstock costs. 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. Although RIN prices have decreased from their record highs in August, they still remain high relative to their average levels prior to 2021 and are likely still adding upward pressure to RBOB prices.

Fuel ethanol and corn prices: Corn and ethanol prices have decreased slightly since corn prices peaked at \$7.73 per bushel on May 7 and ethanol prices peaked at \$2.48/gal in late June. The front-month futures price of corn closed at \$5.16 per bushel on September 2, an increase of \$1.67 per bushel from September 2, 2020, but \$2.57 per bushel lower than the peak price on May 7. The front-month futures price of fuel ethanol settled at \$2.22/gal on September 2, 2021, an increase of 86 cents/gal from September 2, 2020, and 6 cents/gal higher than the front-month RBOB contract. The fuel ethanol–corn crush spread (the difference between the price of fuel ethanol and the price of its corn inputs) has been positive since mid-July after a few atypical months of [negative spreads](#) (Figure 6).

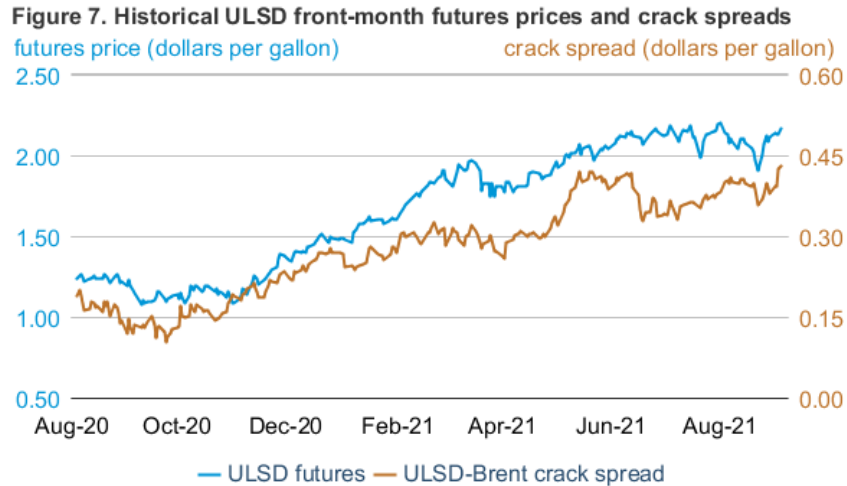


Source: CME Group, as compiled by Bloomberg L.P.
 Note: About 2.8 bushels of corn go into each gallon of ethanol.

The decrease in fuel ethanol prices is mostly the result of lower prices for corn, which is the feedstock for fuel ethanol. Corn prices increased in the first half of 2021 because of [high demand in China](#), concerns of low production as a result of cold weather in the Midwest, and a [La Niña](#) weather pattern that brought hot and dry weather, which is not ideal for corn production, to [major exporters](#) Brazil and Argentina. Corn prices have come down since June because of [increased planted acreage of corn](#) and [increased production forecasts](#) in the United States as well as [uncertain demand in Asia](#).

Ethanol prices have decreased by less than corn prices because ethanol is primarily used for gasoline blending and therefore ethanol prices are also tied to gasoline demand, [which has been relatively high](#). In addition, the uncertainty concerning RVO levels for 2021 has supported high RIN demand and ethanol prices. The fact that RBOB prices generally increased in July and August, despite lower ethanol prices and lower RIN prices in late August, suggests that gasoline inventory draws in August likely contributed to the crack spread increases seen in the second half of August.

Ultra-low sulfur diesel prices: The front-month futures price for ultra-low sulfur diesel (ULSD) for delivery in New York Harbor settled at \$2.17/gal on September 2, up 3 cents/gal from August 2 (**Figure 7**). The ULSD–Brent crack spread (the difference between the price of ULSD and the price of Brent crude oil) increased 3 cents/gal during the same period, settling at 43 cents/gal.



Source: Graph by EIA, based on data from CME Group, as compiled by Bloomberg L.P.
 Note: ULSD=ultra-low sulfur diesel

The average ULSD–Brent crack spread increased 3 cents/gal from July to 39 cents/gal in August as a result of higher distillate demand and low production. We estimate that distillate consumption increased by 0.3 million b/d (8%) from July to 4.10 million b/d in August. [High freight demand expectations](#) and [record congestion at Southern Californian ports](#) suggest that trucking and rail demand will remain high in the upcoming months before winter heating demand provides an additional increase in distillate demand. We forecast distillate demand to exceed 4 million b/d from October 2021 through June 2022.

We also estimate that distillate production in August fell to its lowest level for that month since 2012. Although a reduction in net exports of distillate partly offset the high distillate demand and low distillate production, distillate stocks decreased in August, a month in which distillate stocks typically build.

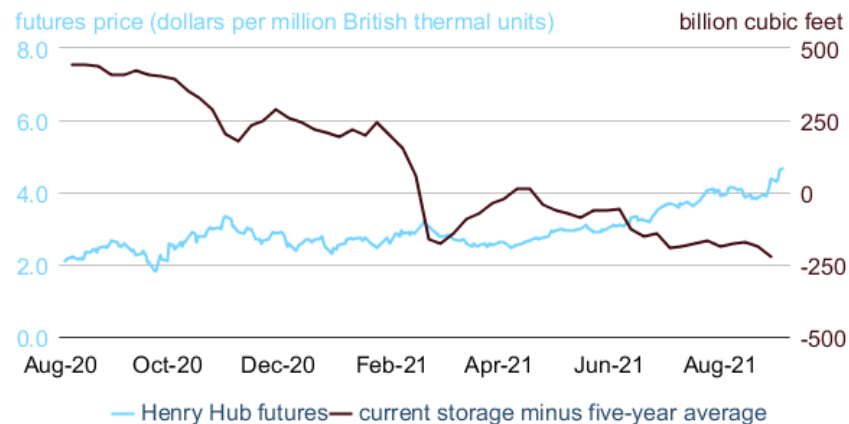
We expect distillate stocks to continue to decrease through November. The forecast decrease partly reflects Hurricane Ida’s refinery disruptions on the U.S. Gulf Coast and partly reflects our expectations of high distillate demand during the crop harvesting season. Low inventories and expectations of inventory draws through November are likely supporting current above-average distillate crack spreads.


Natural Gas

Prices: The front-month natural gas futures contract for delivery at the Henry Hub settled at \$4.64 per million British thermal units (MMBtu) on September 2, 2021, which was up 71

cents/MMBtu from August 2, 2021 (**Figure 9**). The average price for front-month natural gas futures contracts in August was \$4.03/MMBtu. August was warmer than normal, with 355 cooling degree days (CDD), 8.6% more than the 2011–2020 average. The United States this summer (June–August) had 3.9% more CDDs than the 2011–20 average. The hot weather this summer combined with [record exports of liquefied natural gas \(LNG\)](#) has contributed to month-on-month increases in the Henry Hub futures price since March 2021, leading to the highest August average since 2010. Further upward price pressures came from the arrival of Hurricane Ida, which resulted in more than 90% of offshore natural gas production in the Federal Offshore Gulf of Mexico being shut in during late August.

Figure 8. U.S. natural gas front-month futures prices and storage deviation from five-year average

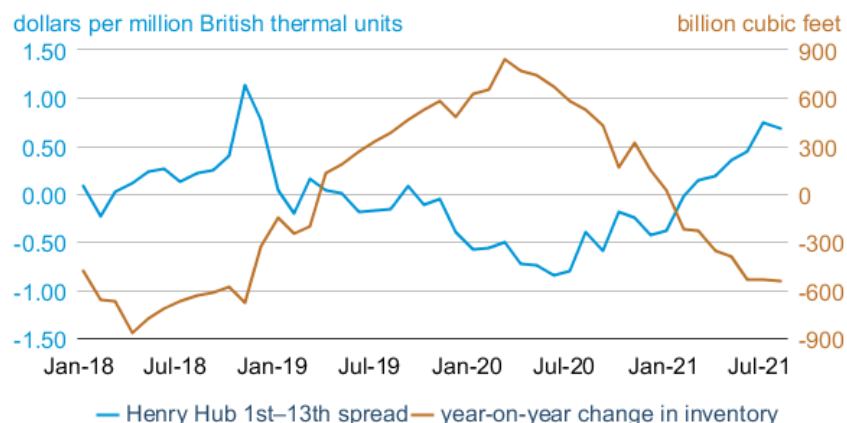


 Source: Graph by EIA, based on data from CME Group, as compiled by Bloomberg L.P.

The Henry Hub front-month futures price increased by 47 cents/MMBtu from \$3.90/MMBtu on August 25 to \$4.37/MMBtu on August 27, as Hurricane Ida approached the U.S. Gulf Coast, leading producers to evacuate personnel from offshore platforms and to shut in production. On August 27, the U.S. Bureau of Safety and Environmental Enforcement (BSEE) [began posting daily Gulf of Mexico hurricane impact updates](#), indicating that from August 27 to August 31, 9.3 billion cubic feet (Bcf), or 1.9 Bcf/d, of natural gas production was shut in. [As of September 2](#), 91.3% of GOM natural gas production remained shut in. Since the arrival of Hurricane Ida, natural gas prices have remained elevated, and they ended August at \$4.38/MMBtu.

Futures price spreads: The natural gas 1st–13th trading month price spread averaged 74 cents/MMBtu in July, the most backwardation (where near-term contract prices are higher than longer-dated ones) since December 2018 (**Figure 10**). In August, the natural gas 1st–13th month price spread averaged 70 cents/MMBtu. Typically, the 1st–13th price spread will increase when natural gas inventories decrease and will decrease when natural gas inventories increase. The August natural gas inventory level was 578 Bcf below last year’s August level, its largest year-on-year deficit since November 2018, and 222 Bcf below the 2016–2020 average.

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

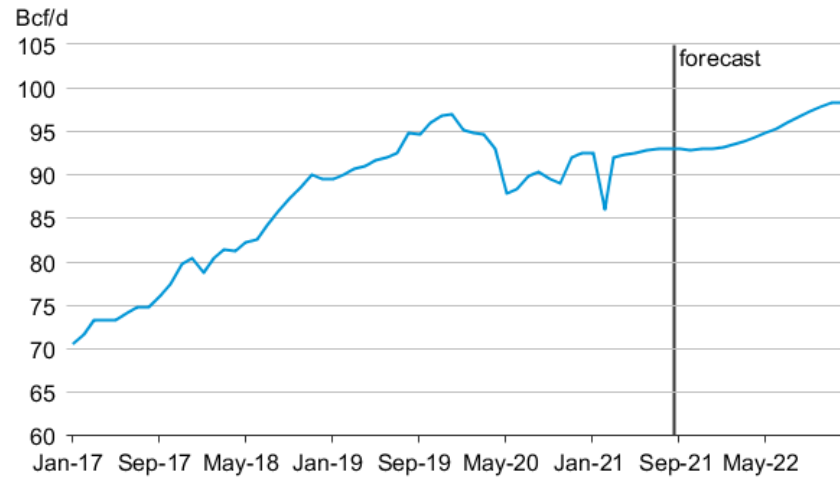


Source: CME Group, as compiled by Bloomberg L.P.; U.S. Energy Information Administration
 Note: Futures spreads are monthly averages.

Above-average withdrawals of U.S. natural gas from storage during the 2020–2021 winter heating season and below-average injections into storage this summer contributed to our forecast of below-average inventories of natural gas. Relatively flat dry natural gas production and high natural gas exports also contributed to the forecast low inventories. U.S. dry natural gas production and U.S. exports of natural gas (by pipeline and as LNG) were relatively flat from July to August. We expect storage to begin the winter heating season (November 1) at 3,570 Bcf, 182 Bcf below the 2016–2020 average and 359 Bcf below the 2020 level, when natural gas inventories were at near-record highs.

Production: U.S. dry natural gas production has been almost flat this year after its brief decline in February because of severely cold weather in Texas, and we expect production to remain relatively flat for the rest of 2021 (Figure 11). Although production has been increasing, the increase has been relatively small. We expect U.S. dry natural gas production in 2021 to average 92.2 Bcf/d, a 0.8 Bcf/d increase from 2020, compared with an annual average increase of 3.3 Bcf/d from 2011 through 2020. In our forecast, production increases accelerate in 2022, driven by the increase in Henry Hub prices this year. In 2022, we expect production to average 95.4 Bcf/d, an increase of 3.2 Bcf/d from 2021. The increase in production from 2021 to 2022 will put some downward pressure on the Henry Hub price, which we expect to average \$3.47/MMBtu next year, a decrease of 16 cents/MMBtu from the average forecast price for 2021.

Figure 10. U.S. dry natural gas production



eia U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021

Notable forecast changes

- In the September STEO, we revised our global liquid fuels consumption forecast down by 0.2 million barrels per day in both 2021 and 2022. The decreased consumption reflects a lower GDP forecast as well as expectations of lower consumption because of travel and other restrictions in response to increases in COVID-19 cases.
- We forecast OPEC crude oil production will average 26.4 million b/d in 2021, down 0.1 million b/d from the August STEO, reflecting our expectation that Iran's crude oil production will be lower in the second half of 2021 (2H21) than we previously expected. We expect OPEC to produce 28.3 million b/d in 2022, down 0.3 million b/d compared with the August STEO. The downward revision to supply growth is driven by lower global oil demand growth, and we expect some producers to continue to restrain output to maintain relatively balanced oil markets in 2022.
- We forecast Henry Hub spot prices will average \$4.00 per million British thermal unit (MMBtu) in 2H21, an increase of 41 cents/MMBtu from last month's STEO. Forecast prices average \$3.47/MMBtu in 2022, an increase of 39 cents from last month's STEO. The increase largely reflects a higher starting point for our price forecast.
- We forecast U.S. coal production to total 648 million short tons (MMst) in 2022, up 47 MMst (8%) from last month's STEO. Higher U.S. coal production in this forecast is the result of a 54 MMst increase in our forecast for electric power sector demand for coal in 2022.

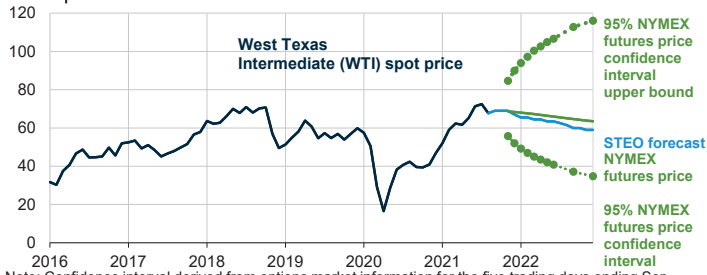
This report was prepared by the U.S. Energy Information Administration (EIA), the statistical and analytical agency within the U.S. Department of Energy. By law, EIA's data, analyses, and forecasts are independent of approval by any other officer or employee of the U.S. Government. The views in this report therefore should not be construed as representing those of the U.S. Department of Energy or other federal agencies.

Short-Term Energy Outlook Chart Gallery



September 8, 2021

West Texas Intermediate (WTI) crude oil price and NYMEX confidence intervals
dollars per barrel

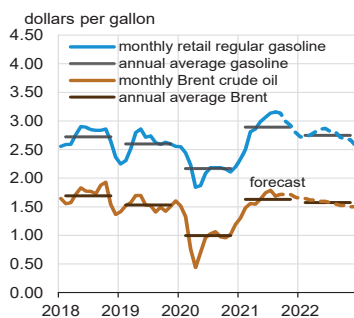


Note: Confidence interval derived from options market information for the five trading days ending Sep 2, 2021. Intervals not calculated for months with sparse trading in near-the-money options contracts.

Sources: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021, CME Group, Bloomberg, L.P., and Refinitiv an LSEG Business



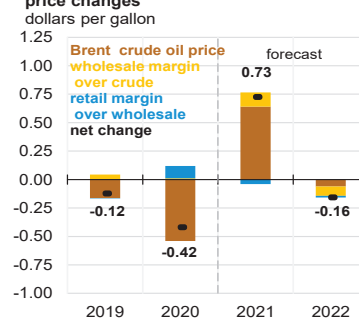
U.S. gasoline and crude oil prices



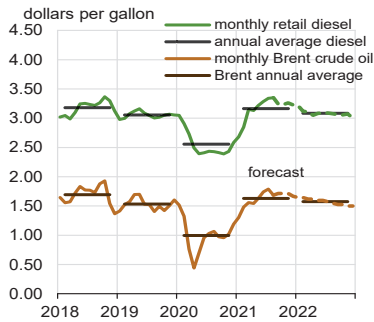
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021, and Refinitiv an LSEG Business



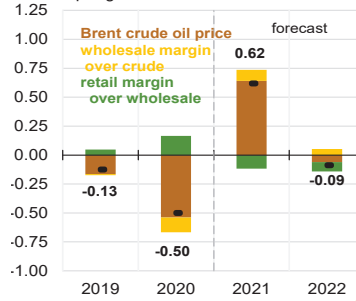
Components of annual gasoline price changes



U.S. diesel and crude oil prices



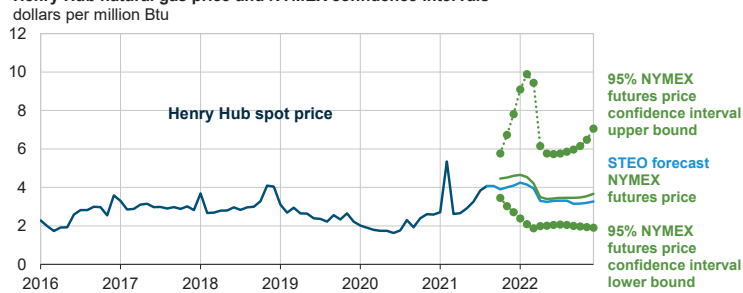
Components of annual diesel prices changes



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021, and Refinitiv an LSEG Business



Henry Hub natural gas price and NYMEX confidence intervals

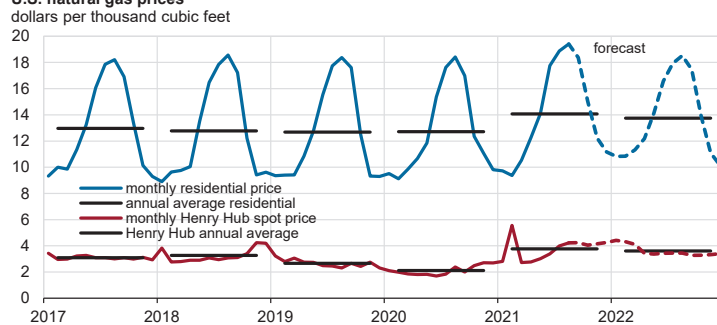


Note: Confidence interval derived from options market information for the five trading days ending Sep 2, 2021. Intervals not calculated for months with sparse trading in near-the-money options contracts.

Sources: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021, CME Group, and Refinitiv an LSEG Business



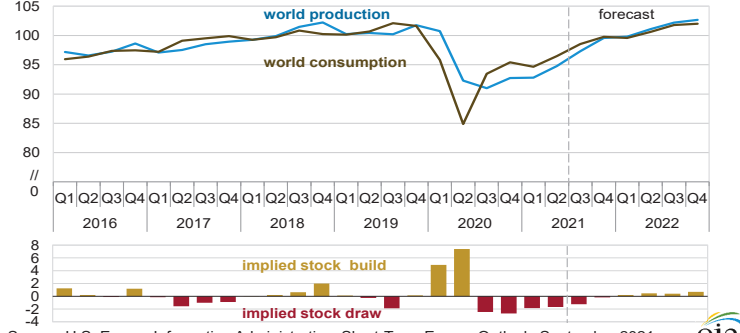
U.S. natural gas prices



Sources: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021, and Refinitiv an LSEG Business



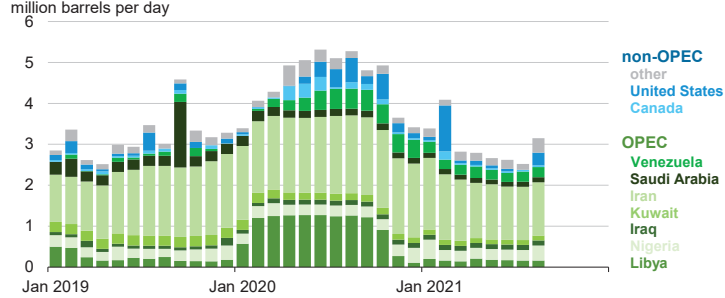
World liquid fuels production and consumption balance
million barrels per day



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



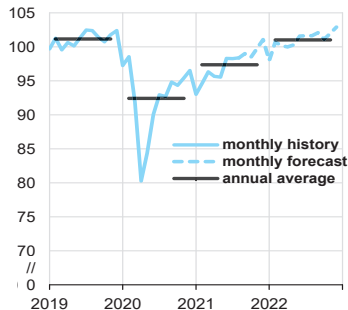
Estimated unplanned liquid fuels production outages among OPEC and non-OPEC producers
million barrels per day



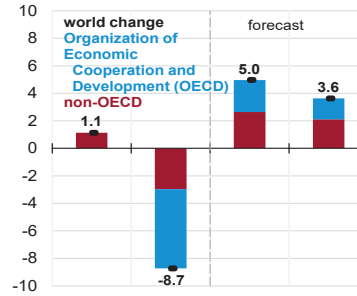
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



World liquid fuels consumption
million barrels per day



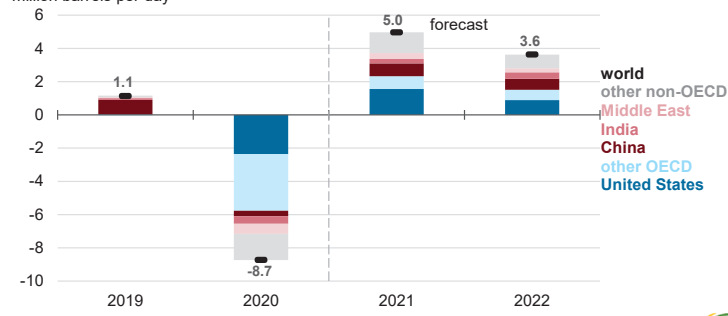
Components of annual change
million barrels per day



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



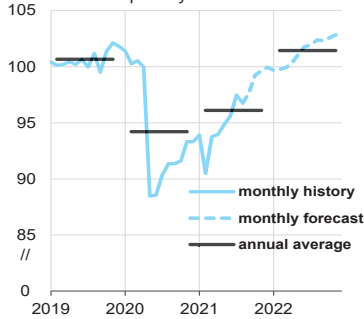
Annual change in world liquid fuels consumption
million barrels per day



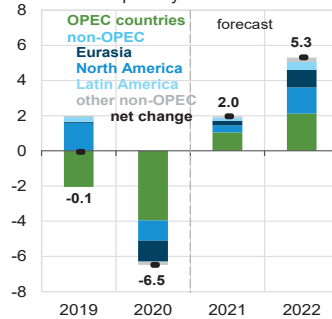
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



World crude oil and liquid fuels production
million barrels per day



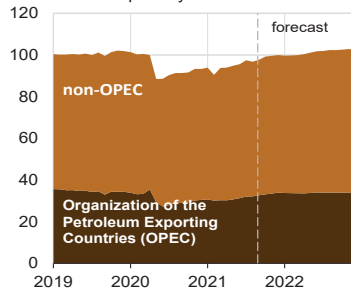
Components of annual change
million barrels per day



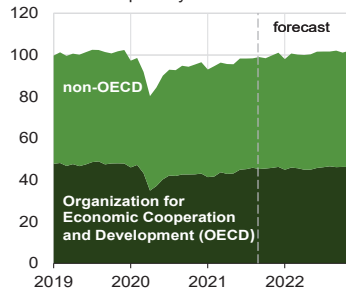
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



World liquid fuels production
million barrels per day



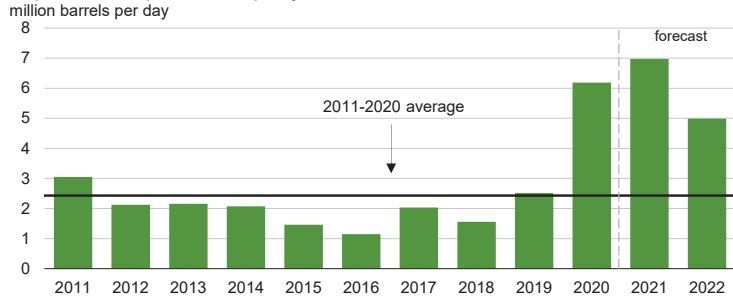
World liquid fuels consumption
million barrels per day



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



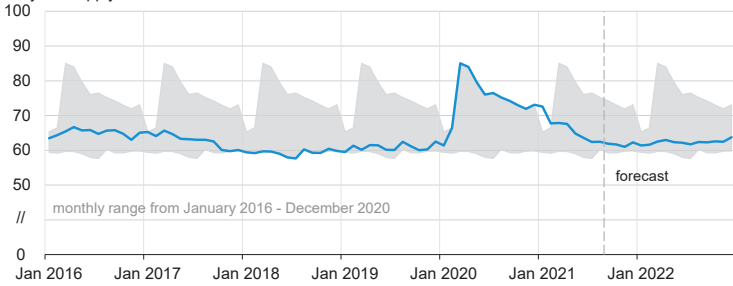
**Organization of the Petroleum Exporting Countries (OPEC)
surplus crude oil production capacity**



Note: Black line represents 2011-2020 average (2.4 million barrels per day).
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



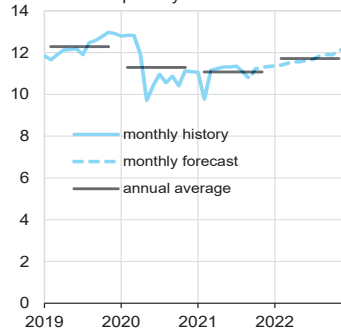
**Organization for Economic Cooperation and Development (OECD)
commercial inventories of crude oil and other liquids**



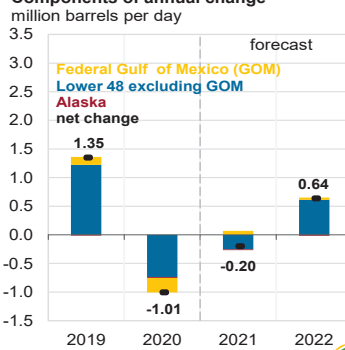
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



U.S. crude oil production



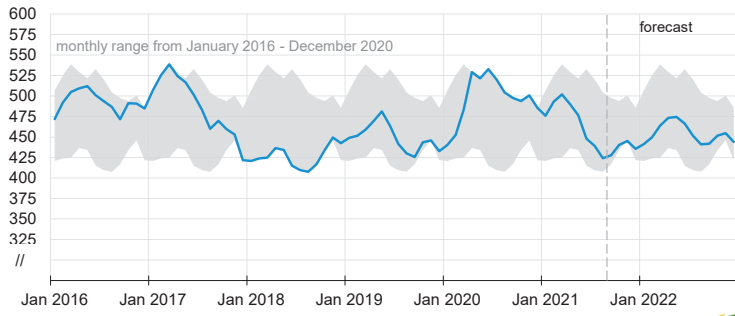
Components of annual change



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



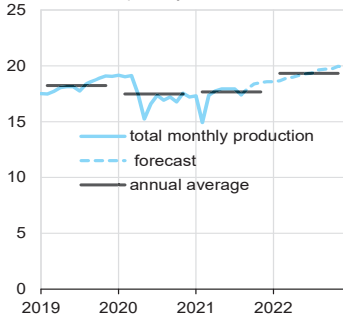
U.S. commercial crude oil inventories
million barrels



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



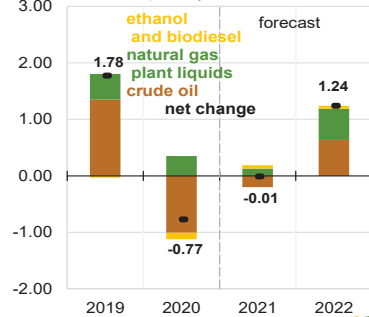
U.S. crude oil and liquid fuels production
million barrels per day



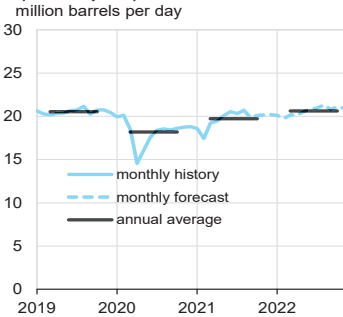
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September



Components of annual change
million barrels per day



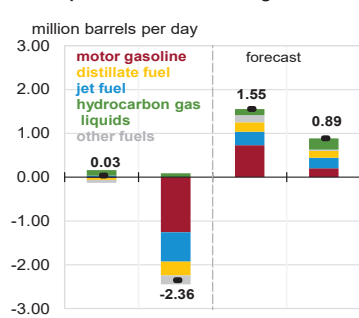
U.S. liquid fuels product supplied (consumption)
million barrels per day



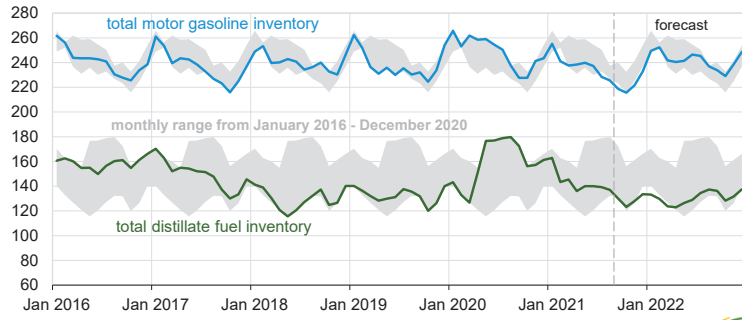
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



Components of annual change
million barrels per day



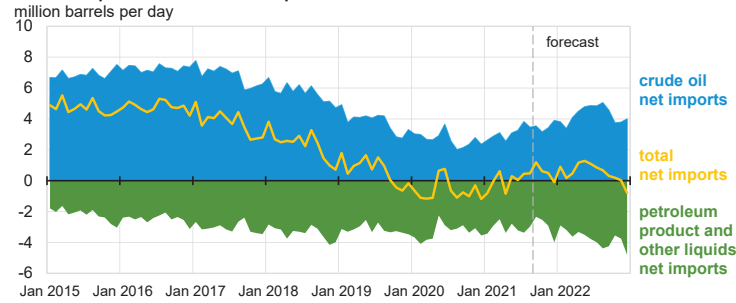
U.S. gasoline and distillate inventories
million barrels



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



U.S. net imports of crude oil and liquid fuels

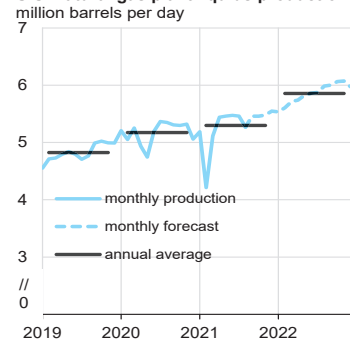


Note: Petroleum product and other liquids include: gasoline, distillate fuels, hydrocarbon gas liquids, jet fuel, residual fuel oil, unfinished oils, other hydrocarbons/oxygenates, and other oils.

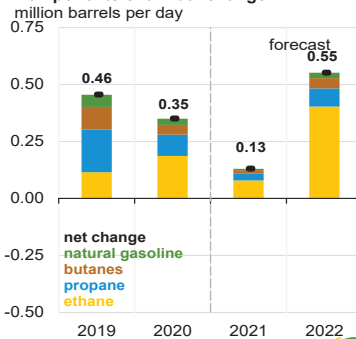
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



U.S. natural gas plant liquids production



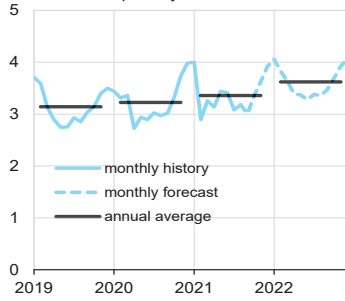
Components of annual change



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021

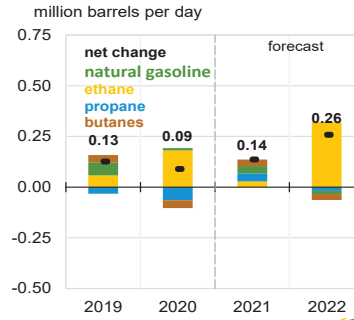


U.S. hydrocarbon gas liquids product supplied (consumption)
million barrels per day

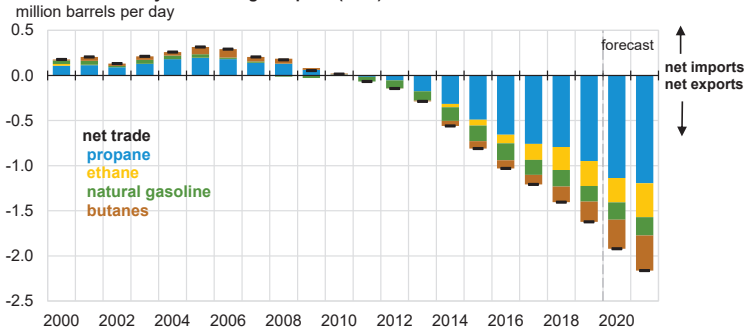


Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021

Components of annual change



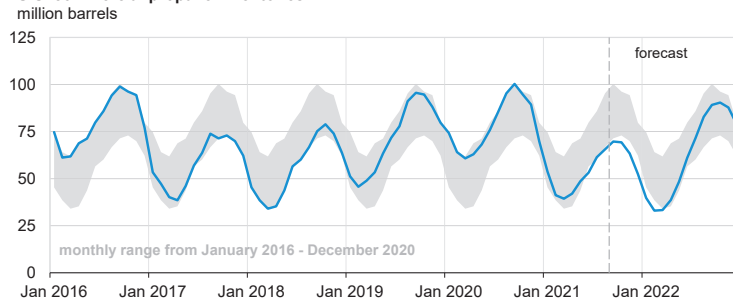
U.S. net trade of hydrocarbon gas liquids (HGL)



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



U.S. commercial propane inventories

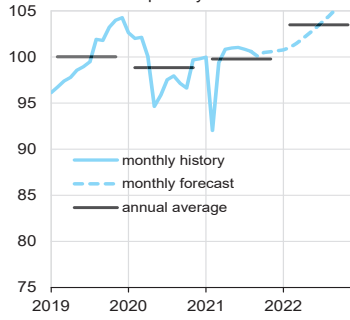


Note: Excludes propylene.

Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



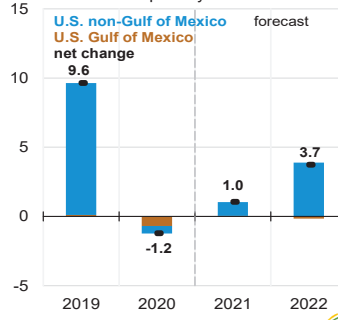
U.S. marketed natural gas production
billion cubic feet per day



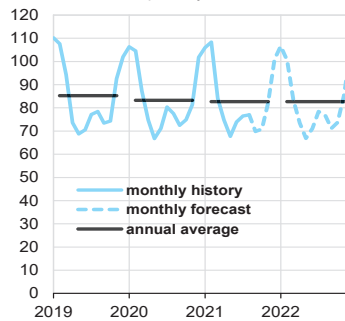
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



Components of annual change
billion cubic feet per day



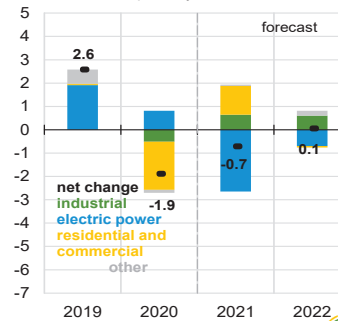
U.S. natural gas consumption
billion cubic feet per day



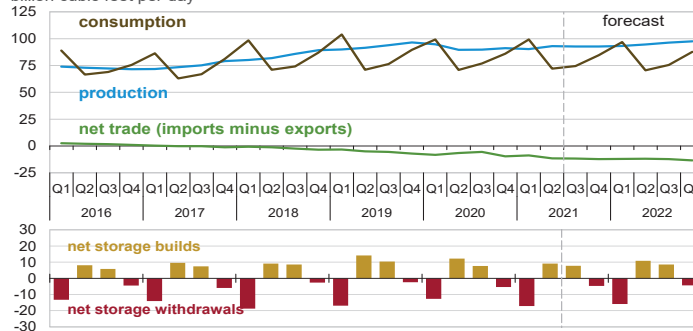
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



Components of annual change
billion cubic feet per day



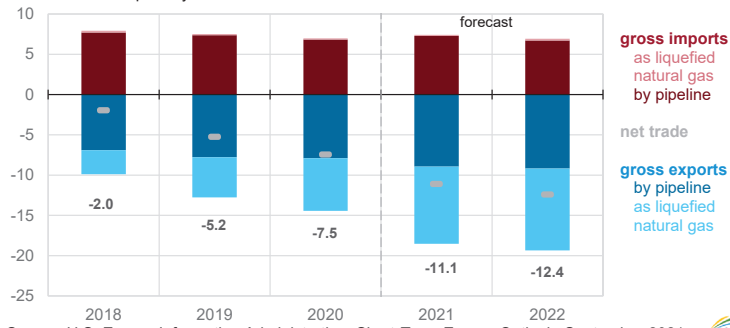
U.S. natural gas production, consumption, and net imports
billion cubic feet per day



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



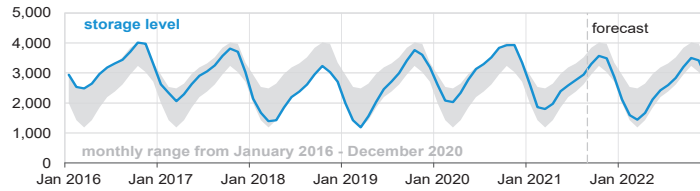
U.S. annual natural gas trade
billion cubic feet per day



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



U.S. working natural gas in storage
billion cubic feet



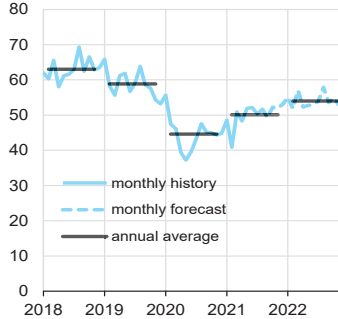
Percent deviation from 2016 - 2020 average



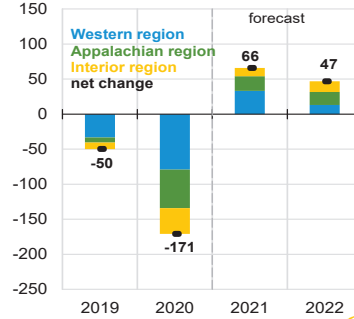
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



U.S. coal production
million short tons



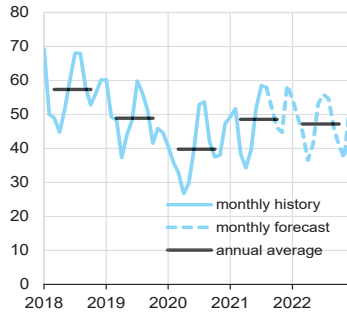
Components of annual change
million short tons



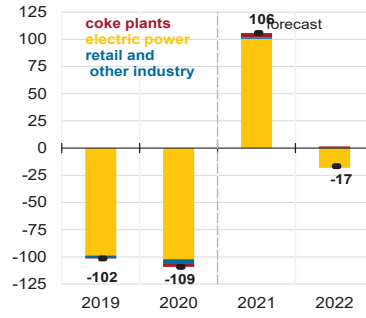
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



U.S. coal consumption
million short tons



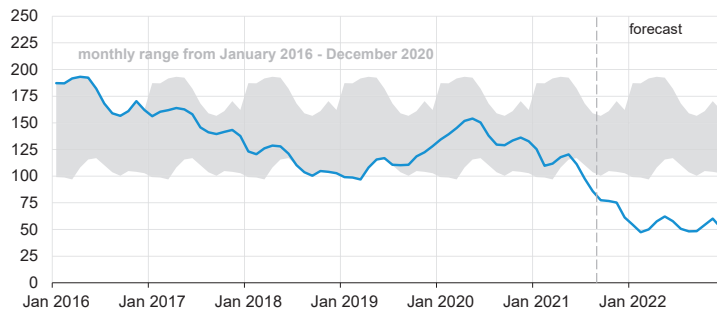
Components of annual change
million short tons



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



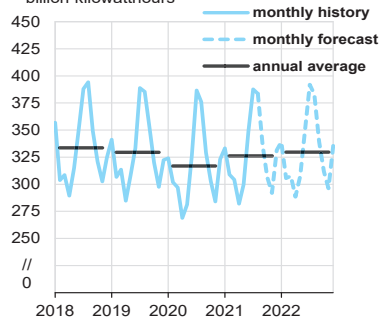
U.S. electric power coal inventories
million short tons



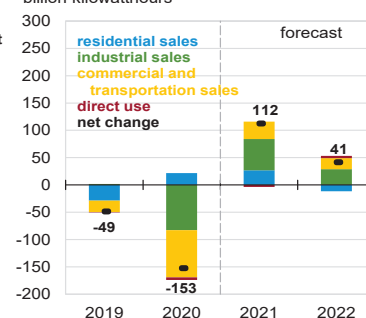
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



U.S. electricity consumption
billion kilowatthours



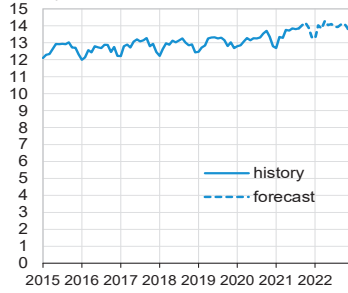
Components of annual change
billion kilowatthours



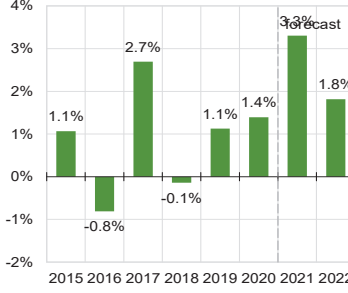
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



U.S. monthly nominal residential electricity price
cents per kilowatthour



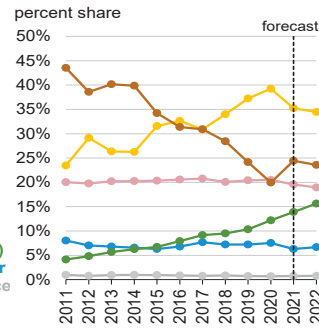
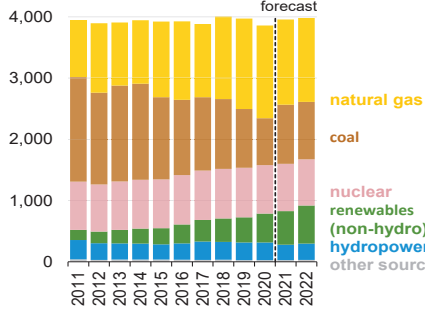
Annual growth in nominal residential electricity prices
percent



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



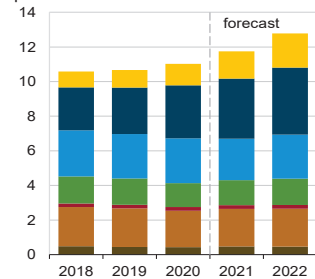
U.S. electricity generation by fuel, all sectors
billion kilowatthours



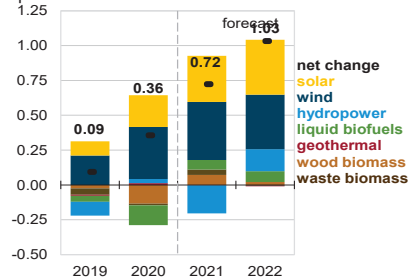
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



U.S. renewable energy supply
quadrillion British thermal units



Components of annual change
quadrillion British thermal units

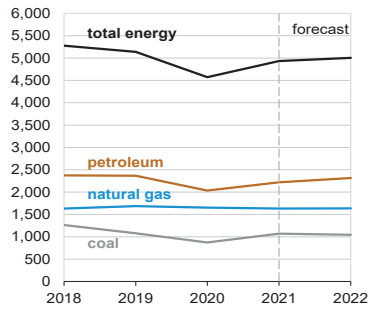


Note: Hydropower excludes pumped storage generation. Liquid biofuels include ethanol and biodiesel. Other biomass includes municipal waste from biogenic sources, landfill gas, and other non-wood waste.

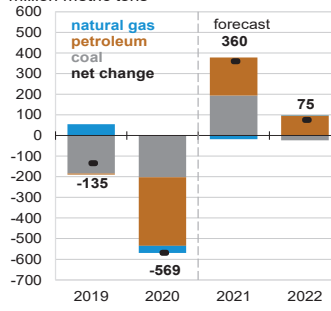
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



U.S. annual CO2 emissions by source
million metric tons



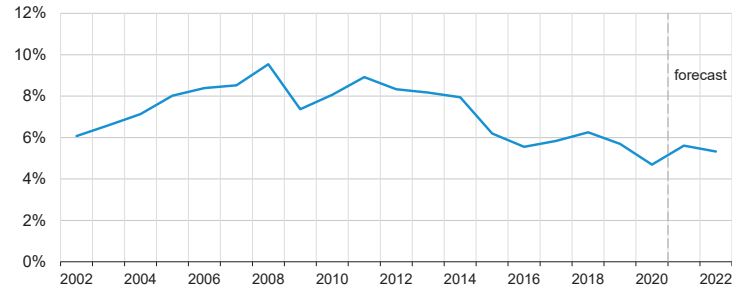
Components of annual change
million metric tons



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



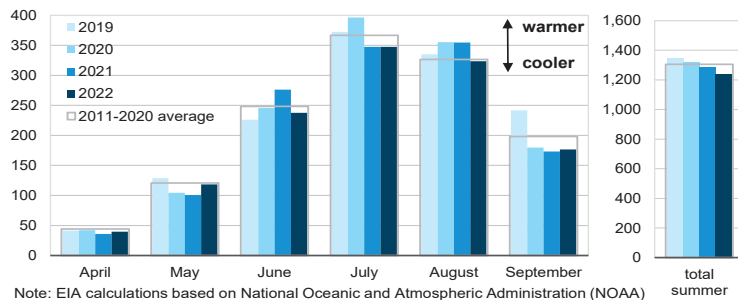
U.S. annual energy expenditures
share of gross domestic product



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



U.S. summer cooling degree days
population-weighted

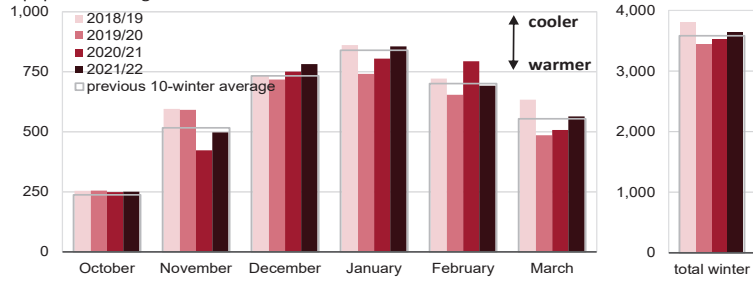


Note: EIA calculations based on National Oceanic and Atmospheric Administration (NOAA) data. Projections reflect NOAA's 14-16 month outlook.

Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



U.S. winter heating degree days
population-weighted

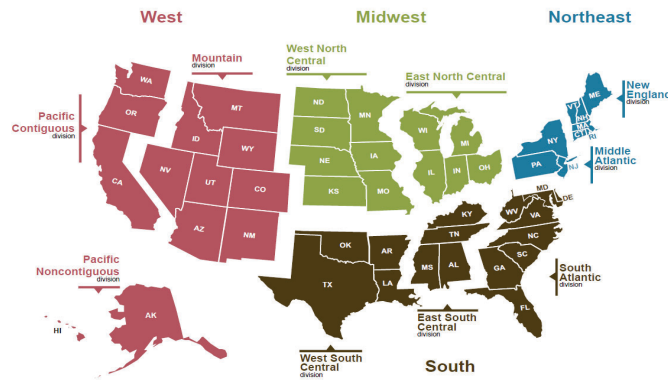


Note: EIA calculations based on National Oceanic and Atmospheric Administration (NOAA) data. Projections reflect NOAA's 14-16 month outlook.

Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2021



U.S. Census regions and divisions



Source: U.S. Energy Information Administration, Short-Term Energy Outlook



Table 1. U.S. Energy Markets Summary

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
Energy Supply															
Crude Oil Production (a) (million barrels per day)	12.81	10.67	10.79	10.87	10.69	11.28	<i>11.06</i>	<i>11.28</i>	<i>11.42</i>	<i>11.58</i>	<i>11.81</i>	<i>12.06</i>	11.28	<i>11.08</i>	<i>11.72</i>
Dry Natural Gas Production (billion cubic feet per day)	94.80	89.68	89.83	91.15	90.30	93.05	<i>92.64</i>	<i>92.70</i>	<i>93.17</i>	<i>94.54</i>	<i>96.25</i>	<i>97.59</i>	91.36	<i>92.18</i>	<i>95.40</i>
Coal Production (million short tons)	149	116	136	134	140	152	<i>151</i>	<i>157</i>	<i>164</i>	<i>158</i>	<i>165</i>	<i>161</i>	535	<i>601</i>	<i>648</i>
Energy Consumption															
Liquid Fuels (million barrels per day)	19.50	16.07	18.45	18.72	18.45	20.03	<i>20.30</i>	<i>20.15</i>	<i>20.01</i>	<i>20.51</i>	<i>21.02</i>	<i>20.94</i>	18.19	<i>19.74</i>	<i>20.63</i>
Natural Gas (billion cubic feet per day)	99.31	70.84	76.83	86.08	99.20	72.12	<i>74.48</i>	<i>84.62</i>	<i>96.77</i>	<i>70.44</i>	<i>75.55</i>	<i>87.80</i>	83.25	<i>82.54</i>	<i>82.60</i>
Coal (b) (million short tons)	110	96	149	123	139	126	<i>168</i>	<i>150</i>	<i>149</i>	<i>131</i>	<i>157</i>	<i>130</i>	477	<i>583</i>	<i>566</i>
Electricity (billion kilowatt hours per day)	10.14	9.64	11.87	9.89	10.52	10.22	<i>12.04</i>	<i>10.11</i>	<i>10.58</i>	<i>10.39</i>	<i>12.11</i>	<i>10.26</i>	10.39	<i>10.72</i>	<i>10.84</i>
Renewables (c) (quadrillion Btu)	2.92	3.00	2.83	2.91	2.95	3.17	<i>3.11</i>	<i>3.20</i>	<i>3.34</i>	<i>3.51</i>	<i>3.31</i>	<i>3.33</i>	11.66	<i>12.43</i>	<i>13.49</i>
Total Energy Consumption (d) (quadrillion Btu)	25.10	20.63	23.42	23.79	25.04	23.09	<i>24.42</i>	<i>24.77</i>	<i>25.57</i>	<i>23.41</i>	<i>24.71</i>	<i>25.14</i>	92.94	<i>97.32</i>	<i>98.84</i>
Energy Prices															
Crude Oil West Texas Intermediate Spot (dollars per barrel)	45.34	27.96	40.89	42.50	58.09	66.19	<i>69.75</i>	<i>68.29</i>	<i>65.13</i>	<i>63.82</i>	<i>61.32</i>	<i>59.33</i>	39.17	<i>65.69</i>	<i>62.37</i>
Natural Gas Henry Hub Spot (dollars per million Btu)	1.91	1.71	2.00	2.53	3.56	2.94	<i>4.00</i>	<i>4.00</i>	<i>4.12</i>	<i>3.28</i>	<i>3.26</i>	<i>3.21</i>	2.03	<i>3.63</i>	<i>3.47</i>
Coal (dollars per million Btu)	1.93	1.91	1.93	1.92	1.91	1.92	<i>1.98</i>	<i>1.99</i>	<i>2.02</i>	<i>2.02</i>	<i>1.99</i>	<i>1.96</i>	1.92	<i>1.95</i>	<i>2.00</i>
Macroeconomic															
Real Gross Domestic Product (billion chained 2012 dollars - SAAR)	18,952	17,258	18,561	18,768	19,056	19,358	<i>19,643</i>	<i>19,914</i>	<i>20,149</i>	<i>20,290</i>	<i>20,417</i>	<i>20,533</i>	18,385	<i>19,493</i>	<i>20,347</i>
Percent change from prior year	0.6	-9.1	-2.9	-2.3	0.5	12.2	<i>5.8</i>	<i>6.1</i>	<i>5.7</i>	<i>4.8</i>	<i>3.9</i>	<i>3.1</i>	-3.4	<i>6.0</i>	<i>4.4</i>
GDP Implicit Price Deflator (Index, 2012=100)	113.4	113.0	114.0	114.6	115.8	117.5	<i>118.7</i>	<i>119.6</i>	<i>120.1</i>	<i>120.6</i>	<i>121.0</i>	<i>121.6</i>	113.7	<i>117.9</i>	<i>120.8</i>
Percent change from prior year	1.7	0.7	1.3	1.5	2.1	4.0	<i>4.2</i>	<i>4.3</i>	<i>3.7</i>	<i>2.6</i>	<i>1.9</i>	<i>1.7</i>	1.3	<i>3.7</i>	<i>2.5</i>
Real Disposable Personal Income (billion chained 2012 dollars - SAAR)	14,963	16,520	15,783	15,443	17,301	15,797	<i>15,514</i>	<i>15,394</i>	<i>15,418</i>	<i>15,561</i>	<i>15,694</i>	<i>15,766</i>	15,677	<i>16,002</i>	<i>15,610</i>
Percent change from prior year	1.6	12.5	6.9	4.0	15.6	-4.4	<i>-1.7</i>	<i>-0.3</i>	<i>-10.9</i>	<i>-1.5</i>	<i>1.2</i>	<i>2.4</i>	6.2	<i>2.1</i>	<i>-2.4</i>
Manufacturing Production Index (Index, 2017=100)	97.6	84.2	94.2	96.7	97.3	98.6	<i>100.4</i>	<i>101.7</i>	<i>103.4</i>	<i>104.5</i>	<i>105.2</i>	<i>105.9</i>	93.2	<i>99.5</i>	<i>104.7</i>
Percent change from prior year	-2.7	-15.3	-5.2	-2.4	-0.3	17.1	<i>6.6</i>	<i>5.2</i>	<i>6.2</i>	<i>5.9</i>	<i>4.8</i>	<i>4.1</i>	-6.4	<i>6.8</i>	<i>5.2</i>
Weather															
U.S. Heating Degree-Days	1,881	544	71	1,422	2,107	473	<i>68</i>	<i>1,530</i>	<i>2,113</i>	<i>488</i>	<i>77</i>	<i>1,525</i>	3,918	<i>4,178</i>	<i>4,202</i>
U.S. Cooling Degree-Days	69	392	931	120	49	413	<i>875</i>	<i>92</i>	<i>45</i>	<i>396</i>	<i>848</i>	<i>96</i>	1,513	<i>1,429</i>	<i>1,384</i>

(a) Includes lease condensate.

(b) Total consumption includes Independent Power Producer (IPP) consumption.

(c) Renewable energy includes minor components of non-marketed renewable energy that is neither bought nor sold, either directly or indirectly, as inputs to marketed energy.

EIA does not estimate or project end-use consumption of non-marketed renewable energy.

(d) The conversion from physical units to Btu is calculated using a subset of conversion factors used in the calculations of gross energy consumption in EIA's Monthly Energy Review (MER).

Consequently, the historical data may not precisely match those published in the MER or the Annual Energy Review (AER).

(e) Refers to the refiner average acquisition cost (RAC) of crude oil.

- = no data available

Notes: EIA completed modeling and analysis for this report on September 2, 2021.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

Prices are not adjusted for inflation.

Historical data: Latest data available from Energy Information Administration databases supporting the following reports: *Petroleum Supply Monthly*, DOE/EIA-0109; *Petroleum Supply Annual*, DOE/EIA-0340/2; *Weekly Petroleum Status Report*, DOE/EIA-0208; *Petroleum Marketing Monthly*, DOE/EIA-0380; *Natural Gas Monthly*, DOE/EIA-0130; *Electric Power Monthly*, DOE/EIA-0226; *Quarterly Coal Report*, DOE/EIA-0121; and *International Petroleum Monthly*, DOE/EIA-0520.

Minor discrepancies with published historical data are due to independent rounding.

Forecasts: EIA Short-Term Integrated Forecasting System. U.S. macroeconomic forecasts are based on the IHS Markit model of the U.S. Economy.

Weather forecasts from National Oceanic and Atmospheric Administration.

Table 2. Energy Prices

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
Crude Oil (dollars per barrel)															
West Texas Intermediate Spot Average	45.34	27.96	40.89	42.50	58.09	66.19	69.75	68.29	65.13	63.82	61.32	59.33	39.17	65.69	62.37
Brent Spot Average	49.97	29.52	42.97	44.34	61.12	68.91	72.67	71.29	68.63	67.32	64.98	63.33	41.69	68.61	66.04
U.S. Imported Average	43.75	26.24	39.87	40.69	55.27	64.74	67.84	66.25	62.88	61.56	58.88	56.83	37.22	63.95	60.02
U.S. Refiner Average Acquisition Cost	47.48	26.76	40.79	42.09	57.12	66.06	68.78	67.29	63.90	62.57	59.86	57.83	39.73	65.05	60.96
U.S. Liquid Fuels (cents per gallon)															
Refiner Prices for Resale															
Gasoline	153	104	137	133	180	217	230	207	197	204	198	182	133	210	195
Diesel Fuel	160	97	124	133	178	204	211	214	206	205	201	196	129	203	202
Fuel Oil	160	87	113	121	162	180	195	208	203	195	190	188	125	192	197
Refiner Prices to End Users															
Jet Fuel	165	85	116	125	163	182	192	200	202	202	198	195	131	186	199
No. 6 Residual Fuel Oil (a)	177	93	116	119	162	181	168	161	152	151	144	138	126	168	146
Retail Prices Including Taxes															
Gasoline Regular Grade (b)	241	194	218	215	256	297	314	291	273	285	278	264	218	291	275
Gasoline All Grades (b)	251	203	227	224	265	306	324	303	286	298	292	278	227	301	289
On-highway Diesel Fuel	289	243	243	247	290	321	331	324	315	307	307	304	256	317	308
Heating Oil	280	200	214	230	272	283	302	332	326	303	285	284	244	296	304
Natural Gas															
Henry Hub Spot (dollars per thousand cubic feet)	1.98	1.77	2.07	2.63	3.70	3.06	4.15	4.16	4.28	3.41	3.38	3.34	2.11	3.77	3.60
Henry Hub Spot (dollars per million Btu)	1.91	1.71	2.00	2.53	3.56	2.94	4.00	4.00	4.12	3.28	3.26	3.21	2.03	3.63	3.47
U.S. Retail Prices (dollars per thousand cubic feet)															
Industrial Sector	3.52	2.85	2.88	3.77	5.72	4.06	4.91	5.38	5.69	4.60	4.33	4.52	3.29	5.05	4.81
Commercial Sector	7.13	7.63	8.49	7.53	7.55	8.84	9.66	8.88	8.73	9.03	9.13	8.03	7.48	8.39	8.61
Residential Sector	9.46	11.89	17.65	10.60	9.79	13.87	18.86	12.09	10.97	13.59	17.94	11.01	10.83	11.73	11.85
U.S. Electricity															
Power Generation Fuel Costs (dollars per million Btu)															
Coal	1.93	1.91	1.93	1.92	1.91	1.92	1.98	1.99	2.02	2.02	1.99	1.96	1.92	1.95	2.00
Natural Gas	2.39	2.08	2.26	2.87	7.26	3.27	4.16	4.42	4.76	3.53	3.42	3.56	2.39	4.69	3.75
Residual Fuel Oil (c)	12.15	6.65	8.85	8.90	11.28	12.99	13.03	13.01	13.03	13.33	12.32	11.90	9.15	12.72	12.70
Distillate Fuel Oil	13.27	8.39	10.37	10.54	13.59	15.40	15.85	16.52	16.15	16.07	15.16	15.17	10.73	14.93	15.59
Retail Prices (cents per kilowatthour)															
Industrial Sector	6.38	6.63	7.08	6.53	7.15	6.90	7.26	6.58	6.96	6.84	7.16	6.57	6.66	6.97	6.89
Commercial Sector	10.33	10.63	10.97	10.62	11.11	11.07	11.52	11.09	11.41	11.21	11.44	10.96	10.65	11.21	11.26
Residential Sector	12.90	13.24	13.35	13.25	13.09	13.78	13.89	13.76	13.68	14.14	13.97	13.73	13.20	13.63	13.88

(a) Average for all sulfur contents.

(b) Average self-service cash price.

(c) Includes fuel oils No. 4, No. 5, No. 6, and topped crude.

- = no data available

Notes: EIA completed modeling and analysis for this report on September 2, 2021.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

Prices are not adjusted for inflation; prices exclude taxes unless otherwise noted.

Historical data: Latest data available from Energy Information Administration databases supporting the following reports: *Petroleum Marketing Monthly*, DOE/EIA-0380;

Weekly Petroleum Status Report, DOE/EIA-0208; *Natural Gas Monthly*, DOE/EIA-0130; *Electric Power Monthly*, DOE/EIA-0226; and *Monthly Energy Review*, DOE/EIA-0035.

Natural gas Henry Hub and WTI crude oil spot prices from Reuter's News Service (<http://www.reuters.com>).

Minor discrepancies with published historical data are due to independent rounding.

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 3a. International Petroleum and Other Liquids Production, Consumption, and Inventories

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
Supply (million barrels per day) (a)															
OECD	33.05	29.27	29.95	30.66	30.18	30.89	31.22	31.90	32.17	32.45	32.79	33.37	30.73	31.05	32.70
U.S. (50 States)	20.33	17.44	18.29	18.29	17.62	19.05	18.76	19.12	19.38	19.81	20.26	20.58	18.58	18.64	20.01
Canada	5.64	4.90	4.94	5.54	5.63	5.41	5.64	5.81	5.84	5.81	5.83	5.86	5.26	5.62	5.83
Mexico	2.00	1.94	1.91	1.90	1.93	1.95	1.86	1.90	1.88	1.84	1.81	1.77	1.94	1.91	1.82
Other OECD	5.08	4.99	4.81	4.93	5.00	4.48	4.96	5.07	5.08	5.00	4.89	5.16	4.95	4.88	5.03
Non-OECD	67.69	63.02	61.06	62.08	62.61	63.90	66.08	67.70	67.62	68.63	69.41	69.32	63.45	65.09	68.75
OPEC	33.50	30.72	28.65	30.00	30.37	30.78	32.30	33.53	33.71	33.80	33.97	34.01	30.71	31.76	33.87
Crude Oil Portion	28.28	25.65	23.63	24.88	25.08	25.51	26.94	28.10	28.12	28.34	28.45	28.45	25.60	26.42	28.34
Other Liquids (b)	5.22	5.07	5.02	5.12	5.29	5.27	5.36	5.43	5.59	5.47	5.52	5.56	5.11	5.34	5.53
Eurasia	14.72	13.16	12.70	13.12	13.38	13.62	13.59	14.19	14.46	14.66	14.77	14.97	13.42	13.70	14.72
China	4.96	4.91	4.95	4.90	5.05	5.09	5.04	5.06	5.05	5.08	5.08	5.13	4.93	5.06	5.08
Other Non-OECD	14.51	14.22	14.75	14.06	13.82	14.42	15.15	14.91	14.40	15.08	15.59	15.21	14.39	14.58	15.07
Total World Supply	100.74	92.30	91.01	92.74	92.80	94.80	97.30	99.60	99.79	101.08	102.20	102.68	94.18	96.14	101.45
Non-OPEC Supply	67.24	61.57	62.36	62.74	62.43	64.02	64.99	66.06	66.07	67.28	68.23	68.68	63.47	64.39	67.57
Consumption (million barrels per day) (c)															
OECD	45.50	37.45	42.27	42.84	42.30	43.68	45.48	45.89	45.51	45.25	46.30	46.36	42.02	44.35	45.86
U.S. (50 States)	19.50	16.07	18.45	18.72	18.45	20.03	20.30	20.15	20.01	20.51	21.02	20.94	18.19	19.74	20.63
U.S. Territories	0.17	0.15	0.16	0.17	0.20	0.18	0.18	0.19	0.20	0.18	0.19	0.20	0.16	0.19	0.19
Canada	2.42	1.97	2.25	2.14	2.12	2.09	2.29	2.31	2.27	2.22	2.32	2.31	2.19	2.20	2.28
Europe	13.34	11.01	12.88	12.51	11.90	12.51	13.73	13.55	13.14	13.27	13.59	13.26	12.43	12.93	13.31
Japan	3.78	2.93	3.06	3.53	3.73	3.01	2.99	3.38	3.63	2.96	3.04	3.35	3.33	3.27	3.24
Other OECD	6.30	5.34	5.47	5.77	5.89	5.86	5.98	6.30	6.25	6.10	6.14	6.31	5.72	6.01	6.20
Non-OECD	50.33	47.44	51.21	52.59	52.37	52.81	53.07	53.88	54.08	55.37	55.49	55.64	50.40	53.04	55.15
Eurasia	4.86	4.48	5.28	5.17	4.92	5.01	5.41	5.25	5.04	5.12	5.51	5.37	4.95	5.15	5.26
Europe	0.71	0.69	0.71	0.72	0.73	0.73	0.74	0.75	0.74	0.74	0.74	0.75	0.71	0.74	0.74
China	13.89	14.08	14.65	15.11	15.26	15.46	14.77	15.30	15.75	16.01	15.71	15.99	14.43	15.20	15.86
Other Asia	13.35	11.63	12.59	13.61	13.78	13.35	13.21	13.89	14.30	14.51	14.10	14.53	12.80	13.56	14.36
Other Non-OECD	17.53	16.55	17.98	17.99	17.67	18.26	18.94	18.69	18.24	19.00	19.42	19.00	17.51	18.39	18.92
Total World Consumption	95.83	84.90	93.47	95.43	94.66	96.49	98.55	99.77	99.59	100.62	101.79	102.00	92.42	97.38	101.01
Total Crude Oil and Other Liquids Inventory Net Withdrawals (million barrels per day)															
U.S. (50 States)	-0.49	-1.67	0.53	0.91	0.47	0.51	0.33	0.54	-0.11	-0.69	-0.08	0.40	-0.18	0.46	-0.12
Other OECD	-0.51	-1.16	0.04	0.69	0.76	0.10	0.30	-0.12	-0.03	0.07	-0.10	-0.34	-0.23	0.26	-0.10
Other Stock Draws and Balance	-3.91	-4.57	1.90	1.09	0.64	1.08	0.62	-0.25	-0.06	0.16	-0.23	-0.74	-1.36	0.52	-0.22
Total Stock Draw	-4.91	-7.40	2.46	2.69	1.87	1.69	1.25	0.17	-0.20	-0.46	-0.41	-0.68	-1.76	1.24	-0.44
End-of-period Commercial Crude Oil and Other Liquids Inventories (million barrels)															
U.S. Commercial Inventory	1,327	1,458	1,423	1,343	1,302	1,271	1,241	1,211	1,221	1,284	1,291	1,265	1,343	1,211	1,265
OECD Commercial Inventory	2,970	3,206	3,168	3,025	2,916	2,876	2,818	2,800	2,812	2,869	2,885	2,890	3,025	2,800	2,890

(a) Supply includes production of crude oil (including lease condensates), natural gas plant liquids, biofuels, other liquids, and refinery processing gains.

(b) Includes lease condensate, natural gas plant liquids, other liquids, and refinery processing gain. Includes other unaccounted-for liquids.

(c) Consumption of petroleum by the OECD countries is synonymous with "petroleum product supplied," defined in the glossary of the EIA *Petroleum Supply Monthly*,

DOE/EIA-0109. Consumption of petroleum by the non-OECD countries is "apparent consumption," which includes internal consumption, refinery fuel and loss, and bunkering.

- = no data available

OECD = Organization for Economic Cooperation and Development: Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Latvia, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States.

OPEC = Organization of the Petroleum Exporting Countries: Algeria, Angola, Congo (Brazzaville), Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, the United Arab Emirates, Venezuela.

Notes: EIA completed modeling and analysis for this report on September 2, 2021.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

Historical data: Latest data available from Energy Information Administration international energy statistics.

Minor discrepancies with published historical data are due to independent rounding.

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 3b. Non-OPEC Petroleum and Other Liquids Production (million barrels per day)
U.S. Energy Information Administration | Short-Term Energy Outlook - September 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
North America	27.97	24.28	25.14	25.73	25.18	26.41	<i>26.25</i>	<i>26.83</i>	<i>27.09</i>	<i>27.46</i>	<i>27.90</i>	<i>28.20</i>	25.78	<i>26.17</i>	<i>27.67</i>
Canada	5.64	4.90	4.94	5.54	5.63	5.41	<i>5.64</i>	<i>5.81</i>	<i>5.84</i>	<i>5.81</i>	<i>5.83</i>	<i>5.86</i>	5.26	<i>5.62</i>	<i>5.83</i>
Mexico	2.00	1.94	1.91	1.90	1.93	1.95	<i>1.86</i>	<i>1.90</i>	<i>1.88</i>	<i>1.84</i>	<i>1.81</i>	<i>1.77</i>	1.94	<i>1.91</i>	<i>1.82</i>
United States	20.33	17.44	18.29	18.29	17.62	19.05	<i>18.76</i>	<i>19.12</i>	<i>19.38</i>	<i>19.81</i>	<i>20.26</i>	<i>20.58</i>	18.58	<i>18.64</i>	<i>20.01</i>
Central and South America	6.01	6.05	6.63	5.89	5.61	6.26	<i>6.93</i>	<i>6.62</i>	<i>6.10</i>	<i>6.82</i>	<i>7.36</i>	<i>7.01</i>	6.15	<i>6.36</i>	<i>6.83</i>
Argentina	0.69	0.60	0.64	0.62	0.63	0.67	<i>0.70</i>	<i>0.69</i>	<i>0.71</i>	<i>0.72</i>	<i>0.75</i>	<i>0.73</i>	0.64	<i>0.67</i>	<i>0.73</i>
Brazil	3.44	3.89	4.29	3.52	3.23	3.90	<i>4.46</i>	<i>4.14</i>	<i>3.53</i>	<i>4.36</i>	<i>4.75</i>	<i>4.28</i>	3.79	<i>3.94</i>	<i>4.23</i>
Colombia	0.90	0.78	0.77	0.79	0.77	0.74	<i>0.77</i>	<i>0.78</i>	<i>0.84</i>	<i>0.72</i>	<i>0.74</i>	<i>0.78</i>	0.81	<i>0.77</i>	<i>0.77</i>
Ecuador	0.54	0.36	0.52	0.51	0.51	0.50	<i>0.52</i>	<i>0.53</i>	<i>0.53</i>	<i>0.53</i>	<i>0.53</i>	<i>0.53</i>	0.48	<i>0.51</i>	<i>0.53</i>
Other Central and S. America	0.45	0.42	0.41	0.45	0.47	0.45	<i>0.49</i>	<i>0.49</i>	<i>0.49</i>	<i>0.50</i>	<i>0.59</i>	<i>0.69</i>	0.43	<i>0.47</i>	<i>0.57</i>
Europe	4.44	4.35	4.16	4.30	4.38	3.91	<i>4.34</i>	<i>4.44</i>	<i>4.45</i>	<i>4.36</i>	<i>4.25</i>	<i>4.53</i>	4.31	<i>4.27</i>	<i>4.40</i>
Norway	2.05	2.00	1.96	2.02	2.11	1.90	<i>2.07</i>	<i>2.18</i>	<i>2.19</i>	<i>2.13</i>	<i>2.13</i>	<i>2.29</i>	2.01	<i>2.07</i>	<i>2.18</i>
United Kingdom	1.17	1.16	0.99	1.06	1.07	0.82	<i>1.05</i>	<i>1.04</i>	<i>1.05</i>	<i>1.03</i>	<i>0.93</i>	<i>1.03</i>	1.10	<i>1.00</i>	<i>1.01</i>
Eurasia	14.72	13.16	12.70	13.12	13.38	13.62	<i>13.59</i>	<i>14.19</i>	<i>14.46</i>	<i>14.66</i>	<i>14.77</i>	<i>14.97</i>	13.42	<i>13.70</i>	<i>14.72</i>
Azerbaijan	0.76	0.69	0.66	0.69	0.74	0.69	<i>0.73</i>	<i>0.78</i>	<i>0.81</i>	<i>0.80</i>	<i>0.78</i>	<i>0.81</i>	0.70	<i>0.74</i>	<i>0.80</i>
Kazakhstan	2.06	1.86	1.71	1.81	1.87	1.86	<i>1.73</i>	<i>1.92</i>	<i>1.98</i>	<i>1.98</i>	<i>1.93</i>	<i>2.00</i>	1.86	<i>1.84</i>	<i>1.97</i>
Russia	11.54	10.25	9.97	10.26	10.43	10.72	<i>10.79</i>	<i>11.12</i>	<i>11.30</i>	<i>11.51</i>	<i>11.69</i>	<i>11.80</i>	10.50	<i>10.77</i>	<i>11.57</i>
Turkmenistan	0.25	0.25	0.25	0.25	0.24	0.24	<i>0.24</i>	<i>0.24</i>	<i>0.23</i>	<i>0.23</i>	<i>0.23</i>	<i>0.23</i>	0.25	<i>0.24</i>	<i>0.23</i>
Other Eurasia	0.11	0.11	0.11	0.11	0.10	0.10	<i>0.11</i>	<i>0.13</i>	<i>0.14</i>	<i>0.14</i>	<i>0.14</i>	<i>0.14</i>	0.11	<i>0.11</i>	<i>0.14</i>
Middle East	3.16	3.13	3.09	3.13	3.15	3.18	<i>3.19</i>	<i>3.22</i>	<i>3.26</i>	<i>3.26</i>	<i>3.26</i>	<i>3.25</i>	3.13	<i>3.18</i>	<i>3.26</i>
Oman	1.01	0.95	0.92	0.95	0.96	0.97	<i>0.99</i>	<i>1.02</i>	<i>1.03</i>	<i>1.03</i>	<i>1.03</i>	<i>1.03</i>	0.96	<i>0.98</i>	<i>1.03</i>
Qatar	1.84	1.87	1.88	1.88	1.89	1.91	<i>1.92</i>	<i>1.92</i>	<i>1.94</i>	<i>1.94</i>	<i>1.94</i>	<i>1.94</i>	1.87	<i>1.91</i>	<i>1.94</i>
Asia and Oceania	9.45	9.17	9.21	9.17	9.32	9.26	<i>9.28</i>	<i>9.33</i>	<i>9.31</i>	<i>9.32</i>	<i>9.30</i>	<i>9.31</i>	9.25	<i>9.30</i>	<i>9.31</i>
Australia	0.49	0.50	0.50	0.49	0.47	0.42	<i>0.49</i>	<i>0.48</i>	<i>0.48</i>	<i>0.48</i>	<i>0.48</i>	<i>0.48</i>	0.49	<i>0.47</i>	<i>0.48</i>
China	4.96	4.91	4.95	4.90	5.05	5.09	<i>5.04</i>	<i>5.06</i>	<i>5.05</i>	<i>5.08</i>	<i>5.08</i>	<i>5.13</i>	4.93	<i>5.06</i>	<i>5.08</i>
India	0.96	0.90	0.92	0.92	0.92	0.92	<i>0.93</i>	<i>0.93</i>	<i>0.93</i>	<i>0.91</i>	<i>0.91</i>	<i>0.91</i>	0.92	<i>0.93</i>	<i>0.91</i>
Indonesia	0.92	0.90	0.88	0.89	0.88	0.86	<i>0.88</i>	<i>0.87</i>	<i>0.87</i>	<i>0.86</i>	<i>0.85</i>	<i>0.84</i>	0.90	<i>0.87</i>	<i>0.85</i>
Malaysia	0.73	0.62	0.64	0.65	0.66	0.63	<i>0.60</i>	<i>0.63</i>	<i>0.63</i>	<i>0.62</i>	<i>0.61</i>	<i>0.61</i>	0.66	<i>0.63</i>	<i>0.62</i>
Vietnam	0.23	0.22	0.21	0.21	0.21	0.21	<i>0.21</i>	<i>0.21</i>	<i>0.20</i>	<i>0.20</i>	<i>0.20</i>	<i>0.19</i>	0.22	<i>0.21</i>	<i>0.20</i>
Africa	1.48	1.44	1.42	1.40	1.40	1.39	<i>1.40</i>	<i>1.43</i>	<i>1.40</i>	<i>1.40</i>	<i>1.39</i>	<i>1.39</i>	1.43	<i>1.41</i>	<i>1.39</i>
Egypt	0.62	0.61	0.60	0.58	0.58	0.60	<i>0.64</i>	<i>0.64</i>	<i>0.61</i>	<i>0.61</i>	<i>0.61</i>	<i>0.61</i>	0.60	<i>0.61</i>	<i>0.61</i>
South Sudan	0.15	0.15	0.17	0.17	0.16	0.16	<i>0.16</i>	<i>0.18</i>	<i>0.18</i>	<i>0.18</i>	<i>0.18</i>	<i>0.18</i>	0.16	<i>0.16</i>	<i>0.18</i>
Total non-OPEC liquids	67.24	61.57	62.36	62.74	62.43	64.02	<i>64.99</i>	<i>66.06</i>	<i>66.07</i>	<i>67.28</i>	<i>68.23</i>	<i>68.68</i>	63.47	<i>64.39</i>	<i>67.57</i>
OPEC non-crude liquids	5.22	5.07	5.02	5.12	5.29	5.27	<i>5.36</i>	<i>5.43</i>	<i>5.59</i>	<i>5.47</i>	<i>5.52</i>	<i>5.56</i>	5.11	<i>5.34</i>	<i>5.53</i>
Non-OPEC + OPEC non-crude	72.46	66.65	67.38	67.86	67.71	69.29	<i>70.36</i>	<i>71.50</i>	<i>71.66</i>	<i>72.75</i>	<i>73.75</i>	<i>74.23</i>	68.58	<i>69.73</i>	<i>73.11</i>
Unplanned non-OPEC Production Outages	0.18	0.92	0.72	0.55	0.68	0.32	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	0.59	<i>-</i>	<i>-</i>

- = no data available

OPEC = Organization of the Petroleum Exporting Countries: Algeria, Angola, Congo (Brazzaville), Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, the United Arab Emirates, Venezuela.

Notes: EIA completed modeling and analysis for this report on September 2, 2021.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

Supply includes production of crude oil (including lease condensates), natural gas plant liquids, biofuels, other liquids, and refinery processing gains.

Not all countries are shown in each region and sum of reported country volumes may not equal regional volumes.

Historical data: Latest data available from Energy Information Administration international energy statistics.

Minor discrepancies with published historical data are due to independent rounding.

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 3c. OPEC Crude Oil (excluding condensates) Production (million barrels per day)
U.S. Energy Information Administration | Short-Term Energy Outlook - September 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
Crude Oil															
Algeria	1.02	0.90	0.84	0.86	0.87	0.88	-	-	-	-	-	-	0.90	-	-
Angola	1.35	1.27	1.19	1.13	1.11	1.08	-	-	-	-	-	-	1.23	-	-
Congo (Brazzaville)	0.29	0.29	0.28	0.26	0.28	0.27	-	-	-	-	-	-	0.28	-	-
Equatorial Guinea	0.13	0.12	0.11	0.11	0.11	0.12	-	-	-	-	-	-	0.11	-	-
Gabon	0.19	0.18	0.15	0.17	0.16	0.17	-	-	-	-	-	-	0.17	-	-
Iran	2.02	1.97	1.90	1.95	2.18	2.47	-	-	-	-	-	-	1.96	-	-
Iraq	4.56	4.16	3.70	3.84	3.94	3.98	-	-	-	-	-	-	4.06	-	-
Kuwait	2.77	2.48	2.25	2.30	2.33	2.36	-	-	-	-	-	-	2.45	-	-
Libya	0.35	0.08	0.11	0.92	1.18	1.16	-	-	-	-	-	-	0.36	-	-
Nigeria	1.72	1.55	1.44	1.44	1.31	1.32	-	-	-	-	-	-	1.54	-	-
Saudi Arabia	9.80	9.28	8.77	9.01	8.49	8.53	-	-	-	-	-	-	9.21	-	-
United Arab Emirates	3.30	2.88	2.55	2.50	2.61	2.65	-	-	-	-	-	-	2.81	-	-
Venezuela	0.77	0.50	0.35	0.40	0.52	0.53	-	-	-	-	-	-	0.50	-	-
OPEC Total	28.28	25.65	23.63	24.88	25.08	25.51	26.94	28.10	28.12	28.34	28.45	28.45	25.60	26.42	28.34
Other Liquids (a)	5.22	5.07	5.02	5.12	5.29	5.27	5.36	5.43	5.59	5.47	5.52	5.56	5.11	5.34	5.53
Total OPEC Supply	33.50	30.72	28.65	30.00	30.37	30.78	32.30	33.53	33.71	33.80	33.97	34.01	30.71	31.76	33.87
Crude Oil Production Capacity															
Middle East	25.61	26.02	26.06	26.22	26.55	26.85	26.91	27.18	27.38	27.39	27.39	27.39	25.98	26.88	27.39
Other	5.82	5.60	5.48	6.33	6.73	6.71	6.66	5.99	5.92	5.94	5.95	5.95	5.81	6.52	5.94
OPEC Total	31.43	31.63	31.54	32.56	33.28	33.56	33.57	33.17	33.31	33.32	33.34	33.35	31.79	33.39	33.33
Surplus Crude Oil Production Capacity															
Middle East	3.15	5.27	6.90	6.62	7.00	6.87	5.58	4.99	5.11	4.92	4.82	4.82	5.49	6.10	4.92
Other	0.00	0.71	1.02	1.06	1.19	1.18	1.05	0.08	0.07	0.07	0.07	0.07	0.70	0.87	0.07
OPEC Total	3.15	5.98	7.92	7.68	8.19	8.06	6.63	5.07	5.18	4.99	4.89	4.90	6.19	6.98	4.99
Unplanned OPEC Production Outages	3.72	4.18	4.35	3.45	2.73	2.38	-	-	-	-	-	-	3.92	-	-

(a) Includes lease condensate, natural gas plant liquids, other liquids, refinery processing gain, and other unaccounted-for liquids.

OPEC = Organization of the Petroleum Exporting Countries: Iran, Iraq, Kuwait, Saudi Arabia, and the United Arab Emirates (Middle East); Algeria, Angola, Congo (Brazzaville), Equatorial Guinea, Gabon, Libya, Nigeria, and Venezuela (Other).

Notes: EIA completed modeling and analysis for this report on September 2, 2021.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

Forecasts are not published for individual OPEC countries.

Historical data: Latest data available from Energy Information Administration international energy statistics.

Minor discrepancies with published historical data are due to independent rounding.

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 3d. World Petroleum and Other Liquids Consumption (million barrels per day)
 U.S. Energy Information Administration | Short-Term Energy Outlook - September 2021

	2020				2021				2022				2020	2021	2022
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
North America	23.77	19.44	22.21	22.44	22.20	23.84	<i>24.48</i>	<i>24.37</i>	<i>24.12</i>	<i>24.59</i>	<i>25.19</i>	<i>25.10</i>	21.97	<i>23.73</i>	<i>24.75</i>
Canada	2.42	1.97	2.25	2.14	2.12	2.09	<i>2.29</i>	<i>2.31</i>	<i>2.27</i>	<i>2.22</i>	<i>2.32</i>	<i>2.31</i>	2.19	<i>2.20</i>	<i>2.28</i>
Mexico	1.85	1.40	1.50	1.58	1.62	1.71	<i>1.88</i>	<i>1.90</i>	<i>1.82</i>	<i>1.84</i>	<i>1.83</i>	<i>1.84</i>	1.58	<i>1.78</i>	<i>1.84</i>
United States	19.50	16.07	18.45	18.72	18.45	20.03	<i>20.30</i>	<i>20.15</i>	<i>20.01</i>	<i>20.51</i>	<i>21.02</i>	<i>20.94</i>	18.19	<i>19.74</i>	<i>20.63</i>
Central and South America	6.13	5.60	6.03	6.31	6.18	6.30	<i>6.56</i>	<i>6.60</i>	<i>6.40</i>	<i>6.56</i>	<i>6.70</i>	<i>6.71</i>	6.02	<i>6.41</i>	<i>6.59</i>
Brazil	2.89	2.67	2.97	3.06	2.97	3.08	<i>3.22</i>	<i>3.23</i>	<i>3.06</i>	<i>3.14</i>	<i>3.25</i>	<i>3.25</i>	2.90	<i>3.13</i>	<i>3.18</i>
Europe	14.04	11.70	13.59	13.23	12.63	13.24	<i>14.47</i>	<i>14.30</i>	<i>13.88</i>	<i>14.01</i>	<i>14.33</i>	<i>14.01</i>	13.14	<i>13.67</i>	<i>14.06</i>
Eurasia	4.86	4.48	5.28	5.17	4.92	5.01	<i>5.41</i>	<i>5.25</i>	<i>5.04</i>	<i>5.12</i>	<i>5.51</i>	<i>5.37</i>	4.95	<i>5.15</i>	<i>5.26</i>
Russia	3.65	3.33	4.04	3.92	3.71	3.82	<i>4.15</i>	<i>3.99</i>	<i>3.80</i>	<i>3.90</i>	<i>4.23</i>	<i>4.08</i>	3.74	<i>3.92</i>	<i>4.01</i>
Middle East	7.90	7.43	8.43	8.05	7.80	8.20	<i>8.81</i>	<i>8.31</i>	<i>8.05</i>	<i>8.63</i>	<i>9.02</i>	<i>8.37</i>	7.95	<i>8.28</i>	<i>8.52</i>
Asia and Oceania	34.95	32.20	33.86	35.94	36.60	35.55	<i>34.56</i>	<i>36.47</i>	<i>37.62</i>	<i>37.23</i>	<i>36.64</i>	<i>37.85</i>	34.24	<i>35.79</i>	<i>37.33</i>
China	13.89	14.08	14.65	15.11	15.26	15.46	<i>14.77</i>	<i>15.30</i>	<i>15.75</i>	<i>16.01</i>	<i>15.71</i>	<i>15.99</i>	14.43	<i>15.20</i>	<i>15.86</i>
Japan	3.78	2.93	3.06	3.53	3.73	3.01	<i>2.99</i>	<i>3.38</i>	<i>3.63</i>	<i>2.96</i>	<i>3.04</i>	<i>3.35</i>	3.33	<i>3.27</i>	<i>3.24</i>
India	4.83	3.76	4.17	4.93	5.00	4.45	<i>4.51</i>	<i>4.88</i>	<i>5.15</i>	<i>5.21</i>	<i>4.86</i>	<i>5.16</i>	4.42	<i>4.71</i>	<i>5.10</i>
Africa	4.18	4.05	4.07	4.29	4.33	4.35	<i>4.25</i>	<i>4.47</i>	<i>4.48</i>	<i>4.49</i>	<i>4.41</i>	<i>4.60</i>	4.15	<i>4.35</i>	<i>4.50</i>
Total OECD Liquid Fuels Consumption	45.50	37.45	42.27	42.84	42.30	43.68	<i>45.48</i>	<i>45.89</i>	<i>45.51</i>	<i>45.25</i>	<i>46.30</i>	<i>46.36</i>	42.02	<i>44.35</i>	<i>45.86</i>
Total non-OECD Liquid Fuels Consumption	50.33	47.44	51.21	52.59	52.37	52.81	<i>53.07</i>	<i>53.88</i>	<i>54.08</i>	<i>55.37</i>	<i>55.49</i>	<i>55.64</i>	50.40	<i>53.04</i>	<i>55.15</i>
Total World Liquid Fuels Consumption	95.83	84.90	93.47	95.43	94.66	96.49	<i>98.55</i>	<i>99.77</i>	<i>99.59</i>	<i>100.62</i>	<i>101.79</i>	<i>102.00</i>	92.42	<i>97.38</i>	<i>101.01</i>
Real Gross Domestic Product (a)															
World Index, 2015 Q1 = 100	110.3	107.6	112.4	113.6	115.9	117.1	<i>118.1</i>	<i>119.3</i>	<i>122.4</i>	<i>123.2</i>	<i>123.8</i>	<i>124.4</i>	111.0	<i>117.6</i>	<i>123.5</i>
Percent change from prior year	-3.3	-6.1	-2.4	-1.7	5.1	8.8	<i>5.1</i>	<i>5.0</i>	<i>5.6</i>	<i>5.2</i>	<i>4.9</i>	<i>4.3</i>	-3.4	<i>6.0</i>	<i>5.0</i>
OECD Index, 2015 = 100	103.7	109.1	113.8	113.8	115.9	117.1	<i>118.1</i>	<i>119.3</i>	<i>122.4</i>	<i>123.2</i>	<i>123.8</i>	<i>124.4</i>	103.7	<i>109.1</i>	<i>113.8</i>
Percent change from prior year	-4.7	5.3	4.3	4.3	5.1	8.8	<i>5.1</i>	<i>5.0</i>	<i>5.6</i>	<i>5.2</i>	<i>4.9</i>	<i>4.3</i>	-4.7	<i>5.3</i>	<i>4.3</i>
Non-OECD Index, 2015 = 100	116.0	123.4	130.1	130.1	115.9	117.1	<i>118.1</i>	<i>119.3</i>	<i>122.4</i>	<i>123.2</i>	<i>123.8</i>	<i>124.4</i>	116.0	<i>123.4</i>	<i>130.1</i>
Percent change from prior year	-2.3	6.4	5.4	5.4	5.1	8.8	<i>5.1</i>	<i>5.0</i>	<i>5.6</i>	<i>5.2</i>	<i>4.9</i>	<i>4.3</i>	-2.3	<i>6.4</i>	<i>5.4</i>
Nominal U.S. Dollar Index (b)															
Index, 2015 Q1 = 100	111.7	115.9	111.5	108.3	106.8	106.3	<i>107.4</i>	<i>108.0</i>	<i>108.1</i>	<i>108.1</i>	<i>108.0</i>	<i>107.9</i>	111.9	<i>107.1</i>	<i>108.0</i>
Percent change from prior year	2.8	5.8	0.9	-1.9	-4.4	-8.3	<i>-3.7</i>	<i>-0.3</i>	<i>1.3</i>	<i>1.7</i>	<i>0.5</i>	<i>-0.1</i>	1.9	<i>-4.2</i>	<i>0.8</i>

(a) GDP values for the individual countries in the indexes are converted to U.S. dollars at purchasing power parity and then summed to create values for the world, OECD, and non-OECD. Historical and forecast data are from Oxford Economics, and quarterly values are reindexed to 2015 Q1 by EIA.

(b) Data source is the Board of Governors of the U.S. Federal Reserve System Nominal Broad Trade-Weighted Dollar Index. An increase in the index indicates an appreciation of the U.S. dollar against a basket of currencies and a decrease in the index indicates a depreciation of the U.S. dollar against a basket of currencies. Historical and forecast data are from Oxford Economics, and quarterly values are reindexed to 2015 Q1 by EIA.

- = no data available

OECD = Organization for Economic Cooperation and Development: Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Latvia, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States.

Notes: EIA completed modeling and analysis for this report on September 2, 2021.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

Historical data: Latest data available from Energy Information Administration international energy statistics.

Minor discrepancies with published historical data are due to independent rounding.

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 4b. U.S. Hydrocarbon Gas Liquids (HGL) and Petroleum Refinery Balances (million barrels per day, except inventories and utilization factor)

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
HGL Production															
Natural Gas Processing Plants															
Ethane	1.95	1.92	2.14	2.05	1.87	2.19	2.10	2.23	2.36	2.49	2.54	2.61	2.02	2.10	2.50
Propane	1.74	1.61	1.68	1.70	1.62	1.74	1.74	1.75	1.76	1.77	1.81	1.83	1.68	1.71	1.79
Butanes	0.92	0.86	0.90	0.89	0.85	0.92	0.93	0.93	0.93	0.94	0.96	0.97	0.89	0.91	0.95
Natural Gasoline (Pentanes Plus)	0.57	0.57	0.62	0.58	0.53	0.61	0.63	0.59	0.58	0.61	0.64	0.62	0.58	0.59	0.61
Refinery and Blender Net Production															
Ethane/Ethylene	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.01
Propane	0.29	0.24	0.27	0.27	0.25	0.29	0.29	0.32	0.31	0.31	0.32	0.32	0.26	0.29	0.32
Propylene (refinery-grade)	0.25	0.26	0.26	0.29	0.27	0.31	0.27	0.28	0.28	0.28	0.28	0.28	0.26	0.28	0.28
Butanes/Butylenes	-0.08	0.18	0.13	-0.19	-0.09	0.24	0.20	-0.19	-0.08	0.26	0.19	-0.19	0.01	0.04	0.05
Renewable Fuels and Oxygenate Plant Net Production															
Natural Gasoline (Pentanes Plus)	-0.02	-0.01	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
HGL Net Imports															
Ethane	-0.30	-0.24	-0.26	-0.27	-0.35	-0.39	-0.39	-0.38	-0.43	-0.45	-0.45	-0.46	-0.27	-0.38	-0.45
Propane/Propylene	-1.08	-1.09	-1.06	-1.31	-1.11	-1.23	-1.21	-1.23	-1.13	-1.19	-1.23	-1.23	-1.14	-1.19	-1.20
Butanes/Butylenes	-0.30	-0.31	-0.34	-0.34	-0.35	-0.40	-0.44	-0.36	-0.39	-0.43	-0.44	-0.40	-0.32	-0.39	-0.41
Natural Gasoline (Pentanes Plus)	-0.27	-0.19	-0.16	-0.14	-0.22	-0.21	-0.21	-0.18	-0.20	-0.18	-0.20	-0.18	-0.19	-0.20	-0.19
HGL Refinery and Blender Net Inputs															
Butanes/Butylenes	0.46	0.25	0.32	0.47	0.39	0.29	0.32	0.49	0.39	0.28	0.32	0.50	0.38	0.37	0.37
Natural Gasoline (Pentanes Plus)	0.15	0.10	0.15	0.13	0.14	0.14	0.17	0.16	0.17	0.18	0.18	0.18	0.13	0.15	0.18
HGL Consumption															
Ethane/Ethylene	1.71	1.68	1.67	1.81	1.54	1.83	1.73	1.88	2.01	2.04	2.09	2.13	1.72	1.75	2.07
Propane	1.14	0.58	0.61	0.97	1.09	0.65	0.63	1.00	1.13	0.57	0.58	1.02	0.82	0.84	0.82
Propylene (refinery-grade)	0.27	0.27	0.27	0.30	0.29	0.32	0.29	0.29	0.30	0.30	0.30	0.30	0.28	0.30	0.30
Butanes/Butylenes	0.17	0.20	0.19	0.23	0.22	0.29	0.21	0.20	0.18	0.22	0.20	0.20	0.20	0.23	0.20
Natural Gasoline (Pentanes Plus)	0.09	0.13	0.26	0.36	0.26	0.24	0.23	0.25	0.22	0.22	0.23	0.24	0.21	0.24	0.23
HGL Inventories (million barrels)															
Ethane	53.2	50.6	62.5	74.8	65.8	67.4	63.4	63.4	55.7	55.2	54.7	57.7	60.3	65.0	55.9
Propane	60.8	75.8	100.3	69.9	39.3	53.2	69.7	52.5	33.3	61.1	89.1	78.9	69.9	52.5	78.9
Propylene (at refineries only)	1.5	1.5	1.5	1.5	1.1	1.2	1.6	1.7	1.6	1.8	2.0	1.9	1.5	1.7	1.9
Butanes/Butylenes	44.1	69.9	86.0	54.6	37.2	53.9	68.4	39.6	29.6	54.0	71.8	42.7	54.6	39.6	42.7
Natural Gasoline (Pentanes Plus)	24.4	36.0	38.7	32.6	22.8	22.3	22.1	20.9	18.4	19.6	20.4	19.7	32.6	20.9	19.7
Refinery and Blender Net Inputs															
Crude Oil	15.77	13.16	14.02	13.90	13.81	15.65	15.39	15.06	15.09	16.48	17.12	16.14	14.21	14.98	16.21
Hydrocarbon Gas Liquids	0.61	0.35	0.47	0.60	0.53	0.43	0.49	0.65	0.55	0.47	0.51	0.69	0.51	0.52	0.55
Other Hydrocarbons/Oxygenates	1.12	0.95	1.11	1.08	1.05	1.19	1.18	1.15	1.13	1.20	1.21	1.18	1.06	1.14	1.18
Unfinished Oils	0.06	0.22	0.45	0.19	-0.08	0.22	0.43	0.36	0.09	0.28	0.31	0.27	0.23	0.24	0.24
Motor Gasoline Blend Components	0.41	0.49	0.85	0.46	0.71	0.92	0.75	0.26	0.56	0.81	0.65	0.30	0.55	0.66	0.58
Aviation Gasoline Blend Components	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
Total Refinery and Blender Net Inputs	17.98	15.16	16.90	16.22	16.01	18.41	18.24	17.49	17.44	19.24	19.80	18.58	16.57	17.54	18.77
Refinery Processing Gain	1.02	0.82	0.93	0.92	0.84	0.97	1.00	1.04	1.05	1.09	1.14	1.13	0.92	0.96	1.10
Refinery and Blender Net Production															
Hydrocarbon Gas Liquids	0.47	0.69	0.67	0.36	0.44	0.85	0.77	0.41	0.51	0.87	0.80	0.41	0.55	0.62	0.65
Finished Motor Gasoline	9.31	7.53	9.14	8.98	8.74	9.82	9.67	9.55	9.32	9.87	10.03	9.79	8.74	9.45	9.75
Jet Fuel	1.63	0.62	0.83	1.00	1.10	1.32	1.38	1.36	1.50	1.61	1.70	1.57	1.02	1.29	1.60
Distillate Fuel	4.95	4.83	4.72	4.45	4.29	4.77	4.61	4.56	4.57	5.11	5.41	5.22	4.74	4.56	5.08
Residual Fuel	0.24	0.17	0.19	0.15	0.19	0.20	0.24	0.20	0.25	0.29	0.29	0.23	0.19	0.21	0.27
Other Oils (a)	2.41	2.14	2.28	2.19	2.09	2.42	2.57	2.44	2.33	2.57	2.71	2.49	2.26	2.38	2.53
Total Refinery and Blender Net Production	19.00	15.98	17.84	17.14	16.86	19.38	19.24	18.53	18.49	20.33	20.94	19.71	17.49	18.51	19.87
Refinery Distillation Inputs	16.37	13.65	14.56	14.32	14.25	16.17	15.95	15.48	15.45	16.69	17.33	16.42	14.72	15.47	16.48
Refinery Operable Distillation Capacity	18.98	18.75	18.55	18.39	18.11	18.13	18.13	18.13	18.13	18.13	18.13	18.13	18.66	18.12	18.13
Refinery Distillation Utilization Factor	0.86	0.73	0.78	0.78	0.79	0.89	0.88	0.85	0.85	0.92	0.96	0.91	0.79	0.85	0.91

(a) "Other Oils" includes aviation gasoline blend components, finished aviation gasoline, kerosene, petrochemical feedstocks, special naphthas, lubricants, waxes, petroleum coke, asphalt and road oil, still gas, and miscellaneous products.

- = no data available

Notes: EIA completed modeling and analysis for this report on September 2, 2021.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

Historical data: Latest data available from Energy Information Administration databases supporting the following reports: *Petroleum Supply Monthly*, DOE/EIA-0109; *Petroleum Supply Annual*, DOE/EIA-0340/2; *Weekly Petroleum Status Report*, DOE/EIA-0208.

Minor discrepancies with published historical data are due to independent rounding.

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 4c. U.S. Regional Motor Gasoline Prices and Inventories
 U.S. Energy Information Administration | Short-Term Energy Outlook - September 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
Prices (cents per gallon)															
Refiner Wholesale Price	153	104	137	133	180	217	230	207	197	204	198	182	133	210	195
Gasoline Regular Grade Retail Prices Including Taxes															
PADD 1	236	191	211	212	252	287	302	286	266	273	272	255	214	283	267
PADD 2	226	179	207	202	247	288	302	275	251	271	263	245	204	279	258
PADD 3	210	162	186	183	228	267	281	259	245	252	246	230	187	261	244
PADD 4	247	200	233	221	247	311	357	307	279	290	287	268	226	307	281
PADD 5	311	258	283	278	312	366	388	355	349	359	344	347	284	357	350
U.S. Average	241	194	218	215	256	297	314	291	273	285	278	264	218	291	275
Gasoline All Grades Including Taxes	251	203	227	224	265	306	324	303	286	298	292	278	227	301	289
End-of-period Inventories (million barrels)															
Total Gasoline Inventories															
PADD 1	71.0	73.1	61.8	68.5	65.1	69.9	56.0	59.1	65.1	68.1	63.2	68.7	68.5	59.1	68.7
PADD 2	60.2	52.7	46.2	50.9	50.7	50.6	47.9	49.7	53.3	52.2	50.2	50.7	50.9	49.7	50.7
PADD 3	85.8	91.3	80.4	84.0	81.9	81.6	77.6	84.7	85.2	88.9	83.4	89.4	84.0	84.7	89.4
PADD 4	9.2	7.7	7.6	8.7	8.6	6.2	7.1	7.9	7.9	7.9	7.5	8.1	8.7	7.9	8.1
PADD 5	35.6	29.7	31.5	31.4	31.4	29.0	30.1	31.3	30.1	29.5	29.4	31.8	31.4	31.3	31.8
U.S. Total	261.8	254.5	227.6	243.4	237.6	237.2	218.7	232.8	241.6	246.5	233.8	248.7	243.4	232.8	248.7
Finished Gasoline Inventories															
U.S. Total	22.6	23.5	22.5	25.4	20.3	18.6	21.4	24.3	24.1	23.9	23.1	26.1	25.4	24.3	26.1
Gasoline Blending Components Inventories															
U.S. Total	239.2	231.0	205.0	218.0	217.4	218.6	197.3	208.5	217.5	222.6	210.6	222.7	218.0	208.5	222.7

- = no data available

Notes: EIA completed modeling and analysis for this report on September 2, 2021.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

Prices are not adjusted for inflation.

Regions refer to Petroleum Administration for Defense Districts (PADD).

See "Petroleum for Administration Defense District" in EIA's Energy Glossary (<http://www.eia.doe.gov/glossary/index.html>) for a list of States in each region.

Historical data: Latest data available from Energy Information Administration databases supporting the following reports: *Petroleum Marketing Monthly*, DOE/EIA-0380;

Petroleum Supply Monthly, DOE/EIA-0109; *Petroleum Supply Annual*, DOE/EIA-0340/2; and *Weekly Petroleum Status Report*, DOE/EIA-0208.

Minor discrepancies with published historical data are due to independent rounding.

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 5a. U.S. Natural Gas Supply, Consumption, and Inventories
 U.S. Energy Information Administration | Short-Term Energy Outlook - September 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
Supply (billion cubic feet per day)															
Total Marketed Production	102.27	96.83	97.55	98.70	97.31	100.95	<i>100.51</i>	<i>100.58</i>	<i>101.09</i>	<i>102.57</i>	<i>104.43</i>	<i>105.89</i>	98.83	<i>99.85</i>	<i>103.51</i>
Alaska	0.96	0.88	0.88	0.98	1.02	0.95	<i>0.76</i>	<i>0.88</i>	<i>0.92</i>	<i>0.81</i>	<i>0.73</i>	<i>0.87</i>	0.92	<i>0.90</i>	<i>0.83</i>
Federal GOM (a)	2.72	2.22	1.72	1.73	2.27	2.26	<i>1.90</i>	<i>2.09</i>	<i>2.09</i>	<i>2.02</i>	<i>1.91</i>	<i>1.88</i>	2.09	<i>2.13</i>	<i>1.97</i>
Lower 48 States (excl GOM)	98.58	93.74	94.95	95.99	94.03	97.74	<i>97.85</i>	<i>97.60</i>	<i>98.08</i>	<i>99.74</i>	<i>101.78</i>	<i>103.14</i>	95.81	<i>96.82</i>	<i>100.70</i>
Total Dry Gas Production	94.80	89.68	89.83	91.15	90.30	93.05	<i>92.64</i>	<i>92.70</i>	<i>93.17</i>	<i>94.54</i>	<i>96.25</i>	<i>97.59</i>	91.36	<i>92.18</i>	<i>95.40</i>
LNG Gross Imports	0.24	0.12	0.09	0.09	0.15	0.02	<i>0.18</i>	<i>0.20</i>	<i>0.32</i>	<i>0.18</i>	<i>0.18</i>	<i>0.20</i>	0.13	<i>0.14</i>	<i>0.22</i>
LNG Gross Exports	7.92	5.52	3.91	8.78	9.27	9.81	<i>9.41</i>	<i>9.83</i>	<i>10.47</i>	<i>9.73</i>	<i>9.41</i>	<i>11.00</i>	6.53	<i>9.58</i>	<i>10.15</i>
Pipeline Gross Imports	7.60	6.08	6.39	7.27	8.68	6.80	<i>6.80</i>	<i>6.85</i>	<i>7.39</i>	<i>6.36</i>	<i>6.38</i>	<i>6.72</i>	6.84	<i>7.28</i>	<i>6.71</i>
Pipeline Gross Exports	8.15	7.17	8.09	8.21	8.31	8.55	<i>9.37</i>	<i>9.52</i>	<i>9.34</i>	<i>8.66</i>	<i>9.38</i>	<i>9.38</i>	7.91	<i>8.94</i>	<i>9.19</i>
Supplemental Gaseous Fuels	0.19	0.17	0.15	0.18	0.18	0.15	<i>0.17</i>	<i>0.17</i>	<i>0.17</i>	<i>0.17</i>	<i>0.17</i>	<i>0.18</i>	0.17	<i>0.17</i>	<i>0.17</i>
Net Inventory Withdrawals	12.74	-12.24	-7.68	5.36	17.19	-9.12	<i>-7.78</i>	<i>4.66</i>	<i>15.86</i>	<i>-10.79</i>	<i>-8.49</i>	<i>4.32</i>	-0.46	<i>1.18</i>	<i>0.17</i>
Total Supply	99.51	71.12	76.78	87.06	98.91	72.53	<i>73.23</i>	<i>85.22</i>	<i>97.10</i>	<i>72.07</i>	<i>75.70</i>	<i>88.63</i>	83.61	<i>82.41</i>	<i>83.33</i>
Balancing Item (b)	-0.19	-0.28	0.05	-0.98	0.28	-0.42	<i>1.25</i>	<i>-0.60</i>	<i>-0.33</i>	<i>-1.63</i>	<i>-0.15</i>	<i>-0.83</i>	-0.35	<i>0.13</i>	<i>-0.74</i>
Total Primary Supply	99.31	70.84	76.83	86.08	99.20	72.12	<i>74.48</i>	<i>84.62</i>	<i>96.77</i>	<i>70.44</i>	<i>75.55</i>	<i>87.80</i>	83.25	<i>82.54</i>	<i>82.60</i>
Consumption (billion cubic feet per day)															
Residential	22.83	8.20	3.82	16.00	25.59	7.52	<i>3.68</i>	<i>16.89</i>	<i>25.05</i>	<i>7.85</i>	<i>3.67</i>	<i>16.92</i>	12.70	<i>13.37</i>	<i>13.32</i>
Commercial	13.93	5.82	4.36	10.31	14.84	6.25	<i>4.72</i>	<i>10.94</i>	<i>14.90</i>	<i>6.25</i>	<i>4.68</i>	<i>10.84</i>	8.60	<i>9.17</i>	<i>9.15</i>
Industrial	24.65	20.62	21.15	23.83	24.05	21.77	<i>21.91</i>	<i>25.10</i>	<i>24.95</i>	<i>22.66</i>	<i>22.41</i>	<i>25.22</i>	22.56	<i>23.21</i>	<i>23.81</i>
Electric Power (c)	29.55	29.05	40.10	28.19	26.65	29.14	<i>36.67</i>	<i>23.87</i>	<i>23.61</i>	<i>26.19</i>	<i>37.05</i>	<i>26.61</i>	31.74	<i>29.09</i>	<i>28.40</i>
Lease and Plant Fuel	5.17	4.90	4.93	4.99	4.92	5.10	<i>5.08</i>	<i>5.09</i>	<i>5.11</i>	<i>5.19</i>	<i>5.28</i>	<i>5.35</i>	5.00	<i>5.05</i>	<i>5.23</i>
Pipeline and Distribution Use	3.02	2.15	2.33	2.61	3.01	2.19	<i>2.27</i>	<i>2.59</i>	<i>2.98</i>	<i>2.13</i>	<i>2.29</i>	<i>2.69</i>	2.53	<i>2.51</i>	<i>2.52</i>
Vehicle Use	0.16	0.10	0.13	0.13	0.14	0.15	<i>0.15</i>	<i>0.15</i>	<i>0.16</i>	<i>0.16</i>	<i>0.16</i>	<i>0.16</i>	0.13	<i>0.15</i>	<i>0.16</i>
Total Consumption	99.31	70.84	76.83	86.08	99.20	72.12	<i>74.48</i>	<i>84.62</i>	<i>96.77</i>	<i>70.44</i>	<i>75.55</i>	<i>87.80</i>	83.25	<i>82.54</i>	<i>82.60</i>
End-of-period Inventories (billion cubic feet)															
Working Gas Inventory	2,029	3,133	3,840	3,341	1,801	2,583	<i>3,299</i>	<i>2,870</i>	<i>1,442</i>	<i>2,424</i>	<i>3,205</i>	<i>2,808</i>	3,341	<i>2,870</i>	<i>2,808</i>
East Region (d)	385	655	890	763	313	515	<i>808</i>	<i>658</i>	<i>174</i>	<i>452</i>	<i>682</i>	<i>498</i>	763	<i>658</i>	<i>498</i>
Midwest Region (d)	471	747	1,053	918	395	630	<i>970</i>	<i>823</i>	<i>278</i>	<i>537</i>	<i>894</i>	<i>790</i>	918	<i>823</i>	<i>790</i>
South Central Region (d)	857	1,221	1,313	1,155	760	991	<i>1,030</i>	<i>979</i>	<i>698</i>	<i>960</i>	<i>1,039</i>	<i>970</i>	1,155	<i>979</i>	<i>970</i>
Mountain Region (d)	92	177	235	195	113	175	<i>196</i>	<i>146</i>	<i>93</i>	<i>148</i>	<i>218</i>	<i>201</i>	195	<i>146</i>	<i>201</i>
Pacific Region (d)	200	308	318	282	197	246	<i>264</i>	<i>233</i>	<i>168</i>	<i>296</i>	<i>342</i>	<i>318</i>	282	<i>233</i>	<i>318</i>
Alaska	23	25	31	28	23	27	<i>31</i>	<i>31</i>	<i>31</i>	<i>31</i>	<i>31</i>	<i>31</i>	28	<i>31</i>	<i>31</i>

(a) Marketed production from U.S. Federal leases in the Gulf of Mexico.

(b) 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.

(c) Natural gas used for electricity generation and (a limited amount of) useful thermal output by electric utilities and independent power producers.

(d) For a list of States in each inventory region refer to *Weekly Natural Gas Storage Report, Notes and Definitions* (<http://ir.eia.gov/hgs/notes.html>).

- = no data available

LNG: liquefied natural gas.

Notes: EIA completed modeling and analysis for this report on September 2, 2021.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

Historical data: Latest data available from Energy Information Administration databases supporting the following reports: *Natural Gas Monthly*, DOE/EIA-0130; and *Electric Power Monthly*, Minor discrepancies with published historical data are due to independent rounding.

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 5b. U.S. Regional Natural Gas Prices (dollars per thousand cubic feet)

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
Wholesale/Spot															
Henry Hub Spot Price	1.98	1.77	2.07	2.63	3.70	3.06	4.15	4.16	4.28	3.41	3.38	3.34	2.11	3.77	3.60
Residential Retail															
New England	13.77	14.50	18.28	14.64	14.78	16.18	18.91	14.61	14.17	14.98	17.59	13.47	14.47	15.19	14.31
Middle Atlantic	10.77	11.85	17.85	11.77	10.41	13.43	17.55	11.83	10.90	13.07	17.49	11.43	11.76	11.67	11.83
E. N. Central	6.99	9.50	18.15	8.02	7.41	12.72	20.39	10.83	9.58	12.03	17.21	8.69	8.39	9.74	10.09
W. N. Central	6.85	9.89	17.26	8.66	7.59	11.57	18.56	10.46	9.15	11.92	17.67	9.50	8.48	9.46	10.12
S. Atlantic	12.12	15.52	24.15	14.20	12.10	18.04	24.95	14.08	12.51	17.41	23.21	12.84	14.23	14.35	14.07
E. S. Central	9.69	13.34	20.85	10.63	9.53	14.93	22.78	14.41	11.49	16.02	22.58	13.58	11.15	11.90	13.51
W. S. Central	8.52	14.22	20.83	11.67	9.32	15.97	21.53	12.65	9.89	15.48	20.85	11.69	11.40	12.11	12.16
Mountain	7.55	9.37	12.60	8.15	7.90	10.60	14.46	9.36	8.88	10.60	14.16	8.89	8.43	9.15	9.55
Pacific	13.41	14.47	14.50	13.70	14.28	15.11	15.57	14.43	14.61	15.22	15.76	14.55	13.82	14.62	14.84
U.S. Average	9.46	11.89	17.65	10.60	9.79	13.87	18.86	12.09	10.97	13.59	17.94	11.01	10.83	11.73	11.85
Commercial Retail															
New England	9.93	10.40	10.99	10.06	10.38	11.15	11.95	11.26	11.55	11.43	10.80	10.39	10.16	10.93	11.08
Middle Atlantic	7.91	7.00	6.78	7.53	7.87	7.96	7.47	8.18	8.65	8.35	7.69	8.02	7.50	7.93	8.28
E. N. Central	5.75	6.73	8.79	6.21	6.12	8.67	10.66	8.29	7.99	8.66	9.25	6.88	6.28	7.50	7.82
W. N. Central	5.43	6.53	8.12	6.55	6.31	7.65	9.58	8.21	8.12	8.40	9.30	7.26	6.14	7.32	7.97
S. Atlantic	8.51	9.21	9.55	8.88	8.79	9.83	10.58	9.80	9.56	10.15	10.08	8.80	8.87	9.49	9.49
E. S. Central	8.38	9.20	10.10	8.69	8.43	9.86	10.96	9.96	9.40	10.24	10.49	9.12	8.78	9.38	9.55
W. S. Central	5.99	7.18	8.13	7.46	7.01	8.32	9.47	8.92	8.13	8.50	8.58	7.61	6.92	8.09	8.12
Mountain	6.09	6.85	7.42	6.45	6.50	7.78	8.92	7.98	7.81	8.13	8.80	7.51	6.46	7.40	7.87
Pacific	9.58	9.30	9.59	9.70	10.50	10.42	10.86	10.24	10.17	9.94	10.17	9.62	9.57	10.46	9.95
U.S. Average	7.13	7.63	8.49	7.53	7.55	8.84	9.66	8.88	8.73	9.03	9.13	8.03	7.48	8.39	8.61
Industrial Retail															
New England	8.15	7.41	6.16	7.67	8.58	8.09	7.31	8.64	9.25	8.51	7.22	8.00	7.54	8.26	8.40
Middle Atlantic	7.43	6.76	7.00	7.61	7.70	7.38	7.62	8.32	8.90	8.38	7.94	8.16	7.28	7.83	8.49
E. N. Central	4.84	5.10	4.15	5.10	5.39	8.11	7.26	6.76	7.01	6.44	5.99	5.77	4.86	6.45	6.42
W. N. Central	3.97	3.30	3.15	4.13	5.20	4.28	4.98	5.91	6.24	5.20	4.79	5.11	3.68	5.14	5.39
S. Atlantic	4.15	3.70	3.72	4.56	5.05	4.69	5.65	6.22	6.43	5.38	5.05	5.15	4.06	5.40	5.55
E. S. Central	3.92	3.24	3.23	4.04	4.64	4.20	5.24	5.92	6.10	5.10	4.64	4.84	3.65	4.98	5.21
W. S. Central	2.19	1.92	2.19	2.89	5.75	3.21	4.29	4.39	4.45	3.68	3.59	3.49	2.31	4.37	3.80
Mountain	4.40	4.59	4.67	4.91	5.00	5.52	6.33	6.55	6.64	6.26	6.22	5.89	4.64	5.76	6.27
Pacific	7.46	6.28	6.18	7.23	8.30	7.23	7.61	7.85	7.98	7.34	7.32	7.19	6.86	7.77	7.47
U.S. Average	3.52	2.85	2.88	3.77	5.72	4.06	4.91	5.38	5.69	4.60	4.33	4.52	3.29	5.05	4.81

- = no data available

Notes: EIA completed modeling and analysis for this report on September 2, 2021.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

Prices are not adjusted for inflation.

Regions refer to U.S. Census divisions.

See "Census division" in EIA's Energy Glossary (<http://www.eia.doe.gov/glossary/index.html>) for a list of States in each region.

Historical data: Latest data available from Energy Information Administration databases supporting the *Natural Gas Monthly*, DOE/EIA-0130.

Natural gas Henry Hub spot price from Reuter's News Service (<http://www.reuters.com>).

Minor discrepancies with published historical data are due to independent rounding.

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 6. U.S. Coal Supply, Consumption, and Inventories

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
Supply (million short tons)															
Production	149.2	116.2	135.9	134.1	140.3	152.3	151.2	157.3	163.9	158.0	165.3	160.7	535.3	601.1	647.9
Appalachia	39.8	29.5	33.9	35.5	40.8	38.1	39.1	41.6	45.3	46.3	43.0	43.8	138.7	159.7	178.4
Interior	25.8	20.0	23.2	21.8	25.0	25.3	25.3	26.9	29.1	28.9	29.9	29.6	90.7	102.4	117.5
Western	83.6	66.7	78.8	76.8	74.5	88.9	86.8	88.8	89.5	82.8	92.4	87.3	305.9	339.1	352.0
Primary Inventory Withdrawals	0.5	1.3	2.0	-0.9	0.3	2.1	2.3	-1.9	-1.1	-1.8	-0.6	-5.0	2.8	2.8	-8.5
Imports	1.3	1.1	1.3	1.3	1.1	1.5	1.4	1.2	0.9	0.9	1.1	1.1	5.1	5.2	4.1
Exports	20.0	14.8	15.3	19.1	20.7	22.1	22.1	25.5	28.1	19.9	20.3	25.7	69.1	90.5	94.0
Metallurgical Coal	11.7	9.0	10.2	11.3	10.3	11.7	14.2	14.0	15.3	11.4	12.7	13.8	42.1	50.2	53.2
Steam Coal	8.3	5.8	5.1	7.8	10.4	10.4	8.0	11.5	12.8	8.5	7.6	11.9	27.0	40.3	40.8
Total Primary Supply	131.0	103.9	123.9	115.4	121.0	133.8	132.8	131.1	135.6	137.2	145.5	131.1	474.2	518.7	549.5
Secondary Inventory Withdrawals	-16.6	-5.0	21.5	-3.3	21.3	-0.8	33.7	16.4	11.4	-7.9	9.2	-3.2	-3.5	70.6	9.5
Waste Coal (a)	1.9	1.5	2.0	2.3	2.0	2.0	2.0	2.0	1.8	1.8	1.8	1.8	7.7	8.0	7.4
Total Supply	116.3	100.3	147.3	114.4	144.3	135.0	168.4	149.5	148.9	131.1	156.6	129.8	478.4	597.3	566.4
Consumption (million short tons)															
Coke Plants	4.3	3.5	3.2	3.5	4.4	5.1	4.2	4.6	5.6	4.6	4.3	4.7	14.4	18.3	19.1
Electric Power Sector (b)	97.9	87.2	139.3	112.1	128.1	113.8	157.3	137.7	136.0	119.5	145.4	117.9	436.5	536.9	518.7
Retail and Other Industry	7.4	5.7	6.1	7.2	6.8	6.9	6.9	7.2	7.4	7.0	7.0	7.2	26.4	27.8	28.6
Residential and Commercial	0.3	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.8	0.9	0.8
Other Industrial	7.1	5.6	5.9	7.0	6.6	6.7	6.7	7.0	7.1	6.9	6.8	7.0	25.6	27.0	27.8
Total Consumption	109.5	96.4	148.6	122.8	139.4	125.7	168.4	149.5	148.9	131.1	156.6	129.8	477.3	583.0	566.4
Discrepancy (c)	6.8	3.9	-1.2	-8.4	5.0	9.3	0.0	0.0	0.0	0.0	0.0	0.0	1.1	14.3	0.0
End-of-period Inventories (million short tons)															
Primary Inventories (d)	30.8	29.5	27.5	28.5	28.1	26.1	23.8	25.7	26.8	28.6	29.2	34.2	28.5	25.7	34.2
Secondary Inventories	150.6	155.6	134.2	137.5	116.1	117.0	83.3	66.9	55.5	63.4	54.2	57.4	137.5	66.9	57.4
Electric Power Sector	145.2	150.4	129.1	132.7	111.8	111.2	77.5	61.3	50.1	57.7	48.4	51.8	132.7	61.3	51.8
Retail and General Industry	3.0	3.0	2.9	2.8	2.6	3.6	3.6	3.4	3.7	3.5	3.5	3.3	2.8	3.4	3.3
Coke Plants	2.1	2.0	2.0	1.7	1.5	2.0	2.1	2.0	1.7	2.1	2.2	2.1	1.7	2.0	2.1
Commercial & Institutional	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2
Coal Market Indicators															
Coal Miner Productivity															
(Tons per hour)	6.37	6.37	6.37	6.37	6.32	6.32	6.32	6.32	6.30	6.30	6.30	6.30	6.37	6.32	6.30
Total Raw Steel Production															
(Million short tons per day)	0.268	0.174	0.197	0.224	0.246	0.258	0.275	0.329	0.329	0.291	0.288	0.302	0.216	0.277	0.302
Cost of Coal to Electric Utilities															
(Dollars per million Btu)	1.93	1.91	1.93	1.92	1.91	1.92	1.98	1.99	2.02	2.02	1.99	1.96	1.92	1.95	2.00

(a) Waste coal includes waste coal and coal slurry reprocessed into briquettes.

(b) Coal used for electricity generation and (a limited amount of) useful thermal output by electric utilities and independent power producers.

(c) The discrepancy reflects an unaccounted-for shipper and receiver reporting difference, assumed to be zero in the forecast period.

(d) Primary stocks are held at the mines and distribution points.

- = no data available

Notes: EIA completed modeling and analysis for this report on September 2, 2021.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

Historical data: Latest data available from Energy Information Administration databases supporting the following reports: *Quarterly Coal Report*, DOE/EIA-0121; and *Electric Power Monthly*,

Minor discrepancies with published historical data are due to independent rounding.

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 7a. U.S. Electricity Industry Overview

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
Electricity Supply (billion kilowatthours)															
Electricity Generation	966	933	1,148	962	989	984	1,157	975	986	1,002	1,158	988	4,009	4,104	4,133
Electric Power Sector (a)	925	896	1,109	923	952	948	1,116	936	947	964	1,116	949	3,853	3,952	3,976
Industrial Sector (b)	38	34	36	36	34	33	37	36	35	35	37	36	143	139	143
Commercial Sector (b)	3	3	4	3	3	3	4	3	3	3	4	3	13	13	14
Net Imports	10	11	15	12	11	12	14	10	11	12	14	11	47	46	49
Total Supply	976	944	1,163	973	999	996	1,170	985	997	1,014	1,172	999	4,056	4,150	4,182
Losses and Unaccounted for (c)	53	67	71	63	53	65	63	55	45	68	58	55	254	236	226
Electricity Consumption (billion kilowatthours unless noted)															
Retail Sales	887	844	1,057	876	914	898	1,072	896	918	912	1,078	909	3,664	3,780	3,817
Residential Sector	340	334	453	334	379	328	444	338	365	327	441	344	1,462	1,489	1,477
Commercial Sector	314	293	360	309	305	322	367	315	312	328	370	318	1,276	1,308	1,328
Industrial Sector	231	216	242	231	229	247	260	241	239	255	266	245	920	977	1,006
Transportation Sector	2	1	2	2	2	1	2	2	2	2	2	2	7	6	6
Direct Use (d)	36	33	35	34	33	32	36	35	34	33	36	35	138	135	139
Total Consumption	923	877	1,092	910	947	930	1,107	930	952	946	1,114	944	3,802	3,915	3,956
Average residential electricity usage per customer (kWh)	2,496	2,451	3,326	2,451	2,744	2,378	3,213	2,447	2,613	2,341	3,151	2,459	10,723	10,782	10,563
End-of-period Fuel Inventories Held by Electric Power Sector															
Coal (mmst)	145.2	150.4	129.1	132.7	111.8	111.2	77.5	61.3	50.1	57.7	48.4	51.8	132.7	61.3	51.8
Residual Fuel (mmb)	8.3	8.5	8.2	8.3	8.0	7.5	7.8	8.2	7.8	7.8	7.8	8.2	8.3	8.2	8.2
Distillate Fuel (mmb)	16.5	16.5	17.0	16.8	15.9	15.3	15.4	15.7	15.6	15.5	15.5	15.8	16.8	15.7	15.8
Prices															
Power Generation Fuel Costs (dollars per million Btu)															
Coal	1.93	1.91	1.93	1.92	1.91	1.92	1.98	1.99	2.02	2.02	1.99	1.96	1.92	1.95	2.00
Natural Gas	2.39	2.08	2.26	2.87	7.26	3.27	4.16	4.42	4.76	3.53	3.42	3.56	2.39	4.69	3.75
Residual Fuel Oil	12.15	6.65	8.85	8.90	11.28	12.99	13.03	13.01	13.03	13.33	12.32	11.90	9.15	12.72	12.70
Distillate Fuel Oil	13.27	8.39	10.37	10.54	13.59	15.40	15.85	16.52	16.15	16.07	15.16	15.17	10.73	14.93	15.59
Retail Prices (cents per kilowatthour)															
Residential Sector	12.90	13.24	13.35	13.25	13.09	13.78	13.89	13.76	13.68	14.14	13.97	13.73	13.20	13.63	13.88
Commercial Sector	10.33	10.63	10.97	10.62	11.11	11.07	11.52	11.09	11.41	11.21	11.44	10.96	10.65	11.21	11.26
Industrial Sector	6.38	6.63	7.08	6.53	7.15	6.90	7.26	6.58	6.96	6.84	7.16	6.57	6.66	6.97	6.89
Wholesale Electricity Prices (dollars per megawatthour)															
ERCOT North hub	23.41	24.03	34.12	26.41	616.34	39.74	41.67	24.17	29.70	24.96	30.27	25.83	26.99	180.48	27.69
CAISO SP15 zone	28.64	19.21	61.94	42.80	44.74	36.90	54.28	17.49	18.03	17.56	19.92	17.00	38.15	38.35	18.13
ISO-NE Internal hub	24.61	20.25	27.20	34.03	55.26	33.67	53.32	52.61	54.31	53.80	56.46	49.52	26.52	48.71	53.52
NYISO Hudson Valley zone	21.82	18.13	24.38	27.05	44.74	31.85	48.44	45.95	49.03	46.74	49.05	43.16	22.85	42.74	46.99
PJM Western hub	22.47	20.79	28.24	26.44	35.09	33.71	45.02	35.49	37.47	33.35	37.52	32.55	24.49	37.33	35.23
Midcontinent ISO Illinois hub	24.43	23.00	29.35	24.94	44.97	33.82	43.47	33.38	34.75	32.10	34.84	30.49	25.43	38.91	33.04
SPP ISO South hub	20.06	19.54	26.27	24.34	250.31	30.86	41.15	26.35	27.51	26.93	30.40	25.04	22.55	87.17	27.47
SERC index, Into Southern	23.58	18.23	23.47	25.21	41.10	32.93	39.92	32.01	33.71	30.62	32.33	28.99	22.62	36.49	31.41
FRCC index, Florida Reliability	26.24	18.53	23.75	25.39	27.73	32.17	40.43	36.35	37.11	32.90	33.46	31.70	23.48	34.17	33.79
Northwest index, Mid-Columbia	22.77	14.49	33.56	31.00	34.56	51.51	69.08	15.91	19.36	16.81	19.09	16.94	25.46	42.76	18.05
Southwest index, Palo Verde	22.07	19.60	80.81	36.10	41.72	46.57	57.82	13.09	15.96	16.09	17.32	14.99	39.64	39.80	16.09

Notes: EIA completed modeling and analysis for this report on September 2, 2021.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

kWh = kilowatthours. Btu = British thermal units.

Prices are not adjusted for inflation.

(a) Generation supplied by power plants with capacity of at least 1 megawatt operated by electric utilities and independent power producers.

(b) Generation supplied by power plants with capacity of at least 1 megawatt operated by businesses in the commercial and industrial sectors, primarily for onsite use.

(c) Includes transmission and distribution losses, data collection time-frame differences, and estimation error.

(d) Direct Use represents commercial and industrial facility use of onsite net electricity generation; and electrical sales or transfers to adjacent or collocated facilities for which revenue information is not available. See Table 7.6 of the EIA *Monthly Energy Review*.

Historical data sources:

(1) Electricity supply, consumption, fuel costs, and retail electricity prices: Latest data available from U.S. Energy Information Administration databases supporting the following reports: Electric Power Monthly, DOE/EIA-0226; and Electric Power Annual, DOE/EIA-0348

(2) Wholesale electricity prices (except for PJM RTO price): S&P Global Market Intelligence, SNL Energy Data

(3) PJM ISO Western Hub wholesale electricity prices: PJM Data Miner website

Minor discrepancies with published historical data are due to independent rounding.

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 7b. U.S. Regional Electricity Retail Sales (billion kilowatthours)

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
Residential Sector															
New England	11.7	10.9	14.6	11.0	12.9	10.8	14.0	11.1	12.4	10.4	13.3	10.9	48.2	48.9	46.9
Middle Atlantic	32.2	30.6	43.5	30.9	36.1	30.3	42.2	31.6	37.0	30.3	40.1	31.7	137.1	140.3	139.1
E. N. Central	46.4	43.7	56.5	43.4	50.2	43.1	55.0	44.7	48.3	42.1	52.8	45.3	190.0	193.1	188.4
W. N. Central	27.6	23.7	30.0	24.5	29.9	23.7	30.1	26.1	31.9	24.9	31.6	27.8	105.8	109.8	116.2
S. Atlantic	84.3	86.3	114.7	85.3	95.2	85.1	113.2	85.7	91.4	84.8	112.4	86.9	370.6	379.3	375.6
E. S. Central	29.0	26.0	37.2	26.6	33.8	25.6	36.5	27.4	32.5	26.1	37.0	27.8	118.8	123.3	123.4
W. S. Central	48.8	52.9	76.4	48.5	56.8	49.5	73.1	49.1	50.9	51.2	77.5	51.1	226.5	228.6	230.8
Mountain	22.5	25.7	36.2	24.0	23.7	26.9	34.5	23.8	23.0	25.3	34.4	24.1	108.4	108.9	106.8
Pacific contiguous	36.7	33.2	43.0	38.6	39.0	32.2	43.8	37.0	36.9	31.1	40.4	36.9	151.5	152.0	145.3
AK and HI	1.3	1.1	1.2	1.3	1.3	1.1	1.2	1.3	1.2	1.1	1.2	1.3	4.9	4.9	4.8
Total	340.3	334.1	453.4	334.1	378.9	328.4	443.7	337.9	365.4	327.4	440.7	343.9	1,462.0	1,488.9	1,477.3
Commercial Sector															
New England	12.3	10.6	13.2	11.4	11.7	11.7	13.2	11.4	11.7	11.6	13.1	11.4	47.5	48.1	47.7
Middle Atlantic	35.9	31.0	38.9	33.2	34.6	33.3	39.9	34.4	36.0	34.4	40.3	35.2	138.9	142.2	145.9
E. N. Central	43.1	38.3	47.3	41.0	41.7	42.2	47.5	42.0	42.8	42.8	47.4	42.3	169.7	173.4	175.3
W. N. Central	24.7	21.6	26.3	23.4	24.0	23.7	26.5	24.1	25.0	24.4	27.2	24.6	96.0	98.3	101.3
S. Atlantic	72.0	70.0	85.7	72.4	70.8	77.3	87.0	72.7	72.0	78.8	87.9	73.4	300.2	307.8	312.2
E. S. Central	20.7	19.4	25.3	20.4	20.9	21.7	25.4	20.8	21.3	22.5	25.7	20.9	85.8	88.7	90.4
W. S. Central	44.3	44.6	55.0	45.4	42.4	50.2	56.8	47.3	43.3	52.1	58.4	47.9	189.4	196.6	201.7
Mountain	22.4	22.1	27.4	22.8	21.9	24.8	28.1	23.2	22.5	24.7	28.3	23.4	94.7	98.0	98.9
Pacific contiguous	37.0	33.9	39.8	37.6	35.2	35.3	41.0	37.9	35.9	35.7	40.0	37.4	148.3	149.4	149.0
AK and HI	1.4	1.2	1.3	1.3	1.3	1.3	1.4	1.4	1.3	1.4	1.4	1.4	5.2	5.3	5.5
Total	313.7	292.7	360.3	308.9	304.6	321.6	366.6	315.0	311.9	328.5	369.7	317.9	1,275.7	1,307.9	1,328.1
Industrial Sector															
New England	3.7	3.5	3.9	3.7	3.8	4.0	4.2	3.8	3.9	4.0	4.2	3.8	14.8	15.7	15.9
Middle Atlantic	18.0	16.2	18.6	17.6	17.6	17.9	19.6	18.1	18.3	18.5	20.0	18.5	70.4	73.3	75.4
E. N. Central	44.0	37.7	44.5	42.5	44.8	46.6	48.2	44.4	47.6	48.2	49.4	45.3	168.7	183.9	190.5
W. N. Central	21.7	20.3	23.2	22.1	23.0	24.2	25.6	23.7	24.9	25.7	26.5	24.2	87.3	96.5	101.3
S. Atlantic	32.8	31.0	34.2	33.6	33.4	35.9	36.2	34.5	34.6	36.8	36.8	35.1	131.7	140.0	143.4
E. S. Central	23.3	21.4	23.4	22.9	23.8	25.0	25.6	24.0	24.9	25.6	25.8	24.1	91.1	98.4	100.4
W. S. Central	46.6	44.9	47.9	48.7	44.1	49.7	52.2	51.7	46.0	51.9	53.9	53.2	188.1	197.6	205.1
Mountain	20.1	20.3	22.6	19.9	19.2	21.6	23.8	20.1	19.3	21.7	24.1	20.4	82.9	84.7	85.5
Pacific contiguous	19.2	19.7	22.1	19.0	18.1	20.9	23.5	19.5	18.6	21.4	23.9	19.7	80.1	82.1	83.6
AK and HI	1.2	1.0	1.2	1.2	1.1	1.1	1.2	1.2	1.1	1.2	1.2	1.2	4.5	4.6	4.6
Total	230.7	216.0	241.6	231.2	228.8	246.9	259.9	241.0	239.2	255.1	265.8	245.4	919.5	976.6	1,005.5
Total All Sectors (a)															
New England	27.8	25.1	31.9	26.3	28.5	26.7	31.6	26.4	28.1	26.1	30.7	26.1	111.0	113.2	111.0
Middle Atlantic	86.9	78.5	101.8	82.5	89.2	82.3	102.5	84.9	92.2	84.1	101.2	86.1	349.7	358.9	363.6
E. N. Central	133.7	119.7	148.4	127.0	136.9	132.0	150.8	131.3	138.8	133.2	149.7	133.0	528.8	550.9	554.7
W. N. Central	74.0	65.7	79.5	70.0	77.0	71.6	82.1	73.8	81.8	75.1	85.2	76.7	289.2	304.6	318.8
S. Atlantic	189.5	187.6	235.0	191.6	199.7	198.6	236.7	193.2	198.3	200.8	237.4	195.7	803.7	828.1	832.2
E. S. Central	73.0	66.8	85.9	69.9	78.5	72.4	87.4	72.2	78.7	74.2	88.6	72.8	295.7	310.4	314.2
W. S. Central	139.8	142.4	179.4	142.7	143.3	149.5	182.2	148.1	140.3	155.3	189.9	152.3	604.2	623.0	637.8
Mountain	65.0	68.2	86.3	66.7	64.8	73.3	86.4	67.2	64.8	71.8	86.9	67.9	286.2	291.7	291.4
Pacific contiguous	93.1	87.0	105.1	95.4	92.5	88.6	108.5	94.6	91.5	88.3	104.4	94.2	380.6	384.2	378.5
AK and HI	3.8	3.4	3.6	3.8	3.6	3.6	3.7	3.9	3.7	3.6	3.7	3.9	14.6	14.8	15.0
Total	886.6	844.3	1,056.9	875.9	914.0	898.4	1,071.8	895.5	918.2	912.5	1,077.8	908.8	3,663.7	3,779.7	3,817.2

(a) Total retail sales to all sectors includes residential, commercial, industrial, and transportation sector sales.

- = no data available

Notes: EIA completed modeling and analysis for this report on September 2, 2021.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

Retail Sales represents total retail electricity sales by electric utilities and power marketers.

Regions refer to U.S. Census divisions.

See "Census division" in EIA's Energy Glossary (<http://www.eia.doe.gov/glossary/index.html>) for a list of States in each region.

Historical data: Latest data available from Energy Information Administration databases supporting the following reports: *Electric Power Monthly*, DOE/EIA-0226; and *Electric*

Minor discrepancies with published historical data are due to independent rounding.

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 7c. U.S. Regional Retail Electricity Prices (Cents per Kilowatthour)

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
Residential Sector															
New England	21.76	21.32	20.95	20.80	21.38	20.82	21.86	22.54	23.75	23.39	24.59	25.10	21.20	21.65	24.22
Middle Atlantic	15.47	15.96	16.18	15.98	15.62	16.28	16.92	16.90	16.41	16.87	17.35	17.07	15.92	16.44	16.93
E. N. Central	13.14	13.75	13.33	13.75	13.38	14.40	13.90	14.17	13.92	14.87	14.27	14.34	13.48	13.94	14.33
W. N. Central	10.98	12.59	12.88	11.46	10.88	12.76	13.61	11.73	10.62	12.15	12.80	11.19	11.99	12.24	11.68
S. Atlantic	11.79	11.80	12.05	11.83	11.66	12.31	12.43	12.32	12.37	12.90	12.83	12.37	11.88	12.19	12.63
E. S. Central	11.24	11.56	11.28	11.41	11.18	12.22	11.85	11.85	11.67	12.46	11.92	11.85	11.36	11.74	11.95
W. S. Central	11.04	11.42	11.29	11.37	11.85	11.72	12.02	12.28	12.63	11.62	11.52	11.73	11.29	11.97	11.83
Mountain	11.42	12.08	12.19	11.64	11.53	12.09	12.23	11.76	11.67	12.12	12.05	11.50	11.88	11.94	11.86
Pacific	15.69	16.18	17.77	16.79	16.76	18.15	18.02	16.82	17.02	18.94	18.57	16.91	16.67	17.43	17.84
U.S. Average	12.90	13.24	13.35	13.25	13.09	13.78	13.89	13.76	13.68	14.14	13.97	13.73	13.20	13.63	13.88
Commercial Sector															
New England	16.24	15.67	15.98	15.67	16.28	15.75	17.03	16.85	17.58	17.00	18.26	17.84	15.90	16.49	17.69
Middle Atlantic	11.69	12.53	13.21	12.41	12.48	13.34	13.95	13.15	13.11	13.90	14.30	13.39	12.47	13.26	13.69
E. N. Central	9.95	10.37	10.19	10.29	10.40	10.69	10.60	10.79	10.79	10.93	10.67	10.76	10.19	10.62	10.78
W. N. Central	9.07	10.12	10.33	9.12	9.10	10.19	11.23	9.61	8.86	9.45	10.27	9.00	9.66	10.06	9.41
S. Atlantic	9.23	9.02	9.09	9.20	9.29	9.18	9.42	9.74	9.81	9.45	9.46	9.59	9.13	9.41	9.57
E. S. Central	10.75	10.83	10.60	10.67	10.96	11.23	11.20	11.20	11.32	11.38	11.28	11.25	10.70	11.15	11.31
W. S. Central	7.84	7.87	7.89	7.98	11.28	8.85	8.30	7.91	10.98	8.88	8.48	8.15	7.90	8.99	9.04
Mountain	9.00	9.82	10.09	9.31	9.11	9.76	10.22	9.39	9.08	9.59	9.84	9.00	9.58	9.66	9.41
Pacific	13.50	14.79	17.20	15.05	14.53	16.00	18.16	15.71	14.88	15.98	17.35	14.85	15.18	16.17	15.80
U.S. Average	10.33	10.63	10.97	10.62	11.11	11.07	11.52	11.09	11.41	11.21	11.44	10.96	10.65	11.21	11.26
Industrial Sector															
New England	12.29	12.22	12.41	12.12	13.49	12.78	13.31	12.73	14.07	13.23	13.71	13.03	12.26	13.08	13.51
Middle Atlantic	6.36	6.35	6.41	6.28	6.50	6.55	6.62	6.34	6.41	6.46	6.39	6.15	6.35	6.51	6.35
E. N. Central	6.51	6.78	6.75	6.62	6.92	6.93	7.00	6.80	6.95	6.95	6.96	6.80	6.66	6.91	6.92
W. N. Central	6.94	7.32	7.89	6.62	6.97	7.30	8.05	6.73	6.90	7.35	8.08	6.81	7.20	7.28	7.30
S. Atlantic	5.98	6.09	6.50	6.09	6.24	6.30	6.81	6.27	6.36	6.30	6.70	6.20	6.17	6.41	6.39
E. S. Central	5.45	5.51	5.70	5.52	5.75	5.87	5.95	5.61	5.72	5.83	5.86	5.56	5.54	5.80	5.75
W. S. Central	5.05	4.98	5.21	5.03	7.60	5.45	5.26	4.88	6.56	5.15	5.01	4.77	5.07	5.73	5.33
Mountain	5.73	6.15	6.91	5.94	6.23	6.62	7.06	5.87	6.15	6.51	6.93	5.92	6.21	6.48	6.41
Pacific	8.97	10.33	12.38	10.95	9.64	10.70	12.33	10.93	9.72	10.77	12.41	11.33	10.71	10.99	11.14
U.S. Average	6.38	6.63	7.08	6.53	7.15	6.90	7.26	6.58	6.96	6.84	7.16	6.57	6.66	6.97	6.89
All Sectors (a)															
New England	18.02	17.61	17.79	17.27	18.19	17.34	18.65	18.61	19.78	18.93	20.35	20.13	17.68	18.22	19.82
Middle Atlantic	11.98	12.58	13.23	12.42	12.56	12.94	13.76	13.09	13.10	13.33	13.93	13.19	12.58	13.11	13.41
E. N. Central	9.92	10.47	10.36	10.24	10.35	10.57	10.65	10.59	10.56	10.73	10.71	10.63	10.24	10.54	10.66
W. N. Central	9.15	10.15	10.58	9.15	9.16	10.07	11.11	9.43	8.95	9.62	10.53	9.10	9.77	9.97	9.57
S. Atlantic	9.80	9.82	10.16	9.82	9.91	10.00	10.46	10.26	10.38	10.33	10.63	10.22	9.91	10.17	10.40
E. S. Central	9.25	9.41	9.56	9.26	9.48	9.72	9.94	9.59	9.69	9.84	9.97	9.60	9.38	9.69	9.78
W. S. Central	8.03	8.28	8.63	8.12	10.37	8.67	8.92	8.30	10.13	8.53	8.73	8.17	8.29	9.05	8.86
Mountain	8.83	9.58	10.14	9.14	9.15	9.69	10.15	9.18	9.12	9.55	9.91	8.97	9.48	9.59	9.43
Pacific	13.41	14.30	16.41	14.92	14.50	15.53	16.82	15.15	14.68	15.75	16.68	14.91	14.82	15.55	15.54
U.S. Average	10.29	10.63	11.11	10.54	10.94	10.92	11.47	10.88	11.15	11.04	11.42	10.82	10.66	11.07	11.12

(a) Volume-weighted average of retail prices to residential, commercial, industrial, and transportation sectors.

- = no data available

Notes: EIA completed modeling and analysis for this report on September 2, 2021.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

Prices are not adjusted for inflation.

Regions refer to U.S. Census divisions.

See "Census division" in EIA's Energy Glossary (<http://www.eia.doe.gov/glossary/index.html>) for a list of States in each region.

Historical data: Latest data available from Energy Information Administration databases supporting the following reports: *Electric Power Monthly*, DOE/EIA-0226; and *Electric*

Minor discrepancies with published historical data are due to independent rounding.

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 7d part 2. U.S. Regional Electricity Generation, Electric Power Sector (billion kilowatthours), continued from Table 7d part 1
 U.S. Energy Information Administration | Short-Term Energy Outlook - September 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
Midwest (MISO)															
Natural Gas	43.9	43.2	53.4	37.7	34.5	40.2	45.6	28.1	29.4	38.2	53.7	40.0	178.3	148.4	161.2
Coal	51.0	41.1	68.5	57.8	69.7	60.1	80.7	70.0	69.8	61.5	70.9	56.2	218.4	280.5	258.4
Nuclear	26.6	22.9	24.4	21.2	23.6	22.6	24.3	23.5	23.8	22.2	23.7	23.0	95.1	94.0	92.6
Conventional hydropower	3.1	3.2	2.8	2.7	2.8	2.9	2.5	2.2	2.4	2.8	2.3	2.1	11.8	10.4	9.6
Nonhydro renewables (d)	20.8	20.1	16.2	24.2	24.3	23.2	19.5	28.1	26.6	25.2	20.8	29.1	81.3	95.1	101.7
Other energy sources (e)	1.4	1.3	1.3	1.2	1.8	1.3	0.7	1.0	1.7	1.5	1.0	1.2	5.2	4.9	5.3
Total generation	146.9	131.8	166.6	144.8	156.7	150.3	173.5	153.0	153.6	151.4	172.3	151.6	590.0	633.5	628.9
Net energy for load (f)	153.0	141.5	174.4	149.8	159.0	154.2	179.4	155.8	156.8	158.5	178.4	157.9	618.7	648.3	651.6
Central (Southwest Power Pool)															
Natural Gas	17.5	16.3	24.2	13.7	12.4	14.5	18.6	7.3	7.6	14.4	21.6	13.3	71.6	52.9	56.9
Coal	17.0	15.7	26.7	19.8	21.8	19.8	30.1	24.9	25.4	18.5	28.2	20.6	79.2	96.6	92.8
Nuclear	4.4	4.4	4.2	3.8	4.1	2.8	4.3	4.4	4.3	4.3	4.1	2.5	16.8	15.6	15.2
Conventional hydropower	5.9	6.0	5.1	4.8	5.3	5.1	4.8	3.6	3.7	4.4	4.0	3.2	21.8	18.8	15.3
Nonhydro renewables (d)	20.3	21.4	16.7	22.2	22.8	23.6	20.3	26.5	27.8	26.0	23.0	29.1	80.6	93.2	105.9
Other energy sources (e)	0.1	0.1	0.1	0.2	0.3	0.1	-0.1	0.1	-0.1	-0.1	-0.1	0.2	0.5	0.5	-0.1
Total generation	65.2	63.9	77.0	64.4	66.7	65.9	78.1	66.7	68.8	67.5	80.9	68.9	270.5	277.5	286.0
Net energy for load (f)	62.8	63.7	74.7	60.9	64.7	65.0	74.9	61.8	66.2	66.6	77.7	64.5	262.1	266.3	275.0
Texas (ERCOT)															
Natural Gas	37.2	42.1	59.3	36.0	33.0	40.0	52.2	27.8	22.6	28.9	44.7	23.9	174.6	153.0	120.0
Coal	13.1	15.8	20.3	17.9	16.3	18.5	24.0	21.5	17.0	20.7	23.4	18.5	67.2	80.3	79.6
Nuclear	10.4	9.7	11.0	10.3	10.5	9.8	10.3	9.5	10.7	10.0	10.6	10.8	41.4	40.1	42.0
Conventional hydropower	0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.1	0.2	0.2	0.2	0.1	1.1	0.8	0.7
Nonhydro renewables (d)	22.6	24.8	20.8	24.4	25.2	27.6	27.0	31.7	35.4	37.6	34.2	35.3	92.6	111.5	142.6
Other energy sources (e)	0.4	0.3	0.4	0.4	0.2	0.3	0.4	0.4	0.2	0.3	0.4	0.4	1.5	1.3	1.3
Total generation	84.1	93.1	112.1	89.1	85.6	96.5	114.0	91.0	86.0	97.7	113.3	89.1	378.4	387.2	386.2
Net energy for load (f)	84.1	93.1	112.1	89.1	85.6	96.5	114.0	91.0	86.0	97.7	113.3	89.1	378.4	387.2	386.2
Northwest															
Natural Gas	23.7	17.1	27.3	21.6	20.9	20.1	31.1	23.2	18.9	14.3	24.4	24.6	89.6	95.3	82.3
Coal	22.3	16.1	24.5	23.2	22.5	19.0	29.9	24.7	24.4	18.6	29.4	21.6	86.1	96.1	93.9
Nuclear	2.4	2.0	2.4	2.5	2.5	1.2	2.5	2.4	2.4	2.4	2.4	2.4	9.4	8.7	9.7
Conventional hydropower	35.0	38.7	32.4	29.9	34.3	32.0	26.3	26.9	33.0	41.1	30.7	28.0	136.0	119.5	132.8
Nonhydro renewables (d)	13.9	14.2	12.6	14.9	15.3	16.6	14.1	16.2	16.7	16.1	14.6	17.1	55.6	62.3	64.5
Other energy sources (e)	0.2	0.2	0.1	0.2	0.2	0.2	0.0	0.1	0.1	-0.1	0.0	0.1	0.6	0.4	0.1
Total generation	97.5	88.3	99.4	92.2	95.6	89.2	103.9	93.5	95.4	92.5	101.5	93.8	377.4	382.2	383.3
Net energy for load (f)	89.9	81.7	93.6	87.7	88.9	82.8	98.9	90.0	89.1	86.0	96.5	90.0	353.0	360.7	361.7
Southwest															
Natural Gas	11.8	14.7	20.4	14.8	11.0	15.8	21.5	11.1	6.4	8.9	16.9	9.8	61.7	59.4	42.0
Coal	5.3	5.3	8.8	6.6	5.9	5.6	9.3	7.6	6.9	7.1	8.7	5.8	25.9	28.4	28.5
Nuclear	8.3	7.6	8.7	7.0	8.5	7.1	8.6	7.7	8.4	7.5	8.6	7.5	31.6	31.8	32.1
Conventional hydropower	2.7	4.0	3.7	2.5	2.5	3.3	3.3	2.2	2.7	3.9	3.8	2.6	12.8	11.2	13.0
Nonhydro renewables (d)	2.5	3.1	2.5	2.3	3.0	3.8	3.7	4.3	4.7	5.6	5.1	5.3	10.5	14.8	20.7
Other energy sources (e)	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	-0.1
Total generation	30.5	34.8	44.2	33.1	30.8	35.7	46.4	32.9	29.1	33.0	43.2	31.0	142.7	145.8	136.2
Net energy for load (f)	19.8	25.3	32.7	21.3	19.2	26.4	32.1	21.1	19.2	24.8	32.2	21.1	99.2	98.9	97.3
California															
Natural Gas	16.7	12.6	27.0	23.6	16.6	17.4	29.2	22.6	15.8	15.9	27.2	21.9	79.9	85.8	80.9
Coal	1.4	1.2	2.1	2.0	1.8	1.4	1.9	2.2	1.8	1.5	1.8	2.8	6.7	7.2	7.9
Nuclear	4.8	4.9	4.5	2.1	2.9	4.2	4.9	4.7	4.6	3.8	4.4	4.0	16.3	16.7	16.7
Conventional hydropower	3.1	5.6	5.4	2.7	2.0	3.2	2.8	0.5	2.2	5.9	5.4	2.6	16.8	8.5	15.9
Nonhydro renewables (d)	14.3	18.9	18.1	14.4	15.5	20.9	20.4	15.2	16.0	21.0	21.4	16.1	65.8	71.9	74.4
Other energy sources (e)	0.0	0.1	0.1	0.1	0.0	-0.1	-0.1	0.1	0.0	-0.3	-0.1	0.1	0.2	-0.2	-0.4
Total generation	40.3	43.3	57.3	44.9	38.7	47.1	58.9	45.3	40.3	47.7	60.2	47.3	185.8	190.0	195.5
Net energy for load (f)	58.6	59.4	74.6	61.1	57.0	62.7	78.2	60.6	56.5	62.4	76.0	61.0	253.7	258.5	255.9

(a) Large-scale solar generation from power plants with more than 1 megawatt of capacity. Excludes generation from small-scale solar photovoltaic systems.
 (b) Residual fuel oil, distillate fuel oil, petroleum coke, and other petroleum liquids.
 (c) Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, nonrenewable waste, and miscellaneous technologies.
 (d) Wind, large-scale solar, biomass, and geothermal
 (e) Pumped storage hydroelectric, petroleum, other gases, batteries, and other nonrenewable fuels. See notes (b) and (c).
 (f) Regional generation from generating units operated by electric power sector, plus energy receipts from minus energy deliveries to U.S. balancing authorities outside region.
 Notes: EIA completed modeling and analysis for this report on September 2, 2021.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

Data reflect generation supplied by power plants with a combined capacity of at least 1 megawatt operated by electric utilities and independent power producers.

Historical data: Latest data available from U.S. Energy Information Administration databases supporting the following reports: *Electric Power Monthly*, DOE/EIA-0226; and *Electric Power Annual*, DOE/EIA-0348.

Table 8b. U.S. Renewable Electricity Generation and Capacity
 U.S. Energy Information Administration | Short-Term Energy Outlook - September 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
Renewable Energy Electric Generating Capacity (megawatts, end of period)															
Electric Power Sector (a)															
Biomass	6,601	6,599	6,550	6,549	6,539	6,395	6,396	6,439	6,442	6,444	6,444	6,444	6,549	6,439	6,444
Waste	3,928	3,926	3,853	3,851	3,842	3,840	3,842	3,885	3,888	3,890	3,890	3,890	3,851	3,885	3,890
Wood	2,673	2,673	2,697	2,697	2,697	2,554	2,554	2,554	2,554	2,554	2,554	2,554	2,697	2,554	2,554
Conventional Hydroelectric	79,488	79,482	79,629	79,631	79,632	79,702	79,706	79,722	79,755	79,765	79,806	79,809	79,631	79,722	79,809
Geothermal	2,505	2,523	2,523	2,523	2,523	2,523	2,523	2,565	2,565	2,565	2,565	2,565	2,523	2,565	2,565
Large-Scale Solar (b)	39,060	41,153	42,954	47,574	50,244	52,116	56,380	63,492	65,554	69,711	72,187	79,837	47,574	63,492	79,837
Wind	106,123	107,617	109,144	118,112	120,998	124,339	127,810	135,696	136,400	137,954	138,664	141,972	118,112	135,696	141,972
Other Sectors (c)															
Biomass	6,430	6,431	6,427	6,438	6,417	6,420	6,405	6,405	6,405	6,405	6,397	6,397	6,438	6,405	6,397
Waste	781	782	778	789	787	790	790	790	790	790	790	790	789	790	790
Wood	5,649	5,649	5,649	5,649	5,630	5,630	5,615	5,615	5,615	5,615	5,607	5,607	5,649	5,615	5,607
Conventional Hydroelectric	288	288	288	288	288	288	284	286	286	286	286	286	288	286	286
Large-Scale Solar (b)	442	455	461	467	471	471	496	539	539	539	541	542	467	539	542
Small-Scale Solar (d)	24,355	25,255	26,264	27,724	28,888	30,385	31,964	33,541	35,065	36,479	37,881	39,261	27,724	33,541	39,261
Residential Sector	15,071	15,689	16,373	17,238	18,076	19,144	20,256	21,370	22,412	23,367	24,290	25,174	17,238	21,370	25,174
Commercial Sector	7,425	7,642	7,910	8,430	8,725	9,104	9,508	9,908	10,325	10,723	11,137	11,567	8,430	9,908	11,567
Industrial Sector	1,859	1,924	1,981	2,056	2,088	2,138	2,201	2,264	2,328	2,390	2,454	2,519	2,056	2,264	2,519
Wind	113	339	348	348	348	348	348	348	348	348	348	348	348	348	348
Renewable Electricity Generation (billion kilowatthours)															
Electric Power Sector (a)															
Biomass	7.1	6.7	7.0	6.7	7.0	6.6	10.4	9.5	8.0	7.8	9.3	8.1	27.5	33.5	33.1
Waste	4.1	4.0	4.0	3.9	4.0	3.9	5.5	5.3	4.2	3.8	5.3	5.1	16.1	18.7	18.4
Wood	3.0	2.7	3.0	2.7	3.1	2.7	4.8	4.2	3.8	4.0	4.0	3.0	11.4	14.9	14.8
Conventional Hydroelectric	75.0	81.3	70.6	63.0	69.3	67.2	57.7	55.2	66.4	78.3	63.4	58.0	289.9	249.5	266.0
Geothermal	3.9	4.2	4.2	4.2	3.9	4.0	4.3	4.2	4.0	3.3	4.3	4.2	16.5	16.3	15.7
Large-Scale Solar (b)	16.7	27.3	27.6	18.5	21.4	35.2	35.7	24.0	28.2	45.1	44.9	29.5	90.1	116.3	147.8
Wind	87.4	87.1	67.5	94.7	96.3	95.2	79.5	111.3	113.7	105.9	87.5	118.2	336.7	382.4	425.4
Other Sectors (c)															
Biomass	7.4	7.1	7.0	7.1	7.0	6.8	7.0	7.1	7.0	6.8	7.0	7.1	28.6	27.9	27.9
Waste	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.7	0.7	0.6	0.7	0.7	2.7	2.7	2.7
Wood	6.7	6.4	6.4	6.4	6.3	6.2	6.4	6.4	6.3	6.2	6.4	6.4	25.8	25.3	25.3
Conventional Hydroelectric	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	1.2	1.2	1.2
Large-Scale Solar (b)	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.3	0.2	0.8	0.9	0.9
Small-Scale Solar (d)	8.4	12.4	12.3	8.7	9.8	14.8	15.1	10.6	11.9	17.9	18.1	12.5	41.7	50.2	60.5
Residential Sector	5.0	7.5	7.5	5.4	5.9	9.1	9.4	6.6	7.4	11.3	11.4	7.9	25.4	31.0	38.0
Commercial Sector	2.7	3.8	3.8	2.6	3.1	4.5	4.6	3.2	3.7	5.3	5.4	3.7	12.9	15.3	18.1
Industrial Sector	0.7	1.0	1.0	0.7	0.8	1.1	1.2	0.8	0.9	1.3	1.3	0.9	3.5	3.9	4.4
Wind	0.1	0.1	0.2	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.8	1.0	0.9

(a) Power plants larger than or equal to one megawatt in size that are operated by electric utilities or independent power producers.
 (b) Solar thermal and photovoltaic generating units at power plants larger than or equal to 1 megawatt.
 (c) Businesses or individual households not primarily engaged in electric power production for sale to the public, whose generating capacity is at least one megawatt (except for small-scale solar photovoltaic data, which consists of systems smaller than 1 megawatt).
 (d) Solar photovoltaic systems smaller than one megawatt.
 - = no data available

Notes: EIA completed modeling and analysis for this report on September 2, 2021.
 The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.
Historical data: Latest data available from EIA databases supporting the Electric Power Monthly, DOE/EIA-0226.
 Minor discrepancies with published historical data are due to independent rounding.
Forecasts: EIA Short-Term Integrated Forecasting System.

Table 9a. U.S. Macroeconomic Indicators and CO2 Emissions

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
Macroeconomic															
Real Gross Domestic Product (billion chained 2012 dollars - SAAR)	18,952	17,258	18,561	18,768	19,056	19,358	19,643	19,914	20,149	20,290	20,417	20,533	18,385	19,493	20,347
Real Personal Consumption Expend. (billion chained 2012 dollars - SAAR)	13,014	11,756	12,821	12,928	13,283	13,659	13,723	13,861	13,948	14,046	14,135	14,220	12,630	13,631	14,087
Real Private Fixed Investment (billion chained 2012 dollars - SAAR)	3,420	3,123	3,319	3,457	3,564	3,591	3,627	3,666	3,708	3,727	3,743	3,762	3,329	3,612	3,735
Business Inventory Change (billion chained 2012 dollars - SAAR)	-21	-290	15	57	-94	-169	29	79	185	193	185	172	-60	-39	183
Real Government Expenditures (billion chained 2012 dollars - SAAR)	3,346	3,378	3,360	3,356	3,391	3,378	3,396	3,422	3,429	3,430	3,440	3,447	3,360	3,397	3,436
Real Exports of Goods & Services (billion chained 2012 dollars - SAAR)	2,442	1,943	2,166	2,279	2,262	2,296	2,331	2,374	2,421	2,471	2,523	2,575	2,208	2,316	2,497
Real Imports of Goods & Services (billion chained 2012 dollars - SAAR)	3,284	2,718	3,188	3,412	3,488	3,555	3,614	3,626	3,666	3,699	3,733	3,768	3,150	3,571	3,717
Real Disposable Personal Income (billion chained 2012 dollars - SAAR)	14,963	16,520	15,783	15,443	17,301	15,797	15,514	15,394	15,418	15,561	15,694	15,766	15,677	16,002	15,610
Non-Farm Employment (millions)	151.9	133.7	140.9	142.6	143.4	145.0	147.6	149.5	151.0	152.2	153.0	153.6	142.3	146.4	152.5
Civilian Unemployment Rate (percent)	3.8	13.1	8.8	6.8	6.2	5.9	5.2	4.7	4.3	4.0	3.8	3.6	8.1	5.5	3.9
Housing Starts (millions - SAAR)	1.49	1.09	1.44	1.58	1.60	1.59	1.56	1.55	1.49	1.44	1.41	1.39	1.40	1.57	1.43
Industrial Production Indices (Index, 2017=100)															
Total Industrial Production	100.0	87.1	95.5	97.4	98.3	99.8	101.2	102.1	103.5	104.4	105.0	105.6	95.0	100.3	104.6
Manufacturing	97.6	84.2	94.2	96.7	97.3	98.6	100.4	101.7	103.4	104.5	105.2	105.9	93.2	99.5	104.7
Food	101.8	93.8	98.0	100.1	101.2	100.7	100.6	101.0	101.4	101.7	102.1	102.6	98.4	100.9	102.0
Paper	99.5	91.5	90.7	94.9	93.9	95.0	95.5	96.2	96.7	97.2	97.7	97.9	94.2	95.2	97.4
Petroleum and Coal Products	98.0	77.3	84.0	86.7	90.5	96.2	97.6	99.3	100.2	100.9	101.5	101.5	86.5	95.9	101.0
Chemicals	95.0	89.9	92.5	94.7	91.7	98.9	101.2	102.6	104.0	105.3	106.0	106.3	93.0	98.6	105.4
Nonmetallic Mineral Products	99.7	88.1	94.6	98.4	97.4	95.1	95.7	96.2	96.5	96.6	96.7	96.8	95.2	96.1	96.6
Primary Metals	95.9	72.9	83.3	90.3	92.4	96.8	99.2	99.5	100.7	101.8	102.2	102.0	85.6	97.0	101.7
Coal-weighted Manufacturing (a)	97.1	86.7	93.0	96.6	94.2	97.2	98.7	99.6	100.8	101.6	102.2	102.5	93.3	97.4	101.8
Distillate-weighted Manufacturing (a)	97.0	84.4	92.0	95.7	94.6	97.2	98.7	99.5	100.4	101.2	101.6	101.7	92.3	97.5	101.2
Electricity-weighted Manufacturing (a)	97.1	83.4	91.6	95.4	94.5	97.8	99.7	100.7	102.0	103.2	103.9	104.2	91.9	98.2	103.3
Natural Gas-weighted Manufacturing (a)	95.5	84.1	89.7	93.7	90.5	96.4	98.3	99.3	100.5	101.6	102.2	102.4	90.8	96.1	101.7
Price Indexes															
Consumer Price Index (all urban consumers) (index, 1982-1984=1.00)	2.59	2.56	2.59	2.61	2.63	2.69	2.73	2.74	2.75	2.76	2.76	2.78	2.59	2.70	2.76
Producer Price Index: All Commodities (index, 1982=1.00)	1.97	1.88	1.94	1.99	2.11	2.23	2.26	2.24	2.23	2.22	2.21	2.20	1.94	2.21	2.21
Producer Price Index: Petroleum (index, 1982=1.00)	1.71	1.05	1.47	1.50	1.89	2.19	2.26	2.15	2.05	2.07	2.02	1.92	1.43	2.12	2.02
GDP Implicit Price Deflator (index, 2012=100)	113.4	113.0	114.0	114.6	115.8	117.5	118.7	119.6	120.1	120.6	121.0	121.6	113.7	117.9	120.8
Miscellaneous															
Vehicle Miles Traveled (b) (million miles/day)	7,764	6,868	8,262	8,009	7,679	8,940	9,175	8,807	8,268	9,279	9,355	9,026	7,728	8,655	8,985
Air Travel Capacity (Available ton-miles/day, thousands)	630	362	478	537	537	607	675	671	647	688	702	671	502	623	677
Aircraft Utilization (Revenue ton-miles/day, thousands)	328	151	208	238	245	324	355	380	402	449	448	407	231	327	426
Airline Ticket Price Index (index, 1982-1984=100)	250.8	203.7	200.6	215.1	198.4	243.3	228.8	224.9	227.3	250.7	244.3	255.9	217.5	223.9	244.6
Raw Steel Production (million short tons per day)	0.268	0.174	0.197	0.224	0.246	0.258	0.275	0.329	0.329	0.291	0.288	0.302	0.216	0.277	0.302
Carbon Dioxide (CO2) Emissions (million metric tons)															
Petroleum	553	442	518	522	516	557	576	570	559	576	591	590	2,035	2,219	2,316
Natural Gas	490	349	383	429	485	355	371	422	473	347	377	438	1,651	1,633	1,634
Coal	201	177	271	224	255	231	308	274	274	241	289	241	873	1,067	1,044
Total Energy (c)	1,247	971	1,174	1,178	1,259	1,146	1,257	1,269	1,308	1,167	1,259	1,272	4,571	4,931	5,005

 (a) Fuel share weights of individual sector indices based on EIA *Manufacturing Energy Consumption Survey*.

(b) Total highway travel includes gasoline and diesel fuel vehicles.

(c) Includes electric power sector use of geothermal energy and non-biomass waste.

- = no data available

SAAR = Seasonally-adjusted annual rate

Notes: EIA completed modeling and analysis for this report on September 2, 2021.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

Historical data: Latest data available from U.S. Department of Commerce, Bureau of Economic Analysis; Federal Reserve System, Statistical release G17; Federal Highway Administration; and Federal Minor discrepancies with published historical data are due to independent rounding.

Forecasts: EIA Short-Term Integrated Forecasting System. U.S. macroeconomic forecasts are based on the IHS Markit model of the U.S. Economy.

Table 9b. U.S. Regional Macroeconomic Data

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
Real Gross State Product (Billion \$2012)															
New England	982	891	959	971	986	1,001	1,015	1,029	1,041	1,047	1,054	1,059	951	1,008	1,050
Middle Atlantic	2,745	2,459	2,641	2,667	2,708	2,758	2,800	2,841	2,880	2,904	2,926	2,943	2,628	2,777	2,913
E. N. Central	2,476	2,241	2,432	2,454	2,494	2,518	2,551	2,585	2,612	2,631	2,646	2,659	2,401	2,537	2,637
W. N. Central	1,175	1,072	1,156	1,172	1,190	1,206	1,221	1,235	1,247	1,253	1,260	1,265	1,144	1,213	1,256
S. Atlantic	3,352	3,080	3,302	3,334	3,387	3,432	3,480	3,526	3,566	3,588	3,607	3,625	3,267	3,456	3,596
E. S. Central	819	734	801	812	825	835	845	855	863	869	873	878	791	840	871
W. S. Central	2,293	2,101	2,243	2,279	2,304	2,344	2,374	2,407	2,438	2,457	2,477	2,495	2,229	2,357	2,467
Mountain	1,270	1,165	1,252	1,266	1,290	1,311	1,331	1,348	1,364	1,372	1,379	1,388	1,238	1,320	1,376
Pacific	3,729	3,399	3,645	3,676	3,731	3,811	3,881	3,941	3,992	4,020	4,044	4,070	3,612	3,841	4,031
Industrial Output, Manufacturing (Index, Year 2017=100)															
New England	96.1	82.6	91.6	94.6	95.0	90.9	92.4	93.5	95.0	95.8	96.3	96.8	91.3	93.0	96.0
Middle Atlantic	95.0	79.2	89.9	92.5	92.9	89.2	90.8	92.3	93.9	94.9	95.5	96.0	89.2	91.3	95.1
E. N. Central	95.9	79.0	91.8	94.4	95.0	97.5	99.1	100.6	102.6	104.0	105.0	105.9	90.3	98.1	104.4
W. N. Central	98.0	86.0	94.7	97.1	98.0	98.4	100.0	101.3	102.7	103.5	104.2	104.7	94.0	99.4	103.8
S. Atlantic	98.6	85.8	95.2	98.4	98.8	103.5	105.4	106.7	108.4	109.4	110.1	110.7	94.5	103.6	109.7
E. S. Central	96.6	79.9	93.6	96.7	97.8	103.8	105.9	107.1	108.4	109.6	110.5	111.2	91.7	103.6	109.9
W. S. Central	100.2	88.9	95.7	97.9	98.8	93.8	95.6	97.2	99.0	100.3	101.1	101.8	95.7	96.3	100.5
Mountain	102.8	92.2	101.3	104.0	105.2	113.2	115.1	116.2	118.0	119.0	119.7	120.4	100.1	112.4	119.3
Pacific	96.4	84.0	91.6	93.3	93.4	94.5	96.3	97.4	99.4	100.7	101.5	102.3	91.3	95.4	101.0
Real Personal Income (Billion \$2012)															
New England	892	978	929	922	1,002	933	922	917	922	930	938	942	930	943	933
Middle Atlantic	2,314	2,522	2,430	2,340	2,574	2,387	2,357	2,335	2,347	2,370	2,391	2,401	2,401	2,413	2,377
E. N. Central	2,457	2,700	2,580	2,535	2,848	2,602	2,557	2,540	2,545	2,570	2,592	2,605	2,568	2,637	2,578
W. N. Central	1,159	1,260	1,180	1,192	1,321	1,231	1,215	1,209	1,206	1,215	1,223	1,227	1,198	1,244	1,218
S. Atlantic	3,267	3,507	3,411	3,363	3,734	3,455	3,415	3,397	3,408	3,440	3,471	3,491	3,387	3,500	3,453
E. S. Central	911	990	938	933	1,064	973	956	949	947	955	962	966	943	985	957
W. S. Central	2,038	2,202	2,101	2,069	2,325	2,137	2,095	2,102	2,113	2,136	2,158	2,172	2,102	2,165	2,145
Mountain	1,211	1,317	1,257	1,252	1,398	1,295	1,277	1,270	1,274	1,286	1,296	1,302	1,259	1,310	1,289
Pacific	2,833	3,036	2,977	2,955	3,196	2,998	2,969	2,949	2,960	2,988	3,014	3,031	2,950	3,028	2,998
Households (Thousands)															
New England	5,896	5,855	5,961	5,954	5,955	5,958	5,961	5,975	5,989	6,003	6,016	6,027	5,954	5,975	6,027
Middle Atlantic	16,157	16,042	16,343	16,333	16,341	16,352	16,371	16,417	16,458	16,496	16,528	16,560	16,333	16,417	16,560
E. N. Central	18,873	18,757	19,104	19,077	19,084	19,099	19,123	19,182	19,234	19,272	19,305	19,338	19,077	19,182	19,338
W. N. Central	8,651	8,606	8,770	8,771	8,783	8,796	8,811	8,843	8,871	8,900	8,927	8,948	8,771	8,843	8,948
S. Atlantic	25,667	25,560	26,072	26,111	26,170	26,234	26,312	26,441	26,558	26,677	26,787	26,886	26,111	26,441	26,886
E. S. Central	7,662	7,625	7,772	7,776	7,787	7,799	7,816	7,847	7,875	7,902	7,928	7,949	7,776	7,847	7,949
W. S. Central	14,881	14,825	15,125	15,153	15,189	15,228	15,277	15,354	15,426	15,497	15,563	15,621	15,153	15,354	15,621
Mountain	9,461	9,436	9,641	9,670	9,708	9,746	9,789	9,851	9,908	9,962	10,013	10,057	9,670	9,851	10,057
Pacific	18,795	18,691	19,041	19,043	19,051	19,062	19,087	19,148	19,204	19,251	19,295	19,327	19,043	19,148	19,327
Total Non-farm Employment (Millions)															
New England	7.6	6.4	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.4	7.5	7.5	6.9	7.1	7.5
Middle Atlantic	20.1	16.7	17.9	18.2	18.3	18.5	18.9	19.2	19.4	19.6	19.8	19.9	18.2	18.7	19.7
E. N. Central	22.3	19.3	20.7	20.8	20.9	21.1	21.4	21.7	21.9	22.1	22.2	22.3	20.8	21.3	22.1
W. N. Central	10.8	9.7	10.2	10.2	10.3	10.4	10.5	10.7	10.7	10.8	10.8	10.9	10.2	10.5	10.8
S. Atlantic	29.3	26.2	27.4	27.8	27.9	28.1	28.6	29.0	29.3	29.5	29.6	29.7	27.7	28.4	29.5
E. S. Central	8.3	7.5	7.9	8.0	8.0	8.1	8.2	8.3	8.3	8.4	8.4	8.4	7.9	8.1	8.4
W. S. Central	17.9	16.2	16.7	17.0	17.1	17.3	17.6	17.7	17.9	18.0	18.1	18.2	17.0	17.4	18.0
Mountain	11.2	10.0	10.5	10.6	10.7	10.9	11.1	11.2	11.3	11.4	11.5	11.5	10.6	11.0	11.4
Pacific	24.0	20.9	21.6	21.9	21.9	22.4	22.9	23.3	23.6	23.8	23.9	24.1	22.1	22.7	23.9

- = no data available

Notes: EIA completed modeling and analysis for this report on September 2, 2021.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

Regions refer to U.S. Census divisions.

 See "Census division" in EIA's Energy Glossary (<http://www.eia.doe.gov/glossary/index.html>) for a list of States in each region.

Historical data: Latest data available from U.S. Department of Commerce, Bureau of Economic Analysis; Federal Reserve System, Statistical release G17.

Minor discrepancies with published historical data are due to independent rounding.

Forecasts: U.S. macroeconomic forecasts are based on the IHS Markit model of the U.S. Economy.

Table 9c. U.S. Regional Weather Data

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
Heating Degree Days															
New England	2,732	973	114	1,995	3,008	777	128	2,127	3,113	868	140	2,128	5,815	6,040	6,248
Middle Atlantic	2,471	839	85	1,830	2,818	667	79	1,956	2,903	696	89	1,960	5,225	5,520	5,648
E. N. Central	2,785	846	126	2,099	3,086	708	111	2,247	3,160	735	134	2,268	5,857	6,152	6,297
W. N. Central	3,037	800	167	2,314	3,227	719	134	2,451	3,253	706	165	2,472	6,318	6,532	6,596
South Atlantic	1,111	253	17	878	1,347	211	13	957	1,376	195	13	945	2,260	2,528	2,529
E. S. Central	1,479	337	20	1,224	1,790	313	22	1,309	1,805	252	21	1,309	3,059	3,434	3,387
W. S. Central	971	102	8	738	1,301	122	5	797	1,145	85	4	797	1,819	2,226	2,031
Mountain	2,220	677	128	1,781	2,303	665	126	1,839	2,226	696	144	1,827	4,805	4,934	4,892
Pacific	1,538	528	65	1,084	1,558	487	85	1,235	1,547	575	87	1,203	3,215	3,364	3,412
U.S. Average	1,881	544	71	1,422	2,107	473	68	1,530	2,113	488	77	1,525	3,918	4,178	4,202
Heating Degree Days, Prior 10-year Average															
New England	3,152	822	105	2,127	3,133	856	107	2,099	3,100	852	112	2,123	6,207	6,195	6,187
Middle Atlantic	2,948	644	69	1,944	2,913	678	72	1,911	2,887	685	74	1,931	5,606	5,573	5,576
E. N. Central	3,198	698	102	2,197	3,157	731	105	2,170	3,133	728	101	2,198	6,195	6,162	6,160
W. N. Central	3,288	703	132	2,380	3,248	728	133	2,368	3,219	726	130	2,399	6,502	6,477	6,474
South Atlantic	1,461	169	10	953	1,395	181	11	916	1,380	187	11	921	2,593	2,503	2,499
E. S. Central	1,849	214	15	1,277	1,771	231	16	1,249	1,763	243	15	1,255	3,356	3,267	3,276
W. S. Central	1,199	83	3	794	1,140	86	3	786	1,145	93	3	784	2,078	2,015	2,026
Mountain	2,198	721	136	1,850	2,188	704	135	1,850	2,180	686	134	1,838	4,905	4,877	4,838
Pacific	1,456	580	85	1,162	1,462	553	81	1,147	1,454	523	80	1,139	3,283	3,242	3,196
U.S. Average	2,153	473	64	1,512	2,113	483	65	1,487	2,096	479	64	1,495	4,202	4,148	4,134
Cooling Degree Days															
New England	0	103	544	0	0	149	430	2	0	81	397	2	647	581	481
Middle Atlantic	0	155	682	4	0	184	603	5	0	149	526	5	841	792	680
E. N. Central	2	218	605	2	2	253	587	7	0	213	520	6	827	849	739
W. N. Central	6	295	662	3	8	312	700	10	3	263	657	9	966	1,030	932
South Atlantic	192	616	1,228	298	150	622	1,161	229	131	649	1,160	245	2,334	2,163	2,186
E. S. Central	74	426	1,062	80	41	435	1,020	62	29	505	1,036	64	1,642	1,557	1,634
W. S. Central	173	838	1,503	210	89	766	1,425	195	90	851	1,497	200	2,723	2,476	2,639
Mountain	10	462	1,076	116	10	528	930	76	18	424	931	77	1,664	1,544	1,450
Pacific	25	195	716	125	24	256	684	60	27	171	593	60	1,061	1,024	852
U.S. Average	69	392	931	120	49	413	875	92	45	396	848	96	1,513	1,429	1,384
Cooling Degree Days, Prior 10-year Average															
New England	0	83	471	1	0	81	474	1	0	88	469	1	554	556	558
Middle Atlantic	0	170	609	6	0	163	610	6	0	162	606	7	786	779	774
E. N. Central	3	240	579	8	3	234	572	7	3	238	567	7	829	816	815
W. N. Central	7	296	696	11	7	294	686	10	7	299	677	10	1,010	997	993
South Atlantic	127	695	1,201	247	142	679	1,194	260	146	668	1,188	263	2,270	2,276	2,266
E. S. Central	36	557	1,082	72	42	532	1,065	74	44	518	1,058	77	1,747	1,714	1,697
W. S. Central	100	892	1,576	207	114	880	1,567	210	113	852	1,531	211	2,775	2,771	2,708
Mountain	24	430	934	80	24	441	949	85	23	458	942	85	1,468	1,499	1,508
Pacific	31	185	624	78	31	193	647	86	31	208	662	85	919	958	987
U.S. Average	47	419	891	99	52	413	892	104	53	412	886	105	1,455	1,461	1,457

- = no data available

Notes: EIA completed modeling and analysis for this report on September 2, 2021.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

Regional degree days for each period are calculated by EIA as contemporaneous period population-weighted averages of state degree day data published by the National See *Change in Regional and U.S. Degree-Day Calculations* (http://www.eia.gov/forecasts/steo/special/pdf/2012_sp_04.pdf) for more information.

The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.

Regions refer to U.S. Census divisions. See "Census division" in EIA's Energy Glossary (<http://www.eia.gov/tools/glossary/>) for a list of states in each region.

Historical data: Latest data available from U.S. Department of Commerce, National Oceanic and Atmospheric Association (NOAA).

Forecasts: Based on forecasts by the NOAA Climate Prediction Center (<http://www.cpc.ncep.noaa.gov/pacdir/DDdir/NHOME3.shtml>).