



Short-Term Energy Outlook

Forecast highlights

- The July *Short-Term Energy Outlook* (STEO) remains subject to heightened levels of uncertainty related to the ongoing economic recovery from the COVID-19 pandemic. U.S. economic activity continues to rise after reaching multiyear lows in the second quarter of 2020 (2Q20). The increase in economic activity and easing of the COVID-19 pandemic have contributed to rising energy use. U.S. gross domestic product (GDP) declined by 3.5% in 2020 from 2019 levels. This STEO assumes U.S. GDP will grow by 7.4% in 2021 and by 5.0% in 2022. We based the U.S. macroeconomic assumptions in this outlook on forecasts by IHS Markit.
- Brent crude oil spot prices averaged \$73 per barrel (b) in June, up \$5/b from May and \$33/b higher than in June of last year. In the coming months, we expect that global oil production, largely from OPEC+ members (OPEC and partner nonmember countries), will increase by more than global oil consumption. We expect rising production will reduce the persistent global oil inventory draws that have occurred for much of the past year and keep prices similar to current levels, averaging \$72/b during the second half of 2021 (2H21). However, in 2022, we expect that continuing growth in production from OPEC+ and accelerating growth in U.S. tight oil production, along with other supply growth, will outpace growth in global oil consumption and contribute to declining oil prices. Based on these factors, we expect Brent to average \$67/b in 2022.
- We estimate that global consumption of petroleum and liquid fuels averaged 92.3 million barrels per day (b/d) for all of 2020, down by 8.6 million b/d from 2019. We expect that global liquid fuels consumption will grow by 5.3 million b/d in 2021. In our forecast, global consumption of liquid fuels rises by an additional 3.7 million b/d in 2022 to 101.4 million b/d, which would surpass 2019 levels.
- Based on our estimates, global liquid fuels inventories rose by 6.3 million b/d in 1H20 before declining at an average rate of 2.1 million b/d in 2H20 and 1H21. We forecast global inventories will continue to fall in the near term but at a slower rate, with global inventories falling by 0.2 million b/d in 2H21. We then expect inventories to rise by almost 0.5 million b/d in 2022.
- U.S. regular gasoline retail prices averaged \$2.78 per gallon (gal) in 1H21, compared with an average of \$2.20/gal in 1H20. In June, monthly retail gasoline prices averaged \$3.06/gal, the first time the monthly average was more than \$3.00/gal since October

2014 (in nominal terms). We forecast regular-grade gasoline prices to average \$2.92/gal in 2H21 and \$2.74/gal for all of 2022.

- U.S. liquid fuels consumption in 2020 averaged 18.1 million b/d, down 2.4 million b/d (12%) from 2019 consumption. We forecast U.S. liquid fuels consumption will rise to 19.6 million b/d in 2021 and then to 20.7 million b/d in 2022, which would surpass the 2019 level.
- [Henry Hub natural gas spot prices averaged \\$2.03 per million British thermal units \(MMBtu\) in 2020](#). We expect Henry Hub prices will rise to an annual average of \$3.22/MMBtu in 2021, and we forecast prices will then fall to an average of \$3.00/MMBtu in 2022.
- We expect U.S. dry natural gas production to average 92.6 billion cubic feet per day (Bcf/d) in 2021, up by 1.3% from 2020, and then rise to 94.7 Bcf/d in 2022.
- U.S. natural gas consumption averaged 83.3 Bcf/d in 2020, down 2.2% from 2019. We expect that natural gas consumption will decline by 1.1% in 2021 and then grow by 0.7% in 2022. Most of the forecast decline in natural gas consumption this year is the result of less natural gas use in the electric power sector, which we expect to continue to decline because of rising natural gas prices.
- U.S. working natural gas in storage ended the winter withdrawal season in March 2021 at 1.8 trillion cubic feet (Tcf), slightly less than the five-year (2016–20) average. We forecast that flat U.S. natural gas production this summer combined with record U.S. natural gas exports will contribute to slightly lower-than-average inventory builds during the remainder of the summer build season, which ends in October. Forecast natural gas inventories end October 2021 at 3.6 Tcf, which is 3% lower than the five-year average.
- We forecast that U.S. retail sales of electricity will increase by 2.8% in 2021 after falling by 3.9% in 2020. The largest forecast increase in electricity consumption occurs in the industrial sector, driven by rising levels of economic output. We forecast U.S. retail sales of electricity to the industrial sector will grow by 5.1% this year. Retail sales of electricity to the commercial sector also grow in the forecast, but they grow at the slightly slower pace of 2.1% in 2021 as some workers continue working from home instead of in office buildings. We forecast U.S. residential electricity sales will grow by 1.9% in 2021, as a result of colder temperatures in 1Q21 compared with 1Q20 and a hot start to the summer.
- We expect the share of electric power generation produced by natural gas in the United States will average 36% in both 2021 and 2022, down from 39% in 2020. Our forecast for the natural gas share as a generation fuel declines because we expect a higher delivered natural gas price for electricity generators. Because we expect higher natural gas prices, we forecast coal's generation share to rise from 20% in 2020 to 24% this year

but to fall to 22% next year. New additions of solar and wind generating capacity support our expectation that the share of U.S. generation from these two energy sources will rise from 11% in 2020 to 15% by 2022. Extreme drought conditions in the West drive our expectation that the share of U.S. generation from hydropower will fall from 8% in 2020 to 6% in 2021 and 7% 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.

- The U.S. retail electricity price for the residential sector in our forecast averages 13.6 cents per kilowatthour in 2021, which is 2.8% higher than the average retail price in 2020. Forecast residential prices increase by an additional 1.8% in 2022.
- During the next 18 months, we expect [electricity generation capacity from renewable energy sources](#) to continue growing. Our forecast includes both wind and solar capacity growth, and solar capacity grows at a faster rate. Based on [our survey data](#), large-scale solar capacity growth in gigawatts (GW) will exceed wind growth for the first time in 2022.
- We expect U.S. coal production to total 617 million short tons (MMst) in 2021, which is 78 MMst (15%) more than in 2020. Rising electricity demand for coal amid higher natural gas prices is driving this production increase. In 2022, we expect coal production to fall by 7 MMst (1%).
- We forecast that total energy-related carbon dioxide (CO₂) emissions will increase by 7.1% in 2021 and by 1.5% in 2022 after declining by 11.1% in 2020. Even with growth over the next two years, forecast emissions in 2022 remain 3.3% lower than in 2019.

Global Liquid Fuels

Global Petroleum and Other Liquid Fuels Consumption. Based on preliminary data and estimates from 1Q21, as well as our assumptions of continued economic recovery, we forecast consumption of global petroleum and other liquid fuels will grow by 5.3 million b/d in 2021. This growth follows a decline of 8.6 million b/d in 2020. Forecast growth in global oil consumption of 3.7 million b/d in 2022 would bring global oil consumption to 101.4 million b/d, which would be 0.4 million b/d higher than in 2019. Our global economic growth forecasts come from Oxford Economics, which forecasts GDP in 2021 will increase by 6.3% and by 4.8% in 2022, compared with a decline of 3.4% in 2020.

We expect oil demand growth in 2021 to be fairly evenly split between the OECD and non-OECD. OECD oil demand grows by 2.5 million b/d, and non-OECD demand grows by 2.8 million b/d. Our forecast assumes that business activity and travel will continue to increase throughout 2021 and into 2022. For 2021, in addition to rising economic activity, oil consumption growth is driven by reopening economies and a return to travel patterns more similar to pre-pandemic norms. In 2022, economic growth alone becomes the main driver of oil consumption growth.

We expect U.S. liquid fuels consumption in 2021 to rise by 1.5 million b/d from 2020, making it the largest contributor to global consumption growth in the forecast. Since the beginning of 2021, some of the most significant increases in our expectations for oil demand have been for Europe. Strict travel restrictions imposed by many of the European OECD countries in 1Q21 gradually eased in the second quarter as a result of successful large-scale vaccination campaigns. As a result, Europe has experienced a significant increase in economic activity in 2Q21 as capacity limits and restrictions on mobility and non-essential business activity have either been reduced or eliminated. We estimate that 2Q21 liquid fuels consumption in OECD Europe was up 1.8 million b/d from the same period in 2020, contributing to our expectation that liquids consumption in OECD Europe will be up 0.5 million b/d for all 2021 compared with 2020.

Oil consumption growth in many of the non-OECD regions remains more uncertain. Large-scale vaccination campaigns in Asia, Latin America, the Middle East, and Africa have been relatively slower—with some exceptions—than in Europe and the United States. Outbreaks of COVID-19 infections and the re-imposition of restrictions on mobility and business activity still pose a significant downside risk in these regions. In 1H21, Malaysia, Thailand, and Vietnam, where a majority of the populations remain unvaccinated, imposed mobility and business activity restrictions after experiencing large outbreaks of COVID-19 infections.

In addition, the spread of COVID-19 variants and the effectiveness of the vaccines against these variants are significant risk factors to a full and sustained global recovery. India experienced its worst outbreak of COVID-19 infections in 2Q21 when the [Delta variant spread](#), which is reportedly more virulent and contagious than other variants, and the outbreak led to a sharp reduction in economic activity from which the country is now slowly recovering. If the vaccines currently available are not effective against the Delta or other variants, countries will have to continue to rely on mobility and activity restrictions to mitigate the spread, which will lead to a longer, more drawn-out return in global oil demand.

For 2021, we forecast liquid fuels consumption in India to grow by 0.3 million b/d (6%), consumption in China to grow by 0.9 million b/d (6%), and consumption in the rest of non-OECD to grow by 1.7 million b/d (5%).

Non-OPEC Production of Petroleum and Other Liquid Fuels. Following a 2.5 million b/d decrease in 2020, with declines extending into 1Q21, we estimate that non-OPEC liquid fuels production increased by 2.6 million b/d in 2Q21 from 2Q20. Almost three quarters of this increase came from two non-OPEC producers: the United States and Russia. We expect non-OPEC production to rise by 1.1 million b/d in 2021 and by 3.1 million b/d in 2022. We expect Canada and Brazil to lead non-OPEC production growth in 2021 and the United States and Russia to lead growth in 2022.

We expect Canada's production of petroleum and other liquid fuels to increase by more than 0.3 million b/d in 2021, which would make it the leading source of non-OPEC liquid fuels supply

growth this year. Despite heavier-than-normal turnarounds at a number of oil sands projects in 1H21, we forecast Canada's production to reach new record highs in 2H21. Output growth in 2021 is driven by increasing refinery demand for crude oil in the United States, the end of Canadian government-ordered curtailments, and the restart of oil sands expansion projects that were deferred during 2020. We do not expect any new upstream projects to come online in Canada during the forecast period. Forecast crude oil production growth comes from expansions or debottlenecking of existing projects.

In January 2021, President Biden revoked the presidential permit authorizing the construction of the Keystone XL pipeline, and in June 2021, owner TC Energy officially canceled the project. The pipeline would have expanded Canada's crude oil export capacity to the United States by 830,000 b/d. The cancellation of the Keystone XL does not materially affect our production outlook for Canada, and we expect Canada's pipeline export capacity will be adequate through the end of the forecast period. Enbridge's Line 3 replacement (370,000 b/d) will come online at the end of 2021, the TransMountain expansion project (590,000 b/d) in 2022, and additional Enbridge expansion and optimizations to its existing pipeline system can bring more than 400,000 b/d of increased export capacity over the forecast period. Forecast production in Canada grows by 0.2 million b/d in 2022.

Even as production in most non-OPEC producers declined in 2020, Brazil's liquid fuels supply grew by 0.1 million b/d during 2020. We expect Brazil's production to grow by more than 0.2 million b/d in 2021. However, our current forecast is 0.1 million b/d lower on average compared with the January 2021 STEO and reflects the difficulties Brazil's national oil company, Petrobras, experienced at the beginning of 2021 with restarting fields that had undergone heavy maintenance in 4Q20. Growth in 2021 is further limited as a result of delayed startups. Petrobras has postponed the start-up of the first phase of the Mero oil field development, the floating production storage and offloading vessel (FPSO) Guanabara, from 4Q21 to 1H22. The restart of the Equinor-operated Peregrino field has also been delayed to 2022. The current operational asset in the Peregrino field has been offline since 2019 because of technical issues and was delayed again in 2020 because of COVID-19 safety protocols. The startup of its second phase of development has also been delayed to 2022 because of work disruptions caused by the pandemic. Forecast production in Brazil will grow by 0.3 million b/d in 2022. We expect that five new FPSO units will ramp up through the forecast period and continue to drive growth, notably at the Sepia, Mero, and Buzios fields. Each of these FPSOs has a production capacity of 180,000 b/d.

Russia is the second-largest producer of liquid fuels among non-OPEC countries after the United States. Production in Russia grew by 0.5 million b/d in 1H21 from 2H20, as OPEC+ participants eased crude oil production cuts. We expect Russia's liquid fuels production to increase by 0.2 million b/d for all of 2021 and by 0.8 million b/d in 2022. After the OPEC+ agreement ends in early 2022, we expect Russia's production to rise above 11.5 million b/d during 2H22, with annual average production in 2022 equal to 2019 levels.

China's liquid fuels production in our forecast increases by more than 0.1 million b/d in 2021. China's government outlined its goals for national oil companies to increase upstream crude oil and natural gas production during the next few years to help meet its outlined energy security goals. We expect slight declines in crude oil production in 2022 will be offset by both increasing production of other liquids and by increasing refinery gains, resulting in a small increase in China's overall production.

Norway's liquid fuels production rises in our forecast by about 0.1 million b/d in both 2021 and 2022. Norway's Ministry of Petroleum and Energy enacted unilateral production limits on the Norwegian continental shelf from June 2020 to December 2020. When production limits expired, Norway's liquid fuels production was up slightly in 1H21 compared with 1H20. We expect liquid fuels production to continue to grow in 2H21 and in 2022 as new fields come online and ramp up production, including the much-delayed Martin Linge field. The Johan Sverdrup field, which was the main driver of growth in Norway's liquid fuels production in 2020, will also contribute to growth in 2021 and 2022.

Mexico's forecast liquid fuels production averages 1.9 million b/d in 2021, almost unchanged from 2019 and 2020. We have revised our 2021 production forecast upwards from its January 2021 STEO estimate of 1.8 million b/d because private operators have surpassed our expectations regarding their ability to ramp up the Ixachi, Pokoch, and Hokchi fields. We expect Mexico's oil production to fall to 1.8 million b/d on average in 2022, reflecting financial constraints at Mexico's national oil company, PEMEX, and continued large declines in mature fields. New growth in foreign-operated fields in 2021 is insufficient to offset declines from PEMEX's older fields, in particular the Maloob field.

We forecast that output across a number of other non-OPEC producers will decline in 2021 and 2022, notably Indonesia, the United Kingdom, and Colombia.

OPEC Production of Petroleum and Other Liquid Fuels. At the [April 2021 OPEC+ meeting](#), the OPEC+ countries agreed to incrementally raise their production from May through July 2021, including a full reversal of Saudi Arabia's voluntary production cut of 1 million b/d. They reaffirmed this agreement [at their June meeting](#). This forecast was completed on July 1, prior to [OPEC+ calling off its most recent meeting](#) on July 5. However, we forecast that OPEC and its OPEC+ partners will continue to increase crude oil production beyond July in response to rising global oil consumption.

Although our forecast assumes current U.S. sanctions remain in place for Iran and Venezuela for the entire forecast period, we expect Iran will increase crude oil supply somewhat in the coming months. We also expect that OPEC+ will not implement further production cuts to accommodate any potential increases in oil output from Iran or Venezuela.

After holding crude oil production near 25 million b/d during the first four months of 2021, OPEC began increasing production in May based on its agreement with OPEC+ partners. We

expect OPEC will increase production by 2.4 million b/d from May through August, raising production in response to rising global oil consumption. In our forecast OPEC crude oil production averages 28.2 million b/d in 2H21, up 2.9 million b/d from 1H21 and up 4.0 million b/d from 2H20. For all of 2021, we forecast that OPEC crude oil production will average 26.8 million b/d, up 1.2 million b/d from 2020. We forecast OPEC will raise crude oil production by an additional 1.8 million b/d in 2022 to 28.6 million b/d.

Our OPEC crude oil production forecast is subject to considerable uncertainty. OPEC+ implemented monthly meetings to assess global oil market conditions, and the group's production targets are potentially subject to regular adjustments. OPEC+ has indicated it will adjust production targets in response to changes in global oil demand, but the path of global oil demand in the coming months remains highly uncertain. Also, the manner in which OPEC+ would change production targets in response to higher production from Iran, or other changes in the oil market, is not clear. Finally, country compliance with existing production targets as the oil price rises is uncertain.

Even with increased OPEC crude oil production, remaining surplus production capacity will be more than sufficient to meet additional demand should consumption exceed our expectations. We expect that OPEC surplus crude oil production capacity, which averaged 6.2 million b/d in 2020, will average 6.7 million b/d in 2021 and 4.8 million b/d in 2022, compared with average surplus capacity of 2.2 million b/d from 2010–19. These estimates do not include additional capacity that may be available in Iran that is offline because of U.S. sanctions on Iran's oil sales. All else equal, elevated levels of OPEC surplus production capacity tend to have a moderating effect on crude oil price increases.

Venezuela is not subject to the current OPEC+ production target, and in contrast to the rest of OPEC, we expect Venezuela's crude oil production to continue to decline as a result of ongoing operational difficulties, lack of field and facility maintenance, and continuing sanctions. Venezuela's production declines accelerated in 2020 after the United States government imposed new sanctions on its main oil trader, Rosneft Trading, in mid-February 2021. In addition, the decline in global oil demand following the onset of the COVID-19 pandemic further reduced the demand for Venezuela's oil.

OPEC Non-Crude Oil Liquids. We estimate that OPEC production of other liquids declined to 5.1 million b/d on average in 2020, down from 5.4 million b/d in 2019. The 2020 production decrease was driven by reduced output of associated condensate stemming from reduced crude oil production. In the forecast, associated liquids production rises as OPEC relaxes its crude oil production cuts. We expect OPEC non-crude oil liquids production will rise to 5.3 million b/d in 2021 and to 5.5 million b/d in 2022.

Global Oil Inventories. We estimate global oil inventories increased by 1.2 billion barrels during the first five months of 2020. Inventories subsequently fell by 0.8 billion barrels from June 2020 through June 2021. However, we expect that markets will be much more balanced

during 2H21 and in 2022. Although global oil demand continues to rise, relaxed OPEC+ production targets during the second half of the year, rising oil supplies in Iran, and rising non-OPEC production will result in global oil inventory draws of 0.2 million b/d during 2H21, compared with our estimate that inventory draws were 1.7 million b/d in 1H21. We expect inventories to build at a rate of nearly 0.5 million b/d in 2022 as OPEC continues to raise production in response to rising demand and as non-OPEC production growth, particularly in the United States, accelerates.

Crude Oil Prices. Brent crude oil prices averaged \$73/b in June 2021, up \$5/b from May. June was the first month when Brent crude oil prices averaged more than \$70/b since May 2019. The increase likely reflected market expectations of continuing near-term tightness in global oil markets, which were evident in ongoing declines in global oil inventories. As vaccination rollouts have continued to ramp up in parts of the world, personal travel and mobility have been rising during much of 2021. Increasing oil consumption combined with production restraint from OPEC+ and relatively flat crude oil output in the United States have kept global oil consumption above global oil supply, draining inventories. Although global oil inventories during May and June fell at a slower rate than earlier in the year, the inventory draws of 1.2 million b/d over the past two months indicate the oil market was still in a structural deficit. Crude oil prices received additional support from increasing global economic activity and decreasing global COVID-19 cases. These factors have also contributed to rising prices across a wide range of assets including equities and other commodities.

We expect that recent increases in crude oil prices along with the OPEC+ decision to raise production will help meet the expected increase in global oil demand and lead to relatively balanced global oil markets for the remainder of the forecast period. Despite strength in oil prices during 1H21, we expect moderate downward oil price pressures to emerge beginning in 2H21, when we forecast global oil production to rise and cause inventories to draw at a slower pace. We expect global oil inventories will fall by 0.2 million b/d in 2H21, compared with an average draw of 1.7 million b/d in 1H21. We forecast Brent spot prices to average \$71/b during 4Q21 compared with the average of \$73/b in June.

Although we expect oil markets to be fairly balanced in 2022, in our forecast, global oil production begins to outpace global oil demand in 2022, which we expect will continue to put moderate downward pressure on oil prices. Higher oil price levels realized in 2021 drive increases in U.S. tight oil production in 2022. In addition, we expect more barrels from OPEC+ members to reach the market. We expect U.S. crude oil production to increase by 0.8 million b/d in 2022 and OPEC crude oil production to increase by 1.8 million b/d in 2022. Paired with a forecast deceleration in global oil demand growth to 3.7 million b/d in 2022—compared with 5.3 million b/d in 2021—rising oil production contributes to our forecast that Brent crude oil spot prices will average \$67/b next year.

Global economic developments and numerous uncertainties surrounding the ongoing COVID-19 pandemic in the coming months could push oil prices higher or lower than our current price

forecast. The current forecast price path reflects global oil consumption increasing by 6% from 2020 levels in 2021 and by an additional 4% in 2022. However, this forecast depends on the rate at which current vaccinations continue and the way oil consumption behavior changes once populations are widely vaccinated. The duration of, and compliance with, the latest OPEC+ production targets also remains uncertain. Lastly, the degree to which the U.S. shale industry responds to the recent relative strength in oil prices will affect the oil price path in the coming quarters.

We forecast West Texas Intermediate (WTI) crude oil prices will average about \$3/b less than Brent prices in 2021 and \$4/b less than Brent prices in 2022. This price discount is based on our assumption that the recent discount of WTI to Brent, which averaged less than \$3/b in 2Q21, reflected low global demand for oil exports and relatively low levels of U.S. crude oil production. As global refinery demand for crude oil increase and U.S. crude oil supply also increases, we expect the WTI discount to return to \$4/b by 2H22. This discount reflects the relative cost of exporting U.S. crude oil from the Cushing distribution hub to Asia, compared with the cost of exporting Brent crude oil from the North Sea to Asia.

U.S. Liquid Fuels

Consumption. Although U.S. liquid fuels consumption has increased since reaching a recent low in 2Q20, lingering effects from COVID-19 continue to limit consumption. We estimate that in 1H21, U.S. consumption of liquids fuels averaged 19.1 million b/d, down 1.3 million b/d (6%) from 1H19. We expect the effects of the COVID-19 pandemic on liquid fuels consumption will continue to abate and liquids consumption will increase through the forecast period. Although we expect the direct effects from the pandemic on U.S. petroleum consumption to decrease, some consumption patterns may be more lasting, including increased working from home and changes in travel behavior, which could limit growth in gasoline and jet fuel consumption.

In 2021, we forecast that total U.S. liquids consumption will average 19.6 million b/d, down from 20.5 million b/d in 2019. Although we expect consumption of distillate fuel to be approximately equal to 2019 levels, we expect consumption of gasoline and jet fuel to remain below 2019 levels. We expect consumption of hydrocarbon gas liquids (HGL) to remain above 2019 levels in 2021, offsetting some of the declines in gasoline and jet fuel consumption.

In 2022, we expect distillate and HGL consumption to rise above 2019 levels, while gasoline and jet consumption will remain below 2019 levels. In the forecast, distillate and HGL consumption drive 2022 total liquids consumption to an average of 20.7 million b/d, surpassing 2019 consumption by about 0.1 million b/d.

In 1H21, we estimate U.S. gasoline consumption averaged 8.5 million b/d, down from 9.3 million b/d in 1H19 and the lowest level for the first half of a year since 2001 (except in 2020). Consumption in 1Q21 averaged 8.0 million b/d and increased to an estimated 9.0 million b/d in 2Q21 as the effects of COVID-19 decreased (driven by [falling COVID-19 infections](#) and [increased](#)

vaccinations) and seasonal driving increased. We expect the effects of COVID-19 will continue to decrease and gasoline consumption will increase to an average of 8.9 million b/d in 2H21, up from 8.3 million b/d from 2H20, but still lower than the 9.3 million b/d consumed in the same period during 2019. For all of 2021, we forecast U.S. gasoline consumption to average 8.7 million b/d and increase to 9.0 million b/d in 2022, compared with 9.3 million b/d in 2019.

We do not expect U.S. gasoline consumption to exceed 2019 levels in the forecast period. In 2021, we forecast that U.S. vehicle miles traveled (VMT) will average 8.6 million miles per day, up from 7.7 million miles per day in 2020 but below the average of 8.9 million miles per day in 2019. In 2022, however, we expect VMT to average 9.0 million miles per day, slightly above the level seen in 2019. Increased vehicle efficiency, however, partly offsets the increases in VMT, keeping gasoline consumption below 2019 levels. We assume that work-from-home options in the future will remain more available than before the pandemic, limiting gasoline demand growth.

Responses to the COVID-19 pandemic affected distillate consumption in the United States in 2020 less than gasoline and jet fuel because it is driven more by economic activity and freight movement and less by reduced travel. In weekly data, distillate consumption recently [returned to 2019 levels](#), and we estimate that distillate consumption in June 2021 surpassed distillate consumption in June 2019 by 70,000 b/d. For 1H21, distillate consumption averaged an estimated 4.0 million b/d, which is below the 1H19 average of 4.2 million b/d. However, we forecast distillate consumption to average 4.2 million b/d in 4Q21, surpassing the 4Q19 average by 0.1 million b/d. We forecast distillate consumption to average almost 4.3 million b/d in 2022, the highest level on record in our data, which dates back to 1945.

In 1H21, jet fuel consumption averaged 1.2 million b/d, up from 1.1 million b/d in 2020 but below 2019 consumption of 1.7 million b/d. We expect jet fuel consumption will average 1.4 million b/d in 2021, down from 1.7 million b/d in 2019. In 2022, forecast jet fuel consumption almost returns to 2019 levels, averaging 1.7 million b/d.

U.S. consumption of HGLs in our forecast increases by 0.1 million b/d to an average 3.3 million b/d in 2021 and then increase by 0.3 million b/d to 3.6 million b/d in 2022. The growth in HGL consumption in 2021 and 2022 reflects more demand for ethane as a petrochemical feedstock in the United States. We forecast ethane consumption will increase by 30,000 b/d in 2021 and by a further 300,000 b/d in 2022 with new demand coming from additional ethylene cracking capacity.

Crude Oil Supply. We forecast that annual U.S. crude oil production will average 11.1 million b/d in 2021, which is a 0.2 million b/d decrease from 2020 levels. However, annual average numbers somewhat obscure production trends. Production in 1Q21 was down by more than 2.0 million b/d from 1Q20, the quarter before 2Q20 when production fell sharply in response to falling oil prices. However, from 2Q21 through 4Q21, we forecast U.S. crude oil production will

be up 0.4 million b/d on average year over year. We forecast U.S. crude oil production will rise to an average of 11.9 million b/d in 2022.

Most crude oil production in the Lower 48 (L48) states, excluding the Federal Offshore Gulf of Mexico (GOM), is tight oil production, and we expect trends in L48 production to drive overall U.S. crude oil production levels. Our forecast crude oil production growth is based on WTI prices that indicate a favorable environment for drilling activity. In June, WTI prices averaged more than \$70/b for the first time since October 2018, and we expect that through the end of 2022, WTI prices will remain above \$60/b—a price that has signaled robust activity among U.S. operators in the past. Because changes in rig counts typically lag changes in the WTI price by three to six months and production changes typically occur about two months after rig deployment, current crude oil price levels will not likely affect production until late 2021. We forecast U.S. crude oil production to average about 11.2 million b/d in both 2Q21 and 3Q21 before beginning to rise more steadily. Forecast U.S. crude oil production reaches 11.3 million b/d in 4Q21 and increases to 12.2 million b/d by 4Q22.

Assuming that other factors remain constant, recent and forecast crude oil price levels will likely continue to drive rig deployments through the end of 2022. However, this forecast depends on the capital decisions of operators. The recent pace of rig deployment indicates that operators are adding rigs more slowly than during past periods when prices reached similar levels. If operators take a more cautious approach to rig deployment than we are expecting, crude oil production could be lower than in our forecast.

In the GOM, we expect crude oil production to average 1.8 million b/d in both 2021 and 2022. Ten new projects that will likely begin operations during the forecast period will help offset declines at existing GOM projects.

We expect little change in Alaska's crude oil production, which will average more than 0.4 million b/d in both 2021 and 2022, down slightly from 2020 levels. We do not expect the U.S. federal moratorium on new federal oil and natural gas leases that occurred earlier this year to affect the short-term outlook for the GOM or Alaska.

Hydrocarbon Gas Liquids Supply. We forecast natural gas plant production of HGLs to increase by 0.1 million b/d in 2021 and by almost 0.5 million b/d in 2022. Rising HGL production in the forecast is mostly driven by increased ethane production. Higher rates of ethane recovery at natural gas processing plants occur in the forecast to meet growing demand for ethane as a petrochemical feedstock in the United States and abroad during both 2021 and 2022.

Liquid Biofuels. COVID-19-related reductions in economic activity in general, and decreased demand for liquid fuels in particular, significantly affected U.S. biofuels markets in 2020, and we expect some of these impacts to persist through the forecast period. The current forecast reflects the most recent 2020 targets in the Renewable Fuel Standard (RFS) program, and given the delays in finalizing 2021 RFS targets, we assume those 2020 target levels to remain

unchanged throughout the forecast period. In the forecast, these RFS targets primarily affect biomass-based diesel production and net imports, which help meet multiple RFS targets for biomass-based diesel, advanced biofuel, and total renewable fuel.

Because of [sharp reductions in motor gasoline demand](#) resulting from responses to COVID-19, U.S. fuel ethanol production was significantly lower in 2020 than in previous years. U.S. fuel ethanol production fell by 12% from 2019 to an average of 0.91 million b/d in 2020. As a result, we forecast that persistent reductions in domestic gasoline demand and limited higher-blend fuel ethanol growth potential will result in fuel ethanol production remaining lower than 2019 levels throughout the STEO forecast. We expect fuel ethanol production to average 0.97 million b/d in 2021, 7% more than in 2020, and to average 1.00 million b/d in 2022, 4% more than 2021, but still slightly below the 2019 level.

U.S. fuel ethanol consumption averaged 949,000 b/d in 2019, and we estimate fuel ethanol consumption fell by 13% to an average of 822,000 b/d in 2020. We forecast that fuel ethanol consumption will gradually rise during the forecast period, largely following the growth in domestic motor gasoline consumption with limited growth in any higher blending levels. In our forecast, U.S. fuel ethanol consumption averages 896,000 b/d in 2021 and 917,000 b/d in 2022. This level of consumption results in the fuel ethanol share of total gasoline, which was an estimated 10.2% in both 2019 and 2020, remaining near this level during 2021 and 2022. This stable fuel ethanol share assumes that growth in higher-level fuel ethanol blends is limited by a lack in consumer demand for higher levels of fuel ethanol blending beyond 10% of gasoline (E10) despite significantly elevated renewable identification number (RIN) prices which could incentivize increased fuel ethanol blending by some gasoline blenders and retailers.

We estimate that U.S. biodiesel production increased in 2020 and was less affected by [COVID-19-related restrictions](#) than many other fuels, despite [production capacity that declined slightly](#). U.S. biodiesel production increased by an estimated 5% from 2019 to 2020, averaging an estimated 118,000 b/d last year. We expect biodiesel production will fall slightly to 117,000 b/d in 2021 before increasing by 10% to 129,000 b/d in 2022, driven largely by biodiesel's role in meeting multiple RFS targets and the existence of the biodiesel production tax credit through 2022. Despite [RIN prices that have recently been at all-time highs](#), record-high feedstock costs are expected to limit biodiesel production growth over the forecast period.

U.S. net imports of biomass-based diesel increased by an estimated 6% to an average of 22,000 b/d in 2020, and we expect net imports to increase to an average of 29,000 b/d in 2021 and 44,000 b/d in 2022. Increased net imports of biomass-based diesel primarily reflect increased volumes of renewable diesel imported to meet both [California Low Carbon Fuel Standard requirements](#) and RFS targets for biomass-based diesel and advanced biofuels.

Product Prices. Changes in travel patterns in response to COVID-19 resulted in significant reductions in crude oil prices and demand for liquid fuels in the United States during 2020, which significantly reduced prices for gasoline and diesel fuel during the same period. In 2021,

as vaccination levels have increased and general economic activity has begun to recover, personal mobility and seasonal driving demand has grown sharply year-over-year, leading to increasing prices for crude oil, gasoline, and diesel fuel compared with the same time last year.

Although much of the increase in U.S. gasoline and diesel prices so far in 2021 reflects rising crude oil prices, higher refinery margins have also contributed. Refinery margins (the difference between the wholesale price of gasoline and the price of Brent crude oil), which fell significantly along with gasoline and diesel demand in March and April 2020, returned to levels within their seasonal ranges in 4Q20. Since then, margins have increased significantly beyond their recent five-year averages, driven in part by [significant increases in RIN prices](#), which are embedded to some degree in wholesale product prices. So, although refinery margins have increased beyond seasonal averages for both gasoline and diesel fuel, RIN costs have likely limited actual refinery profitability to some degree. This dynamic is reflected in refinery production of gasoline, which has not increased in line with growing gasoline demand, resulting in [U.S. gasoline inventories that have been lower](#) than in recent years and in upward pressure on prices.

The U.S. refinery wholesale gasoline margin averaged 30 cents/gal in February 2021. It then increased to an average of 52 cents/gal in June, which was 17 cents/gal higher than at the same time last year and 11 cents/gal higher than the recent five-year average. We expect the U.S. refinery wholesale gasoline margin will average 42 cents/gal in 2021 and 36 cents/gal in 2022, compared with a five-year (2016–20) average of 35 cents/gal. Because some of the strength in margins is attributable to elevated RIN costs, the margins remain uncertain throughout the year because RIN markets can be highly volatile and are currently driven by both agricultural commodity markets as well as uncertainty around future RFS rulemakings. Our forecast assumes current elevated agricultural commodity prices will not persist to the same degree, and future RFS rulemakings will add clarity and reduce some tightness in RIN markets.

In addition to elevated refinery margins, supply disruptions as a result of the [Colonial Pipeline Cyberattack](#) added upward retail gasoline price pressure in May, when the U.S. weekly average gasoline retail prices [surpassed \\$3.00/gal for the first time since late 2014](#). Since then, U.S. regular gasoline retail prices have remained above \$3.00/gal, averaging \$3.06/gal in June. We expect that gradual reductions in U.S. refinery margins, driven partially by increased refinery output along with falling crude oil prices, will result in lower retail gasoline prices for the remainder of the year. We forecast the retail price of regular gasoline in the United States will average \$3.04/gal during 3Q21, 85 cents/gal higher than at the same time last year. We expect the U.S. monthly regular retail gasoline price will fall from an average of \$3.11/gal in July 2021 to \$2.93/gal in September before falling to \$2.76/gal in December 2021. We forecast the U.S. regular gasoline retail price, which averaged \$2.18/gal in 2020, to average \$2.85/gal in 2021 and \$2.74/gal in 2022.

Regional annual average forecast prices for 2021 range from a low of \$2.56/gal in the Gulf Coast region ([PADD 3](#)) to a high of \$3.51/gal in the West Coast region ([PADD 5](#)).

The retail price of diesel fuel in the United States averaged \$2.55/gal in 2020, which was 50 cents/gal lower than in 2019. We forecast that the diesel price will average \$3.16/gal in 2021 and \$3.09/gal in 2022. We expect that global economic activity returning to pre-pandemic levels will help drive diesel refinery margins higher during the forecast period than their multiyear lows in 2020. Diesel refinery margins based on the Brent crude oil price averaged 30 cents/gal in 2020, which was 11 cents/gal lower than the 2015–19 average and the lowest annual average since 2009. We expect diesel refinery margins will average 40 cents/gal in 2021 and 44 cents/gal in 2022.

Natural Gas

Natural Gas Consumption. U.S. consumption of natural gas averaged 83.3 billion cubic feet per day (Bcf/d) in 2020, and we expect consumption will decrease by 0.9 Bcf/d (1.1%) in 2021 and then increase by 0.6 Bcf/d (0.7%) 2022 to average 82.9 Bcf/d for the year.

The largest natural gas-consuming sector in the United States is the electric power sector. We estimate that the electric power sector will consume an average of 29.3 Bcf/d in 2021, which is 7.7% less than in 2020. We forecast that higher prices for natural gas (compared with coal prices) for power generation and rising electricity generation capacity from renewable energy will likely cause natural gas consumption in the electric power sector to decline in 2021. We forecast electric power sector consumption of natural gas will increase by 1.3% in 2022, based on an expected decline in natural gas prices next year.

We expect combined U.S. residential and commercial natural gas consumption will average 22.6 Bcf/d in 2021, up 6.0% from 2020. Compared with 1Q20, colder temperatures and people spending more time at home because of the COVID-19 pandemic led to increases in heating demand in 1Q21. Based on forecasts by the National Oceanic and Atmospheric Administration (NOAA), we assume colder temperatures with 7.0% more heating degree days (HDD) across the United States in 2021 compared with 2020. We expect natural gas consumption in the U.S. residential and commercial sectors to decline by 0.4% in 2022.

We forecast U.S. consumption of natural gas in the industrial sector will increase 1.2% in 2021 to 22.8 Bcf/d and an additional 0.9% to 23.0 Bcf/d in 2022. Our natural gas-weighted manufacturing index, based on forecasts from IHS Markit, has steadily increased after falling in 2Q20, and our forecast assumes that the natural gas-weighted manufacturing index will reach 2019 levels in 2H21.

Natural Gas Production. We forecast that U.S. dry natural gas production will average 92.6 Bcf/d in 2021, which would be up 1.3% from 2020. Natural gas production rises in response to higher crude oil and natural gas prices. We forecast Henry Hub spot prices in 2021 will average more than \$1 per million British thermal units (MMBtu), or 58%, higher than the average in 2020. In addition, we expect associated natural gas production from oil directed rigs in the Permian Basin to increase in 2021 as WTI prices average almost \$27/b (68%) more than in 2020.

In 2022, we expect dry natural gas production to average 94.7 Bcf/d, which would be up 2.3% from 2021.

Natural Gas Trade. We forecast U.S. liquefied natural gas (LNG) exports to average 9.6 Bcf/d in 2021 and 10.2 Bcf/d in 2022, surpassing pipeline exports for the first time on an annual basis in both years. Several factors support this forecast: gradual recovery in global LNG demand, high winter LNG demand, particularly in Asia, and expansions in global LNG regasification capacity in both existing and new markets in the next two years. U.S. LNG exports are projected to increase in 2022 because of commissioning of additional LNG trains at Sabine Pass and Calcasieu Pass.

U.S. LNG exports have reached record high levels this spring, averaging 10.3 Bcf/d from March through May, supported by high spot LNG prices in Asia and Europe, and a continuous recovery in global LNG demand. We estimate that U.S. LNG exports declined to 9.0 Bcf/d in June, likely because of planned and unplanned outages at several U.S. liquefaction facilities.

Pipeline exports of U.S. natural gas have also increased as more infrastructure has been built to transport natural gas both to and within Mexico. U.S. pipeline exports averaged 7.9 Bcf/d in 2020, an increase of 1.7% compared with 2019. We expect pipeline exports to increase as more natural gas-fired power plants come online in Mexico and more pipeline infrastructure is built within [Mexico](#) and the [United States](#). We expect gross U.S. pipeline exports to Mexico and Canada to average 9.0 Bcf/d in 2021 and 9.2 Bcf/d in 2022.

U.S. natural gas pipeline imports (almost all of which come from Canada) decreased from 2019 to 2020, continuing a trend that began in 2008. We forecast natural gas pipeline imports to increase 5.7% in 2021 because the United States will import more natural gas amid relatively flat U.S. natural gas production along with record U.S. exports of natural gas. However, pipeline imports will likely decline in 2022 in response to an increase in U.S. natural gas production in 2022.

Natural Gas Inventories. Storage withdrawals in 1Q21 were 14% higher than the five-year average because severely cold temperatures in February caused [near-record storage withdrawals](#) and because of declines in natural gas production. Total inventories were 1.8 trillion cubic feet (Tcf) at the end of March, about 2% lower than the five-year average for that time of year. For the 2021 April–October storage injection season, we expect injections will be 5% below the five-year average rate because record exports outpace increases in natural gas production. We expect that inventories will reach more than 3.6 Tcf at the end of October 2021, which would be 3% lower than the previous five-year average for the end of October and 8% lower than at the end of October 2020.

Natural Gas Prices. The Henry Hub spot price averaged \$2.03/MMBtu in 2020. Natural gas prices fell through much of 2020 as U.S. natural gas consumption outside of the electric power sector declined and LNG exports also dropped. These declines outpaced declines in production and contributed to inventories building at a faster rate than the five-year average.

The Henry Hub spot price rose to an average of \$3.25/MMBtu in 1H21, somewhat elevated by the February monthly average price of \$5.35/MMBtu, [which was strongly influenced by cold weather](#). More recently, the daily spot price reached \$3.79/MMBtu on June 30. U.S. natural gas prices rose in 1H21 as growth in demand for natural gas outpaced supply. The combination of U.S. consumption of natural gas outside of the power sector and exports together were up almost 6 Bcf/d in 1H21 compared with the same period in 2020. At the same time, domestic dry natural gas production plus imports were almost unchanged in 1H21 compared in 1H20.

We expect the Henry Hub spot price to fall from recent highs and average \$3.22/MMBtu in 3Q21 and also average \$3.22/MMBtu for all of 2021. For the remaining months in 2021, we expect prices to remain more than \$3.00/MMBtu, driven by continuing record natural gas exports and rising demand for natural gas outside of the electric power sector amid relatively flat natural gas production. We expect downward price pressure to emerge in 2022 as U.S. natural gas production increases and export growth slows. We forecast the Henry Hub spot price to average \$3.00/MMBtu in 2022.

Coal

Coal Production. We forecast U.S. coal production will increase by 78 million short tons (MMst) (15%) in 2021 to total 617 MMst for the year. The expected increase in production reflects greater electric power sector demand for coal. Higher natural gas prices make coal more economically competitive relative to natural gas for electricity generation dispatch. In the forecast, coal production increases by 13 MMst (9%) in the Appalachia region, 14 MMst (16%) in the Interior region, and 51 MMst (17%) in the Western region.

Coal production in the forecast falls by 7 MMst (1%) in 2022 to 610 MMst. The decline is in response to falling natural gas prices in our forecast, which tends to reduce coal use for power generation. Western region production is expected to decline by 6% in 2022, offsetting gains in the Interior (7%) and Appalachia (5%) regions.

Overall production capacity decreased in 2020, and the lost capacity is unlikely to come back online. We expect an increased draw on electric power sector coal inventories in 2021 (25 MMst) and 2022 (23 MMst).

Coal Consumption. We expect a 92 MMst (19%) increase in U.S. coal consumption in 2021. Rising consumption is largely driven by an increase in demand from the electric power sector, which is expected to consume 522 MMst of coal in 2021, 20% more than 2020. We forecast total U.S. coal consumption to decrease 32 MMst (6%), in 2022 to 537 MMst.

Coal Trade. [Annual U.S. coal exports dropped 26% between 2019 and 2020](#), from 94 MMst to 69 MMst. Metallurgical coal exports were 42 MMst in 2020, 20% lower than the previous year, and steam coal exports were 27 MMst, 34% lower than in 2019.

Four of the top 10 U.S. coal export destinations—Brazil, Turkey, the Dominican Republic, and China—increased their imports of U.S. coal in 2020. Exports to the Dominican Republic increased by 1.3 MMst, more than double its 2019 imports of U.S. coal. In particular, an ongoing trade dispute between Australia and China has opened up opportunities for swing suppliers, such as the United States, to gain market share and increase overall exports especially for steam coal.

In our forecast, we assume the seaborne steam coal market in 2021 will be more robust with higher demand for U.S. coal. Forecast U.S. steam coal exports reach 37 MMst in 2021, which is a 37% increase from 2020. Rising U.S. exports in the forecast reflect smaller export volumes from other global suppliers and seaborne coal prices that are supportive of U.S. exports. We expect total U.S. coal exports to increase by 15 MMst (21%) in 2021 as a result of economic growth for major coal importers that are emerging from a lower demand market because of the pandemic in 2020. Steel production, which was limited by pandemic shutdowns, is expected to return to average levels during the remainder of 2021 and bring U.S. metallurgical coal exports to 47 MMst. We expect coal exports to increase by 15 MMst (18%) in 2022 as overall seaborne supply comes back into line with 2019 levels. We expect that U.S. coal exports will total 99 MMst in 2022.

Coal Prices. The delivered coal price to U.S. electricity generators averaged \$1.92/MMBtu in 2020, which was 10 cents/MMBtu lower than the 2019 price. We forecast that coal prices will decrease to \$1.88/MMBtu in 2021 and \$1.85/MMBtu in 2022.

Electricity

Electricity Consumption. We forecast total retail sales of electricity by U.S. utilities and electricity suppliers will increase by 2.8% in 2021 and by 1.0% in 2022. So far this year, estimated U.S. retail electricity sales during 1H21 were 4.5% more than for the same period of 2020. We forecast that electricity sales during 2H21 will grow by 1.2% compared with 2H20.

The relaxing of social distancing guidelines and growing COVID-19 vaccinations have led to increased economic activity compared with last year, especially in restaurants and retail stores, which were most affected by pandemic-related restrictions in 2020. Residential electricity consumption in 2020 noticeably increased because people were staying at home for longer periods during the day and because many were working from home. Residential electricity use is likely to remain elevated as work-from-home arrangements continue for some workers.

Year-to-year changes in residential electricity consumption are most related to changes in temperature, often measured using heating degree days (HDD) and cooling degree days (CDD). We estimate residential electricity sales during 1H21 to be 5.7% more than during the same period in 2020. Much of this increase reflected colder winter temperatures compared with last year's mild winter and a hot June across much of the country. HDDs in the United States during 1H21 were 6.9% more than in 2020. Based on forecasts from NOAA, our forecast assumes U.S.

HDDs to be higher than last year during 2H21, but the effect on electricity consumption is offset by CDDs in the forecast that are 9.7% lower than in 2H20. We forecast residential electricity sales during 2H21 will be 1.4% lower than residential sales in 2020. Forecast annual residential electricity use grows by 1.9% in 2021 and falls by 0.5% in 2022.

Weather and overall economic activity affect electricity consumption in the commercial sector. Although the colder winter weather earlier this year supported electricity consumption in the commercial sector, economic activity and growth in private-sector jobs were still restrained, especially during 1Q21 compared with the same period in 2020, before the pandemic-related lockdowns began. Nonfarm employment during 1Q21 was 5.6% lower during the same period in 2020, while retail electricity sales to the commercial sector were 2.9% lower. For 2H21, we forecast commercial sector retail electricity sales will grow by 1.7% compared with last year, driven in part by an expected 4.8% increase in nonfarm employment. For 2022, forecast commercial sector electricity use grows by 1.4% on an annual basis.

Improving economic conditions will also likely increase electricity demand in the industrial sector. The U.S. industrial production index for electricity-intensive industries in the forecast increases by 6.5% in 2021 after declining by a similar percentage in 2020. This expected increase in industrial production contributes to our forecast that retail sales of electricity to the industrial sector will rise by 5.1% in 2021. In 2022, we forecast retail sales of electricity to the industrial sector will increase by 2.6%.

Electricity Generation. We expect the U.S. electric power sector will generate 2.1% more power during 2021 than in 2020. Electric power sector generation in the forecast grows by an additional 0.7% in 2022.

One of the largest shifts in fuels for electricity generation in recent years has been the industry's reduced use of coal and increased use of natural gas. Coal-fired electricity generation in the United States has declined almost every year over the past decade. The amount of U.S. coal generation in 2020 was [62% below its high](#) in 2007. In contrast, natural gas generation grew by 86% between 2007 and 2020.

Both regulatory and economic factors are driving this trend of declining coal use and rising natural gas use. One of the most important drivers has been the sustained low cost of natural gas, which reached the [lowest level in decades](#) last year. In 2020, the price of natural gas delivered to electric generators averaged \$2.39/MMBtu. However, natural gas prices have been rising in recent months now that the economy is beginning to recover from the effects of the pandemic, but U.S. production of natural gas is growing at a slower pace. In April 2021, the most recent available history, the delivered natural gas price to electricity generators averaged \$3.04/MMBtu. Expected natural gas costs remain relatively elevated through the forecast and delivered prices average \$3.44/MMBtu in 2H21.

These expected changes in the costs of fuels used for generating power will likely reverse some of the recent trends in the use of coal and natural gas for electricity generation, at least temporarily. We forecast that the natural gas-fired share of total U.S. generation will decline from 39% in 2020 to 36% in both 2021 and 2022, which would be close to what the natural gas share was in 2019. The expected rise in natural gas costs make coal more economical for electricity generation. The forecast share of generation from coal-fired power plants rises from 20% last year to 24% in 2021 and 22% in 2022.

We forecast the share of generation from renewable sources will increase from 20% in 2020 to 21% in 2021 and to 23% in 2022. Most of this increase will come from new solar and wind generating capacity expansions in the electric power sector. The current drought in the West has restrained electricity generation by hydropower. U.S. hydropower generation contributes about 6.5% of total generation in the 2021 forecast, which would be the lowest share since 2015. In 2022, the forecast hydropower share rises to 6.8% but is still below the 7.5% share last year.

The forecast nuclear share of total electricity generation, which averaged nearly 21% in 2020 will fall to 20% by 2021 and to 19% in 2022. The declining share partly reflects retirements of nuclear capacity. In April, New York's [Indian Point](#) nuclear power plant retired. Reactors at three other nuclear plants in the Midwest are scheduled to retire in either 2021 or 2022. The retirements are partly offset by two reactors at the Vogtle plant in Georgia that are scheduled to come online next year.

Renewable Capacity. We expect that generating capacity from renewable energy sources will continue to grow through the STEO forecast horizon. By the end of 2022, electric power sector total renewables capacity increases by 81 gigawatts (GW) from 2019. An additional 15 GW in all other sectors brings the total to 96 GW.

We forecast that in 2022 large-scale solar capacity growth will exceed wind growth for the first time. We forecast that 16 GW of solar photovoltaic (PV) generating capacity in the electric power sector will be added in 2021 and an additional 17 GW is forecast for 2022. We forecast small-scale solar PV capacity to increase by about 5 GW per year through the STEO forecast period. Residential PV accounts for most of this additional small-scale generating capacity for both 2021 and 2022. Solar capacity growth in the forecast reflects various state and federal policies that support renewable energy.

We forecast generating capacity from wind turbines in the electric power sector to grow by 17 GW in 2021 and by 6 GW in 2022. Because wind capacity is often added at the end of the calendar year, increases in wind generation frequently lag behind increases in capacity for the year they occur in, and they are reflected in the generation for the next year.

Much of this slowing growth in wind capacity can be attributed to the expiration of the production tax credit. The credit, which at the end of 2019 was extended through 2020,

provided a 2.5 cents per kilowatt-hour (kWh) benefit for facilities entering service or securing 5% safe harbor (spending at least 5% of total estimated project cost) through the 2020 calendar year. The effect of the tax credit extension included in the Consolidated Appropriation Act 2021, enacted in late-December 2020, is now reflected in this forecast. This extension caused capacity additions to move from 2020 to 2021 and the slowing wind growth in 2022.

Electricity Prices. Wholesale electricity prices throughout the country so far in 2021 have been higher than last year, reflecting the increased cost of natural gas for power generation. During 2Q21, wholesale prices ranged from \$31 per megawatt-hour (MWh) in the Central region, which is 58% higher than 2Q20, to \$52/MWh in the Northwest region, which is 256% higher than in 2020. Wholesale prices are likely to remain relatively volatile over the next few months. Forecast prices during 2H21 average from a low of \$24/MWh in Texas to a high of \$46/MWh in California.

We forecast the U.S. retail electricity price for the residential sector will average 13.6 cents/kWh in 2021, which is 2.8% higher than the average retail price in 2020. Forecast residential prices increase by an additional 1.8% in 2022.

U.S. Economic Assumptions and Energy-Related Carbon Dioxide Emissions

U.S. Economy. We base the STEO on macroeconomic forecasts for the United States by IHS Markit. We used the June 2021 version of the IHS Markit macroeconomic model with our own energy price forecasts as model assumptions to develop the economic forecasts in the STEO.

Using the IHS Markit model, we assume U.S. real GDP will grow by 7.4% in 2021 and by 5.0% in 2022. These rates compare with a 3.5% decline in annual GDP growth in 2020. We assume that total U.S. industrial production will increase 6.5% in 2021 and 4.8% in 2022. This growth contrasts with the 7.2% decline in annual growth in 2020. In the forecast, U.S. nonfarm employment, which decreased by 5.7% in 2020, will increase by 2.9% in 2021 and 3.8% in 2022.

Energy-Related Carbon Dioxide Emissions. Energy-related carbon dioxide (CO₂) emissions in the United States fell by 11.1% in 2020 relative to 2019. We expect CO₂ emissions to rise by 7.1% in 2021 and by 1.5% in 2022. We forecast an increase in coal CO₂ emissions and a decrease in natural gas CO₂ emissions because higher natural gas prices make coal more economically competitive for electric power generation. We expect CO₂ emissions from coal to rise by 18.5% in 2021 and to decline by 4.9% in 2022. We expect CO₂ emissions from natural gas to fall by 1.3% from 2020 to 2021 and then increase by less than 1% in 2022. Petroleum-related CO₂ emissions increase 9.0% in 2021 and 5.2% in 2022 as transportation patterns begin to return to normal. Energy-related CO₂ emissions are sensitive to changes in weather, economic growth, energy prices, and fuel mix.

Notable forecast changes

- For more information, see the [detailed table of forecast changes](#).

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 United States 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



July 7, 2021

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

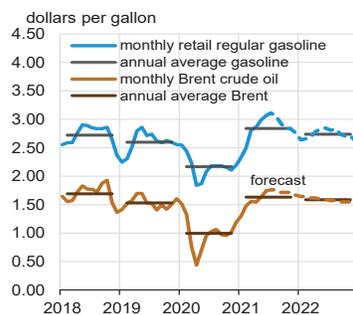


Note: Confidence interval derived from options market information for the five trading days ending Jul 1, 2021. Intervals not calculated for months with sparse trading in near-the-money options contracts.

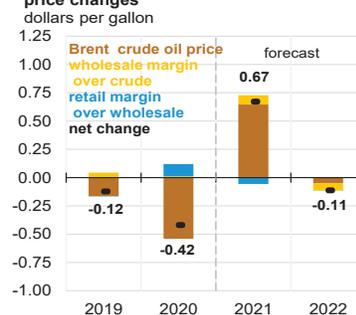
Sources: U.S. Energy Information Administration, Short-Term Energy Outlook, July 2021, CME Group, Bloomberg, L.P., and Refinitiv an LSEG Business



U.S. gasoline and crude oil prices



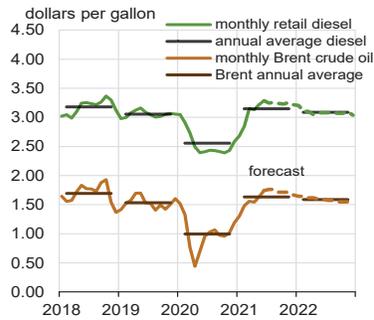
Components of annual gasoline price changes



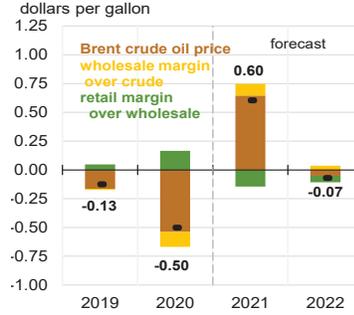
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, July 2021, and Refinitiv an LSEG Business



U.S. diesel and crude oil prices



Components of annual diesel prices changes



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



Henry Hub natural gas price and NYMEX confidence intervals

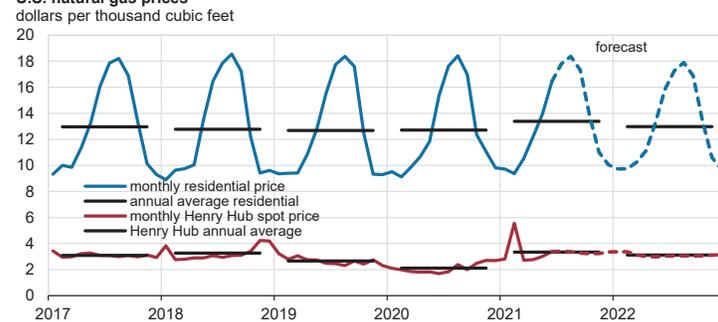


Note: Confidence interval derived from options market information for the five trading days ending Jul 1, 2021. Intervals not calculated for months with sparse trading in near-the-money options contracts.

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



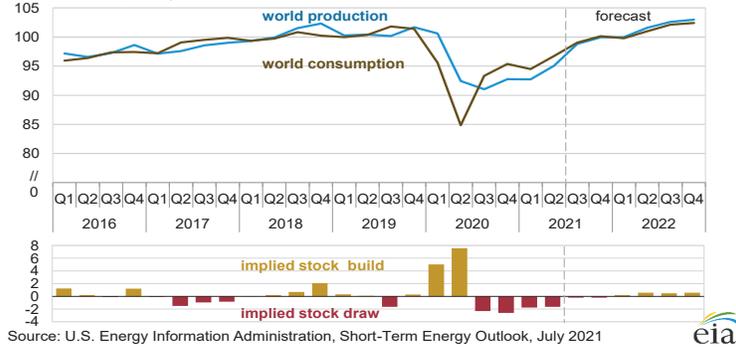
U.S. natural gas prices



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



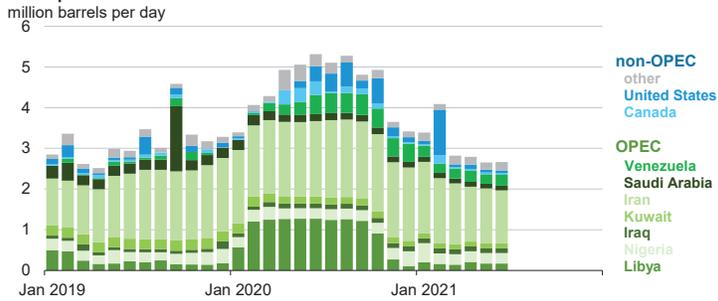
World liquid fuels production and consumption balance
million barrels per day



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



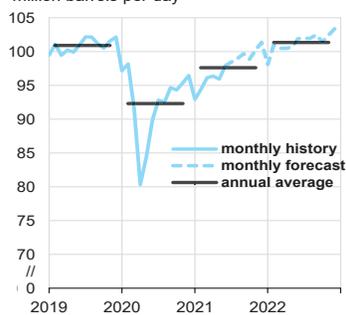
Estimated unplanned liquid fuels production outages among OPEC and non-OPEC producers
million barrels per day



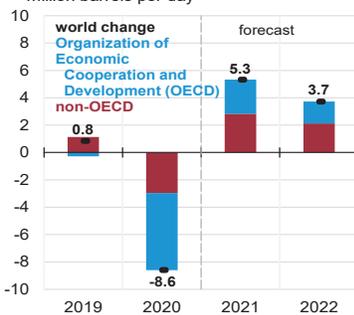
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, July 2021



World liquid fuels consumption
million barrels per day



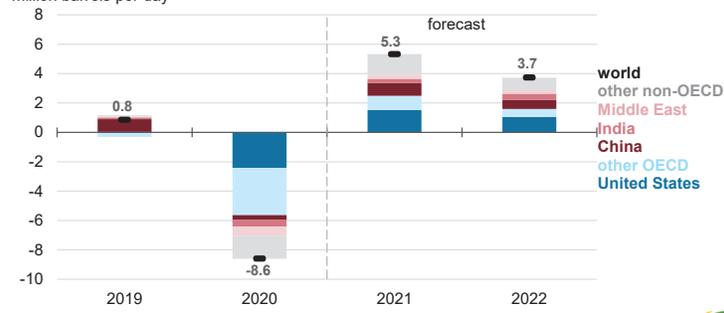
Components of annual change
million barrels per day



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



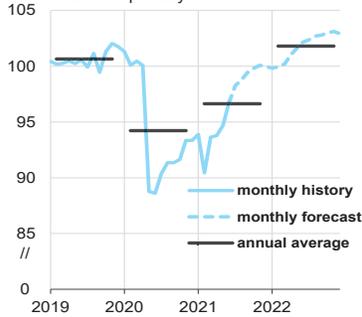
Annual change in world liquid fuels consumption
million barrels per day



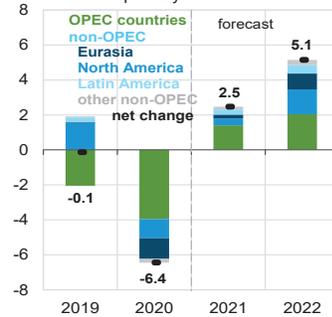
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, July 2021



World crude oil and liquid fuels production
million barrels per day



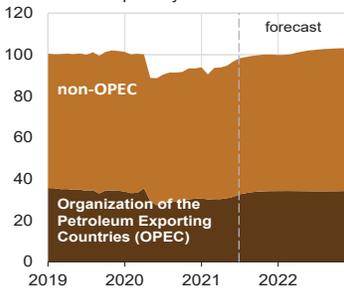
Components of annual change
million barrels per day



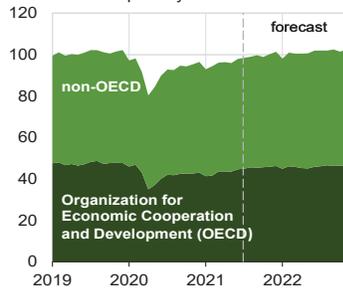
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, July 2021



World liquid fuels production
million barrels per day



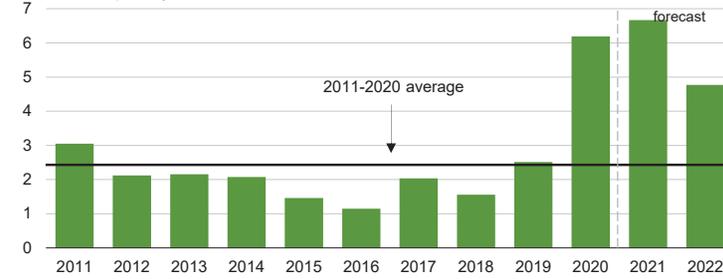
World liquid fuels consumption
million barrels per day



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



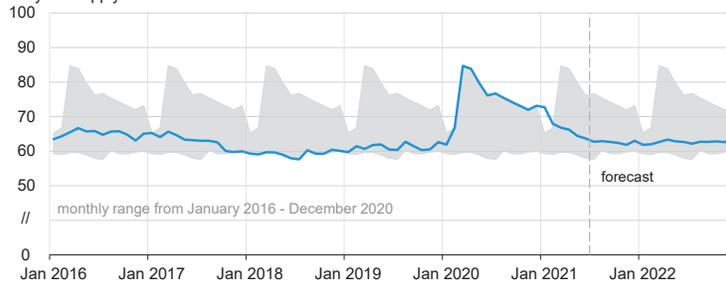
**Organization of the Petroleum Exporting Countries (OPEC)
surplus crude oil production capacity**
million barrels per day



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



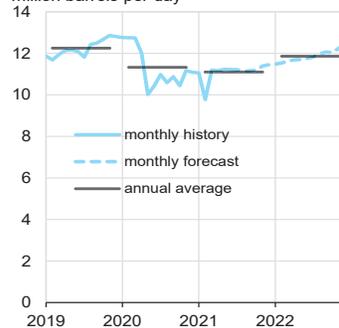
**Organization for Economic Cooperation and Development (OECD)
commercial inventories of crude oil and other liquids**
days of supply



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

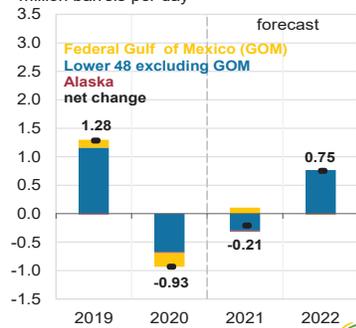


U.S. crude oil production
million barrels per day

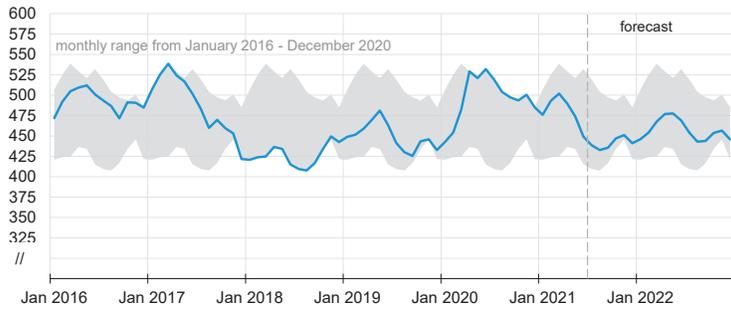


Source: U.S. Energy Information Administration, Short-Term Energy Outlook, July 2021

Components of annual change
million barrels per day



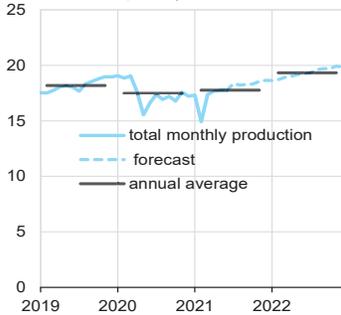
U.S. commercial crude oil inventories
million barrels



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

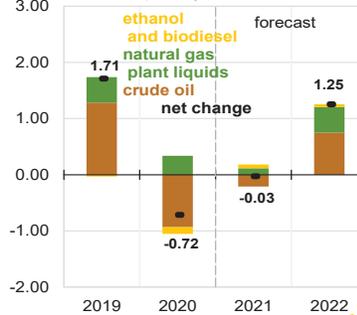


U.S. crude oil and liquid fuels production
million barrels per day

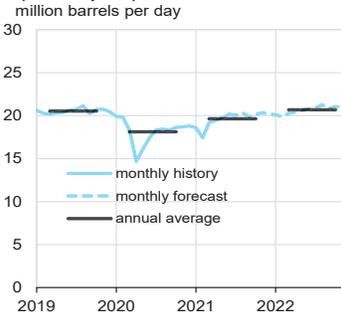


Source: U.S. Energy Information Administration, Short-Term Energy Outlook, July 2021

Components of annual change
million barrels per day

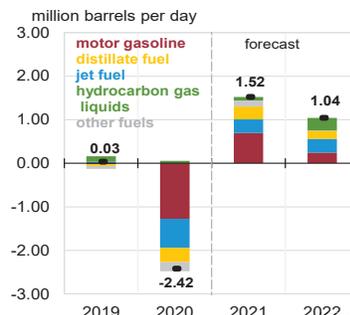


U.S. liquid fuels product supplied (consumption)
million barrels per day

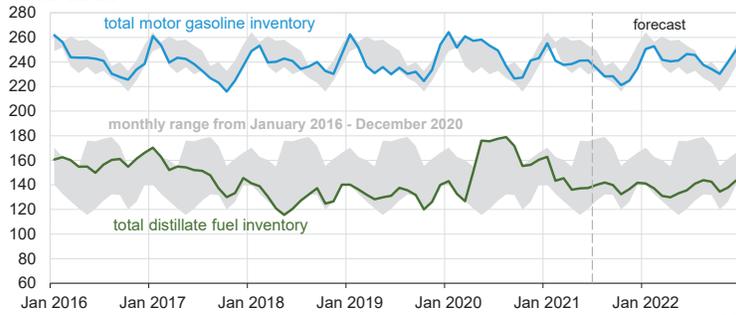


Source: U.S. Energy Information Administration, Short-Term Energy Outlook, July 2021

Components of annual change
million barrels per day



U.S. gasoline and distillate inventories
million barrels

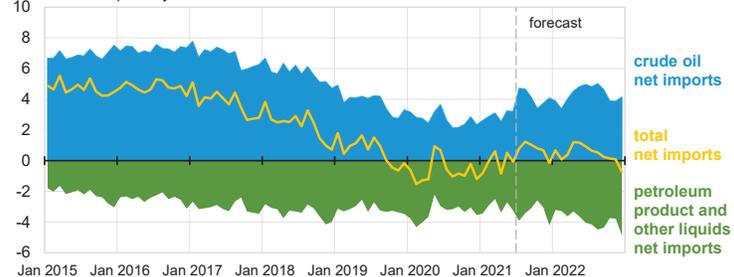


Source: U.S. Energy Information Administration, Short-Term Energy Outlook, July 2021



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

million barrels per day



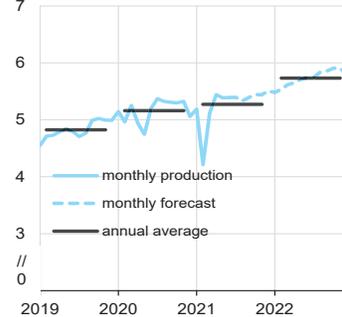
Note: Petroleum product and other liquids include: gasoline, distillate fuels, hydrocarbon gas liquids, jet fuel, residual fuel oil, unfinished oils, other hydrocarbons/oxygenates, and other oils.

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



U.S. natural gas plant liquids production

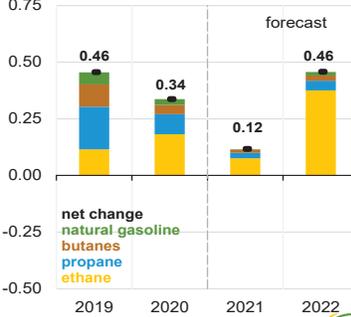
million barrels per day



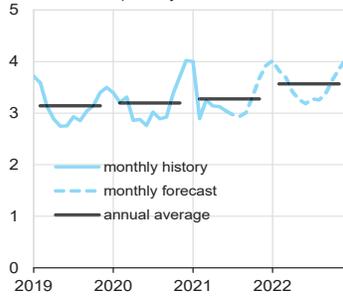
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, July 2021

Components of annual change

million barrels per day



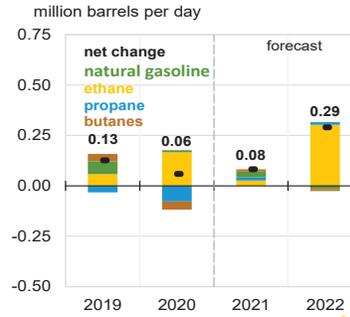
U.S. hydrocarbon gas liquids product supplied (consumption)
million barrels per day



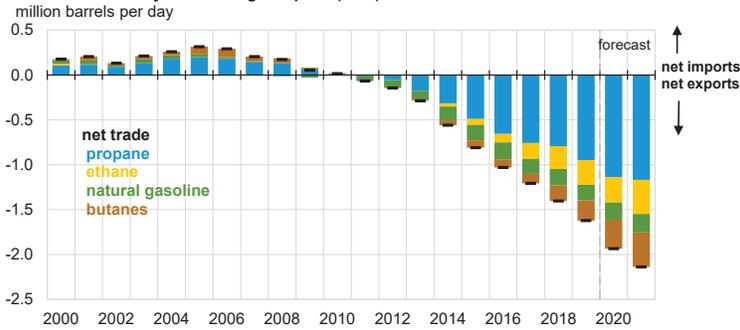
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, July 2021



Components of annual change



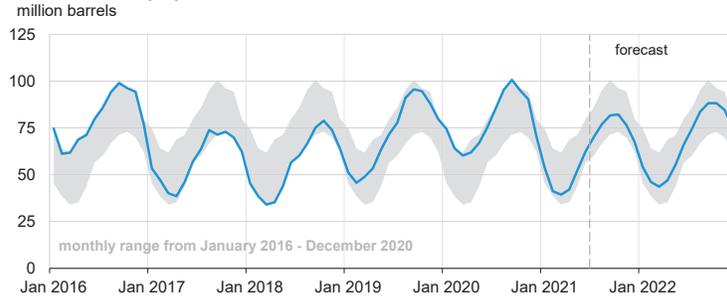
U.S. net trade of hydrocarbon gas liquids (HGL)



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



U.S. commercial propane inventories

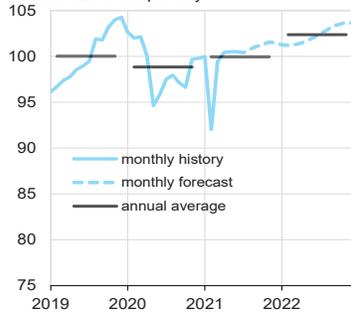


Note: Excludes propylene.

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



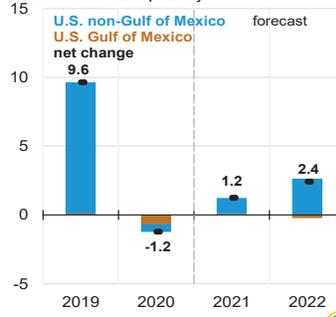
U.S. marketed natural gas production
billion cubic feet per day



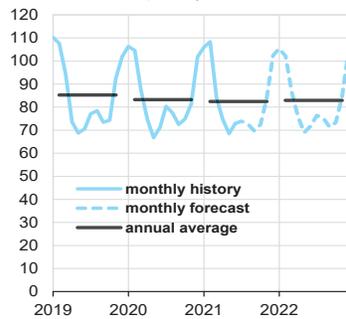
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, July 2021



Components of annual change
billion cubic feet per day



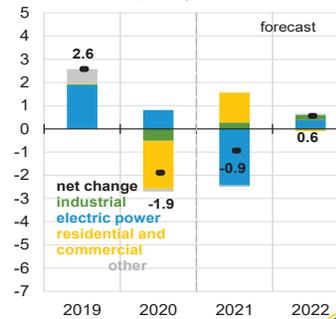
U.S. natural gas consumption
billion cubic feet per day



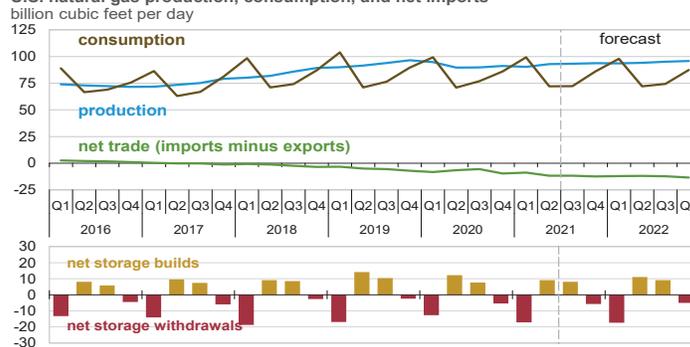
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, July 2021



Components of annual change
billion cubic feet per day



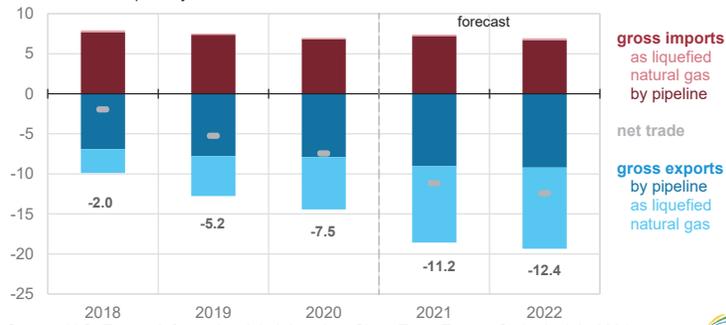
U.S. natural gas production, consumption, and net imports
billion cubic feet per day



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



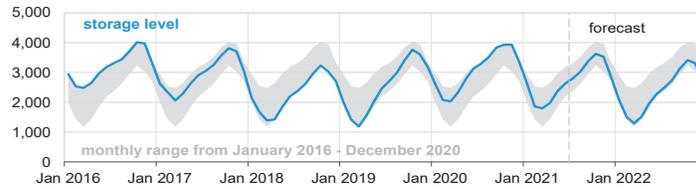
U.S. annual natural gas trade
billion cubic feet per day



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



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



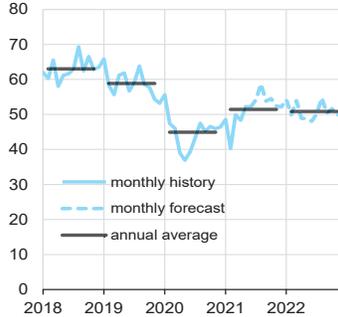
Percent deviation from 2016 - 2020 average



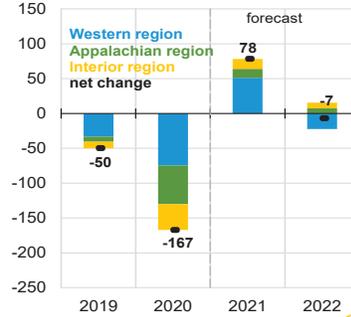
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, July 2021



U.S. coal production
million short tons



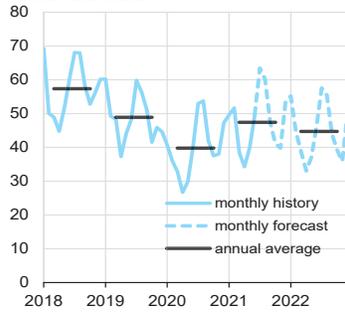
Components of annual change
million short tons



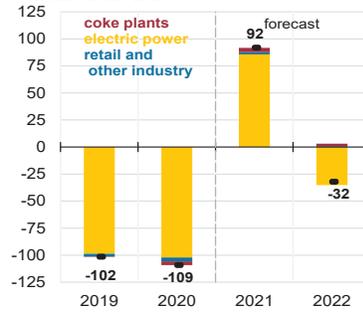
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, July 2021



U.S. coal consumption
million short tons



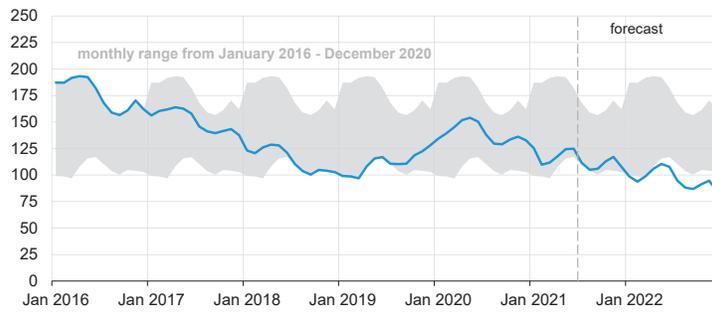
Components of annual change
million short tons



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



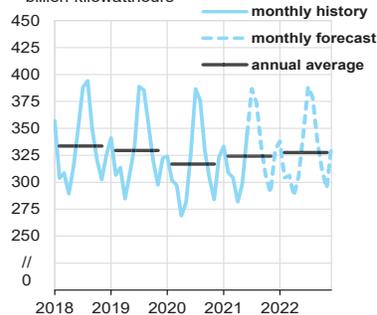
U.S. electric power coal inventories
million short tons



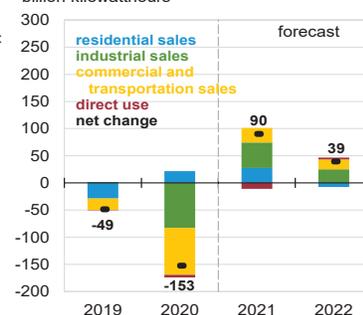
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, July 2021



U.S. electricity consumption
billion kilowatthours



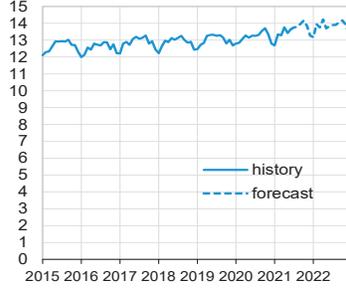
Components of annual change
billion kilowatthours



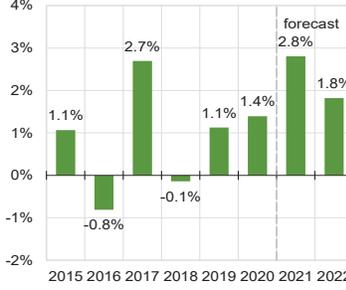
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, July 2021



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



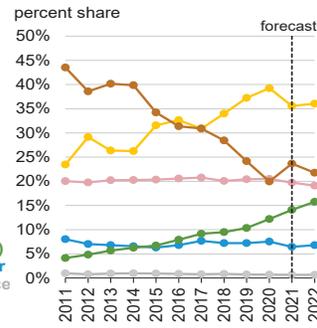
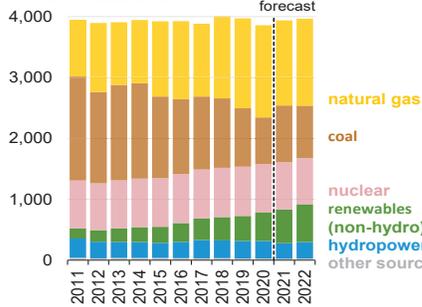
Annual growth in nominal residential electricity prices
percent



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



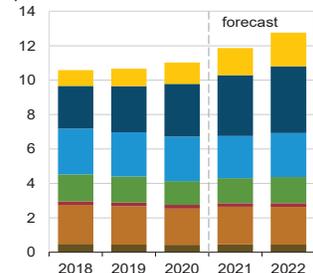
U.S. electricity generation by fuel, all sectors
billion kilowatthours



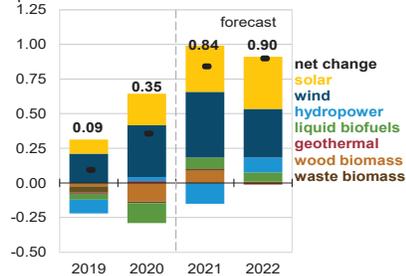
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, July 2021



U.S. renewable energy supply
quadrillion British thermal units



Components of annual change
quadrillion British thermal units

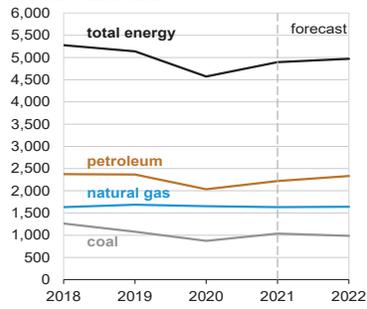


Note: Hydropower excludes pumped storage generation. Liquid biofuels include ethanol and biodiesel. Other biomass includes municipal waste from biogenic sources, landfill gas, and other non-wood waste.

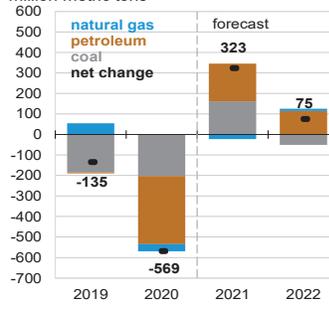
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, July 2021



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



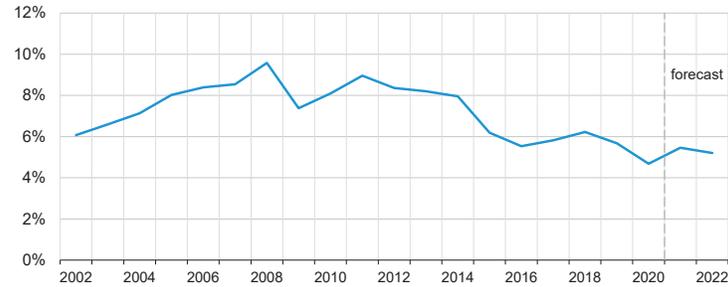
Components of annual change
million metric tons



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



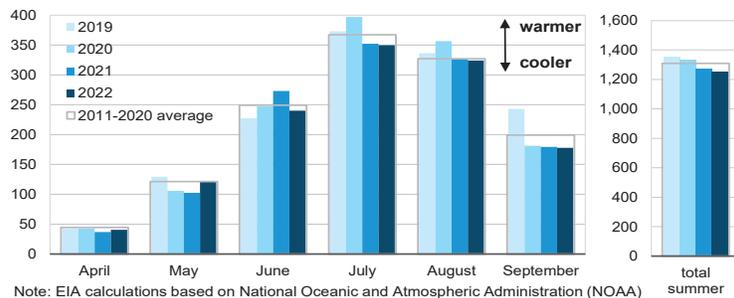
U.S. annual energy expenditures
share of gross domestic product



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



U.S. summer cooling degree days
population-weighted

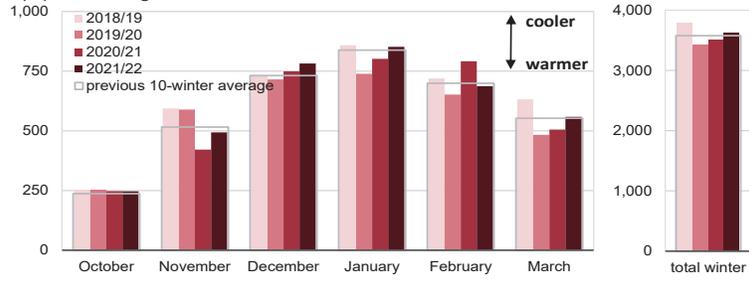


Note: EIA calculations based on National Oceanic and Atmospheric Administration (NOAA) data. Projections reflect NOAA's 14-16 month outlook.

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



U.S. winter heating degree days
population-weighted

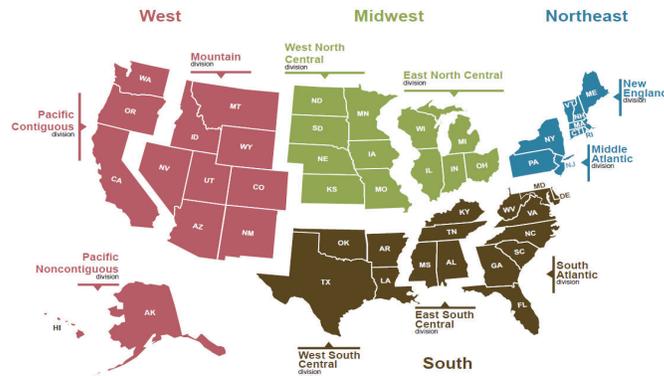


Note: EIA calculations based on National Oceanic and Atmospheric Administration (NOAA) data. Projections reflect NOAA's 14-16 month outlook.

Source: U.S. Energy Information Administration, Short-Term Energy Outlook, July 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 - July 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)	12.75	10.81	10.81	10.90	10.70	11.20	<i>11.17</i>	<i>11.34</i>	<i>11.54</i>	<i>11.72</i>	<i>11.95</i>	<i>12.20</i>	11.31	<i>11.10</i>	<i>11.85</i>
Dry Natural Gas Production (billion cubic feet per day)	94.79	89.68	89.83	91.15	90.31	92.88	<i>93.17</i>	<i>93.80</i>	<i>93.65</i>	<i>94.10</i>	<i>95.16</i>	<i>95.82</i>	91.35	<i>92.55</i>	<i>94.69</i>
Coal Production (million short tons)	149	115	136	139	139	153	<i>167</i>	<i>159</i>	<i>158</i>	<i>146</i>	<i>155</i>	<i>151</i>	539	<i>617</i>	<i>610</i>
Energy Consumption															
Liquid Fuels (million barrels per day)	19.33	16.08	18.36	18.71	18.45	19.78	<i>20.09</i>	<i>20.23</i>	<i>20.10</i>	<i>20.62</i>	<i>21.00</i>	<i>21.00</i>	18.12	<i>19.64</i>	<i>20.68</i>
Natural Gas (billion cubic feet per day)	99.31	70.84	76.83	86.08	99.17	72.04	<i>72.16</i>	<i>86.16</i>	<i>97.90</i>	<i>72.10</i>	<i>74.38</i>	<i>87.33</i>	83.25	<i>82.32</i>	<i>82.87</i>
Coal (b) (million short tons)	110	96	149	123	140	124	<i>171</i>	<i>135</i>	<i>139</i>	<i>116</i>	<i>157</i>	<i>125</i>	477	<i>569</i>	<i>537</i>
Electricity (billion kilowatt hours per day)	10.14	9.64	11.87	9.89	10.52	10.17	<i>11.89</i>	<i>10.07</i>	<i>10.54</i>	<i>10.31</i>	<i>12.01</i>	<i>10.21</i>	10.39	<i>10.66</i>	<i>10.77</i>
Renewables (c) (quadrillion Btu)	2.92	3.00	2.83	2.91	2.95	3.31	<i>3.10</i>	<i>3.18</i>	<i>3.30</i>	<i>3.57</i>	<i>3.28</i>	<i>3.33</i>	11.65	<i>12.54</i>	<i>13.47</i>
Total Energy Consumption (d) (quadrillion Btu)	25.10	20.63	23.42	23.79	24.99	22.91	<i>24.15</i>	<i>24.64</i>	<i>25.49</i>	<i>23.39</i>	<i>24.58</i>	<i>25.05</i>	92.94	<i>96.68</i>	<i>98.50</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>70.86</i>	<i>67.79</i>	<i>65.13</i>	<i>63.82</i>	<i>62.01</i>	<i>61.00</i>	39.17	<i>65.85</i>	<i>62.97</i>
Natural Gas Henry Hub Spot (dollars per million Btu)	1.91	1.71	2.00	2.53	3.56	2.94	<i>3.22</i>	<i>3.15</i>	<i>3.17</i>	<i>2.90</i>	<i>2.94</i>	<i>2.99</i>	2.03	<i>3.22</i>	<i>3.00</i>
Coal (dollars per million Btu)	1.93	1.91	1.93	1.92	1.91	1.89	<i>1.89</i>	<i>1.85</i>	<i>1.87</i>	<i>1.86</i>	<i>1.84</i>	<i>1.82</i>	1.92	<i>1.88</i>	<i>1.85</i>
Macroeconomic															
Real Gross Domestic Product (billion chained 2012 dollars - SAAR)	19,011	17,303	18,597	18,794	19,088	19,620	<i>20,019</i>	<i>20,410</i>	<i>20,597</i>	<i>20,732</i>	<i>20,824</i>	<i>20,917</i>	18,426	<i>19,784</i>	<i>20,767</i>
Percent change from prior year	0.3	-9.0	-2.8	-2.4	0.4	13.4	<i>7.6</i>	<i>8.6</i>	<i>7.9</i>	<i>5.7</i>	<i>4.0</i>	<i>2.5</i>	-3.5	<i>7.4</i>	<i>5.0</i>
GDP Implicit Price Deflator (Index, 2012=100)	113.4	112.9	113.8	114.4	115.6	117.0	<i>117.6</i>	<i>118.2</i>	<i>118.7</i>	<i>119.3</i>	<i>120.0</i>	<i>120.6</i>	113.6	<i>117.1</i>	<i>119.6</i>
Percent change from prior year	1.7	0.6	1.1	1.3	2.0	3.7	<i>3.3</i>	<i>3.3</i>	<i>2.7</i>	<i>2.0</i>	<i>2.0</i>	<i>2.1</i>	1.2	<i>3.1</i>	<i>2.2</i>
Real Disposable Personal Income (billion chained 2012 dollars - SAAR)	15,061	16,630	15,851	15,541	17,521	16,202	<i>15,819</i>	<i>15,706</i>	<i>15,899</i>	<i>16,017</i>	<i>16,107</i>	<i>16,154</i>	15,771	<i>16,312</i>	<i>16,045</i>
Percent change from prior year	1.4	12.2	6.4	3.9	16.3	-2.6	<i>-0.2</i>	<i>1.1</i>	<i>-9.3</i>	<i>-1.1</i>	<i>1.8</i>	<i>2.9</i>	6.0	<i>3.4</i>	<i>-1.6</i>
Manufacturing Production Index (Index, 2012=100)	97.6	84.2	94.2	96.7	97.2	98.7	<i>101.2</i>	<i>103.8</i>	<i>104.9</i>	<i>105.5</i>	<i>105.8</i>	<i>106.0</i>	93.2	<i>100.2</i>	<i>105.6</i>
Percent change from prior year	-2.7	-15.3	-5.2	-2.4	-0.4	17.2	<i>7.4</i>	<i>7.4</i>	<i>7.9</i>	<i>6.9</i>	<i>4.6</i>	<i>2.2</i>	-6.4	<i>7.6</i>	<i>5.3</i>
Weather															
U.S. Heating Degree-Days	1,874	540	70	1,418	2,099	482	<i>72</i>	<i>1,523</i>	<i>2,098</i>	<i>484</i>	<i>78</i>	<i>1,521</i>	3,903	<i>4,176</i>	<i>4,182</i>
U.S. Cooling Degree-Days	71	396	935	122	50	412	<i>859</i>	<i>95</i>	<i>46</i>	<i>402</i>	<i>852</i>	<i>95</i>	1,523	<i>1,416</i>	<i>1,395</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 Thursday July 1, 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 - July 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	<i>70.86</i>	<i>67.79</i>	<i>65.13</i>	<i>63.82</i>	<i>62.01</i>	<i>61.00</i>	39.17	<i>65.85</i>	<i>62.97</i>
Brent Spot Average	49.97	29.52	42.97	44.34	61.12	68.90	<i>73.35</i>	<i>71.29</i>	<i>68.63</i>	<i>67.32</i>	<i>65.67</i>	<i>65.00</i>	41.69	<i>68.78</i>	<i>66.64</i>
U.S. Imported Average	43.72	26.33	39.89	40.67	55.23	64.14	<i>68.93</i>	<i>65.76</i>	<i>62.88</i>	<i>61.56</i>	<i>59.53</i>	<i>58.50</i>	37.25	<i>64.33</i>	<i>60.57</i>
U.S. Refiner Average Acquisition Cost	47.48	26.75	40.79	42.09	57.12	65.54	<i>69.89</i>	<i>66.79</i>	<i>63.90</i>	<i>62.57</i>	<i>60.52</i>	<i>59.50</i>	39.72	<i>65.12</i>	<i>61.56</i>
U.S. Liquid Fuels (cents per gallon)															
Refiner Prices for Resale															
Gasoline	153	104	137	133	180	217	<i>221</i>	<i>201</i>	<i>190</i>	<i>202</i>	<i>200</i>	<i>186</i>	133	<i>206</i>	<i>194</i>
Diesel Fuel	160	97	124	133	178	202	<i>218</i>	<i>214</i>	<i>205</i>	<i>204</i>	<i>201</i>	<i>199</i>	129	<i>204</i>	<i>202</i>
Fuel Oil	160	87	113	121	162	188	<i>209</i>	<i>209</i>	<i>202</i>	<i>194</i>	<i>190</i>	<i>191</i>	125	<i>196</i>	<i>198</i>
Refiner Prices to End Users															
Jet Fuel	165	85	116	125	163	182	<i>199</i>	<i>202</i>	<i>201</i>	<i>201</i>	<i>198</i>	<i>197</i>	131	<i>189</i>	<i>199</i>
No. 6 Residual Fuel Oil (a)	176	93	116	119	162	166	<i>166</i>	<i>160</i>	<i>152</i>	<i>151</i>	<i>145</i>	<i>142</i>	125	<i>164</i>	<i>147</i>
Retail Prices Including Taxes															
Gasoline Regular Grade (b)	241	194	218	215	256	297	<i>304</i>	<i>281</i>	<i>266</i>	<i>282</i>	<i>279</i>	<i>268</i>	218	<i>285</i>	<i>274</i>
Gasoline All Grades (b)	251	203	227	224	265	306	<i>315</i>	<i>294</i>	<i>280</i>	<i>295</i>	<i>293</i>	<i>282</i>	227	<i>296</i>	<i>288</i>
On-highway Diesel Fuel	289	243	243	246	290	321	<i>325</i>	<i>323</i>	<i>314</i>	<i>307</i>	<i>307</i>	<i>307</i>	255	<i>316</i>	<i>309</i>
Heating Oil	280	200	214	230	272	283	<i>312</i>	<i>334</i>	<i>325</i>	<i>303</i>	<i>286</i>	<i>287</i>	244	<i>297</i>	<i>305</i>
Natural Gas															
Henry Hub Spot (dollars per thousand cubic feet)	1.98	1.77	2.07	2.63	3.70	3.06	<i>3.35</i>	<i>3.27</i>	<i>3.29</i>	<i>3.01</i>	<i>3.06</i>	<i>3.11</i>	2.11	<i>3.34</i>	<i>3.12</i>
Henry Hub Spot (dollars per million Btu)	1.91	1.71	2.00	2.53	3.56	2.94	<i>3.22</i>	<i>3.15</i>	<i>3.17</i>	<i>2.90</i>	<i>2.94</i>	<i>2.99</i>	2.03	<i>3.22</i>	<i>3.00</i>
U.S. Retail Prices (dollars per thousand cubic feet)															
Industrial Sector	3.52	2.85	2.88	3.77	5.72	3.96	<i>4.29</i>	<i>4.47</i>	<i>4.67</i>	<i>3.98</i>	<i>3.89</i>	<i>4.20</i>	3.29	<i>4.63</i>	<i>4.20</i>
Commercial Sector	7.13	7.63	8.49	7.53	7.56	8.57	<i>9.15</i>	<i>8.16</i>	<i>7.91</i>	<i>8.24</i>	<i>8.57</i>	<i>7.62</i>	7.48	<i>8.08</i>	<i>7.95</i>
Residential Sector	9.46	11.89	17.65	10.60	9.79	13.56	<i>17.81</i>	<i>10.92</i>	<i>9.87</i>	<i>12.62</i>	<i>17.33</i>	<i>10.54</i>	10.83	<i>11.24</i>	<i>11.01</i>
U.S. Electricity															
Power Generation Fuel Costs (dollars per million Btu)															
Coal	1.93	1.91	1.93	1.92	1.91	1.89	<i>1.89</i>	<i>1.85</i>	<i>1.87</i>	<i>1.86</i>	<i>1.84</i>	<i>1.82</i>	1.92	<i>1.88</i>	<i>1.85</i>
Natural Gas	2.39	2.08	2.26	2.87	7.27	3.18	<i>3.41</i>	<i>3.49</i>	<i>3.72</i>	<i>3.06</i>	<i>3.07</i>	<i>3.29</i>	2.39	<i>4.24</i>	<i>3.26</i>
Residual Fuel Oil (c)	12.15	6.65	8.85	8.90	11.28	12.88	<i>13.15</i>	<i>13.03</i>	<i>12.97</i>	<i>13.31</i>	<i>12.40</i>	<i>12.01</i>	9.15	<i>12.54</i>	<i>12.66</i>
Distillate Fuel Oil	13.27	8.39	10.37	10.54	13.59	15.54	<i>16.72</i>	<i>16.55</i>	<i>16.09</i>	<i>15.87</i>	<i>15.59</i>	<i>15.49</i>	10.73	<i>15.29</i>	<i>15.79</i>
Retail Prices (cents per kilowatthour)															
Industrial Sector	6.38	6.63	7.08	6.53	7.15	7.00	<i>7.20</i>	<i>6.61</i>	<i>6.96</i>	<i>6.96</i>	<i>7.21</i>	<i>6.60</i>	6.66	<i>6.99</i>	<i>6.94</i>
Commercial Sector	10.33	10.63	10.97	10.62	11.11	11.09	<i>11.48</i>	<i>11.04</i>	<i>11.40</i>	<i>11.31</i>	<i>11.60</i>	<i>11.12</i>	10.65	<i>11.19</i>	<i>11.37</i>
Residential Sector	12.90	13.24	13.35	13.25	13.09	13.61	<i>13.83</i>	<i>13.71</i>	<i>13.60</i>	<i>13.91</i>	<i>13.95</i>	<i>13.77</i>	13.20	<i>13.57</i>	<i>13.81</i>

(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 Thursday July 1, 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 - July 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	32.94	29.42	29.97	30.68	30.17	30.93	<i>31.47</i>	<i>31.94</i>	<i>32.22</i>	<i>32.50</i>	<i>32.84</i>	<i>33.36</i>	30.75	<i>31.13</i>	<i>32.74</i>
U.S. (50 States)	20.22	17.58	18.30	18.31	17.63	18.99	<i>18.94</i>	<i>19.15</i>	<i>19.44</i>	<i>19.85</i>	<i>20.27</i>	<i>20.58</i>	18.60	<i>18.68</i>	<i>20.04</i>
Canada	5.64	4.91	4.94	5.55	5.63	5.29	<i>5.66</i>	<i>5.76</i>	<i>5.79</i>	<i>5.76</i>	<i>5.79</i>	<i>5.81</i>	5.26	<i>5.59</i>	<i>5.79</i>
Mexico	2.00	1.94	1.91	1.90	1.93	1.95	<i>1.93</i>	<i>1.90</i>	<i>1.84</i>	<i>1.80</i>	<i>1.77</i>	<i>1.74</i>	1.94	<i>1.93</i>	<i>1.79</i>
Other OECD	5.08	4.99	4.81	4.93	4.99	4.70	<i>4.94</i>	<i>5.14</i>	<i>5.15</i>	<i>5.08</i>	<i>5.01</i>	<i>5.24</i>	4.95	<i>4.94</i>	<i>5.12</i>
Non-OECD	67.68	63.02	61.06	62.09	62.55	64.15	<i>67.36</i>	<i>68.01</i>	<i>67.77</i>	<i>69.09</i>	<i>69.77</i>	<i>69.64</i>	63.45	<i>65.54</i>	<i>69.07</i>
OPEC	33.50	30.72	28.65	30.00	30.35	30.81	<i>33.17</i>	<i>34.07</i>	<i>34.22</i>	<i>34.09</i>	<i>34.12</i>	<i>34.16</i>	30.71	<i>32.11</i>	<i>34.15</i>
Crude Oil Portion	28.28	25.65	23.63	24.88	25.08	25.53	<i>27.82</i>	<i>28.67</i>	<i>28.63</i>	<i>28.63</i>	<i>28.63</i>	<i>28.63</i>	25.60	<i>26.79</i>	<i>28.63</i>
Other Liquids (b)	5.22	5.07	5.02	5.12	5.27	5.28	<i>5.35</i>	<i>5.40</i>	<i>5.59</i>	<i>5.46</i>	<i>5.49</i>	<i>5.53</i>	5.11	<i>5.32</i>	<i>5.52</i>
Eurasia	14.73	13.18	12.72	13.13	13.39	13.63	<i>13.71</i>	<i>13.88</i>	<i>14.04</i>	<i>14.63</i>	<i>14.78</i>	<i>14.92</i>	13.44	<i>13.65</i>	<i>14.59</i>
China	4.96	4.91	4.95	4.90	5.05	5.06	<i>5.01</i>	<i>5.06</i>	<i>5.05</i>	<i>5.08</i>	<i>5.08</i>	<i>5.13</i>	4.93	<i>5.05</i>	<i>5.08</i>
Other Non-OECD	14.49	14.21	14.74	14.06	13.77	14.64	<i>15.46</i>	<i>15.00</i>	<i>14.46</i>	<i>15.30</i>	<i>15.78</i>	<i>15.43</i>	14.38	<i>14.72</i>	<i>15.25</i>
Total World Supply	100.63	92.44	91.02	92.78	92.73	95.08	<i>98.82</i>	<i>99.95</i>	<i>99.99</i>	<i>101.59</i>	<i>102.61</i>	<i>103.00</i>	94.20	<i>96.67</i>	<i>101.81</i>
Non-OPEC Supply	67.13	61.72	62.37	62.77	62.38	64.27	<i>65.65</i>	<i>65.88</i>	<i>65.77</i>	<i>67.51</i>	<i>68.49</i>	<i>68.84</i>	63.49	<i>64.56</i>	<i>67.66</i>
Consumption (million barrels per day) (c)															
OECD	45.26	37.40	42.12	42.79	42.23	43.95	<i>45.35</i>	<i>45.97</i>	<i>45.61</i>	<i>45.41</i>	<i>46.37</i>	<i>46.53</i>	41.90	<i>44.39</i>	<i>45.98</i>
U.S. (50 States)	19.33	16.08	18.36	18.71	18.45	19.78	<i>20.09</i>	<i>20.23</i>	<i>20.10</i>	<i>20.62</i>	<i>21.00</i>	<i>21.00</i>	18.12	<i>19.64</i>	<i>20.68</i>
U.S. Territories	0.17	0.15	0.16	0.17	0.20	0.18	<i>0.18</i>	<i>0.19</i>	<i>0.20</i>	<i>0.18</i>	<i>0.19</i>	<i>0.20</i>	0.16	<i>0.19</i>	<i>0.19</i>
Canada	2.33	1.88	2.16	2.05	2.01	2.16	<i>2.30</i>	<i>2.30</i>	<i>2.26</i>	<i>2.21</i>	<i>2.31</i>	<i>2.30</i>	2.10	<i>2.19</i>	<i>2.27</i>
Europe	13.33	11.01	12.87	12.51	11.88	12.79	<i>13.56</i>	<i>13.48</i>	<i>13.13</i>	<i>13.29</i>	<i>13.64</i>	<i>13.32</i>	12.43	<i>12.93</i>	<i>13.35</i>
Japan	3.69	2.89	3.03	3.50	3.69	2.95	<i>3.06</i>	<i>3.40</i>	<i>3.63</i>	<i>2.97</i>	<i>3.05</i>	<i>3.37</i>	3.27	<i>3.27</i>	<i>3.25</i>
Other OECD	6.41	5.41	5.55	5.87	6.01	6.09	<i>6.16</i>	<i>6.36</i>	<i>6.29</i>	<i>6.14</i>	<i>6.18</i>	<i>6.34</i>	5.81	<i>6.16</i>	<i>6.24</i>
Non-OECD	50.33	47.45	51.21	52.59	52.27	52.79	<i>53.68</i>	<i>54.19</i>	<i>54.19</i>	<i>55.61</i>	<i>55.76</i>	<i>55.88</i>	50.40	<i>53.24</i>	<i>55.37</i>
Eurasia	4.86	4.48	5.28	5.17	4.92	5.00	<i>5.39</i>	<i>5.23</i>	<i>5.04</i>	<i>5.13</i>	<i>5.53</i>	<i>5.38</i>	4.95	<i>5.14</i>	<i>5.27</i>
Europe	0.71	0.69	0.71	0.72	0.73	0.74	<i>0.74</i>	<i>0.74</i>	<i>0.73</i>	<i>0.75</i>	<i>0.76</i>	<i>0.76</i>	0.71	<i>0.74</i>	<i>0.75</i>
China	13.89	14.08	14.65	15.11	15.03	15.48	<i>15.21</i>	<i>15.53</i>	<i>15.83</i>	<i>16.07</i>	<i>15.76</i>	<i>16.02</i>	14.43	<i>15.31</i>	<i>15.92</i>
Other Asia	13.35	11.63	12.60	13.61	13.83	13.45	<i>13.50</i>	<i>14.06</i>	<i>14.44</i>	<i>14.69</i>	<i>14.28</i>	<i>14.71</i>	12.80	<i>13.71</i>	<i>14.53</i>
Other Non-OECD	17.53	16.55	17.98	17.99	17.76	18.13	<i>18.84</i>	<i>18.62</i>	<i>18.15</i>	<i>18.98</i>	<i>19.43</i>	<i>19.01</i>	17.51	<i>18.34</i>	<i>18.90</i>
Total World Consumption	95.59	84.85	93.33	95.39	94.50	96.74	<i>99.03</i>	<i>100.15</i>	<i>99.81</i>	<i>101.02</i>	<i>102.13</i>	<i>102.41</i>	92.30	<i>97.63</i>	<i>101.35</i>
Total Crude Oil and Other Liquids Inventory Net Withdrawals (million barrels per day)															
U.S. (50 States)	-0.43	-1.68	0.49	0.89	0.48	0.33	<i>-0.09</i>	<i>0.48</i>	<i>0.05</i>	<i>-0.55</i>	<i>0.02</i>	<i>0.43</i>	-0.18	<i>0.30</i>	<i>-0.01</i>
Other OECD	-0.51	-1.16	0.04	0.69	0.76	0.42	<i>0.10</i>	<i>-0.09</i>	<i>-0.07</i>	<i>-0.01</i>	<i>-0.16</i>	<i>-0.32</i>	-0.23	<i>0.29</i>	<i>-0.14</i>
Other Stock Draws and Balance	-4.10	-4.75	1.79	1.04	0.54	0.91	<i>0.21</i>	<i>-0.18</i>	<i>-0.16</i>	<i>-0.02</i>	<i>-0.35</i>	<i>-0.70</i>	-1.49	<i>0.37</i>	<i>-0.31</i>
Total Stock Draw	-5.03	-7.59	2.31	2.61	1.77	1.66	<i>0.21</i>	<i>0.21</i>	<i>-0.18</i>	<i>-0.58</i>	<i>-0.49</i>	<i>-0.59</i>	-1.90	<i>0.96</i>	<i>-0.46</i>
End-of-period Commercial Crude Oil and Other Liquids Inventories (million barrels)															
U.S. Commercial Inventory	1,321	1,453	1,422	1,344	1,302	1,288	<i>1,297</i>	<i>1,257</i>	<i>1,257</i>	<i>1,312</i>	<i>1,313</i>	<i>1,283</i>	1,344	<i>1,257</i>	<i>1,283</i>
OECD Commercial Inventory	2,964	3,201	3,167	3,026	2,915	2,864	<i>2,863</i>	<i>2,832</i>	<i>2,838</i>	<i>2,894</i>	<i>2,909</i>	<i>2,908</i>	3,026	<i>2,832</i>	<i>2,908</i>

(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 Thursday July 1, 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 - July 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
North America	27.86	24.43	25.15	25.75	25.19	26.24	26.53	26.80	27.07	27.42	27.83	28.13	25.80	26.19	27.62
Canada	5.64	4.91	4.94	5.55	5.63	5.29	5.66	5.76	5.79	5.76	5.79	5.81	5.26	5.59	5.79
Mexico	2.00	1.94	1.91	1.90	1.93	1.95	1.93	1.90	1.84	1.80	1.77	1.74	1.94	1.93	1.79
United States	20.22	17.58	18.30	18.31	17.63	18.99	18.94	19.15	19.44	19.85	20.27	20.58	18.60	18.68	20.04
Central and South America	6.01	6.05	6.63	5.89	5.61	6.42	7.15	6.70	6.13	7.01	7.53	7.21	6.15	6.47	6.97
Argentina	0.69	0.60	0.64	0.62	0.63	0.68	0.70	0.69	0.71	0.74	0.75	0.73	0.64	0.67	0.73
Brazil	3.44	3.89	4.29	3.52	3.23	4.04	4.64	4.20	3.56	4.51	4.90	4.46	3.79	4.03	4.36
Colombia	0.90	0.78	0.77	0.79	0.77	0.76	0.79	0.79	0.84	0.73	0.76	0.79	0.81	0.78	0.78
Ecuador	0.54	0.36	0.52	0.51	0.51	0.50	0.52	0.53	0.53	0.53	0.53	0.53	0.48	0.51	0.53
Other Central and S. America	0.45	0.42	0.41	0.45	0.47	0.45	0.49	0.49	0.49	0.50	0.59	0.69	0.43	0.47	0.57
Europe	4.44	4.34	4.16	4.29	4.35	4.10	4.33	4.53	4.55	4.48	4.41	4.65	4.31	4.33	4.52
Norway	2.05	2.00	1.96	2.02	2.11	2.00	2.08	2.22	2.23	2.18	2.20	2.32	2.01	2.10	2.24
United Kingdom	1.18	1.15	0.99	1.06	1.05	0.86	1.00	1.05	1.06	1.04	0.93	1.04	1.10	0.99	1.02
Eurasia	14.73	13.18	12.72	13.13	13.39	13.63	13.71	13.88	14.04	14.63	14.78	14.92	13.44	13.65	14.59
Azerbaijan	0.76	0.69	0.66	0.69	0.74	0.69	0.70	0.74	0.76	0.77	0.75	0.78	0.70	0.72	0.76
Kazakhstan	2.06	1.86	1.71	1.81	1.87	1.87	1.86	1.92	1.94	1.99	1.95	2.00	1.86	1.88	1.97
Russia	11.54	10.25	9.97	10.26	10.43	10.72	10.79	10.84	10.96	11.49	11.70	11.75	10.50	10.69	11.48
Turkmenistan	0.25	0.25	0.25	0.25	0.24	0.24	0.24	0.24	0.23	0.23	0.23	0.23	0.25	0.24	0.23
Other Eurasia	0.12	0.12	0.12	0.12	0.11	0.12	0.12	0.14	0.15	0.16	0.16	0.16	0.12	0.12	0.16
Middle East	3.16	3.13	3.09	3.13	3.16	3.17	3.21	3.22	3.27	3.26	3.26	3.25	3.13	3.19	3.26
Oman	1.01	0.95	0.92	0.95	0.96	0.96	1.01	1.02	1.03	1.03	1.03	1.03	0.96	0.99	1.03
Qatar	1.84	1.87	1.88	1.88	1.90	1.91	1.92	1.92	1.94	1.94	1.94	1.94	1.87	1.91	1.94
Asia and Oceania	9.44	9.15	9.21	9.18	9.27	9.30	9.29	9.32	9.32	9.31	9.29	9.29	9.24	9.29	9.30
Australia	0.49	0.50	0.50	0.49	0.47	0.50	0.51	0.50	0.50	0.50	0.49	0.48	0.49	0.49	0.49
China	4.96	4.91	4.95	4.90	5.05	5.06	5.01	5.06	5.05	5.08	5.08	5.13	4.93	5.05	5.08
India	0.96	0.90	0.92	0.92	0.92	0.91	0.92	0.91	0.92	0.90	0.90	0.89	0.92	0.91	0.90
Indonesia	0.91	0.89	0.87	0.88	0.84	0.87	0.87	0.86	0.86	0.85	0.84	0.83	0.89	0.86	0.85
Malaysia	0.71	0.60	0.63	0.64	0.64	0.63	0.63	0.64	0.63	0.63	0.62	0.61	0.65	0.64	0.62
Vietnam	0.25	0.24	0.23	0.23	0.23	0.22	0.22	0.22	0.22	0.21	0.21	0.21	0.23	0.22	0.21
Africa	1.48	1.44	1.42	1.40	1.40	1.41	1.44	1.43	1.40	1.40	1.39	1.39	1.43	1.42	1.39
Egypt	0.62	0.61	0.60	0.58	0.58	0.62	0.64	0.64	0.61	0.61	0.61	0.61	0.60	0.62	0.61
South Sudan	0.15	0.15	0.17	0.17	0.16	0.16	0.18	0.18	0.18	0.18	0.18	0.18	0.16	0.17	0.18
Total non-OPEC liquids	67.13	61.72	62.37	62.77	62.38	64.27	65.65	65.88	65.77	67.51	68.49	68.84	63.49	64.56	67.66
OPEC non-crude liquids	5.22	5.07	5.02	5.12	5.27	5.28	5.35	5.40	5.59	5.46	5.49	5.53	5.11	5.32	5.52
Non-OPEC + OPEC non-crude	72.35	66.79	67.40	67.90	67.64	69.55	71.00	71.27	71.36	72.97	73.98	74.37	68.60	69.88	73.18
Unplanned non-OPEC Production Outages	0.18	0.92	0.72	0.55	0.68	0.31	-	-	-	-	-	-	0.59	-	-

- = 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 Thursday July 1, 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 - July 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	4.02	-	-	-	-	-	-	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	1.17	-	-	-	-	-	-	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	0.51	-	-	-	-	-	-	0.50	-	-
OPEC Total	28.28	25.65	23.63	24.88	25.08	25.53	<i>27.82</i>	<i>28.67</i>	<i>28.63</i>	<i>28.63</i>	<i>28.63</i>	<i>28.63</i>	25.60	<i>26.79</i>	<i>28.63</i>
Other Liquids (a)	5.22	5.07	5.02	5.12	5.27	5.28	<i>5.35</i>	<i>5.40</i>	<i>5.59</i>	<i>5.46</i>	<i>5.49</i>	<i>5.53</i>	5.11	<i>5.32</i>	<i>5.52</i>
Total OPEC Supply	33.50	30.72	28.65	30.00	30.35	30.81	<i>33.17</i>	<i>34.07</i>	<i>34.22</i>	<i>34.09</i>	<i>34.12</i>	<i>34.16</i>	30.71	<i>32.11</i>	<i>34.15</i>
Crude Oil Production Capacity															
Middle East	25.61	26.02	26.06	26.22	26.55	26.85	<i>27.08</i>	<i>27.35</i>	<i>27.38</i>	<i>27.39</i>	<i>27.39</i>	<i>27.39</i>	25.98	<i>26.96</i>	<i>27.39</i>
Other	5.82	5.60	5.48	6.33	6.73	6.70	<i>6.48</i>	<i>6.10</i>	<i>6.01</i>	<i>6.01</i>	<i>6.01</i>	<i>6.01</i>	5.81	<i>6.50</i>	<i>6.01</i>
OPEC Total	31.43	31.63	31.54	32.56	33.28	33.55	<i>33.56</i>	<i>33.44</i>	<i>33.40</i>	<i>33.39</i>	<i>33.40</i>	<i>33.41</i>	31.79	<i>33.46</i>	<i>33.40</i>
Surplus Crude Oil Production Capacity															
Middle East	3.15	5.27	6.90	6.62	7.00	6.84	<i>5.10</i>	<i>4.68</i>	<i>4.68</i>	<i>4.69</i>	<i>4.69</i>	<i>4.69</i>	5.49	<i>5.90</i>	<i>4.69</i>
Other	0.00	0.71	1.02	1.06	1.19	1.18	<i>0.63</i>	<i>0.09</i>	<i>0.08</i>	<i>0.08</i>	<i>0.08</i>	<i>0.08</i>	0.70	<i>0.77</i>	<i>0.08</i>
OPEC Total	3.15	5.98	7.92	7.68	8.19	8.02	<i>5.73</i>	<i>4.77</i>	<i>4.76</i>	<i>4.77</i>	<i>4.77</i>	<i>4.78</i>	6.19	<i>6.67</i>	<i>4.77</i>
Unplanned OPEC Production Outages	3.72	4.18	4.35	3.45	2.73	2.39	-	-	-	-	-	-	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 Thursday July 1, 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 - July 2021

	2020				2021				2022				2020	2021	2022
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
North America	23.64	19.44	22.12	22.45	22.18	23.81	<i>24.27</i>	<i>24.42</i>	<i>24.18</i>	<i>24.68</i>	<i>25.15</i>	<i>25.15</i>	21.91	<i>23.68</i>	<i>24.79</i>
Canada	2.33	1.88	2.16	2.05	2.01	2.16	<i>2.30</i>	<i>2.30</i>	<i>2.26</i>	<i>2.21</i>	<i>2.31</i>	<i>2.30</i>	2.10	<i>2.19</i>	<i>2.27</i>
Mexico	1.97	1.48	1.59	1.68	1.71	1.86	<i>1.87</i>	<i>1.88</i>	<i>1.81</i>	<i>1.84</i>	<i>1.83</i>	<i>1.84</i>	1.68	<i>1.83</i>	<i>1.83</i>
United States	19.33	16.08	18.36	18.71	18.45	19.78	<i>20.09</i>	<i>20.23</i>	<i>20.10</i>	<i>20.62</i>	<i>21.00</i>	<i>21.00</i>	18.12	<i>19.64</i>	<i>20.68</i>
Central and South America	6.14	5.61	6.04	6.32	6.21	6.36	<i>6.54</i>	<i>6.56</i>	<i>6.37</i>	<i>6.56</i>	<i>6.70</i>	<i>6.72</i>	6.03	<i>6.42</i>	<i>6.59</i>
Brazil	2.89	2.67	2.97	3.06	2.95	3.06	<i>3.19</i>	<i>3.19</i>	<i>3.03</i>	<i>3.14</i>	<i>3.24</i>	<i>3.25</i>	2.90	<i>3.10</i>	<i>3.17</i>
Europe	14.04	11.70	13.58	13.23	12.61	13.53	<i>14.30</i>	<i>14.23</i>	<i>13.86</i>	<i>14.04</i>	<i>14.40</i>	<i>14.09</i>	13.14	<i>13.67</i>	<i>14.10</i>
Eurasia	4.86	4.48	5.28	5.17	4.92	5.00	<i>5.39</i>	<i>5.23</i>	<i>5.04</i>	<i>5.13</i>	<i>5.53</i>	<i>5.38</i>	4.95	<i>5.14</i>	<i>5.27</i>
Russia	3.65	3.33	4.04	3.92	3.71	3.82	<i>4.14</i>	<i>3.97</i>	<i>3.80</i>	<i>3.92</i>	<i>4.25</i>	<i>4.10</i>	3.74	<i>3.91</i>	<i>4.02</i>
Middle East	7.91	7.43	8.44	8.06	7.91	8.10	<i>8.73</i>	<i>8.28</i>	<i>7.99</i>	<i>8.60</i>	<i>9.01</i>	<i>8.37</i>	7.96	<i>8.26</i>	<i>8.49</i>
Asia and Oceania	34.84	32.13	33.80	35.87	36.36	35.60	<i>35.54</i>	<i>36.98</i>	<i>37.89</i>	<i>37.53</i>	<i>36.93</i>	<i>38.12</i>	34.16	<i>36.12</i>	<i>37.61</i>
China	13.89	14.08	14.65	15.11	15.03	15.48	<i>15.21</i>	<i>15.53</i>	<i>15.83</i>	<i>16.07</i>	<i>15.76</i>	<i>16.02</i>	14.43	<i>15.31</i>	<i>15.92</i>
Japan	3.69	2.89	3.03	3.50	3.69	2.95	<i>3.06</i>	<i>3.40</i>	<i>3.63</i>	<i>2.97</i>	<i>3.05</i>	<i>3.37</i>	3.27	<i>3.27</i>	<i>3.25</i>
India	4.83	3.76	4.17	4.93	5.00	4.43	<i>4.48</i>	<i>4.87</i>	<i>5.15</i>	<i>5.24</i>	<i>4.89</i>	<i>5.21</i>	4.42	<i>4.69</i>	<i>5.12</i>
Africa	4.18	4.05	4.07	4.29	4.32	4.34	<i>4.26</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>4.49</i>
Total OECD Liquid Fuels Consumption	45.26	37.40	42.12	42.79	42.23	43.95	<i>45.35</i>	<i>45.97</i>	<i>45.61</i>	<i>45.41</i>	<i>46.37</i>	<i>46.53</i>	41.90	<i>44.39</i>	<i>45.98</i>
Total non-OECD Liquid Fuels Consumption	50.33	47.45	51.21	52.59	52.27	52.79	<i>53.68</i>	<i>54.19</i>	<i>54.19</i>	<i>55.61</i>	<i>55.76</i>	<i>55.88</i>	50.40	<i>53.24</i>	<i>55.37</i>
Total World Liquid Fuels Consumption	95.59	84.85	93.33	95.39	94.50	96.74	<i>99.03</i>	<i>100.15</i>	<i>99.81</i>	<i>101.02</i>	<i>102.13</i>	<i>102.41</i>	92.30	<i>97.63</i>	<i>101.35</i>
Real Gross Domestic Product (a)															
World Index, 2015 Q1 = 100	110.3	107.6	112.4	113.5	115.9	117.3	<i>118.9</i>	<i>119.8</i>	<i>122.6</i>	<i>123.3</i>	<i>123.9</i>	<i>124.5</i>	111.0	<i>118.0</i>	<i>123.6</i>
Percent change from prior year	-3.4	-6.1	-2.4	-1.7	5.1	9.0	<i>5.7</i>	<i>5.5</i>	<i>5.8</i>	<i>5.1</i>	<i>4.3</i>	<i>3.9</i>	-3.4	<i>6.3</i>	<i>4.8</i>
OECD Index, 2015 = 100	103.6	109.5	114.1	118.1	123.1	128.1	<i>133.1</i>	<i>138.1</i>	<i>143.1</i>	<i>148.1</i>	<i>153.1</i>	<i>158.1</i>	103.6	<i>109.5</i>	<i>114.1</i>
Percent change from prior year	-4.8	5.7	4.2	3.5	4.2	5.1	<i>3.8</i>	<i>3.6</i>	<i>3.5</i>	<i>3.4</i>	<i>3.3</i>	<i>3.2</i>	-4.8	<i>5.7</i>	<i>4.2</i>
Non-OECD Index, 2015 = 100	116.0	123.7	130.1	137.0	144.0	151.0	<i>158.0</i>	<i>165.0</i>	<i>172.0</i>	<i>179.0</i>	<i>186.0</i>	<i>193.0</i>	116.0	<i>123.7</i>	<i>130.1</i>
Percent change from prior year	-2.2	6.6	5.1	5.0	4.9	4.8	<i>4.7</i>	<i>4.6</i>	<i>4.5</i>	<i>4.4</i>	<i>4.3</i>	<i>4.2</i>	-2.2	<i>6.6</i>	<i>5.1</i>
Nominal U.S. Dollar Index (b)															
Index, 2015 Q1 = 100	111.7	115.9	111.5	108.3	106.8	106.6	<i>105.9</i>	<i>106.7</i>	<i>107.3</i>	<i>107.6</i>	<i>107.6</i>	<i>107.6</i>	111.9	<i>106.5</i>	<i>107.5</i>
Percent change from prior year	2.8	5.8	0.9	-1.9	-4.4	-8.0	<i>-5.0</i>	<i>-1.5</i>	<i>0.6</i>	<i>0.9</i>	<i>1.6</i>	<i>0.8</i>	1.9	<i>-4.8</i>	<i>1.0</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 Thursday July 1, 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 4a. U.S. Petroleum and Other Liquids Supply, Consumption, and Inventories
U.S. Energy Information Administration | Short-Term Energy Outlook - July 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)															
Crude Oil Supply															
Domestic Production (a)	12.75	10.81	10.81	10.90	10.70	11.20	11.17	11.34	11.54	11.72	11.95	12.20	11.31	11.10	11.85
Alaska	0.48	0.41	0.44	0.46	0.46	0.43	0.40	0.44	0.43	0.41	0.39	0.43	0.45	0.43	0.42
Federal Gulf of Mexico (b)	1.96	1.69	1.45	1.52	1.80	1.77	1.74	1.73	1.77	1.74	1.75	1.78	1.66	1.76	1.76
Lower 48 States (excl GOM)	10.31	8.71	8.92	8.91	8.44	9.00	9.03	9.17	9.34	9.56	9.81	9.99	9.21	8.91	9.68
Crude Oil Net Imports (c)	2.90	3.08	2.31	2.51	2.87	2.99	4.50	3.73	3.77	4.77	4.82	3.96	2.70	3.53	4.33
SPR Net Withdrawals	0.00	-0.23	0.15	0.04	0.00	0.18	0.00	0.05	0.05	0.05	0.03	0.11	-0.01	0.06	0.06
Commercial Inventory Net Withdrawals	-0.55	-0.54	0.38	0.13	-0.18	0.58	0.15	-0.06	-0.29	-0.02	0.27	-0.02	-0.14	0.12	-0.01
Crude Oil Adjustment (d)	0.67	0.03	0.38	0.32	0.42	0.58	0.23	0.16	0.22	0.22	0.23	0.16	0.35	0.35	0.21
Total Crude Oil Input to Refineries	15.77	13.16	14.03	13.90	13.81	15.54	16.04	15.22	15.28	16.74	17.30	16.41	14.21	15.16	16.44
Other Supply															
Refinery Processing Gain	1.02	0.82	0.94	0.92	0.84	1.06	1.08	1.05	1.07	1.10	1.15	1.15	0.92	1.01	1.12
Natural Gas Plant Liquids Production	5.12	4.96	5.33	5.23	4.86	5.41	5.37	5.46	5.54	5.70	5.82	5.87	5.16	5.28	5.73
Renewables and Oxygenate Production (e)	1.11	0.80	1.03	1.07	1.03	1.11	1.10	1.09	1.08	1.11	1.13	1.13	1.01	1.08	1.11
Fuel Ethanol Production	1.02	0.70	0.92	0.97	0.90	1.00	1.00	0.98	0.98	1.01	1.02	1.02	0.91	0.97	1.00
Petroleum Products Adjustment (f)	0.22	0.19	0.20	0.19	0.19	0.21	0.21	0.21	0.21	0.22	0.23	0.23	0.20	0.21	0.22
Product Net Imports (c)	-4.03	-2.94	-3.12	-3.32	-2.94	-3.12	-3.48	-3.29	-3.38	-3.67	-4.34	-4.14	-3.35	-3.21	-3.88
Hydrocarbon Gas Liquids	-1.99	-1.86	-1.86	-2.03	-2.02	-2.21	-2.26	-2.07	-2.11	-2.25	-2.33	-2.18	-1.94	-2.14	-2.22
Unfinished Oils	0.31	0.25	0.34	0.19	0.14	0.36	0.42	0.29	0.21	0.25	0.30	0.20	0.27	0.30	0.24
Other HC/Oxygenates	-0.10	-0.05	-0.04	-0.04	-0.08	-0.06	-0.07	-0.08	-0.09	-0.08	-0.08	-0.09	-0.06	-0.07	-0.08
Motor Gasoline Blend Comp.	0.39	0.36	0.48	0.43	0.55	0.68	0.42	0.14	0.53	0.76	0.43	0.21	0.42	0.45	0.48
Finished Motor Gasoline	-0.72	-0.40	-0.58	-0.78	-0.66	-0.59	-0.61	-0.63	-0.82	-0.68	-0.74	-0.76	-0.62	-0.62	-0.75
Jet Fuel	-0.07	0.09	0.12	0.07	0.03	0.09	0.11	0.13	0.00	0.03	0.12	0.19	0.05	0.09	0.09
Distillate Fuel Oil	-1.19	-0.86	-1.15	-0.74	-0.49	-0.85	-0.91	-0.50	-0.53	-0.97	-1.28	-1.09	-0.98	-0.69	-0.97
Residual Fuel Oil	-0.02	0.02	0.05	0.05	0.08	0.04	0.00	0.05	-0.03	-0.08	-0.06	0.04	0.02	0.04	-0.03
Other Oils (g)	-0.65	-0.49	-0.49	-0.48	-0.49	-0.59	-0.59	-0.62	-0.53	-0.67	-0.70	-0.65	-0.52	-0.57	-0.64
Product Inventory Net Withdrawals	0.12	-0.91	-0.04	0.71	0.66	-0.43	-0.24	0.49	0.30	-0.59	-0.28	0.35	-0.03	0.12	-0.06
Total Supply	19.33	16.08	18.36	18.71	18.45	19.78	20.09	20.23	20.10	20.62	21.00	21.00	18.12	19.64	20.68
Consumption (million barrels per day)															
Hydrocarbon Gas Liquids	3.31	2.83	2.95	3.70	3.40	3.10	2.97	3.64	3.84	3.29	3.30	3.84	3.20	3.28	3.57
Unfinished Oils	0.14	0.11	0.01	0.03	0.05	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03	0.00
Motor Gasoline	8.49	7.11	8.50	8.02	8.00	9.02	9.13	8.74	8.45	9.22	9.29	8.92	8.03	8.73	8.97
Fuel Ethanol blended into Motor Gasoline	0.85	0.72	0.87	0.84	0.82	0.94	0.93	0.89	0.86	0.94	0.94	0.93	0.82	0.90	0.92
Jet Fuel	1.56	0.69	0.97	1.09	1.13	1.33	1.55	1.55	1.53	1.66	1.81	1.82	1.08	1.39	1.71
Distillate Fuel Oil	3.97	3.51	3.70	3.92	3.97	4.01	4.06	4.24	4.30	4.25	4.19	4.28	3.78	4.07	4.26
Residual Fuel Oil	0.17	0.15	0.32	0.23	0.26	0.24	0.28	0.24	0.23	0.21	0.26	0.26	0.22	0.25	0.24
Other Oils (g)	1.68	1.68	1.91	1.71	1.63	1.98	2.11	1.82	1.74	1.99	2.15	1.88	1.75	1.89	1.94
Total Consumption	19.33	16.08	18.36	18.71	18.45	19.78	20.09	20.23	20.10	20.62	21.00	21.00	18.12	19.64	20.68
Total Petroleum and Other Liquids Net Imports	-1.13	0.14	-0.81	-0.81	-0.07	-0.12	1.02	0.44	0.39	1.11	0.48	-0.17	-0.65	0.32	0.45
End-of-period Inventories (million barrels)															
Commercial Inventory															
Crude Oil (excluding SPR)	482.5	531.9	497.3	485.3	501.9	449.3	435.5	441.0	467.6	469.1	443.9	445.9	485.3	441.0	445.9
Hydrocarbon Gas Liquids	180.8	233.9	299.1	229.2	168.6	209.1	248.4	201.8	158.9	207.4	248.5	206.7	229.2	201.8	206.7
Unfinished Oils	100.1	91.9	81.4	78.2	93.3	91.3	90.2	83.1	93.1	90.8	90.0	83.2	78.2	83.1	83.2
Other HC/Oxygenates	33.6	26.2	25.2	29.9	29.1	27.6	27.5	27.7	29.8	28.6	28.3	28.6	29.9	27.7	28.6
Total Motor Gasoline	260.8	253.3	226.5	243.2	237.6	241.2	228.3	234.7	241.8	246.5	234.3	249.8	243.2	234.7	249.8
Finished Motor Gasoline	22.6	23.5	22.4	25.3	20.3	22.4	22.4	24.5	24.1	23.9	23.2	26.2	25.3	24.5	26.2
Motor Gasoline Blend Comp.	238.3	229.8	204.1	217.9	217.4	218.8	205.9	210.2	217.7	222.6	211.2	223.6	217.9	210.2	223.6
Jet Fuel	39.9	41.5	40.1	38.6	39.0	44.6	45.9	42.2	41.2	41.7	43.9	40.7	38.6	42.2	40.7
Distillate Fuel Oil	126.7	175.4	171.7	160.4	145.5	137.6	139.8	141.8	131.0	135.6	142.6	143.6	160.4	141.8	143.6
Residual Fuel Oil	34.4	39.6	32.1	30.2	30.9	31.1	30.1	31.7	31.5	32.4	30.5	32.0	30.2	31.7	32.0
Other Oils (g)	62.0	59.2	48.6	49.3	55.8	56.6	51.0	53.2	62.2	60.0	50.7	52.1	49.3	53.2	52.1
Total Commercial Inventory	1320.8	1452.8	1422.0	1344.3	1301.7	1288.4	1296.7	1257.3	1257.2	1312.0	1312.7	1282.5	1344.3	1257.3	1282.5
Crude Oil in SPR	635.0	656.0	642.2	638.1	637.8	620.9	620.9	616.7	612.4	608.1	605.4	595.8	638.1	616.7	595.8

(a) Includes lease condensate.

(b) Crude oil production from U.S. Federal leases in the Gulf of Mexico (GOM).

(c) Net imports equals gross imports minus gross exports.

(d) Crude oil adjustment balances supply and consumption and was previously referred to as "Unaccounted for Crude Oil."

(e) Renewables and oxygenate production includes pentanes plus, oxygenates (excluding fuel ethanol), and renewable fuels. Beginning in January 2021, renewable fuels includes biodiesel, renewable diesel, renewable jet fuel, renewable heating oil, renewable naphtha and gasoline, and other renewable fuels. For December 2020 and prior, renewable fuels includes only biodiesel.

(f) Petroleum products adjustment includes hydrogen/oxygenates/renewables/other hydrocarbons, motor gasoline blend components, and finished motor gasoline.

(g) For net imports and inventories "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; for consumption "Other Oils" also includes renewable fuels except fuel ethanol.

- = no data available

SPR: Strategic Petroleum Reserve

HC: Hydrocarbons

Notes: EIA completed modeling and analysis for this report on Thursday July 1, 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; 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 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 - July 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	1.93	1.92	2.14	2.06	1.87	2.17	2.09	2.22	2.34	2.45	2.49	2.57	2.01	2.09	2.46
Propane	1.72	1.61	1.68	1.70	1.62	1.73	1.73	1.73	1.73	1.73	1.76	1.77	1.68	1.70	1.75
Butanes	0.91	0.86	0.90	0.89	0.85	0.92	0.93	0.92	0.91	0.92	0.94	0.94	0.89	0.90	0.93
Natural Gasoline (Pentanes Plus)	0.56	0.57	0.62	0.58	0.53	0.59	0.62	0.59	0.57	0.60	0.63	0.60	0.58	0.58	0.60
Refinery and Blender Net Production															
Ethane/Ethylene	0.01	0.01	0.01	0.01	0.00	0.00	0.01	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	0.28	0.31	0.30	0.30	0.30	0.32	0.31	0.26	0.29	0.31
Propylene (refinery-grade)	0.25	0.26	0.26	0.29	0.27	0.29	0.28	0.28	0.28	0.29	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	0.04
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	-0.28	-0.27	-0.28	-0.35	-0.41	-0.38	-0.38	-0.43	-0.45	-0.45	-0.47	-0.28	-0.38	-0.45
Propane/Propylene	-1.12	-1.08	-1.08	-1.29	-1.11	-1.19	-1.26	-1.13	-1.10	-1.21	-1.28	-1.19	-1.14	-1.17	-1.20
Butanes/Butylenes	-0.30	-0.31	-0.36	-0.33	-0.35	-0.41	-0.42	-0.37	-0.38	-0.41	-0.41	-0.36	-0.32	-0.38	-0.39
Natural Gasoline (Pentanes Plus)	-0.27	-0.19	-0.16	-0.14	-0.22	-0.20	-0.21	-0.19	-0.21	-0.18	-0.19	-0.17	-0.19	-0.21	-0.18
HGL Refinery and Blender Net Inputs															
Butanes/Butylenes	0.46	0.25	0.32	0.47	0.39	0.28	0.31	0.49	0.39	0.29	0.33	0.51	0.37	0.37	0.38
Natural Gasoline (Pentanes Plus)	0.15	0.10	0.15	0.13	0.14	0.16	0.17	0.16	0.17	0.18	0.18	0.18	0.13	0.16	0.18
HGL Consumption															
Ethane/Ethylene	1.70	1.65	1.66	1.81	1.54	1.81	1.70	1.87	1.99	2.00	2.05	2.09	1.70	1.73	2.03
Propane	1.09	0.59	0.58	0.99	1.09	0.55	0.56	1.05	1.17	0.56	0.53	1.02	0.81	0.81	0.82
Propylene (refinery-grade)	0.26	0.27	0.27	0.30	0.29	0.30	0.29	0.29	0.30	0.30	0.30	0.30	0.28	0.30	0.30
Butanes/Butylenes	0.17	0.20	0.17	0.24	0.22	0.22	0.20	0.20	0.17	0.22	0.20	0.20	0.20	0.21	0.20
Natural Gasoline (Pentanes Plus)	0.09	0.13	0.26	0.35	0.26	0.23	0.22	0.23	0.21	0.21	0.23	0.24	0.21	0.24	0.22
HGL Inventories (million barrels)															
Ethane	52.6	49.5	62.5	74.9	65.8	66.6	64.2	65.7	57.7	57.1	56.2	59.1	59.9	65.6	57.5
Propane	60.3	75.3	100.7	70.4	39.3	62.4	81.7	67.4	43.6	66.1	88.2	74.6	70.4	67.4	74.6
Propylene (at refineries only)	1.4	1.5	1.5	1.5	1.1	1.4	1.8	1.8	1.7	1.8	2.1	1.9	1.5	1.8	1.9
Butanes/Butylenes	43.6	69.3	86.0	54.7	37.2	60.4	78.4	49.6	39.6	63.9	81.6	52.5	54.7	49.6	52.5
Natural Gasoline (Pentanes Plus)	24.0	35.7	38.6	32.9	22.8	21.2	21.0	19.9	17.4	18.7	19.7	19.1	32.9	19.9	19.1
Refinery and Blender Net Inputs															
Crude Oil	15.77	13.16	14.03	13.90	13.81	15.54	16.04	15.22	15.28	16.74	17.30	16.41	14.21	15.16	16.44
Hydrocarbon Gas Liquids	0.61	0.35	0.47	0.60	0.53	0.45	0.48	0.65	0.56	0.47	0.51	0.69	0.51	0.53	0.56
Other Hydrocarbons/Oxygenates	1.12	0.95	1.11	1.08	1.05	1.17	1.19	1.15	1.13	1.20	1.21	1.19	1.06	1.14	1.18
Unfinished Oils	0.05	0.23	0.44	0.20	-0.08	0.30	0.43	0.37	0.09	0.28	0.31	0.27	0.23	0.26	0.24
Motor Gasoline Blend Components	0.41	0.48	0.85	0.46	0.71	0.91	0.66	0.26	0.56	0.81	0.65	0.30	0.55	0.63	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	17.97	15.17	16.90	16.23	16.01	18.37	18.80	17.65	17.63	19.50	19.98	18.85	16.57	17.72	19.00
Refinery Processing Gain	1.02	0.82	0.94	0.92	0.84	1.06	1.08	1.05	1.07	1.10	1.15	1.15	0.92	1.01	1.12
Refinery and Blender Net Production															
Hydrocarbon Gas Liquids	0.47	0.69	0.67	0.36	0.44	0.81	0.79	0.40	0.50	0.86	0.80	0.41	0.55	0.61	0.64
Finished Motor Gasoline	9.30	7.52	9.14	8.98	8.74	9.84	9.83	9.55	9.35	9.96	10.09	9.89	8.74	9.49	9.82
Jet Fuel	1.63	0.62	0.83	1.00	1.10	1.31	1.45	1.38	1.52	1.63	1.71	1.59	1.02	1.31	1.61
Distillate Fuel	4.95	4.83	4.72	4.46	4.29	4.73	4.91	4.69	4.69	5.22	5.49	5.33	4.74	4.66	5.19
Residual Fuel	0.23	0.18	0.19	0.15	0.19	0.20	0.27	0.21	0.26	0.30	0.30	0.24	0.19	0.22	0.27
Other Oils (a)	2.41	2.14	2.28	2.19	2.09	2.54	2.63	2.46	2.37	2.63	2.75	2.55	2.26	2.43	2.58
Total Refinery and Blender Net Production	18.99	15.99	17.84	17.15	16.86	19.43	19.88	18.70	18.69	20.61	21.13	20.00	17.49	18.72	20.12
Refinery Distillation Inputs	16.36	13.65	14.55	14.32	14.25	16.03	16.39	15.61	15.62	16.91	17.48	16.65	14.72	15.58	16.67
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	0.88	0.90	0.86	0.86	0.93	0.96	0.92	0.79	0.86	0.92

(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 Thursday July 1, 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 - July 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	221	201	190	202	200	186	133	206	194
Gasoline Regular Grade Retail Prices Including Taxes															
PADD 1	236	191	211	212	252	287	295	276	259	270	273	259	214	278	266
PADD 2	226	179	207	202	247	288	288	265	244	269	265	249	204	273	257
PADD 3	210	162	186	183	228	268	272	250	239	250	247	234	187	256	243
PADD 4	247	201	233	221	247	311	323	289	270	287	288	271	226	293	279
PADD 5	311	258	283	278	312	365	374	348	343	357	345	350	284	351	349
U.S. Average	241	194	218	215	256	297	304	281	266	282	279	268	218	285	274
Gasoline All Grades Including Taxes	251	203	227	224	265	306	315	294	280	295	293	282	227	296	288
End-of-period Inventories (million barrels)															
Total Gasoline Inventories															
PADD 1	71.0	73.0	61.6	68.5	65.1	70.3	60.2	60.0	65.4	68.1	63.8	69.2	68.5	60.0	69.2
PADD 2	60.2	52.6	46.2	50.9	50.7	51.0	50.2	53.4	52.3	50.7	51.1	50.9	50.2	51.1	
PADD 3	84.8	90.5	79.7	83.7	81.9	84.3	81.3	85.5	85.1	88.9	83.0	89.7	83.7	85.5	89.7
PADD 4	9.2	7.7	7.6	8.7	8.6	6.2	7.2	8.0	7.9	7.8	7.5	8.2	8.7	8.0	8.2
PADD 5	35.6	29.4	31.5	31.4	31.4	29.4	29.5	31.1	30.0	29.5	29.4	31.7	31.4	31.1	31.7
U.S. Total	260.8	253.3	226.5	243.2	237.6	241.2	228.3	234.7	241.8	246.5	234.3	249.8	243.2	234.7	249.8
Finished Gasoline Inventories															
U.S. Total	22.6	23.5	22.4	25.3	20.3	22.4	22.4	24.5	24.1	23.9	23.2	26.2	25.3	24.5	26.2
Gasoline Blending Components Inventories															
U.S. Total	238.3	229.8	204.1	217.9	217.4	218.8	205.9	210.2	217.7	222.6	211.2	223.6	217.9	210.2	223.6

- = no data available

Notes: EIA completed modeling and analysis for this report on Thursday July 1, 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 - July 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	97.33	100.49	<i>100.76</i>	<i>101.43</i>	<i>101.26</i>	<i>101.75</i>	<i>102.89</i>	<i>103.61</i>	98.83	<i>100.01</i>	<i>102.39</i>
Alaska	0.96	0.88	0.88	0.98	1.02	0.85	<i>0.73</i>	<i>0.88</i>	<i>0.92</i>	<i>0.80</i>	<i>0.73</i>	<i>0.87</i>	0.92	<i>0.87</i>	<i>0.83</i>
Federal GOM (a)	2.72	2.22	1.72	1.73	2.26	2.23	<i>2.10</i>	<i>2.03</i>	<i>2.04</i>	<i>1.97</i>	<i>1.87</i>	<i>1.84</i>	2.09	<i>2.16</i>	<i>1.93</i>
Lower 48 States (excl GOM)	98.58	93.74	94.95	95.99	94.05	97.41	<i>97.92</i>	<i>98.51</i>	<i>98.30</i>	<i>98.98</i>	<i>100.29</i>	<i>100.90</i>	95.81	<i>96.99</i>	<i>99.63</i>
Total Dry Gas Production	94.79	89.68	89.83	91.15	90.31	92.88	<i>93.17</i>	<i>93.80</i>	<i>93.65</i>	<i>94.10</i>	<i>95.16</i>	<i>95.82</i>	91.35	<i>92.55</i>	<i>94.69</i>
LNG Gross Imports	0.24	0.12	0.09	0.09	0.15	0.12	<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>0.16</i>	<i>0.22</i>
LNG Gross Exports	7.92	5.52	3.91	8.78	9.27	9.89	<i>9.24</i>	<i>9.83</i>	<i>10.47</i>	<i>9.73</i>	<i>9.41</i>	<i>11.00</i>	6.53	<i>9.56</i>	<i>10.15</i>
Pipeline Gross Imports	7.60	6.08	6.39	7.27	8.68	6.68	<i>6.71</i>	<i>6.84</i>	<i>7.38</i>	<i>6.36</i>	<i>6.38</i>	<i>6.71</i>	6.84	<i>7.22</i>	<i>6.70</i>
Pipeline Gross Exports	8.15	7.17	8.09	8.21	8.31	8.70	<i>9.45</i>	<i>9.56</i>	<i>9.36</i>	<i>8.67</i>	<i>9.39</i>	<i>9.38</i>	7.91	<i>9.01</i>	<i>9.20</i>
Supplemental Gaseous Fuels	0.19	0.17	0.15	0.18	0.18	0.18	<i>0.18</i>	<i>0.18</i>	<i>0.18</i>	<i>0.18</i>	<i>0.18</i>	<i>0.18</i>	0.17	<i>0.18</i>	<i>0.18</i>
Net Inventory Withdrawals	12.74	-12.24	-7.68	5.36	17.19	-9.09	<i>-8.14</i>	<i>5.69</i>	<i>17.35</i>	<i>-11.01</i>	<i>-9.13</i>	<i>4.98</i>	-0.46	<i>1.35</i>	<i>0.49</i>
Total Supply	99.49	71.12	76.78	87.06	98.92	72.18	<i>73.41</i>	<i>87.31</i>	<i>99.05</i>	<i>71.40</i>	<i>73.97</i>	<i>87.51</i>	83.61	<i>82.90</i>	<i>82.93</i>
Balancing Item (b)	-0.18	-0.29	0.05	-0.98	0.25	-0.14	<i>-1.25</i>	<i>-1.15</i>	<i>-1.15</i>	<i>0.69</i>	<i>0.41</i>	<i>-0.18</i>	-0.35	<i>-0.58</i>	<i>-0.05</i>
Total Primary Supply	99.31	70.84	76.83	86.08	99.17	72.04	<i>72.16</i>	<i>86.16</i>	<i>97.90</i>	<i>72.10</i>	<i>74.38</i>	<i>87.33</i>	83.25	<i>82.32</i>	<i>82.87</i>
Consumption (billion cubic feet per day)															
Residential	22.83	8.20	3.82	16.00	25.59	7.45	<i>3.73</i>	<i>16.86</i>	<i>25.06</i>	<i>7.90</i>	<i>3.69</i>	<i>16.92</i>	12.70	<i>13.35</i>	<i>13.34</i>
Commercial	13.93	5.82	4.36	10.31	14.81	6.49	<i>4.76</i>	<i>10.95</i>	<i>14.84</i>	<i>6.27</i>	<i>4.71</i>	<i>10.85</i>	8.60	<i>9.23</i>	<i>9.14</i>
Industrial	24.65	20.62	21.15	23.83	24.05	21.83	<i>21.26</i>	<i>24.24</i>	<i>24.72</i>	<i>22.08</i>	<i>21.49</i>	<i>23.92</i>	22.56	<i>22.84</i>	<i>23.05</i>
Electric Power (c)	29.55	29.05	40.10	28.19	26.65	28.85	<i>35.09</i>	<i>26.56</i>	<i>25.52</i>	<i>28.37</i>	<i>37.00</i>	<i>27.75</i>	31.74	<i>29.30</i>	<i>29.69</i>
Lease and Plant Fuel	5.17	4.90	4.93	4.99	4.92	5.08	<i>5.09</i>	<i>5.13</i>	<i>5.12</i>	<i>5.14</i>	<i>5.20</i>	<i>5.24</i>	5.00	<i>5.06</i>	<i>5.18</i>
Pipeline and Distribution Use	3.02	2.15	2.33	2.61	3.01	2.19	<i>2.08</i>	<i>2.28</i>	<i>2.47</i>	<i>2.16</i>	<i>2.12</i>	<i>2.49</i>	2.53	<i>2.39</i>	<i>2.31</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	99.17	72.04	<i>72.16</i>	<i>86.16</i>	<i>97.90</i>	<i>72.10</i>	<i>74.38</i>	<i>87.33</i>	83.25	<i>82.32</i>	<i>82.87</i>
End-of-period Inventories (billion cubic feet)															
Working Gas Inventory	2,030	3,133	3,840	3,341	1,801	2,628	<i>3,377</i>	<i>2,853</i>	<i>1,291</i>	<i>2,294</i>	<i>3,134</i>	<i>2,675</i>	3,341	<i>2,853</i>	<i>2,675</i>
East Region (d)	385	655	890	763	313	528	<i>826</i>	<i>623</i>	<i>115</i>	<i>399</i>	<i>659</i>	<i>448</i>	763	<i>623</i>	<i>448</i>
Midwest Region (d)	472	747	1,053	918	395	639	<i>972</i>	<i>787</i>	<i>202</i>	<i>484</i>	<i>863</i>	<i>732</i>	918	<i>787</i>	<i>732</i>
South Central Region (d)	857	1,221	1,313	1,155	760	1,010	<i>1,068</i>	<i>1,005</i>	<i>660</i>	<i>921</i>	<i>1,011</i>	<i>941</i>	1,155	<i>1,005</i>	<i>941</i>
Mountain Region (d)	92	177	235	195	113	177	<i>216</i>	<i>175</i>	<i>117</i>	<i>166</i>	<i>230</i>	<i>210</i>	195	<i>175</i>	<i>210</i>
Pacific Region (d)	200	308	318	282	197	248	<i>269</i>	<i>238</i>	<i>172</i>	<i>298</i>	<i>344</i>	<i>319</i>	282	<i>238</i>	<i>319</i>
Alaska	23	25	31	28	23	26	<i>26</i>	<i>26</i>	<i>26</i>	<i>26</i>	<i>26</i>	<i>26</i>	28	<i>26</i>	<i>26</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 Thursday July 1, 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 - July 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	3.35	3.27	3.29	3.01	3.06	3.11	2.11	3.34	3.12
Residential Retail															
New England	13.77	14.50	18.28	14.64	14.78	15.80	17.97	13.70	13.24	14.07	16.90	12.97	14.47	14.82	13.52
Middle Atlantic	10.77	11.85	17.85	11.77	10.41	13.34	17.41	11.19	10.14	12.38	17.05	11.14	11.76	11.43	11.23
E. N. Central	6.99	9.50	18.15	8.02	7.41	11.79	17.32	8.82	7.98	10.76	16.37	8.11	8.39	8.91	8.91
W. N. Central	6.85	9.89	17.26	8.66	7.59	11.04	17.36	9.42	8.14	10.91	16.94	8.98	8.48	9.05	9.26
S. Atlantic	12.12	15.52	24.15	14.20	12.10	17.26	23.18	12.79	11.38	16.41	22.55	12.37	14.23	13.73	13.17
E. S. Central	9.69	13.34	20.85	10.63	9.53	14.48	22.28	13.55	10.61	14.99	22.03	13.19	11.15	11.61	12.70
W. S. Central	8.52	14.22	20.83	11.67	9.32	14.90	20.82	11.88	9.05	14.46	20.27	11.35	11.40	11.75	11.44
Mountain	7.55	9.37	12.60	8.15	7.90	10.19	14.10	8.83	8.28	9.94	13.68	8.51	8.43	8.89	9.02
Pacific	13.41	14.47	14.50	13.70	14.28	15.17	15.31	13.84	13.87	14.49	15.22	14.15	13.82	14.43	14.23
U.S. Average	9.46	11.89	17.65	10.60	9.79	13.56	17.81	10.92	9.87	12.62	17.33	10.54	10.83	11.24	11.01
Commercial Retail															
New England	9.93	10.40	10.99	10.06	10.38	10.85	11.08	10.37	10.65	10.62	10.26	10.03	10.16	10.51	10.41
Middle Atlantic	7.91	7.00	6.78	7.53	7.87	8.04	7.36	7.73	8.02	7.73	7.19	7.64	7.50	7.79	7.75
E. N. Central	5.75	6.73	8.79	6.21	6.12	8.16	9.66	7.37	7.02	7.68	8.60	6.43	6.28	7.06	7.05
W. N. Central	5.43	6.53	8.12	6.55	6.38	7.50	9.11	7.45	7.22	7.61	8.79	6.92	6.14	7.07	7.29
S. Atlantic	8.51	9.21	9.55	8.88	8.79	9.63	10.14	9.08	8.66	9.29	9.47	8.36	8.87	9.18	8.77
E. S. Central	8.38	9.20	10.10	8.69	8.43	9.56	10.44	9.23	8.54	9.44	9.94	8.76	8.78	9.05	8.89
W. S. Central	5.99	7.18	8.13	7.46	7.01	7.56	8.72	8.11	7.25	7.64	8.01	7.24	6.92	7.63	7.43
Mountain	6.09	6.85	7.42	6.45	6.50	7.50	8.51	7.44	7.17	7.46	8.23	7.04	6.46	7.15	7.29
Pacific	9.58	9.30	9.59	9.70	10.50	10.24	10.36	9.59	9.42	9.18	9.57	9.14	9.57	10.15	9.31
U.S. Average	7.13	7.63	8.49	7.53	7.56	8.57	9.15	8.16	7.91	8.24	8.57	7.62	7.48	8.08	7.95
Industrial Retail															
New England	8.15	7.41	6.16	7.67	8.58	8.25	7.15	8.00	8.39	7.67	6.65	7.61	7.54	8.09	7.72
Middle Atlantic	7.43	6.76	7.00	7.61	7.70	7.33	7.49	7.62	8.08	7.72	7.55	7.93	7.28	7.58	7.91
E. N. Central	4.84	5.10	4.15	5.10	5.39	7.20	6.20	5.85	6.05	5.69	5.54	5.48	4.86	5.92	5.76
W. N. Central	3.97	3.30	3.15	4.13	5.20	4.18	4.63	5.13	5.33	4.54	4.38	4.85	3.68	4.83	4.82
S. Atlantic	4.15	3.70	3.72	4.56	5.05	4.69	5.18	5.34	5.46	4.74	4.65	4.89	4.06	5.07	4.96
E. S. Central	3.92	3.24	3.23	4.04	4.64	4.23	4.78	5.05	5.14	4.48	4.25	4.59	3.65	4.68	4.65
W. S. Central	2.19	1.92	2.19	2.89	5.75	3.13	3.65	3.49	3.48	3.18	3.24	3.27	2.31	3.90	3.29
Mountain	4.40	4.59	4.67	4.91	5.00	5.23	5.90	5.94	5.91	5.57	5.66	5.45	4.64	5.46	5.66
Pacific	7.46	6.28	6.18	7.23	8.30	7.23	7.31	7.22	7.18	6.58	6.78	6.79	6.86	7.50	6.85
U.S. Average	3.52	2.85	2.88	3.77	5.72	3.96	4.29	4.47	4.67	3.98	3.89	4.20	3.29	4.63	4.20

- = no data available

Notes: EIA completed modeling and analysis for this report on Thursday July 1, 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 - July 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	149.1	115.2	135.8	139.0	138.7	152.7	166.7	159.1	158.0	145.8	155.1	151.4	539.1	617.3	610.4
Appalachia	39.7	29.3	33.9	35.5	34.8	38.2	38.8	39.3	41.5	40.6	37.8	38.8	138.3	151.2	158.7
Interior	25.8	19.2	23.2	22.3	22.4	25.3	28.7	28.3	29.0	27.3	28.3	27.8	90.4	104.6	112.5
Western	83.6	66.7	78.8	81.2	81.5	89.2	99.2	91.6	87.5	77.8	89.1	84.8	310.3	361.6	339.2
Primary Inventory Withdrawals	0.5	1.3	2.0	-0.9	0.3	1.1	2.3	-1.9	-1.3	-2.1	-0.9	-5.3	2.8	1.8	-9.6
Imports	1.3	1.1	1.3	1.3	1.1	1.5	1.5	1.3	1.0	1.1	1.3	1.3	5.1	5.5	4.7
Exports	20.0	14.8	15.3	19.1	20.7	18.5	20.2	24.5	30.2	20.9	21.2	26.7	69.1	83.8	99.1
Metallurgical Coal	11.7	9.0	10.2	11.3	10.3	10.0	12.9	13.6	16.8	12.1	13.8	14.7	42.1	46.9	57.4
Steam Coal	8.3	5.8	5.1	7.8	10.4	8.5	7.2	10.9	13.4	8.9	7.5	12.0	27.0	36.9	41.7
Total Primary Supply	130.9	102.9	123.8	120.3	119.5	136.9	150.4	134.1	127.6	123.7	134.4	120.7	477.9	540.8	506.4
Secondary Inventory Withdrawals	-16.6	-5.0	21.5	-3.3	20.2	-13.3	18.8	-1.5	9.1	-9.3	20.7	2.6	-3.5	24.2	23.0
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	116.2	99.4	147.3	119.3	141.6	125.6	171.2	134.5	138.5	116.3	156.9	125.1	482.1	573.0	536.8
Consumption (million short tons)															
Coke Plants	4.3	3.5	3.2	3.5	4.4	5.1	4.3	4.6	6.1	5.0	4.6	5.1	14.4	18.3	20.7
Electric Power Sector (b)	97.9	87.2	139.3	112.1	128.1	111.7	159.8	122.5	124.9	104.1	145.2	112.8	436.5	522.2	487.0
Retail and Other Industry	7.4	5.7	6.1	7.2	7.0	7.0	7.1	7.4	7.5	7.2	7.1	7.3	26.4	28.5	29.1
Residential and Commercial	0.3	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.8	0.8	0.8
Other Industrial	7.1	5.6	5.9	7.0	6.8	6.8	6.9	7.2	7.3	7.0	6.9	7.1	25.6	27.7	28.4
Total Consumption	109.5	96.4	148.6	122.8	139.5	123.8	171.2	134.5	138.5	116.3	156.9	125.1	477.3	569.0	536.8
Discrepancy (c)	6.7	2.9	-1.3	-3.5	2.1	1.9	0.0	0.0	0.0	0.0	0.0	0.0	4.8	4.0	0.0
End-of-period Inventories (million short tons)															
Primary Inventories (d)	30.8	29.5	27.5	28.5	28.1	27.0	24.7	26.6	27.9	30.1	30.9	36.2	28.5	26.6	36.2
Secondary Inventories	150.6	155.6	134.2	137.5	117.3	130.6	111.8	113.3	104.2	113.5	92.8	90.2	137.5	113.3	90.2
Electric Power Sector	145.2	150.4	129.1	132.7	111.8	124.8	105.9	107.7	98.7	107.7	86.9	84.5	132.7	107.7	84.5
Retail and General Industry	3.0	3.0	2.9	2.8	3.8	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	2.3	2.2	1.7	2.0	2.2
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	0.284	0.321	0.314	0.270	0.271	0.280	0.216	0.277	0.283
Cost of Coal to Electric Utilities															
(Dollars per million Btu)	1.93	1.91	1.93	1.92	1.91	1.89	1.89	1.85	1.87	1.86	1.84	1.82	1.92	1.88	1.85

(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 Thursday July 1, 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 - July 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	1,134	970	981	994	1,148	983	4,009	4,077	4,107
Electric Power Sector (a)	925	896	1,109	923	952	948	1,098	935	945	958	1,109	946	3,853	3,933	3,959
Industrial Sector (b)	38	34	36	36	34	32	33	32	32	32	35	34	143	131	134
Commercial Sector (b)	3	3	4	3	3	3	4	3	3	3	4	3	13	13	14
Net Imports	10	11	15	12	9	11	14	11	12	12	14	11	47	45	50
Total Supply	976	944	1,163	973	998	995	1,148	981	993	1,007	1,163	994	4,056	4,122	4,157
Losses and Unaccounted for (c)	53	67	71	63	51	70	54	55	45	68	57	55	254	229	225
Electricity Consumption (billion kilowatthours unless noted)															
Retail Sales	887	844	1,057	876	914	894	1,062	895	917	907	1,071	906	3,664	3,765	3,801
Residential Sector	340	334	453	334	379	334	438	338	366	333	440	344	1,462	1,489	1,482
Commercial Sector	314	293	360	309	305	317	365	315	311	324	368	318	1,276	1,303	1,321
Industrial Sector	231	216	242	231	229	241	257	240	238	248	262	243	920	966	992
Transportation Sector	2	1	2	2	2	2	2	2	2	2	2	2	7	6	6
Direct Use (d)	36	33	35	34	33	31	32	32	32	32	34	33	138	127	131
Total Consumption	923	877	1,092	910	947	925	1,094	926	948	939	1,105	939	3,802	3,892	3,932
Average residential electricity usage per customer (kWh)	2,496	2,451	3,326	2,451	2,741	2,416	3,172	2,446	2,614	2,380	3,141	2,455	10,723	10,775	10,590
End-of-period Fuel Inventories Held by Electric Power Sector															
Coal (mmst)	145.2	150.4	129.1	132.7	111.8	124.8	105.9	107.7	98.7	107.7	86.9	84.5	132.7	107.7	84.5
Residual Fuel (mmb)	8.3	8.5	8.2	8.3	8.0	8.0	8.2	8.4	7.9	7.9	7.9	8.3	8.3	8.4	8.3
Distillate Fuel (mmb)	16.5	16.5	17.0	16.8	15.9	15.6	15.6	15.9	15.8	15.6	15.6	15.9	16.8	15.9	15.9
Prices															
Power Generation Fuel Costs (dollars per million Btu)															
Coal	1.93	1.91	1.93	1.92	1.91	1.89	1.89	1.85	1.87	1.86	1.84	1.82	1.92	1.88	1.85
Natural Gas	2.39	2.08	2.26	2.87	7.27	3.18	3.41	3.49	3.72	3.06	3.07	3.29	2.39	4.24	3.26
Residual Fuel Oil	12.15	6.65	8.85	8.90	11.28	12.88	13.15	13.03	12.97	13.31	12.40	12.01	9.15	12.54	12.66
Distillate Fuel Oil	13.27	8.39	10.37	10.54	13.59	15.54	16.72	16.55	16.09	15.87	15.59	15.49	10.73	15.29	15.79
Retail Prices (cents per kilowatthour)															
Residential Sector	12.90	13.24	13.35	13.25	13.09	13.61	13.83	13.71	13.60	13.91	13.95	13.77	13.20	13.57	13.81
Commercial Sector	10.33	10.63	10.97	10.62	11.11	11.09	11.48	11.04	11.40	11.31	11.60	11.12	10.65	11.19	11.37
Industrial Sector	6.38	6.63	7.08	6.53	7.15	7.00	7.20	6.61	6.96	6.96	7.21	6.60	6.66	6.99	6.94
Wholesale Electricity Prices (dollars per megawatthour)															
ERCOT North hub	23.41	24.03	34.12	26.41	616.34	39.74	23.90	24.77	28.82	32.38	33.83	27.14	26.99	176.19	30.54
CAISO SP15 zone	28.64	19.21	61.94	42.80	44.74	36.90	50.44	41.16	42.90	40.41	44.28	39.43	38.15	43.31	41.75
ISO-NE Internal hub	24.61	20.25	27.20	34.03	55.26	33.67	36.59	40.90	53.00	29.87	31.81	35.94	26.52	41.61	37.65
NYISO Hudson Valley zone	21.82	18.13	24.38	27.05	44.74	31.85	36.08	35.01	40.42	31.86	33.63	31.65	22.85	36.92	34.39
PJM Western hub	22.47	20.79	28.24	26.44	35.09	33.71	35.18	32.97	34.62	32.62	36.24	33.10	24.49	34.24	34.15
Midcontinent ISO Illinois hub	24.43	23.00	29.35	24.94	44.97	33.82	35.25	32.24	32.74	32.73	35.72	32.28	25.43	36.57	33.37
SPP ISO South hub	20.06	19.54	26.27	24.34	250.31	30.86	33.97	28.28	28.33	28.18	33.97	28.34	22.55	85.85	29.70
SERC index, Into Southern	23.58	18.23	23.47	25.21	41.10	32.93	31.92	31.31	30.80	30.54	32.52	29.54	22.62	34.32	30.85
FRCC index, Florida Reliability	26.24	18.53	23.75	25.39	27.73	32.17	31.68	30.71	30.62	28.62	29.25	28.73	23.48	30.57	29.30
Northwest index, Mid-Columbia	22.77	14.49	33.56	31.00	34.56	51.51	44.05	37.94	39.55	35.98	38.99	35.94	25.46	42.01	37.61
Southwest index, Palo Verde	22.07	19.60	80.81	36.10	41.72	46.57	44.83	33.33	33.56	33.40	35.26	31.62	39.64	41.61	33.46

Notes: EIA completed modeling and analysis for this report on Thursday July 1, 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 - July 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	10.9	13.8	11.2	12.4	10.5	13.0	11.1	48.2	48.9	47.0
Middle Atlantic	32.2	30.6	43.5	30.9	36.1	30.1	40.9	31.6	36.8	29.9	39.3	31.6	137.1	138.6	137.6
E. N. Central	46.4	43.7	56.5	43.4	50.2	43.3	54.1	44.8	48.5	42.5	53.7	45.3	190.0	192.3	189.9
W. N. Central	27.6	23.7	30.0	24.5	29.9	23.9	29.9	25.8	31.5	24.5	31.5	27.2	105.8	109.6	114.7
S. Atlantic	84.3	86.3	114.7	85.3	95.2	87.7	112.4	85.6	91.3	87.2	111.5	86.7	370.6	381.0	376.8
E. S. Central	29.0	26.0	37.2	26.6	33.8	25.8	37.0	27.4	32.7	26.4	37.6	27.8	118.8	124.0	124.4
W. S. Central	48.8	52.9	76.4	48.5	56.8	51.7	74.2	49.2	51.4	53.8	77.6	50.8	226.5	231.9	233.7
Mountain	22.5	25.7	36.2	24.0	23.7	26.2	33.6	23.8	23.0	25.1	33.7	24.1	108.4	107.3	106.0
Pacific contiguous	36.7	33.2	43.0	38.6	39.0	33.1	41.3	37.4	36.8	32.0	40.5	37.5	151.5	150.8	146.9
AK and HI	1.3	1.1	1.2	1.3	1.3	1.1	1.2	1.3	1.3	1.1	1.2	1.3	4.9	4.9	4.9
Total	340.3	334.1	453.4	334.1	378.9	333.9	438.4	338.1	365.7	333.1	439.6	343.5	1,462.0	1,489.4	1,482.0
Commercial Sector															
New England	12.3	10.6	13.2	11.4	11.7	11.3	12.9	11.4	11.7	11.1	12.6	11.4	47.5	47.3	46.8
Middle Atlantic	35.9	31.0	38.9	33.2	34.6	33.5	39.5	34.5	36.0	34.4	39.7	35.0	138.9	142.1	145.0
E. N. Central	43.1	38.3	47.3	41.0	41.7	41.7	47.5	42.2	42.8	42.3	47.7	42.3	169.7	173.1	175.1
W. N. Central	24.7	21.6	26.3	23.4	24.0	23.7	27.3	24.3	25.0	24.3	27.9	24.7	96.0	99.4	101.9
S. Atlantic	72.0	70.0	85.7	72.4	70.8	75.7	86.1	72.7	71.9	77.0	86.5	73.2	300.2	305.3	308.7
E. S. Central	20.7	19.4	25.3	20.4	20.9	21.7	25.8	20.8	21.2	22.3	26.1	20.9	85.8	89.2	90.4
W. S. Central	44.3	44.6	55.0	45.4	42.4	49.7	57.1	47.3	43.2	51.6	58.2	47.9	189.4	196.5	200.9
Mountain	22.4	22.1	27.4	22.8	21.9	24.3	27.3	23.1	22.4	24.4	27.5	23.3	94.7	96.7	97.7
Pacific contiguous	37.0	33.9	39.8	37.6	35.2	34.6	40.5	37.7	35.8	35.2	40.3	37.7	148.3	148.0	149.0
AK and HI	1.4	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	5.2	5.2	5.4
Total	313.7	292.7	360.3	308.9	304.6	317.4	365.3	315.4	311.3	323.9	367.9	317.7	1,275.7	1,302.7	1,320.9
Industrial Sector															
New England	3.7	3.5	3.9	3.7	3.8	3.9	4.0	3.8	3.9	3.9	4.0	3.7	14.8	15.4	15.5
Middle Atlantic	18.0	16.2	18.6	17.6	17.6	17.4	19.2	18.1	18.3	17.9	19.7	18.4	70.4	72.3	74.2
E. N. Central	44.0	37.7	44.5	42.5	44.8	44.7	47.9	44.4	47.5	46.3	48.9	44.9	168.7	181.7	187.5
W. N. Central	21.7	20.3	23.2	22.1	23.0	23.1	25.4	23.5	24.6	24.4	26.1	24.0	87.3	95.0	99.0
S. Atlantic	32.8	31.0	34.2	33.6	33.4	34.4	35.6	34.5	34.6	35.3	36.2	34.9	131.7	138.0	141.0
E. S. Central	23.3	21.4	23.4	22.9	23.8	24.2	24.8	23.6	24.6	24.6	24.8	23.4	91.1	96.4	97.5
W. S. Central	46.6	44.9	47.9	48.7	44.1	50.5	52.4	51.4	45.7	52.6	54.1	53.1	188.1	198.4	205.5
Mountain	20.1	20.3	22.6	19.9	19.2	20.9	22.9	20.0	19.4	21.1	23.1	20.2	82.9	82.9	83.9
Pacific contiguous	19.2	19.7	22.1	19.0	18.1	20.8	23.4	19.5	18.5	21.2	23.7	19.6	80.1	81.8	83.0
AK and HI	1.2	1.0	1.2	1.2	1.1	1.1	1.2	1.2	1.1	1.1	1.2	1.2	4.5	4.5	4.6
Total	230.7	216.0	241.6	231.2	228.8	241.0	256.7	239.9	238.1	248.4	261.8	243.4	919.5	966.5	991.7
Total All Sectors (a)															
New England	27.8	25.1	31.9	26.3	28.5	26.2	30.9	26.5	28.1	25.6	29.7	26.3	111.0	112.0	109.7
Middle Atlantic	86.9	78.5	101.8	82.5	89.2	81.7	100.4	84.9	91.9	83.0	99.4	85.7	349.7	356.2	360.0
E. N. Central	133.7	119.7	148.4	127.0	136.9	129.8	149.6	131.4	138.9	131.2	150.4	132.6	528.8	547.7	553.1
W. N. Central	74.0	65.7	79.5	70.0	77.0	70.8	82.6	73.7	81.0	73.2	85.6	75.9	289.2	304.0	315.7
S. Atlantic	189.5	187.6	235.0	191.6	199.7	198.2	234.3	193.1	198.1	199.8	234.5	195.1	803.7	825.4	827.6
E. S. Central	73.0	66.8	85.9	69.9	78.5	71.7	87.6	71.8	78.4	73.2	88.6	72.1	295.7	309.5	312.3
W. S. Central	139.8	142.4	179.4	142.7	143.3	152.0	183.8	148.0	140.4	158.1	190.0	151.9	604.2	627.0	640.3
Mountain	65.0	68.2	86.3	66.7	64.8	71.5	83.8	67.0	64.9	70.7	84.4	67.7	286.2	287.1	287.7
Pacific contiguous	93.1	87.0	105.1	95.4	92.5	88.7	105.3	94.7	91.4	88.5	104.7	95.0	380.6	381.3	379.6
AK and HI	3.8	3.4	3.6	3.8	3.6	3.5	3.7	3.8	3.6	3.6	3.7	3.9	14.6	14.7	14.8
Total	886.6	844.3	1,056.9	875.9	914.0	893.9	1,062.0	894.9	916.8	907.0	1,070.9	906.2	3,663.7	3,764.9	3,800.8

(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 Thursday July 1, 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 - July 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	21.61	21.96	22.40	23.43	23.77	23.95	23.99	21.20	21.83	23.78
Middle Atlantic	15.47	15.96	16.18	15.98	15.62	16.63	16.99	16.77	16.19	16.97	17.21	16.83	15.92	16.51	16.80
E. N. Central	13.14	13.75	13.33	13.75	13.38	14.29	13.79	14.11	13.85	14.68	14.05	14.30	13.48	13.87	14.20
W. N. Central	10.98	12.59	12.88	11.46	10.88	13.05	13.62	11.71	10.66	12.64	13.08	11.39	11.99	12.30	11.92
S. Atlantic	11.79	11.80	12.05	11.83	11.66	11.86	12.33	12.25	12.29	12.35	12.67	12.31	11.88	12.04	12.42
E. S. Central	11.24	11.56	11.28	11.41	11.18	12.25	11.86	11.85	11.64	12.46	11.90	11.87	11.36	11.75	11.95
W. S. Central	11.04	11.42	11.29	11.37	11.85	11.71	12.01	12.16	12.47	11.51	11.59	11.84	11.29	11.94	11.82
Mountain	11.42	12.08	12.19	11.64	11.53	12.18	12.40	11.88	11.82	12.43	12.54	11.97	11.88	12.04	12.23
Pacific	15.69	16.18	17.77	16.79	16.76	16.96	18.01	16.84	17.03	17.78	18.75	17.28	16.67	17.16	17.74
U.S. Average	12.90	13.24	13.35	13.25	13.09	13.61	13.83	13.71	13.60	13.91	13.95	13.77	13.20	13.57	13.81
Commercial Sector															
New England	16.24	15.67	15.98	15.67	16.28	15.55	16.51	16.47	17.23	16.44	17.24	16.95	15.90	16.22	16.98
Middle Atlantic	11.69	12.53	13.21	12.41	12.48	13.50	13.88	13.02	12.89	13.78	13.92	12.95	12.47	13.24	13.40
E. N. Central	9.95	10.37	10.19	10.29	10.40	10.67	10.58	10.72	10.70	10.84	10.67	10.77	10.19	10.59	10.74
W. N. Central	9.07	10.12	10.33	9.12	9.10	10.40	11.16	9.55	8.87	9.83	10.51	9.17	9.66	10.08	9.62
S. Atlantic	9.23	9.02	9.09	9.20	9.29	8.90	9.37	9.66	9.69	9.08	9.39	9.58	9.13	9.31	9.43
E. S. Central	10.75	10.83	10.60	10.67	10.96	11.26	11.15	11.16	11.28	11.39	11.25	11.27	10.70	11.14	11.30
W. S. Central	7.84	7.87	7.89	7.98	11.27	8.80	8.29	7.94	11.08	8.96	8.54	8.15	7.90	8.98	9.10
Mountain	9.00	9.82	10.09	9.31	9.11	9.88	10.31	9.45	9.21	9.96	10.30	9.42	9.58	9.73	9.75
Pacific	13.50	14.79	17.20	15.05	14.53	16.59	18.27	15.80	15.30	17.59	19.13	16.51	15.18	16.36	17.18
U.S. Average	10.33	10.63	10.97	10.62	11.11	11.09	11.48	11.04	11.40	11.31	11.60	11.12	10.65	11.19	11.37
Industrial Sector															
New England	12.29	12.22	12.41	12.12	13.49	12.67	12.81	12.51	13.91	12.97	13.02	12.64	12.26	12.87	13.14
Middle Atlantic	6.36	6.35	6.41	6.28	6.50	6.63	6.42	6.27	6.35	6.47	6.27	6.11	6.35	6.45	6.30
E. N. Central	6.51	6.78	6.75	6.62	6.92	6.90	6.86	6.77	6.92	6.93	6.92	6.81	6.66	6.86	6.90
W. N. Central	6.94	7.32	7.89	6.62	6.98	7.37	7.99	6.74	6.91	7.43	8.11	6.85	7.20	7.29	7.34
S. Atlantic	5.98	6.09	6.50	6.09	6.24	6.29	6.67	6.20	6.27	6.23	6.64	6.16	6.17	6.35	6.33
E. S. Central	5.45	5.51	5.70	5.52	5.75	5.86	5.84	5.59	5.69	5.82	5.83	5.56	5.54	5.76	5.72
W. S. Central	5.05	4.98	5.21	5.03	7.61	5.71	5.23	4.97	6.60	5.49	5.19	4.86	5.07	5.81	5.50
Mountain	5.73	6.15	6.91	5.94	6.24	6.60	7.00	6.00	6.27	6.61	6.99	6.02	6.21	6.48	6.49
Pacific	8.97	10.33	12.38	10.95	9.64	11.32	12.80	11.32	9.95	11.63	13.15	11.67	10.71	11.37	11.70
U.S. Average	6.38	6.63	7.08	6.53	7.15	7.00	7.20	6.61	6.96	6.96	7.21	6.60	6.66	6.99	6.94
All Sectors (a)															
New England	18.02	17.61	17.79	17.27	18.19	17.63	18.44	18.37	19.48	18.88	19.57	19.28	17.68	18.17	19.32
Middle Atlantic	11.98	12.58	13.23	12.42	12.56	13.18	13.71	12.97	12.91	13.35	13.70	12.91	12.58	13.12	13.23
E. N. Central	9.92	10.47	10.36	10.24	10.35	10.57	10.55	10.54	10.50	10.70	10.65	10.63	10.24	10.50	10.62
W. N. Central	9.15	10.15	10.58	9.15	9.16	10.30	11.08	9.41	8.97	9.97	10.72	9.23	9.77	10.01	9.74
S. Atlantic	9.80	9.82	10.16	9.82	9.91	9.76	10.38	10.19	10.29	10.00	10.53	10.18	9.91	10.07	10.26
E. S. Central	9.25	9.41	9.56	9.26	9.47	9.79	9.95	9.59	9.67	9.90	10.01	9.64	9.38	9.71	9.82
W. S. Central	8.03	8.28	8.63	8.12	10.37	8.76	8.92	8.32	10.13	8.67	8.83	8.23	8.29	9.07	8.94
Mountain	8.83	9.58	10.14	9.14	9.15	9.76	10.24	9.28	9.26	9.84	10.29	9.31	9.48	9.65	9.71
Pacific	13.41	14.30	16.41	14.92	14.50	15.48	16.94	15.27	14.90	16.22	17.61	15.80	14.82	15.60	16.18
U.S. Average	10.29	10.63	11.11	10.54	10.94	10.93	11.41	10.86	11.12	11.07	11.49	10.91	10.66	11.05	11.16

(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 Thursday July 1, 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 1. U.S. Regional Electricity Generation, Electric Power Sector (billion kilowatthours), continues on Table 7d part 2

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

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
United States															
Natural Gas	354.7	342.6	474.2	340.7	318.2	341.3	416.4	322.8	307.0	338.2	441.9	339.9	1,512.2	1,398.6	1,427.0
Coal	170.3	151.2	248.2	198.6	230.3	196.9	286.2	216.6	225.3	182.4	257.0	196.6	768.2	930.1	861.3
Nuclear	204.1	190.7	204.1	191.0	198.5	187.3	204.0	186.3	188.7	185.1	197.1	185.8	789.9	776.0	756.7
Renewable Energy Sources:	190.1	206.5	176.9	187.0	198.0	218.7	187.9	203.7	217.8	247.9	209.1	217.9	760.6	808.3	892.7
Conventional Hydropower	75.0	81.3	70.6	63.0	69.3	69.8	58.7	56.0	67.2	79.2	64.7	58.6	289.9	253.9	269.7
Wind	87.4	87.1	67.5	94.7	96.3	101.8	80.3	110.5	110.8	112.3	87.2	117.2	336.7	388.9	427.6
Solar (a)	16.7	27.3	27.6	18.5	21.4	35.3	35.4	24.0	28.4	45.2	44.9	29.7	90.1	116.1	148.2
Biomass	7.1	6.7	7.0	6.7	7.0	7.7	9.2	9.0	7.3	7.5	8.1	8.2	27.5	32.9	31.1
Geothermal	3.9	4.2	4.2	4.2	3.9	4.1	4.2	4.3	4.0	3.7	4.2	4.3	16.5	16.5	16.2
Pumped Storage Hydropower	-1.0	-1.2	-2.0	-1.2	-1.1	-1.3	-2.5	-1.2	-1.0	-1.3	-2.4	-1.1	-5.3	-6.1	-5.8
Petroleum (b)	4.0	3.9	4.5	4.0	5.2	3.3	3.8	4.0	5.2	3.6	4.1	4.2	16.5	16.4	17.1
Other Gases	1.0	0.4	0.8	0.9	0.7	0.6	0.7	0.8	0.6	0.5	0.7	0.9	3.1	2.7	2.8
Other Nonrenewable Fuels (c)	1.9	1.8	1.9	1.9	1.9	1.7	1.6	1.8	1.8	1.8	1.7	1.9	7.5	7.0	7.1
Total Generation	925.2	896.1	1,108.5	922.9	951.8	948.5	1,098.1	934.8	945.3	958.3	1,109.1	946.1	3,852.8	3,933.2	3,958.9
New England (ISO-NE)															
Natural Gas	10.8	10.0	16.1	10.8	12.1	10.5	17.1	12.3	9.0	12.2	17.5	11.6	47.7	52.0	50.3
Coal	0.1	0.0	0.0	0.1	0.5	0.0	0.0	0.1	0.4	0.0	0.0	0.1	0.2	0.6	0.5
Nuclear	7.3	4.9	7.3	6.1	7.1	7.1	7.2	5.6	7.0	6.2	7.2	7.2	25.6	27.0	27.7
Conventional hydropower	2.2	2.1	1.8	1.7	1.9	1.9	1.2	1.8	2.0	2.3	1.3	1.8	7.8	6.8	7.4
Nonhydro renewables (d)	2.6	2.7	2.4	2.6	2.8	3.0	2.7	3.2	3.3	3.2	2.8	3.3	10.3	11.6	12.6
Other energy sources (e)	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.4	0.3	0.3	0.3	0.4	1.4	1.3	1.3
Total generation	23.2	20.1	28.0	21.7	24.7	22.8	28.5	23.3	22.1	24.1	29.1	24.4	92.9	99.3	99.8
Net energy for load (f)	27.9	25.2	32.3	27.6	29.3	27.1	32.1	28.3	29.4	27.4	31.6	28.4	113.0	116.8	116.9
New York (NYISO)															
Natural Gas	12.4	11.4	20.6	12.8	12.8	13.7	20.2	15.5	14.9	14.9	21.2	16.5	57.1	62.2	67.5
Coal	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Nuclear	10.7	9.2	9.0	9.6	9.3	7.8	7.1	6.8	6.5	7.0	6.7	7.0	38.5	31.0	27.3
Conventional hydropower	8.0	8.0	7.8	7.6	7.3	7.3	7.2	7.3	7.1	7.1	7.0	7.2	31.4	29.1	28.3
Nonhydro renewables (d)	2.0	1.9	1.7	2.1	1.9	2.0	1.8	2.2	2.0	2.2	2.0	2.6	7.6	7.9	8.9
Other energy sources (e)	0.2	0.1	0.1	0.2	0.4	0.1	0.1	0.1	0.4	0.1	0.1	0.1	0.6	0.8	0.8
Total generation	33.4	30.6	39.2	32.2	31.7	30.9	36.4	31.9	30.9	31.3	37.0	33.5	135.4	130.9	132.7
Net energy for load (f)	35.3	32.4	42.9	34.7	36.6	35.5	43.1	36.4	37.3	36.1	42.7	36.8	145.3	151.6	153.0
Mid-Atlantic (PJM)															
Natural Gas	78.4	69.9	97.6	69.9	72.5	75.3	83.4	71.4	79.9	79.7	99.2	83.5	315.8	302.6	342.3
Coal	33.7	29.7	46.8	38.1	50.5	40.0	58.3	44.3	51.2	35.3	44.3	34.4	148.3	193.1	165.2
Nuclear	68.9	67.1	70.9	68.9	68.4	64.6	72.4	62.4	59.0	59.2	62.9	57.7	275.7	267.7	238.8
Conventional hydropower	3.1	2.9	2.1	1.9	2.7	2.4	1.6	2.1	2.6	2.7	1.6	2.1	9.9	8.8	9.1
Nonhydro renewables (d)	10.4	10.2	7.5	10.9	11.1	11.8	8.9	12.2	12.1	12.9	9.6	12.9	39.1	44.0	47.4
Other energy sources (e)	0.6	0.5	0.4	0.7	1.0	0.3	0.0	0.8	1.2	0.4	0.1	1.0	2.2	2.1	2.7
Total generation	195.1	180.2	225.3	190.5	206.2	194.4	224.6	193.2	206.0	190.2	217.7	191.7	791.1	818.4	805.5
Net energy for load (f)	182.5	163.5	209.3	177.0	194.4	180.4	207.1	182.2	195.4	179.1	206.7	184.2	732.4	764.2	765.3
Southeast (SERC)															
Natural Gas	61.9	59.1	74.7	58.5	57.6	57.2	66.6	56.1	53.5	59.5	71.7	58.7	254.2	237.6	243.4
Coal	23.8	22.1	44.4	28.0	36.3	31.0	46.9	32.6	35.5	33.1	46.3	32.1	118.3	146.8	147.0
Nuclear	53.0	50.5	54.1	52.5	53.8	52.5	55.4	52.0	54.1	55.2	58.4	56.4	210.1	213.7	224.1
Conventional hydropower	11.1	10.2	8.8	8.6	9.8	8.3	6.9	7.9	10.2	7.6	6.7	7.8	38.7	32.8	32.3
Nonhydro renewables (d)	3.4	5.0	5.0	3.9	4.0	6.0	5.9	4.6	4.6	7.5	7.7	5.5	17.4	20.4	25.2
Other energy sources (e)	-0.1	-0.3	-0.6	-0.2	0.0	-0.4	-0.7	-0.2	0.0	-0.3	-0.7	-0.2	-1.1	-1.3	-1.2
Total generation	153.1	146.7	186.5	151.3	161.4	154.6	181.0	152.9	157.8	162.4	190.1	160.4	637.6	650.0	670.7
Net energy for load (f)	157.4	152.5	186.1	153.7	163.1	153.3	181.1	154.3	160.4	161.4	187.2	158.8	649.7	651.7	667.8
Florida (FRCC)															
Natural Gas	40.0	45.7	52.8	41.0	34.5	41.6	43.8	34.1	31.8	43.6	46.7	36.7	179.5	154.0	158.8
Coal	2.1	3.5	5.7	4.6	4.7	5.1	7.0	5.1	4.4	4.0	5.0	3.6	15.9	21.9	16.9
Nuclear	7.3	7.6	7.6	7.0	7.8	7.2	7.9	6.9	7.9	7.3	8.1	7.1	29.4	29.8	30.4
Conventional hydropower	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.2	0.2
Nonhydro renewables (d)	1.8	2.4	2.3	1.9	2.4	3.4	4.1	4.0	3.6	3.8	3.7	3.5	8.4	13.9	14.5
Other energy sources (e)	0.9	0.8	0.9	0.7	0.8	0.7	0.8	0.6	0.8	0.7	0.8	0.6	3.3	3.0	3.0
Total generation	52.1	60.0	69.3	55.2	50.3	58.1	63.7	50.7	48.5	59.5	64.3	51.6	236.7	222.8	223.8
Net energy for load (f)	50.2	54.3	72.0	56.3	50.6	55.7	66.6	52.1	48.0	59.0	67.1	52.5	232.8	225.0	226.6

(a) Solar generation from large-scale 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 Thursday July 1, 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 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 - July 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	39.1	43.5	34.3	35.9	43.2	52.4	38.7	178.3	151.3	170.1
Coal	51.0	41.1	68.5	57.8	69.7	58.7	80.8	63.9	69.8	56.4	73.0	58.4	218.4	273.2	257.7
Nuclear	26.6	22.9	24.4	21.2	23.6	22.6	23.6	24.0	23.8	22.2	23.7	23.0	95.1	93.8	92.7
Conventional hydropower	3.1	3.2	2.8	2.7	2.8	2.5	2.2	2.1	2.4	2.8	2.3	2.2	11.8	9.7	9.7
Nonhydro renewables (d)	20.8	20.1	16.2	24.2	24.3	24.8	19.2	27.8	26.3	26.5	20.5	28.9	81.3	96.1	102.2
Other energy sources (e)	1.4	1.3	1.3	1.2	1.8	1.0	0.9	1.2	1.8	1.2	1.1	1.4	5.2	4.9	5.5
Total generation	146.9	131.8	166.6	144.8	156.7	148.6	170.2	153.5	160.0	152.3	173.0	152.6	590.0	629.0	637.9
Net energy for load (f)	153.0	141.5	174.4	149.8	159.0	156.5	177.3	156.7	157.7	158.7	179.2	158.3	618.7	649.5	653.9
Central (Southwest Power Pool)															
Natural Gas	17.5	16.3	24.2	13.7	12.4	14.1	20.6	12.6	13.5	14.1	22.1	13.5	71.6	59.8	63.2
Coal	17.0	15.7	26.7	19.8	21.8	19.2	28.2	19.6	21.3	17.4	28.1	20.7	79.2	88.8	87.5
Nuclear	4.4	4.4	4.2	3.8	4.1	2.8	4.4	4.4	4.3	4.4	4.1	2.5	16.8	15.8	15.3
Conventional hydropower	5.9	6.0	5.1	4.8	5.3	4.4	4.0	3.2	3.5	4.3	4.0	3.2	21.8	16.9	14.9
Nonhydro renewables (d)	20.3	21.4	16.7	22.2	22.8	24.3	20.3	26.2	25.6	26.7	22.7	28.7	80.6	93.6	103.7
Other energy sources (e)	0.1	0.1	0.1	0.2	0.3	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.5	0.6	0.4
Total generation	65.2	63.9	77.0	64.4	66.7	65.0	77.6	66.1	68.4	66.9	80.9	68.7	270.5	275.4	284.9
Net energy for load (f)	62.8	63.7	74.7	60.9	64.7	63.8	74.8	61.5	65.4	64.9	77.8	63.8	262.1	264.8	272.0
Texas (ERCOT)															
Natural Gas	37.2	42.1	59.3	36.0	33.0	38.1	48.0	27.9	22.2	30.6	42.3	23.6	174.6	147.0	118.6
Coal	13.1	15.8	20.3	17.9	16.3	16.1	24.7	19.0	15.4	15.8	24.3	17.5	67.2	76.1	73.0
Nuclear	10.4	9.7	11.0	10.3	10.5	9.9	10.3	9.5	10.7	9.9	10.6	10.8	41.4	40.1	42.0
Conventional hydropower	0.3	0.3	0.3	0.2	0.3	0.2	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	30.7	27.9	31.4	34.9	39.6	33.9	34.8	92.6	115.2	143.3
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	95.4	111.3	88.2	83.6	96.5	111.5	87.3	378.4	380.6	378.8
Net energy for load (f)	84.1	93.1	112.1	89.1	85.6	95.4	111.3	88.2	83.6	96.5	111.5	87.3	378.4	380.6	378.8
Northwest															
Natural Gas	23.7	17.1	27.3	21.6	20.9	21.1	29.9	23.4	19.9	15.9	28.8	24.6	89.6	95.2	89.2
Coal	22.3	16.1	24.5	23.2	22.5	19.3	28.3	21.7	20.2	11.9	25.0	19.6	86.1	91.8	76.8
Nuclear	2.4	2.0	2.4	2.5	2.5	1.2	2.4	2.4	2.4	2.4	2.4	2.4	9.4	8.6	9.7
Conventional hydropower	35.0	38.7	32.4	29.9	34.3	35.0	27.6	27.3	33.2	41.6	31.5	28.2	136.0	124.1	134.5
Nonhydro renewables (d)	13.9	14.2	12.6	14.9	15.3	16.8	14.7	17.0	17.0	17.8	15.5	17.8	55.6	63.8	68.1
Other energy sources (e)	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.6	0.6	0.6
Total generation	97.5	88.3	99.4	92.2	95.6	93.7	103.0	91.9	92.8	89.8	103.3	92.8	377.4	384.2	378.8
Net energy for load (f)	89.9	81.7	93.6	87.7	88.9	87.5	94.9	89.3	88.4	85.0	94.9	89.9	353.0	360.5	358.3
Southwest															
Natural Gas	11.8	14.7	20.4	14.8	11.0	16.4	18.0	13.1	9.3	10.9	15.5	10.9	61.7	58.5	46.7
Coal	5.3	5.3	8.8	6.6	5.9	5.8	9.3	8.0	5.6	6.6	8.4	7.9	25.9	29.0	28.5
Nuclear	8.3	7.6	8.7	7.0	8.5	7.2	8.6	7.7	8.4	7.5	8.6	7.5	31.6	32.0	32.0
Conventional hydropower	2.7	4.0	3.7	2.5	2.5	3.4	3.6	2.4	2.8	4.0	3.9	2.6	12.8	11.9	13.3
Nonhydro renewables (d)	2.5	3.1	2.5	2.3	3.0	4.6	3.6	3.5	4.8	6.4	4.9	4.6	10.5	14.8	20.7
Other energy sources (e)	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.2	0.2	0.2
Total generation	30.5	34.8	44.2	33.1	30.8	37.6	43.2	34.6	30.9	35.5	41.5	33.5	142.7	146.3	141.4
Net energy for load (f)	19.8	25.3	32.7	21.3	19.2	25.6	32.1	21.7	19.9	25.0	32.0	21.7	99.2	98.7	98.5
California															
Natural Gas	16.7	12.6	27.0	23.6	16.6	13.4	24.6	21.4	16.3	13.1	23.9	20.9	79.9	76.0	74.2
Coal	1.4	1.2	2.1	2.0	1.8	1.3	2.2	2.0	1.1	1.4	2.1	1.8	6.7	7.2	6.4
Nuclear	4.8	4.9	4.5	2.1	2.9	4.2	4.7	4.7	4.6	3.8	4.4	4.0	16.3	16.5	16.7
Conventional hydropower	3.1	5.6	5.4	2.7	2.0	4.0	3.9	1.4	2.8	6.4	5.8	2.9	16.8	11.2	17.9
Nonhydro renewables (d)	14.3	18.9	18.1	14.4	15.5	21.0	19.6	15.3	16.0	21.7	20.6	16.2	65.8	71.3	74.6
Other energy sources (e)	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1
Total generation	40.3	43.3	57.3	44.9	38.7	44.0	54.9	44.7	40.8	46.5	56.9	45.9	185.8	182.3	190.0
Net energy for load (f)	58.6	59.4	74.6	61.1	57.0	62.2	74.1	60.2	56.3	61.7	74.8	60.7	253.7	253.6	253.4

(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 Thursday July 1, 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 8a. U.S. Renewable Energy Consumption (Quadrillion Btu)
 U.S. Energy Information Administration | Short-Term Energy Outlook - July 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
Electric Power Sector															
Geothermal	0.035	0.037	0.037	0.038	0.035	0.037	<i>0.038</i>	<i>0.038</i>	<i>0.036</i>	<i>0.033</i>	<i>0.038</i>	<i>0.038</i>	0.147	<i>0.147</i>	<i>0.144</i>
Hydroelectric Power (a)	0.668	0.724	0.629	0.561	0.617	0.656	<i>0.599</i>	<i>0.559</i>	<i>0.691</i>	<i>0.694</i>	<i>0.597</i>	<i>0.556</i>	2.581	<i>2.431</i>	<i>2.538</i>
Solar (b)	0.152	0.248	0.252	0.168	0.195	0.321	<i>0.322</i>	<i>0.218</i>	<i>0.259</i>	<i>0.412</i>	<i>0.408</i>	<i>0.270</i>	0.820	<i>1.057</i>	<i>1.349</i>
Waste Biomass (c)	0.063	0.058	0.059	0.059	0.059	0.065	<i>0.067</i>	<i>0.063</i>	<i>0.056</i>	<i>0.063</i>	<i>0.064</i>	<i>0.062</i>	0.238	<i>0.254</i>	<i>0.245</i>
Wood Biomass	0.049	0.043	0.048	0.046	0.050	0.055	<i>0.076</i>	<i>0.078</i>	<i>0.058</i>	<i>0.053</i>	<i>0.062</i>	<i>0.065</i>	0.185	<i>0.259</i>	<i>0.239</i>
Wind	0.796	0.793	0.615	0.862	0.877	0.927	<i>0.731</i>	<i>1.006</i>	<i>1.009</i>	<i>1.023</i>	<i>0.794</i>	<i>1.067</i>	3.065	<i>3.541</i>	<i>3.892</i>
Subtotal	1.761	1.904	1.639	1.733	1.833	2.060	<i>1.834</i>	<i>1.962</i>	<i>2.108</i>	<i>2.277</i>	<i>1.964</i>	<i>2.058</i>	7.037	<i>7.689</i>	<i>8.407</i>
Industrial Sector															
Biofuel Losses and Co-products (d)	0.197	0.135	0.179	0.188	0.169	0.191	<i>0.193</i>	<i>0.190</i>	<i>0.185</i>	<i>0.193</i>	<i>0.197</i>	<i>0.197</i>	0.698	<i>0.743</i>	<i>0.771</i>
Geothermal	0.001	0.001	0.001	0.001	0.001	0.001	<i>0.001</i>	<i>0.001</i>	<i>0.001</i>	<i>0.001</i>	<i>0.001</i>	<i>0.001</i>	0.004	<i>0.004</i>	<i>0.004</i>
Hydroelectric Power (a)	0.003	0.002	0.002	0.002	0.002	0.002	<i>0.002</i>	<i>0.002</i>	<i>0.002</i>	<i>0.002</i>	<i>0.002</i>	<i>0.002</i>	0.009	<i>0.009</i>	<i>0.009</i>
Solar (b)	0.007	0.010	0.010	0.007	0.007	0.011	<i>0.011</i>	<i>0.008</i>	<i>0.008</i>	<i>0.012</i>	<i>0.012</i>	<i>0.009</i>	0.033	<i>0.037</i>	<i>0.041</i>
Waste Biomass (c)	0.041	0.039	0.036	0.041	0.041	0.039	<i>0.038</i>	<i>0.040</i>	<i>0.040</i>	<i>0.039</i>	<i>0.038</i>	<i>0.040</i>	0.156	<i>0.158</i>	<i>0.157</i>
Wood Biomass	0.349	0.340	0.336	0.352	0.338	0.339	<i>0.356</i>	<i>0.360</i>	<i>0.350</i>	<i>0.348</i>	<i>0.360</i>	<i>0.363</i>	1.376	<i>1.393</i>	<i>1.421</i>
Subtotal	0.594	0.520	0.558	0.588	0.555	0.577	<i>0.595</i>	<i>0.597</i>	<i>0.583</i>	<i>0.588</i>	<i>0.603</i>	<i>0.608</i>	2.261	<i>2.325</i>	<i>2.381</i>
Commercial Sector															
Geothermal	0.006	0.006	0.006	0.006	0.006	0.006	<i>0.006</i>	<i>0.006</i>	<i>0.006</i>	<i>0.006</i>	<i>0.006</i>	<i>0.006</i>	0.024	<i>0.023</i>	<i>0.023</i>
Solar (b)	0.025	0.037	0.037	0.025	0.029	0.043	<i>0.043</i>	<i>0.030</i>	<i>0.035</i>	<i>0.050</i>	<i>0.051</i>	<i>0.035</i>	0.123	<i>0.146</i>	<i>0.171</i>
Waste Biomass (c)	0.010	0.008	0.009	0.009	0.009	0.009	<i>0.009</i>	<i>0.009</i>	<i>0.009</i>	<i>0.009</i>	<i>0.009</i>	<i>0.009</i>	0.036	<i>0.036</i>	<i>0.036</i>
Wood Biomass	0.021	0.021	0.021	0.021	0.020	0.020	<i>0.021</i>	<i>0.021</i>	<i>0.020</i>	<i>0.020</i>	<i>0.021</i>	<i>0.021</i>	0.083	<i>0.082</i>	<i>0.082</i>
Subtotal	0.068	0.077	0.078	0.067	0.070	0.085	<i>0.086</i>	<i>0.072</i>	<i>0.076</i>	<i>0.092</i>	<i>0.093</i>	<i>0.077</i>	0.290	<i>0.313</i>	<i>0.338</i>
Residential Sector															
Geothermal	0.010	0.010	0.010	0.010	0.010	0.010	<i>0.010</i>	<i>0.010</i>	<i>0.010</i>	<i>0.010</i>	<i>0.010</i>	<i>0.010</i>	0.040	<i>0.040</i>	<i>0.040</i>
Solar (e)	0.058	0.086	0.086	0.061	0.066	0.103	<i>0.104</i>	<i>0.072</i>	<i>0.078</i>	<i>0.117</i>	<i>0.118</i>	<i>0.081</i>	0.291	<i>0.344</i>	<i>0.394</i>
Wood Biomass	0.114	0.114	0.115	0.115	0.112	0.114	<i>0.115</i>	<i>0.115</i>	<i>0.112</i>	<i>0.114</i>	<i>0.115</i>	<i>0.115</i>	0.458	<i>0.456</i>	<i>0.456</i>
Subtotal	0.181	0.210	0.211	0.186	0.188	0.226	<i>0.229</i>	<i>0.197</i>	<i>0.199</i>	<i>0.241</i>	<i>0.243</i>	<i>0.206</i>	0.788	<i>0.840</i>	<i>0.889</i>
Transportation Sector															
Biomass-based Diesel (f)	0.061	0.064	0.073	0.076	0.057	0.073	<i>0.072</i>	<i>0.081</i>	<i>0.079</i>	<i>0.081</i>	<i>0.086</i>	<i>0.093</i>	0.275	<i>0.282</i>	<i>0.339</i>
Ethanol (f)	0.257	0.220	0.267	0.258	0.244	0.286	<i>0.286</i>	<i>0.274</i>	<i>0.257</i>	<i>0.286</i>	<i>0.289</i>	<i>0.284</i>	1.002	<i>1.090</i>	<i>1.115</i>
Subtotal	0.318	0.284	0.340	0.334	0.301	0.359	<i>0.358</i>	<i>0.355</i>	<i>0.336</i>	<i>0.367</i>	<i>0.375</i>	<i>0.377</i>	1.277	<i>1.372</i>	<i>1.454</i>
All Sectors Total															
Biomass-based Diesel (f)	0.061	0.064	0.073	0.076	0.057	0.073	<i>0.072</i>	<i>0.081</i>	<i>0.079</i>	<i>0.081</i>	<i>0.086</i>	<i>0.093</i>	0.275	<i>0.282</i>	<i>0.339</i>
Biofuel Losses and Co-products (d)	0.197	0.135	0.179	0.188	0.169	0.191	<i>0.193</i>	<i>0.190</i>	<i>0.185</i>	<i>0.193</i>	<i>0.197</i>	<i>0.197</i>	0.698	<i>0.743</i>	<i>0.771</i>
Ethanol (f)	0.267	0.228	0.278	0.268	0.254	0.297	<i>0.297</i>	<i>0.284</i>	<i>0.267</i>	<i>0.297</i>	<i>0.300</i>	<i>0.295</i>	1.041	<i>1.132</i>	<i>1.158</i>
Geothermal	0.052	0.054	0.054	0.055	0.051	0.054	<i>0.054</i>	<i>0.055</i>	<i>0.052</i>	<i>0.049</i>	<i>0.055</i>	<i>0.055</i>	0.214	<i>0.214</i>	<i>0.212</i>
Hydroelectric Power (a)	0.671	0.727	0.632	0.563	0.620	0.659	<i>0.602</i>	<i>0.562</i>	<i>0.694</i>	<i>0.697</i>	<i>0.600</i>	<i>0.558</i>	2.592	<i>2.442</i>	<i>2.549</i>
Solar (b)(e)	0.238	0.374	0.377	0.257	0.292	0.478	<i>0.481</i>	<i>0.328</i>	<i>0.379</i>	<i>0.591</i>	<i>0.589</i>	<i>0.395</i>	1.246	<i>1.579</i>	<i>1.955</i>
Waste Biomass (c)	0.113	0.105	0.104	0.108	0.108	0.112	<i>0.114</i>	<i>0.113</i>	<i>0.104</i>	<i>0.111</i>	<i>0.111</i>	<i>0.111</i>	0.430	<i>0.447</i>	<i>0.438</i>
Wood Biomass	0.532	0.517	0.519	0.533	0.520	0.529	<i>0.568</i>	<i>0.573</i>	<i>0.540</i>	<i>0.535</i>	<i>0.559</i>	<i>0.564</i>	2.101	<i>2.190</i>	<i>2.198</i>
Wind	0.796	0.793	0.615	0.862	0.877	0.927	<i>0.731</i>	<i>1.006</i>	<i>1.009</i>	<i>1.023</i>	<i>0.794</i>	<i>1.067</i>	3.065	<i>3.541</i>	<i>3.892</i>
Total Consumption	2.923	2.995	2.826	2.907	2.947	3.307	<i>3.101</i>	<i>3.183</i>	<i>3.303</i>	<i>3.565</i>	<i>3.277</i>	<i>3.326</i>	11.652	<i>12.539</i>	<i>13.471</i>

- (a) Conventional hydroelectric power only. Hydroelectricity generated by pumped storage is not included in renewable energy.
- (b) Solar consumption in the electric power, commercial, and industrial sectors includes energy produced from large scale (>1 MW) solar thermal and photovoltaic generators and small-scale (<1 MW)
- (c) Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass.
- (d) Losses and co-products from the production of fuel ethanol and biomass-based diesel
- (e) Solar consumption in the residential sector includes energy from small-scale (<1 MW) solar photovoltaic systems. Also includes solar heating consumption in all sectors.
- (f) Fuel ethanol and biomass-based diesel consumption in the transportation sector includes production, stock change, and imports less exports. Some biomass-based diesel may be consumed in

- = no data available

Notes: EIA completed modeling and analysis for this report on Thursday July 1, 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 following reports: *Electric Power Monthly*, DOE/EIA-0226 and *Renewable Energy Annual*, DOE/EIA-0603; *Petroleum*

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

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 8b. U.S. Renewable Electricity Generation and Capacity
 U.S. Energy Information Administration | Short-Term Energy Outlook - July 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	6,600	6,598	6,549	6,548	6,538	6,393	6,394	6,438	6,441	6,443	6,443	6,443	6,548	6,438	6,443
Waste	3,927	3,925	3,852	3,850	3,841	3,839	3,840	3,884	3,887	3,889	3,889	3,889	3,850	3,884	3,889
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	79,508	79,502	79,649	79,651	79,652	79,724	79,726	79,772	79,785	79,800	79,841	79,845	79,651	79,772	79,845
Geothermal	2,502	2,520	2,520	2,520	2,520	2,520	2,520	2,562	2,562	2,562	2,562	2,562	2,520	2,562	2,562
Large-Scale Solar (b)	39,102	41,195	42,996	47,567	50,233	53,117	56,778	63,532	65,566	70,609	72,726	80,308	47,567	63,532	80,308
Wind	106,170	107,664	109,191	118,159	121,045	125,944	128,262	134,923	135,633	137,374	138,084	141,064	118,159	134,923	141,064
Other Sectors (c)															
Biomass	6,384	6,385	6,381	6,393	6,371	6,379	6,359	6,359	6,359	6,359	6,351	6,351	6,393	6,359	6,351
Waste	781	782	778	789	787	790	790	790	790	790	790	790	789	790	790
Wood	5,603	5,603	5,603	5,603	5,584	5,589	5,569	5,569	5,569	5,569	5,561	5,561	5,603	5,569	5,561
Conventional Hydroelectric	289	289	289	289	289	289	284	287	287	287	287	287	289	287	287
Large-Scale Solar (b)	441	468	473	480	483	498	508	552	554	554	554	554	480	552	554
Small-Scale Solar (d)	24,355	25,255	26,264	27,724	28,888	30,142	31,372	32,571	33,796	35,027	36,263	37,543	27,724	32,571	37,543
Residential Sector	15,071	15,689	16,373	17,238	18,076	18,943	19,731	20,469	21,215	21,988	22,789	23,619	17,238	20,469	23,619
Commercial Sector	7,425	7,642	7,910	8,430	8,725	9,055	9,435	9,831	10,245	10,640	11,013	11,400	8,430	9,831	11,400
Industrial Sector	1,859	1,924	1,981	2,056	2,088	2,145	2,207	2,271	2,335	2,399	2,461	2,524	2,056	2,271	2,524
Wind	113	339	348	348	348	348	348	598	598	598	598	598	348	598	598
Renewable Electricity Generation (billion kilowatthours)															
Electric Power Sector (a)															
Biomass	7.1	6.7	7.0	6.7	7.0	7.7	9.2	9.0	7.3	7.5	8.1	8.2	27.5	32.9	31.1
Waste	4.1	4.0	4.0	3.9	4.0	4.3	4.5	4.2	3.7	4.3	4.3	4.2	16.1	17.1	16.5
Wood	3.0	2.7	3.0	2.7	3.1	3.3	4.7	4.8	3.5	3.3	3.8	4.0	11.4	15.9	14.6
Conventional Hydroelectric	75.0	81.3	70.6	63.0	69.3	69.8	58.7	56.0	67.2	79.2	64.7	58.6	289.9	253.9	269.7
Geothermal	3.9	4.2	4.2	4.2	3.9	4.1	4.2	4.3	4.0	3.7	4.2	4.3	16.5	16.5	16.2
Large-Scale Solar (b)	16.7	27.3	27.6	18.5	21.4	35.3	35.4	24.0	28.4	45.2	44.9	29.7	90.1	116.1	148.2
Wind	87.4	87.1	67.5	94.7	96.3	101.8	80.3	110.5	110.8	112.3	87.2	117.2	336.7	388.9	427.6
Other Sectors (c)															
Biomass	7.4	7.1	7.0	7.1	7.0	6.9	7.0	7.1	7.0	6.9	7.0	7.1	28.6	28.0	28.0
Waste	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	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	15.0	10.4	11.6	17.3	17.4	12.0	41.7	49.9	58.2
Residential Sector	5.0	7.5	7.5	5.4	5.9	9.1	9.3	6.4	7.1	10.7	10.7	7.4	25.4	30.7	35.9
Commercial Sector	2.7	3.8	3.8	2.6	3.1	4.5	4.6	3.1	3.6	5.3	5.3	3.7	12.9	15.3	17.9
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	0.3	0.4	0.4	0.4	0.4	0.8	1.1	1.5

(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 Thursday July 1, 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 - July 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)	19,011	17,303	18,597	18,794	19,088	19,620	20,019	20,410	20,597	20,732	20,824	20,917	18,426	19,784	20,767
Real Personal Consumption Expend. (billion chained 2012 dollars - SAAR)	13,118	11,860	12,925	12,999	13,352	13,770	13,932	14,098	14,249	14,368	14,475	14,577	12,726	13,788	14,417
Real Private Fixed Investment (billion chained 2012 dollars - SAAR)	3,375	3,096	3,315	3,459	3,552	3,594	3,660	3,707	3,734	3,755	3,772	3,793	3,311	3,629	3,764
Business Inventory Change (billion chained 2012 dollars - SAAR)	-52	-298	-1	60	-97	-112	114	282	285	268	232	193	-73	47	244
Real Government Expenditures (billion chained 2012 dollars - SAAR)	3,348	3,369	3,327	3,320	3,367	3,445	3,441	3,451	3,451	3,453	3,444	3,440	3,341	3,426	3,447
Real Exports of Goods & Services (billion chained 2012 dollars - SAAR)	2,495	1,927	2,167	2,279	2,262	2,335	2,379	2,439	2,492	2,537	2,579	2,618	2,217	2,354	2,556
Real Imports of Goods & Services (billion chained 2012 dollars - SAAR)	3,283	2,702	3,186	3,400	3,456	3,533	3,588	3,619	3,664	3,701	3,733	3,763	3,143	3,549	3,715
Real Disposable Personal Income (billion chained 2012 dollars - SAAR)	15,061	16,630	15,851	15,541	17,521	16,202	15,819	15,706	15,899	16,017	16,107	16,154	15,771	16,312	16,045
Non-Farm Employment (millions)	151.9	133.7	140.9	142.6	143.4	145.0	147.8	149.4	150.6	151.6	152.5	153.2	142.3	146.4	152.0
Civilian Unemployment Rate (percent)	3.8	13.1	8.8	6.8	6.2	5.8	5.0	4.5	4.1	3.7	3.5	3.4	8.1	5.4	3.7
Housing Starts (millions - SAAR)	1.49	1.09	1.44	1.58	1.60	1.56	1.58	1.51	1.48	1.46	1.43	1.41	1.40	1.57	1.45
Industrial Production Indices (Index, 2012=100)															
Total Industrial Production	100.0	87.1	95.5	97.4	98.2	99.9	102.2	104.3	105.4	105.9	106.2	106.5	95.0	101.2	106.0
Manufacturing	97.6	84.2	94.2	96.7	97.2	98.7	101.2	103.8	104.9	105.5	105.8	106.0	93.2	100.2	105.6
Food	101.8	93.8	98.0	100.1	101.2	101.6	102.9	102.9	103.0	103.3	103.6	103.9	98.4	102.1	103.4
Paper	99.5	91.5	90.7	94.9	94.0	94.7	96.5	97.2	97.7	98.1	98.5	98.6	94.2	95.6	98.2
Petroleum and Coal Products	98.0	77.3	84.0	86.7	90.6	95.0	96.6	97.7	98.3	98.7	98.9	98.9	86.5	95.0	98.7
Chemicals	95.0	89.9	92.5	94.7	91.3	96.3	98.1	99.7	100.8	101.9	102.6	103.0	93.0	96.3	102.1
Nonmetallic Mineral Products	99.7	88.1	94.6	98.4	97.1	95.6	98.7	99.4	99.8	99.8	100.0	100.2	95.2	97.7	99.9
Primary Metals	95.9	72.9	83.3	90.3	92.1	96.3	96.9	98.2	98.8	99.2	99.3	98.8	85.6	95.9	99.0
Coal-weighted Manufacturing (a)	96.8	86.5	92.7	96.4	93.7	95.9	98.5	99.9	100.6	101.1	101.4	101.6	93.1	97.0	101.2
Distillate-weighted Manufacturing (a)	87.9	76.4	82.5	85.4	86.2	87.4	89.3	90.3	90.7	90.8	90.9	90.9	83.1	88.3	90.8
Electricity-weighted Manufacturing (a)	97.1	83.4	91.6	95.4	94.2	97.0	99.3	100.7	101.6	102.4	102.8	102.9	91.9	97.8	102.4
Natural Gas-weighted Manufacturing (a)	98.0	86.1	92.2	96.3	92.8	97.2	99.5	100.8	101.6	102.3	102.7	102.8	93.2	97.6	102.3
Price Indexes															
Consumer Price Index (all urban consumers) (index, 1982-1984=1.00)	2.59	2.56	2.59	2.61	2.63	2.68	2.69	2.70	2.71	2.72	2.73	2.75	2.59	2.67	2.73
Producer Price Index: All Commodities (index, 1982=1.00)	1.97	1.88	1.94	1.99	2.10	2.14	2.15	2.14	2.14	2.15	2.15	2.15	1.94	2.13	2.15
Producer Price Index: Petroleum (index, 1982=1.00)	1.71	1.05	1.47	1.50	1.89	2.16	2.23	2.12	2.02	2.06	2.03	1.96	1.43	2.10	2.02
GDP Implicit Price Deflator (index, 2012=100)	113.4	112.9	113.8	114.4	115.6	117.0	117.6	118.2	118.7	119.3	120.0	120.6	113.6	117.1	119.6
Miscellaneous															
Vehicle Miles Traveled (b) (million miles/day)	7,762	6,880	8,262	8,009	7,678	8,840	8,995	8,787	8,231	9,252	9,292	9,051	7,730	8,579	8,960
Air Travel Capacity (Available ton-miles/day, thousands)	630	363	478	537	537	649	642	669	664	722	739	710	502	625	709
Aircraft Utilization (Revenue ton-miles/day, thousands)	328	152	208	238	245	306	357	390	413	459	467	444	231	325	446
Airline Ticket Price Index (index, 1982-1984=100)	250.8	203.7	200.6	215.1	198.4	219.1	192.8	197.9	203.0	223.3	223.6	240.9	217.5	202.0	222.7
Raw Steel Production (million short tons per day)	0.268	0.174	0.197	0.224	0.246	0.258	0.284	0.321	0.314	0.270	0.271	0.280	0.216	0.277	0.283
Carbon Dioxide (CO2) Emissions (million metric tons)															
Petroleum	553	442	518	522	516	555	574	573	562	581	596	594	2,035	2,218	2,333
Natural Gas	490	349	383	429	485	355	360	430	479	355	371	436	1,651	1,629	1,640
Coal	201	177	271	224	247	228	313	247	247	215	289	233	873	1,035	985
Total Energy (c)	1,247	971	1,174	1,178	1,251	1,141	1,249	1,253	1,291	1,154	1,258	1,265	4,571	4,894	4,969

(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 Thursday July 1, 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 - July 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 \$2009)															
New England	993	901	969	981	999	1,027	1,046	1,065	1,073	1,080	1,084	1,088	961	1,034	1,082
Middle Atlantic	2,774	2,486	2,669	2,695	2,737	2,821	2,879	2,939	2,966	2,988	3,004	3,016	2,656	2,844	2,994
E. N. Central	2,502	2,266	2,458	2,480	2,523	2,589	2,636	2,685	2,704	2,719	2,727	2,735	2,427	2,608	2,721
W. N. Central	1,188	1,084	1,168	1,184	1,202	1,232	1,254	1,276	1,285	1,293	1,298	1,301	1,156	1,241	1,294
S. Atlantic	3,388	3,114	3,337	3,369	3,415	3,500	3,567	3,633	3,666	3,690	3,705	3,722	3,302	3,529	3,696
E. S. Central	828	742	809	820	833	852	868	883	890	895	899	903	800	859	897
W. S. Central	2,317	2,125	2,267	2,303	2,337	2,404	2,455	2,507	2,534	2,552	2,567	2,582	2,253	2,426	2,559
Mountain	1,283	1,177	1,265	1,280	1,304	1,341	1,369	1,395	1,408	1,417	1,423	1,430	1,251	1,352	1,420
Pacific	3,769	3,436	3,684	3,714	3,770	3,886	3,977	4,062	4,104	4,133	4,151	4,174	3,651	3,924	4,141
Industrial Output, Manufacturing (Index, Year 2012=100)															
New England	96.7	83.2	92.5	95.4	90.4	92.0	94.1	96.5	97.4	97.9	98.0	98.1	91.9	93.2	97.8
Middle Atlantic	95.6	79.7	90.8	93.3	88.7	90.3	92.7	95.2	96.2	96.8	97.1	97.2	89.8	91.7	96.8
E. N. Central	96.5	79.5	92.7	95.1	97.6	98.8	101.1	104.0	105.4	106.2	106.6	106.9	90.9	100.4	106.3
W. N. Central	98.6	86.6	95.6	97.9	98.0	99.5	101.6	104.1	105.0	105.3	105.6	105.8	94.7	100.8	105.4
S. Atlantic	99.2	86.4	96.1	99.1	103.0	104.8	107.5	110.2	111.3	111.9	112.1	112.1	95.2	106.3	111.8
E. S. Central	97.2	80.5	94.5	97.5	103.4	104.9	107.3	110.0	111.0	111.5	111.8	111.9	92.4	106.4	111.5
W. S. Central	100.8	89.5	96.6	98.7	93.0	94.5	97.0	99.7	101.1	101.9	102.3	102.5	96.4	96.0	101.9
Mountain	103.4	92.8	102.2	104.9	111.5	113.4	115.9	118.7	119.8	120.3	120.6	120.8	100.8	114.9	120.4
Pacific	97.0	84.6	92.5	94.1	94.0	95.2	97.8	100.3	101.8	102.8	103.2	103.7	92.0	96.8	102.9
Real Personal Income (Billion \$2009)															
New England	891	980	932	912	1,018	952	934	925	936	943	949	952	929	957	945
Middle Atlantic	2,313	2,517	2,429	2,342	2,612	2,446	2,400	2,374	2,404	2,423	2,437	2,443	2,400	2,458	2,427
E. N. Central	2,455	2,698	2,578	2,534	2,838	2,631	2,572	2,563	2,591	2,610	2,624	2,631	2,566	2,651	2,614
W. N. Central	1,159	1,259	1,180	1,194	1,310	1,234	1,209	1,206	1,218	1,226	1,232	1,235	1,198	1,240	1,228
S. Atlantic	3,265	3,506	3,411	3,372	3,761	3,512	3,449	3,429	3,470	3,497	3,519	3,534	3,389	3,538	3,505
E. S. Central	910	990	937	935	1,060	979	956	952	963	970	975	977	943	987	971
W. S. Central	2,037	2,201	2,099	2,082	2,322	2,167	2,113	2,121	2,151	2,169	2,184	2,194	2,105	2,181	2,174
Mountain	1,211	1,316	1,257	1,248	1,388	1,299	1,275	1,270	1,285	1,296	1,303	1,309	1,258	1,308	1,298
Pacific	2,832	3,039	2,977	2,932	3,238	3,030	2,984	2,964	3,001	3,025	3,044	3,056	2,945	3,054	3,032
Households (Thousands)															
New England	5,897	5,858	5,961	5,952	5,952	5,957	5,970	5,984	5,996	6,007	6,018	6,028	5,952	5,984	6,028
Middle Atlantic	16,163	16,049	16,333	16,310	16,311	16,324	16,359	16,397	16,426	16,456	16,482	16,509	16,310	16,397	16,509
E. N. Central	18,866	18,752	19,098	19,077	19,085	19,110	19,162	19,219	19,262	19,294	19,322	19,353	19,077	19,219	19,353
W. N. Central	8,647	8,603	8,768	8,773	8,784	8,801	8,829	8,859	8,881	8,906	8,929	8,948	8,773	8,859	8,948
S. Atlantic	25,672	25,565	26,084	26,122	26,185	26,263	26,376	26,498	26,597	26,701	26,796	26,884	26,122	26,498	26,884
E. S. Central	7,660	7,622	7,769	7,775	7,786	7,801	7,827	7,855	7,877	7,900	7,921	7,938	7,775	7,855	7,938
W. S. Central	14,889	14,831	15,138	15,168	15,208	15,257	15,327	15,400	15,462	15,524	15,585	15,639	15,168	15,400	15,639
Mountain	9,465	9,439	9,644	9,673	9,710	9,753	9,809	9,867	9,917	9,964	10,009	10,048	9,673	9,867	10,048
Pacific	18,782	18,678	19,034	19,039	19,056	19,082	19,136	19,195	19,243	19,289	19,336	19,373	19,039	19,195	19,373
Total Non-farm Employment (Millions)															
New England	7.6	6.4	6.9	7.0	7.0	7.1	7.3	7.3	7.4	7.5	7.5	7.5	6.9	7.2	7.5
Middle Atlantic	20.1	16.8	18.0	18.3	18.4	18.7	19.1	19.3	19.5	19.7	19.9	19.9	18.3	18.9	19.8
E. N. Central	22.3	19.4	20.8	21.0	21.1	21.3	21.7	21.9	22.0	22.2	22.3	22.4	20.9	21.5	22.2
W. N. Central	10.8	9.8	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.8	10.9	10.9	10.3	10.6	10.8
S. Atlantic	29.3	26.3	27.6	27.9	28.0	28.3	28.9	29.2	29.4	29.6	29.7	29.9	27.8	28.6	29.7
E. S. Central	8.3	7.5	7.9	8.1	8.1	8.1	8.2	8.3	8.3	8.4	8.4	8.4	8.0	8.2	8.4
W. S. Central	17.9	16.3	16.8	17.1	17.2	17.4	17.7	17.9	18.0	18.1	18.2	18.3	17.0	17.6	18.2
Mountain	11.2	10.1	10.6	10.7	10.8	10.9	11.1	11.2	11.3	11.4	11.5	11.5	10.6	11.0	11.4
Pacific	24.0	21.0	21.8	22.0	22.1	22.5	23.0	23.3	23.6	23.8	23.9	24.0	22.2	22.7	23.8

- = no data available

Notes: EIA completed modeling and analysis for this report on Thursday July 1, 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 - July 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	2,734	971	115	1,996	3,009	823	123	2,139	3,108	866	152	2,139	5,816	6,095	6,265
Middle Atlantic	2,470	837	85	1,828	2,816	692	75	1,968	2,886	694	99	1,968	5,221	5,551	5,646
E. N. Central	2,787	847	127	2,101	3,088	730	118	2,249	3,156	736	136	2,249	5,861	6,185	6,276
W. N. Central	3,037	799	167	2,313	3,226	728	154	2,449	3,249	706	162	2,449	6,317	6,557	6,567
South Atlantic	1,107	253	17	876	1,341	215	12	949	1,373	193	14	947	2,253	2,516	2,527
E. S. Central	1,482	337	20	1,226	1,795	324	20	1,308	1,811	249	20	1,309	3,065	3,446	3,389
W. S. Central	971	102	8	740	1,299	124	4	789	1,143	82	4	789	1,821	2,217	2,018
Mountain	2,207	669	126	1,763	2,289	647	141	1,824	2,208	688	142	1,823	4,765	4,900	4,861
Pacific	1,537	527	64	1,087	1,561	500	97	1,227	1,533	576	86	1,228	3,216	3,386	3,424
U.S. Average	1,874	540	70	1,418	2,099	482	72	1,523	2,098	484	78	1,521	3,903	4,176	4,182
Heating Degree Days, Prior 10-year Average															
New England	3,152	823	105	2,128	3,133	856	107	2,099	3,100	857	111	2,125	6,207	6,195	6,193
Middle Atlantic	2,948	644	69	1,944	2,913	677	72	1,911	2,887	687	73	1,932	5,606	5,573	5,579
E. N. Central	3,197	698	102	2,197	3,157	731	105	2,170	3,133	730	102	2,198	6,194	6,162	6,163
W. N. Central	3,287	702	132	2,379	3,247	728	133	2,367	3,218	727	131	2,398	6,500	6,475	6,474
South Atlantic	1,459	169	10	952	1,393	180	11	914	1,377	187	11	919	2,589	2,498	2,494
E. S. Central	1,850	214	15	1,277	1,772	231	16	1,249	1,764	244	15	1,255	3,356	3,268	3,278
W. S. Central	1,199	83	3	794	1,140	86	3	786	1,145	94	3	784	2,078	2,016	2,026
Mountain	2,192	718	135	1,844	2,181	701	134	1,842	2,172	680	134	1,828	4,889	4,857	4,815
Pacific	1,456	580	85	1,162	1,462	553	81	1,148	1,455	524	81	1,139	3,284	3,243	3,200
U.S. Average	2,149	472	64	1,509	2,108	482	65	1,484	2,090	479	64	1,491	4,194	4,138	4,125
Cooling Degree Days															
New England	0	102	543	0	0	146	449	2	0	82	387	2	645	596	471
Middle Atlantic	0	157	684	4	0	187	574	5	0	150	517	5	845	766	672
E. N. Central	2	218	605	2	2	238	542	7	0	214	521	7	827	789	742
W. N. Central	6	295	662	3	8	311	669	10	3	263	666	10	967	998	942
South Atlantic	195	619	1,232	300	153	627	1,174	236	132	653	1,159	236	2,346	2,190	2,180
E. S. Central	73	424	1,057	80	40	433	1,032	66	29	511	1,046	66	1,634	1,571	1,652
W. S. Central	173	837	1,500	209	90	765	1,475	204	93	870	1,506	204	2,719	2,534	2,673
Mountain	10	469	1,089	120	11	513	939	78	19	431	939	78	1,689	1,540	1,467
Pacific	24	195	717	124	23	255	574	59	27	169	592	59	1,061	911	847
U.S. Average	71	396	935	122	50	412	859	95	46	402	852	95	1,523	1,416	1,395
Cooling Degree Days, Prior 10-year Average															
New England	0	83	471	1	0	80	474	1	0	88	471	1	554	555	560
Middle Atlantic	0	170	609	6	0	163	610	6	0	163	603	7	785	779	772
E. N. Central	3	240	579	8	3	234	572	7	3	236	562	7	829	816	809
W. N. Central	7	296	696	11	7	294	686	10	7	299	674	10	1,010	998	990
South Atlantic	127	696	1,202	247	143	680	1,195	261	147	670	1,190	265	2,272	2,279	2,272
E. S. Central	36	557	1,082	72	42	532	1,064	74	44	518	1,058	78	1,747	1,713	1,697
W. S. Central	100	892	1,576	207	114	880	1,567	210	113	852	1,536	212	2,774	2,771	2,713
Mountain	24	432	939	81	24	445	955	86	24	460	949	86	1,476	1,510	1,519
Pacific	31	185	624	78	31	193	647	85	31	208	650	85	917	956	974
U.S. Average	47	420	892	100	52	415	894	104	53	414	887	106	1,459	1,466	1,460

- = no data available

Notes: EIA completed modeling and analysis for this report on Thursday July 1, 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>).