Short-Term Energy Outlook (STEO)

Forecast highlights

- The July *Short-Term Energy Outlook* (STEO) remains subject to heightened levels of uncertainty because mitigation and reopening efforts related to the 2019 novel coronavirus disease (COVID-19) continue to evolve. Reduced economic activity related to the COVID-19 pandemic has caused changes in energy supply and demand patterns in 2020. Uncertainties persist across the U.S. Energy Information Administration's (EIA) outlook for all energy sources, including liquid fuels, natural gas, electricity, coal, and renewables. The STEO is based on U.S. macroeconomic forecasts by IHS Markit, which assumes U.S. gross domestic product declined by 6.4% in the first half of 2020 from the same period a year ago before rising from the third quarter of 2020 through 2021.

- Daily Brent crude oil spot prices averaged $40 per barrel (b) in June, up $11/b from the average in May and up $22/b from the multiyear low monthly average price in April. Oil prices rose in June as numerous regions worldwide began to lift stay-at-home orders and as global oil supply fell as a result of production cuts by the Organization of the Petroleum Exporting Countries (OPEC) and partner countries (OPEC+). In June, OPEC+ announced that they extended through July their period of deepest cuts that had been set to relax on July 1. EIA expects monthly Brent spot prices will average $41/b during the second half of 2020 and rise to an average of $50/b in 2021, $4/b and $2/b higher than forecast in last month's STEO, respectively.

- The forecast of rising crude oil prices reflects EIA's expectation of declines in global oil inventories during the second half of 2020 and through 2021. EIA expects high inventory levels and surplus crude oil production capacity will limit upward price pressures in the coming months, but as inventories decline into 2021, those upward price pressures will increase. EIA estimates global liquid fuels inventories rose at a rate of 6.7 million barrels per day (b/d) in the first half of 2020 and expects they will decline at a rate of 3.3 million b/d in the second half of 2020 and then decline by a further 1.1 million b/d in 2021.

- EIA expects annual average U.S. crude oil production to fall in 2020 and 2021 as forecast West Texas Intermediate (WTI) spot prices remain less than $50/b through 2021. EIA forecasts that U.S. crude oil production will average 11.6 million b/d in 2020 and 11.0 million b/d in 2021. These levels are 0.6 million b/d and 1.2 million b/d, respectively, lower than the 2019 average of 12.2 million b/d. EIA finalized this month's forecast before a U.S. District Court ordered on July 6 the temporary closure of the Dakota

Access Pipeline. The operators of the pipeline have announced they will file a motion to stay the decision.

- EIA forecasts U.S. liquid fuels consumption will average 18.3 million b/d in 2020, down 2.1 million b/d from 2019. Declines in U.S. liquid fuels consumption vary across products. From 2019 to 2020, EIA expects jet fuel consumption to fall by 31% and gasoline and distillate fuel consumption to both fall by 10%. The declines reflect travel restrictions and reduced economic activity related to COVID-19 mitigation efforts. EIA expects the largest declines in U.S. liquid fuels consumption have already occurred and consumption will generally rise through the second half of 2020 and in 2021. EIA forecasts U.S. liquid fuels consumption will average 19.9 million b/d in 2021.

- EIA expects U.S. dry natural gas production to average 89.2 billion cubic feet per day (Bcf/d) in 2020, down from 92.2 Bcf/d in 2019. This 3% decrease is the result of falling natural gas prices that caused a decline in drilling activity and production curtailments. EIA expects annual average dry natural gas production in the United States will decline by 6% in 2021 to 84.2 Bcf/d. However, EIA expects production to increase during the second half of 2021 as natural gas prices in the forecast rise.

- EIA expects U.S. natural gas consumption will decline by 3% in 2020. The main driver of the decline is lower consumption in the industrial sector because of COVID-19 mitigation efforts and related reductions in economic activity. Forecast U.S. natural gas consumption declines by 5% in 2021 as a result of expected rising natural gas prices. The rising prices will reduce the use of natural gas in the electric power sector, which will more than offset increases in natural gas consumption in the industrial, commercial, and residential sectors.

- The Henry Hub natural gas spot price averaged $1.63 per million British thermal units (MMBtu) in June, the lowest inflation-adjusted price going back to at least 1989, as a result of low demand. EIA expects falling production will put upward pressure on natural gas prices through the end of 2021. EIA forecasts that Henry Hub spot prices will average $1.93/MMBtu in 2020 and $3.10/MMBtu in 2021.

- EIA forecasts working natural gas in storage will reach 4,039 billion cubic feet (Bcf) at the end of October, which would be the most U.S. natural gas in storage as of the end-of-October on record. This forecast level surpasses the previous end-of-October record of 4,013 Bcf reached in October 2016.

- EIA forecasts total U.S. coal production will decrease by 29% to 501 million short tons (MMst) in 2020. This decline largely reflects less demand for coal from the electric power sector and the coal export market. In 2021, EIA expects coal production to increase by 7% to 536 MMst because of forecast rising natural gas prices that make coal more competitive in the electric power sector.

- EIA forecasts 4.2% less electricity consumption in the United States in 2020 compared with 2019. The largest forecast decline occurs in the commercial sector, where EIA expects retail sales of electricity to fall by 7.0% this year because of COVID-19 mitigation efforts. Forecast electricity sales to the industrial sector fall by 5.6%. EIA forecasts that residential sector retail electricity sales in 2020 will be similar to 2019 as less electricity use for heating in the first quarter is offset by more consumption during the rest of the year as a result of people spending more time at home. EIA forecasts total U.S. electricity consumption will rise by 1.5% in 2021.

- EIA expects the share of U.S. electric power sector generation from natural gas-fired power plants will increase from 37% in 2019 to 41% this year. In 2021, the forecast natural gas share will decline to 36% in response to higher natural gas prices. Coal's forecast share of electricity generation falls from 24% in 2019 to 18% in 2020 and then increases to 21% in 2021. Electricity generation from renewable energy sources rises from 17% in 2019 to 20% in 2020 and to 22% in 2021. The increase in the share from renewables is the result of expected additions to wind and solar generating capacity. The forecast nuclear share of generation averages about 21% in 2020 and will be slightly less than 21% by 2021, which is consistent with upcoming reactor retirements.

- EIA forecasts that energy-related carbon dioxide (CO_2) emissions, after decreasing by 2.8% in 2019, will decrease by 12.2% in 2020 and increase by 6.0% in 2021. This forecast is highly dependent on assumptions regarding the economic impact and subsequent recovery from COVID-19 mitigation efforts. In addition to economic growth, energy-related CO_2 emissions are sensitive to changes in weather, energy prices, and fuel mix.

Global Liquid Fuels

The disruptions to global petroleum supply and consumption as a result of COVID-19 and associated mitigation efforts have been significant. As road and air travel fell sharply when economies around the world went into lockdown in the first quarter and early second quarter of this year, global liquid fuels consumption fell more quickly than production. Based on the mismatch between production and consumption of liquid fuels, EIA estimates that global oil inventories increased by almost 1.3 billion barrels from the start of 2020 through the end of May. Inventory accumulation caused Brent crude oil spot prices to fall from a monthly average of $64 per barrel (b) in January to $18/b in April. In late April, when price declines were the steepest, market participants had concerns about the ability of global storage capacity to hold the quickly rising inventory.

The situation in oil markets has now shifted. EIA estimates that, in June, global consumption of petroleum and other liquid fuels was up 10 million barrels per day (b/d) from April levels as economies worldwide have begun emerging from lockdown. EIA estimates global supply has fallen by 12 million b/d during the same period as a result of reduced production from OPEC+ and price-driven declines and curtailments in the United States and Canada. These changes in

EIA's supply and demand estimates have shifted global oil markets from 21 million b/d of oversupply in April to inventory draws in June.

EIA expects global oil inventories to generally draw through the end of 2021 as EIA forecasts global oil demand will continue to recover. Although EIA's forecast consumption of global liquid fuels of 101.1 million b/d in the fourth quarter of 2021 would still be less than during the same period of 2019, it would be 16.7 million b/d more than in the second quarter of 2020. EIA also expects global oil supply to rise in the coming quarters. However, voluntary production restraint from OPEC+ producers, along with the lingering effects of low oil prices on U.S. tight oil production, will limit increases. As a result, EIA expects global oil inventories to decline at a rate of 1.8 million b/d through the end of 2021, eliminating most of the surplus that accumulated in early 2020. These inventory draws will likely put upward pressure on oil prices, but that pressure will be partly offset by high existing oil inventories, particularly in the second half of 2020, and a large amount of spare crude oil production capacity. The trajectory of both supply and demand are highly uncertain, however, and EIA will continue to closely track incoming data and oil market drivers in the coming months and adjust our forecasts accordingly.

Global Petroleum and Other Liquid Fuels Consumption. In the July STEO, EIA revised its 2020 global oil consumption forecast to reflect the most up-to-date information available on the impacts of COVID-19 and associated mitigation efforts on global oil consumption.

Initial data indicate the extent of demand declines for global liquid fuels were not as significant as EIA had previously estimated. EIA estimates that consumption of global liquid fuels averaged 84.4 million b/d in the second quarter of 2020, down by 16.3 million b/d from the same period in 2019. Although these declines are the largest for any quarter on record, EIA had estimated a drop of 16.6 million b/d in the June STEO, and EIA had estimated a drop of 18.8 million b/d in the May STEO. Initial second-quarter consumption data for the United States was 0.4 million b/d more than estimated in the June STEO and consumption in Canada and Brazil were each about 0.3 million b/d higher. Those increases were partly offset by lower-than-expected liquid fuels consumption in India and China.

EIA's most recent estimates of global oil consumption in the second quarter came in higher than in the previous forecast despite a lower assumed level of economic activity compared with previous forecasts. The July STEO's forecast for global economic growth is based on forecasts from Oxford Economics. In the July STEO, EIA assumes global oil consumption-weighted gross domestic product (GDP) in 2020 will decline by 5.7% from 2019, compared with an assumed decline of 5.0% in the June STEO. The sharpest declines occur in the second quarter of 2020, when oil consumption-weighted GDP is estimated to have declined by 10.3% compared with the second quarter of 2019. In the June STEO, the assumed decline in second-quarter 2020 GDP was 8.6%. In 2021, EIA assumes global GDP weighted by oil consumption will grow by 6.3%.

For the full year of 2020, EIA forecasts that consumption of global liquid fuels will average 92.9 million b/d, down 8.1 million b/d from 2019. EIA forecasts that both oil-consumption weighted GDP and global liquid fuels consumption will begin increasing in the third quarter of 2020 and

will continue increasing through 2021. However, EIA expects global liquids consumption in the second half of 2020 to remain lower, by 5.8 million b/d, than the same period in 2019, which would still be an increase of 6.2 million b/d from the first half of the year. The increase in oil consumption results from a normalization of economic activity following COVID-19-related disruptions. Although EIA expects steady increases in consumption of gasoline and diesel in the second half of 2020, forecast jet fuel consumption remains weak as EIA expects the recovery in air travel to lag behind the recovery in road travel in most countries.

Annual average global consumption of liquid fuels rises in 2021 by 7.0 million b/d from 2020 levels. This increase reflects forecast GDP growth and increases in travel. However, any lasting changes to transportation and other oil consumption patterns once the effects of COVID-19 and associated mitigation efforts end present considerable uncertainty to the increase in liquid fuels consumption for 2021.

Non-OPEC Production of Petroleum and Other Liquid Fuels. EIA estimates that non-OPEC production of petroleum and other liquid fuels fell by 5.4 million b/d in the second quarter of 2020 from the first quarter of the year. Almost 85% of these declines came from the three largest non-OPEC producers: the United States, Russia, and Canada. U.S. declines resulted from a drop in active drilling rigs in response to low oil prices. Declines in Russia were the result of voluntary reductions resulting from the April OPEC+ agreement. In Canada, declines largely reflected a drop in activity at oil sands operations in Alberta because of low oil prices.

EIA forecasts that for 2020 as a whole, non-OPEC production will decline by 2.2 million b/d from 2019 levels. EIA expects that the second quarter marked a low point for non-OPEC production, and it will begin rising in the third quarter as oil demand increases. EIA expects production of non-OPEC petroleum and other liquid fuels to increase by 1.1 million b/d in 2021. Production in countries that have implemented voluntary cuts will generally rise in 2021 as global oil demand recovers. However, EIA forecasts production to continue to decline in the United States, where production is driven by price-sensitive shale operators.

In Russia, EIA forecasts production to decline sharply in 2020 and grow in 2021 as OPEC+ cuts limit production in 2020 and moderate in 2021. EIA expects Russia to experience the largest liquid fuels production declines in 2020 among OPEC+ producers, with forecast declines of 1.0 million b/d compared with 2019. EIA expects Russia's liquid fuels production to rise by 0.6 million b/d in 2021.

EIA expects total production of liquid fuels in the United States to fall by 0.7 million b/d in 2020, largely as a result of reduced drilling in price-sensitive tight oil regions. EIA expects U.S. production to fall by 0.3 million b/d in 2021.

EIA expects Canada's total liquid fuels production to fall by 0.4 million b/d in 2020. This decrease is a result of both 2019 government-ordered production cuts in Alberta that continue into 2020 and economic shut-ins because of the effect of low oil prices and falling demand for oil exports. In 2021, EIA expects Canada's production to increase by almost 0.5 million b/d and surpass 2019 levels in the second half of the year as demand rebounds and deferred or shut-in projects come

online. EIA expects no additional Canadian production from new upstream projects to come online during the forecast period, only expansions or debottlenecking of existing projects. EIA does not expect any new Canadian pipeline capacity until the second half of 2021.

Mexico agreed to 100,000 b/d of oil production cuts under the April OPEC+ agreement. However, Mexico declined to extend cuts past June, breaking from other OPEC+ producers. Independent of the OPEC+ agreement, EIA forecasts crude oil production to decline in Mexico in 2020 and 2021 because of natural declines in mature fields. Overall, EIA expects Mexico's annual average liquid fuels production to fall by almost 100,000 b/d in 2020 and by a similar amount in 2021.

EIA expects a number of other non-OPEC producers will experience notable production declines in 2020, including India, Azerbaijan, Kazakhstan, Colombia, Malaysia, and Egypt. Forecast annual average declines in each of these countries range between 50,000 b/d and 100,000 b/d.

The only non-OPEC countries where EIA expects production will grow significantly in 2020 are Brazil and Norway. EIA expects Brazil's production of petroleum and other liquid fuels to grow by 0.2 million in 2020 b/d and by 0.3 million b/d 2021. On April 1, Brazil's national oil company, Petroleo Brasileiro, S.A. (Petrobras), deepened its production cuts to 0.2 million b/d for 2020. Weeks after this announcement, Petrobras reversed these cuts as demand for crude oil exports remained strong. In addition, EIA now expects the P-70 floating, production, storage, and offloading vessel (FPSO) in Brazil to start production in the second half of 2020, bringing on additional volumes. The P-70 was originally scheduled to begin producing in the first half of 2020, before it was damaged in a storm in February 2020. This expected new supply growth offsets planned heavy maintenance for the second half of 2020. EIA also estimates Brazil's biofuels production was lower in the first half of 2020 than previously estimated because of reduced ethanol demand related to COVID-19 mitigation efforts combined with weak ethanol prices relative to sugar prices that caused sugar cane millers to shift toward more sugar production.

Despite voluntary production cuts announced in April 2020, EIA expects production growth in Norway during 2020 and 2021. Norway's Ministry of Petroleum and Energy enacted unilateral production cuts on the Norwegian continental shelf, which will limit production of crude oil from June to December 2020. These cuts limit growth in total liquids production in 2020 to less than 0.3 million b/d. After the expiration of production limits, EIA forecasts production growth of 0.1 million b/d in 2021. Phase 1 of the Johan Sverdrup field came online in October 2019 and reached production of more than 0.4 million b/d in early 2020 before the government production cuts took effect. The Johan Sverdrup field will drive most of the production growth in Norway in 2020 and 2021.

OPEC Production of Petroleum and Other Liquid Fuels. On June 6, 2020, OPEC+ announced that they were extending through July the large production cuts for May and June originally announced in April 2020. In addition, OPEC+ producers reconfirmed the remaining cuts under

the April agreement that extend into 2022. EIA assumes that participating OPEC+ countries are broadly complying with the May–July cuts.

EIA forecasts OPEC crude oil production will fall below 22.5 million b/d in July, a 7.9 million b/d decline from April. If OPEC production declines to forecast levels in July, it would be the group's lowest level of crude oil production since November 1991. After July, EIA expects OPEC will continue to limit production, but to a lesser degree as cuts are relaxed, global oil demand rises, and compliance lessens. With increases in forecast global oil demand growth in 2021, EIA assumes that OPEC members will further increase production in the face of large oil supply/demand imbalances that lead to large stock drawdowns and rising oil prices. EIA forecasts that OPEC crude oil production will average 29.2 million b/d in 2021, up 3.2 million b/d from 2020 but about the same as 2019 levels.

Venezuela, Libya, and Iran are not subject to the OPEC+ agreement. EIA expects Venezuela's production to continue falling throughout the forecast period. Production declines accelerated following the imposition of new sanctions by the United States government on Rosneft Trading in mid-February. In addition, the decline in global oil demand following the onset of the COVID-19 pandemic further reduced the demand for Venezuela's oil. Much of Venezuela's exports had been used for in-kind loan payments to China; however, the decline in oil demand from China in 2020 as a result of COVID-19 mitigation efforts further reduced outlets for Venezuela's oil production.

Libya's crude oil production fell in the first half of 2020 after the January closure of five export terminals in eastern Libya and the pipelines connecting the El Sharara and El Feel oilfields to those terminals. By May 2020, Libya's crude oil production averaged 80,000 b/d, down from 1.2 million b/d at the end of 2019. With the ongoing civil war in Libya, EIA does not expect production to increase until late 2020. However, that forecast is very uncertain as the timing of any settlement or resolution in Libya's civil war is not possible to forecast. Once currently shuttered export terminals and oil fields reopen, EIA expects that Libya will boost production to near-capacity in a relatively short time despite low oil prices.

EIA expects that crude oil production in the Neutral Zone shared between Saudi Arabia and Kuwait, which resumed in March 2020, will increase to full production levels in 2021, following a one-month hiatus in June 2020. However, EIA assumes that increases in Neutral Zone production will be offset elsewhere, as Kuwait and Saudi Arabia reduce production at other fields in response to the OPEC+ cuts.

EIA estimates that OPEC production of other liquids will decline to 4.8 million b/d on average in 2020, down from 5.4 million b/d in 2019. The 2020 decrease in production of other liquids is the result of less associated liquids production stemming from a reduction in crude oil production because of the OPEC+ cuts. The decrease in production of other liquids in 2021 is the result of less expected condensate output in Iran.

EIA expects that OPEC surplus crude oil production capacity, which averaged 2.5 million b/d in 2019, will average 5.7 million b/d in 2020, peaking during the third quarter of 2020 at 7.9 million

b/d before declining to 3.1 million b/d on average in 2021. The forecast 2020 annual level would mark the first time since 2002 that surplus capacity averaged at least 5 million b/d and would be the highest level since the mid-1980s. The fluctuations in surplus capacity are a direct result of crude oil production changes in response to the OPEC+ agreement. These estimates do not include additional capacity that may be available in Iran but is offline because of U.S. sanctions on Iran's oil sales.

Global Petroleum Inventories. A faster recovery of global oil demand and steeper declines in global oil production than EIA had forecast in previous outlooks mean inventory builds during the first five months of 2020 were not as large as previously expected. EIA now estimates that implied global oil inventory growth (measured as the difference between estimated global liquid fuels demand and production) averaged 8.4 million b/d from January through May. This level of growth implies oil inventories stood almost 1.3 billion barrels higher at the end of May than they did at the start of the year. In the June STEO, EIA had estimated builds of more than 1.4 billion barrels during this period.

EIA now forecasts that global petroleum inventory builds will average 1.7 million b/d in 2020, compared with the 2.2 million b/d inventory build EIA had forecast in the June STEO. EIA estimates that global inventories began declining in June. Forecast petroleum inventory draws average 3.3 million b/d for the second half of 2020 and 1.1 million b/d in 2021. As a result, EIA expects that commercial crude oil and other liquid fuels inventories held within the Organization of Economic Cooperation and Development (OECD), which peaked at an estimated 3.3 billion barrels in May, will decline to 3.0 billion barrels by the end of 2020. By the end of 2021, the inventory builds that occurred in 2020 will have disappeared, and OECD commercial inventories will fall below 2.9 billion barrels, a level last seen at the end of February 2020.

Crude Oil Prices. Brent crude oil spot prices averaged $40/b in June, up $11/b from May and up $22/b from the multiyear lows from April. Prices rose as OPEC+ producers agreed to extend the deepest production cuts through July and as indications that many locations previously under lockdown orders were increasing liquid fuels demand. Given supply reductions and rising demand, EIA estimates that global oil inventories declined in June for the first time since December 2019. This decline followed five months in which global oil inventory builds averaged 8.4 million b/d, which caused crude oil prices to drop sharply. Because EIA expects global oil demand to exceed supply in the second half of 2020, and continue to exceed through the forecast period, EIA expects crude oil prices to rise through the end of the forecast. However, existing inventory levels, significant OPEC surplus production capacity, and uncertainty about the trajectory of oil demand will likely limit upward crude oil price movements, particularly in the third quarter of 2020.

EIA expects Brent crude oil prices to average $41/b during the second half of 2020 and $50/b during 2021, reaching $53/b by the end of 2021. However, this price path reflects global oil consumption of 96.0 million b/d during the second half of 2020 along with relatively strict compliance to announced OPEC+ production cuts, both of which are uncertain. Also, the degree

to which the U.S. shale industry responds to the recent relative strength in oil prices compared with their recent lows in April will affect the oil price path in the coming quarters.

Global economic developments and numerous uncertainties surrounding the ongoing COVID-19 pandemic in the coming months could push oil prices higher or lower than the current STEO price forecast. Uncertainty also remains regarding the duration of, and adherence to, the current OPEC+ production cuts. Lastly, the U.S. tight oil sector continues to be dynamic, and the ability of producers to adjust to an especially volatile pricing environment in the face of significant reductions in drilling activity in recent months could affect both current crude oil prices and expectations for future prices.

EIA forecasts West Texas Intermediate (WTI) crude oil prices will average about $3/b less than Brent prices in 2020 and $4/b in 2021. This price discount is based on EIA's assumption that the current reduced discount of WTI to Brent of $2/b on average in June reflects significant declines in U.S. crude oil production and reduced available volumes of U.S. crude oil for export to distant markets relative to other global benchmarks. As the global market adjusts to reduced demand and production levels, EIA expects the spread to return to $4/b by the end of 2020 based on the relative cost of exporting U.S. crude oil from the Cushing distribution hub to Asia, compared with Brent crude oil from the North Sea.

U.S. Liquid Fuels

Consumption. Consumption of U.S. liquid fuels fell in early 2020 as a result of reduced travel because of COVID-19 and associated mitigation measures. Consumption of liquid fuels in the United States reached its low point in April at an average of 14.7 million barrels per day (b/d), down 5.4 million b/d from April 2019. Initial data show consumption increased to 16.1 million b/d in May and to 17.5 million b/d in June as states relaxed restrictions. EIA expects consumption will continue increasing in the second half of the year as economic activity increases.

EIA forecasts that U.S. consumption of petroleum and other liquid fuels will average 18.9 million b/d in the second half of 2020, up from an average of 17.7 million b/d in the first half of the year. EIA forecasts that annual consumption in 2020 will average 18.3 million b/d, down 2.1 million b/d from 2019. On a volumetric basis, almost half of the decrease in 2020 of U.S. consumption of liquid fuels is reduced gasoline use. On a percentage basis, however, jet fuel consumption declines the most (-31%) in 2020 from 2019, followed by residual fuel oil (-20%), gasoline (-10%), and distillate (-10%). EIA forecasts U.S. consumption of liquid fuels will recover to 19.9 million b/d in 2021.

EIA forecasts that U.S. jet fuel consumption will decline by 540,000 b/d from 2019 to average 1.2 million b/d in 2020. Estimated consumption fell to 660,000 b/d in the second quarter of 2020, and EIA expects it to rise to 1.4 million b/d in the fourth quarter. EIA's forecast consumption continues rising in 2021, and averages 1.5 million b/d for the year, remaining less than the 2019 consumption level of 1.7 million b/d.

U.S. motor gasoline consumption in the forecast averages 8.3 million b/d in 2020, down 1.0 million b/d (10.3%) from 2019 consumption levels. The annual declines are largely the result of travel disruptions and COVID-19 mitigation efforts that occurred predominantly in the first half of 2020. In the second half of 2020, gasoline consumption is supported by a forecast increase in employment and is expected to rise from an average of 7.8 million b/d in the first half of 2020 to 8.8 million b/d in the second half of the year. EIA assumes employment levels continue to grow in 2021, driving gasoline consumption up 0.8 million b/d from 2020 levels to average 9.1 million b/d in 2021.

U.S. consumption of distillate fuel in the forecast averages 3.7 million b/d in 2020 and 3.8 million b/d in 2021, down from 4.1 million b/d in 2019. Distillate consumption in the forecast is less affected on a percentage basis by COVID-19 mitigation efforts than jet fuel consumption, decreasing a forecast 10.1% in 2020 compared with 2019. Distillate consumption is driven by economic activity and by freight movements and is more likely affected by slowing economic growth than by travel restrictions themselves. Distillate fuel is also used in activities that are less directly affected by restrictions, such as for diesel engines of heavy construction equipment and as heating oil both for space heating in buildings and industrial heating. The restrictions may have indirectly affected these uses over time as a result of reduced economic activity that eventually led to a decrease in consumer spending for all goods. Diesel fuel is also used in oil and natural gas drilling operations, which have decreased significantly. U.S. gross domestic product reached an estimated low in the second quarter of 2020, and EIA assumes it will increase throughout the forecast, driving the recovery in distillate consumption.

EIA forecasts that U.S. consumption of hydrocarbon gas liquids (HGL) will decline by 110,000 b/d in 2020 to an average 3.0 million b/d in 2020 and increase to 3.3 million b/d in 2021. The decline in HGL consumption in 2020 is driven by an exceptionally warm first quarter that depressed propane consumption for space heating, followed by COVID-19 related mitigation measures, which depressed demand for HGLs as a petrochemical feedstock and for other end uses. The forecast decline in propane, butanes, and natural gasoline consumption is partially offset by an increase in the use of ethane as a feedstock for additional petrochemical capacity expected to come online in 2020 and 2021. EIA forecasts ethane consumption will increase by 110,000 b/d in 2020 and by a further 160,000 b/d in 2021.

Crude Oil Supply. EIA estimates that annual U.S. crude oil production will average 11.6 million b/d in 2020, down 0.6 million b/d from 2019 as result of a drop in drilling activity and production curtailments related to low oil prices. This 2020 production decline would mark the first annual decline since 2016. EIA expects production to decline slightly through the first half of 2021 and then to generally increase for the rest of 2021 as prices and economic conditions become more favorable for oil drilling.

EIA estimates that U.S. crude oil production in June averaged 11.0 million b/d, down 1.9 million b/d from the record level reached in November 2019. The declines occurred because producers quickly curtailed production and reduced drilling activity in response to falling prices. As of July 2, Baker Hughes reported the fewest active drilling rigs in the United States in their records,

which date back to 1987. Adding to the June drop in U.S. crude oil production were declines in the Federal Gulf of Mexico (GOM) stemming from shut-in production in response to Tropical Storm Cristobal.

In July, EIA expects U.S. oil production to increase to 11.4 million b/d as production returns in the GOM. EIA also expects small increases in crude oil production in the Lower 48 states and Alaska in July as operators respond to recent oil price increases.

EIA's forecast of a small increase in tight oil production in July is a result of expectations that some producers will reduce curtailments as oil prices have increased. EIA forecasts that the effect of reduced curtailments will be relatively short lived, and then the effects of less drilling take back over and cause production to fall. As a result, EIA expects that production declines in the tight oil basins of the Lower 48 states will resume after July. Although crude oil prices have increased, they are not high enough to encourage a significant recovery in drilling. Typically, crude oil price changes lead to changes in crude oil production in tight oil basins after about six months. However, current market conditions forced U.S. producers to curtail production more quickly as the WTI spot price dropped to less than $20 per barrel (b) in April and remained less than $40/b during most days in June. With EIA's West Texas Intermediate (WTI) crude oil price forecast averaging $39/b during the second half of 2020, EIA expects onshore production in the Lower 48 states decline from 9.0 million b/d in July 2020 to 8.5 million b/d in April 2021. EIA finalized this month's forecast before a U.S. District Court ordered on July 6 the temporary closure of the Dakota Access Pipeline beginning in early August. Energy Transfer, the operators of the pipeline, have announced they will "file a motion to stay this decision and if not granted, to pursue a stay and expedited appeal with the Court of Appeals." Depending on the outcome, a closure could affect oil prices and wellhead economics during the forecast period, particularly in Bakken region of North Dakota. EIA will incorporate any relevant information related to the pipeline's status in its August STEO.

EIA expects some growth in U.S. crude oil production to resume in mid-2021 as oil prices increase. However, EIA's forecast WTI prices remain lower than $50/b through 2021, and with an uncertain capital environment growth could be limited. EIA expects crude oil production in the Lower 48 states to increase to 8.7 million b/d in the fourth quarter of 2021 and total U.S. crude oil production to increase to 11.1 million b/d; both would be lower than June 2020 levels. Forecast annual average U.S. crude oil production in 2021 is 11.0 million b/d.

Hydrocarbon Gas Liquids Supply. EIA forecasts natural gas plant production of HGLs to increase by 70,000 b/d in 2020 and by 110,000 b/d in 2021, despite the forecast decline in natural gas production. Declines in the production of propane and butanes at natural gas processing plants in 2021, resulting from less natural gas production, will be more than offset by increased ethane production. EIA forecasts higher rates of ethane recovery at natural gas processing plants to increase to meet growing demand for ethane as a petrochemical feedstock in the United States and abroad between 2020 and 2021.

Liquid Biofuels. COVID-19 related reductions in economic activity in general and demand for liquid fuels in particular have had significant effects on U.S. biofuels markets that are expected to persist throughout the STEO forecast period. EIA still expects that current targets in the Renewable Fuel Standard (RFS) program will primarily impact biomass-based diesel production and net imports, which help to meet multiple RFS targets for biomass-based diesel, advanced biofuel, and total renewable fuel, but those impacts will be outweighed by COVID-19 disruptions during 2020.

U.S. biodiesel production fell by 7% from 2018 to 2019, averaging an estimated 112,000 b/d last year. EIA expects biodiesel production will again decrease by nearly 2% to average 110,000 b/d in 2020 before increasing by 21% to average 133,000 b/d in 2021, driven largely by increasing RFS targets and the renewal of the biodiesel production tax credit through 2022.

U.S. net imports of biomass-based diesel increased by 32% to an average 20,000 b/d in 2019, driven primarily by growth in renewable diesel imports, and EIA expects them to increase further to an average of 24,000 b/d in 2020 and 39,000 b/d in 2021. Increased net imports of biomass-based diesel are driven primarily by increased volumes of renewable diesel imported to meet both California Low Carbon Fuel Standard requirements and the rising RFS targets.

As a result of limited demand growth and oversupply, U.S. ethanol producers experienced weakening operating margins, and ethanol production fell for the first time in seven years in 2019, down 2.0% from 2018 to an average of 1.03 million b/d. In 2020, ethanol producers have seen even weaker margins and have significantly curtailed production in response to dramatic decreases to domestic motor gasoline demand. As a result, EIA forecasts that persistent reductions in domestic gasoline demand and limited higher-blend ethanol growth potential will result in ethanol production remaining lower than 2019 levels throughout the STEO forecast. EIA expects ethanol production to average 0.90 million b/d in 2020, 12% less than in 2019, and to average 1.00 million b/d in 2021, which would still be 2% lower than the 2019 level.

U.S. ethanol consumption averaged 948,000 b/d in 2019, and EIA forecasts significant decreases to average 836,000 b/d in 2020 and 919,000 b/d in 2021, driven by persistent COVID-19 related demand impacts. This level of consumption results in the ethanol share of total gasoline, which was an estimated 10.1% in 2018 and 10.2% in 2019, to be 10.1% on average during 2020 and 2021. This stable ethanol share assumes that growth in higher-level ethanol blends is limited by a combination of lower gasoline prices reducing incentives for increased ethanol blending and limited consumer demand for higher levels of ethanol blending beyond 10% of gasoline (E10).

Product Prices. Travel reductions related to COVID-19 mitigation efforts have resulted in sharp reductions in crude oil prices and demand for liquid fuels in the United States during the second quarter of 2020, which have significantly reduced prices for gasoline and diesel fuel during the same period. U.S. retail prices for regular-grade gasoline averaged $1.94 per gallon (gal) during the second quarter of 2020 and diesel retail prices averaged $2.43/gal, down about 47 cents/gal from the first quarter of 2020 for both fuels.

The U.S. gasoline and diesel price declines largely reflect a drop in crude oil prices. Refinery margins, after falling significantly as gasoline and diesel demand fell quickly in March and April, have increased recently as refiners have reduced runs. EIA expects petroleum product prices will rise as crude oil prices rise in the coming quarters. However, EIA generally expects U.S. average gasoline prices to remain near $2/gal until March 2021.

Refinery wholesale gasoline margins in the United States (the difference between the wholesale price of gasoline and the price of Brent crude oil) averaged 21 cents/gal in April 2020 before increasing to 30 cents/gal in June. This level in June was 8 cents/gal less than the average for the same time last year and 18 cents/gal less than the five-year (2015–19) average for June. EIA expects the U.S. refinery wholesale gasoline margin will average 31 cents/gal in 2020 and 30 cents/gal in 2021.

EIA expects the retail price of regular gasoline in the United States will average $2.06/gal during the third quarter of 2020, 59 cents/gal lower than at the same time last year. EIA expects the U.S. monthly regular retail gasoline price will increase from an average of $2.08/gal in June to $2.10/gal in July before falling to $2.00/gal in September 2020. The U.S. regular gasoline retail price, which averaged $2.60/gal in 2019, is forecast to average $2.11/gal in 2020 and $2.23/gal in 2021.

Regional annual average forecast prices for 2020 range from a low of $1.83/gal in the Gulf Coast region—Petroleum Administration for Defense District (PADD) 3—to a high of $2.77/gal in the West Coast region (PADD 5).

The retail price of diesel fuel in the United States averaged $3.06/gal in 2019, which was 13 cents/gal lower than in 2018. EIA forecasts that the diesel price will average $2.52/gal in 2020 and $2.59/gal in 2021. EIA expects that sharp reductions in forecast global economic activity and high levels of diesel inventories will keep diesel refinery margins lower during the forecast period. Diesel refinery margins based on Brent crude oil averaged 20 cents/gal in June 2020, which was 18 cents/gal lower than the five-year average for June and the lowest monthly average since June 2009. They averaged 43 cents/gal in 2019. EIA expects diesel refinery margins will average 33 cents/gal in 2020 and 38 cents/gal in 2021.

Natural Gas

Natural Gas Consumption. Consumption of natural gas in the United States averaged an estimated 85.0 billion cubic feet per day (Bcf/d) in 2019, and EIA expects U.S. consumption will decrease by 2.6 Bcf/d (3.1%) in 2020 before decreasing by an additional 3.7 Bcf/d (4.5%) in 2021.

The largest natural gas consuming sector in the United States is the electric power sector. EIA estimates that electric generation will consume an average 31.9 Bcf/d in 2020, which is 2.9% more than in 2019 because of new natural gas-fired electric generation capacity and competitive natural gas prices. EIA forecasts power sector consumption of natural gas to decline by 14.3% in 2021, which reflects increased competition from renewable sources and from coal.

Growth in renewable sources of electricity generation is a result of continuing renewables capacity additions. EIA's forecast of higher natural gas spot prices in 2021 compared with 2020, makes natural gas less competitive compared with coal for use in power generation.

EIA expects combined U.S. residential and commercial natural gas consumption will average 21.8 Bcf/d in 2020, down 6.8% from 2019, primarily because of warmer-than-average temperatures in the first quarter of 2020 that reduced demand for space heating. Based on forecasts by the National Oceanic and Atmospheric Administration (NOAA), EIA assumes a cooler summer with 7.2% fewer heating degree days (HDD) across the United States in 2020 compared with 2019. EIA expects natural gas consumption in the residential and commercial sectors to increase by 1.6% in 2021, based on a forecast increase in U.S. HDD of 4.0% in 2021.

EIA forecasts U.S. consumption of natural gas by the industrial sector will decline by 6.2% in 2020. Most of this 2020 decrease is the result of less manufacturing activity following COVID-19 mitigation efforts. EIA forecasts industrial sector natural gas consumption to rise by 2.6% as economic growth supports renewed manufacturing activity.

Natural Gas Production and Trade. EIA estimates that U.S. production of dry natural gas averaged 89.9 Bcf/d in the second quarter of 2020, down 6.1 Bcf/d (6.3%) from the fourth quarter of 2019. The declines are the result of a sharp drop in drilling activity because of low natural gas and crude oil prices and because of production curtailments. EIA expects dry natural gas production to continue to decline through the end of 2020. Forecast dry natural gas production in the United States averages 89.2 Bcf/d in 2020, down 3.0 Bcf/d (3.2%) from 2019. Natural gas production declines the most in the Permian region because of a drop in drilling activity and low crude oil prices reduce associated natural gas output from oil-directed wells.

In 2021, EIA expects dry natural gas production to decline by 5.0 Bcf/d (5.6%) from 2020. EIA forecasts the low point in natural gas production to occur in the second quarter of 2021 at an average of 83.3 Bcf/d, which would be down 12.7 Bcf/d (13.2%) from the fourth-quarter 2019 peak. However, toward the second half of 2021, as Henry Hub prices rise and economic conditions become more favorable, EIA expects dry natural gas production to increase, reaching 85.6 Bcf/d in the fourth quarter of 2021.

EIA forecasts net natural gas exports will rise to average 6.1 Bcf/d in 2020 and 7.5 Bcf/d in 2021. Because of rising liquefied natural gas (LNG) and pipeline exports, the United States has been a net exporter of natural gas since the second quarter of 2017. EIA estimates that net exports of U.S. LNG averaged 5.0 Bcf/d in 2019. EIA expects LNG exports will increase to 5.4 Bcf/d in 2020 and 7.3 Bcf/d in 2021.

In 2020, U.S. LNG liquefaction capacity continues to expand. In May 2020, the third train at Freeport LNG in Texas began commercial operations. Later this summer, the third train at the Cameron LNG export facility in Louisiana and three of Elba Island's small-scale moveable modular liquefaction system units are expected to come online in Georgia, bringing U.S. total liquefaction export capacity to 8.9 Bcf/d of baseload (10.1 Bcf/d peak).

U.S. LNG exports averaged 7.7 Bcf/d through the first four months of 2020, but declined by 17% between April and May. A mild winter and COVID-19 mitigation efforts have led to declining global natural gas demand and high natural gas inventories in Europe and Asia, reducing the need for LNG imports. Historically low natural gas and LNG spot prices in Europe and Asia have reduced the economic viability of U.S. LNG exports, which are highly price sensitive. In the summer 2020, more than 70 LNG export cargoes from the United States were canceled for June and July deliveries, and more than 40 cargoes were canceled for August deliveries. In comparison, 74 cargoes were exported from the United States in January 2020.

EIA estimates that as a result of these cancellations, U.S. LNG exports averaged 3.6 Bcf/d in June and forecasts that they will average 2.2 Bcf/d in July and August 2020, implying a 25% utilization of LNG export capacity. EIA expects U.S. LNG exports to increase beginning in September and average 7.1 Bcf/d from December 2020–February 2021 as global natural gas demand gradually recovers.

U.S. natural gas exports to Mexico by pipeline have also increased as more infrastructure has been built to transport natural gas both to and within Mexico. U.S. pipeline exports to Mexico averaged 5.3 Bcf/d in the first quarter of 2020, an increase of 9% compared with the same period in 2019. Exports to Mexico should continue to increase as more natural gas-fired power plants come online in Mexico and more pipeline infrastructure within Mexico is built. EIA expects gross U.S. pipeline exports to Mexico and Canada to average 7.9 Bcf/d and 8.3 Bcf/d in 2020 and 2021, respectively.

U.S. net natural gas pipeline imports from Canada decreased from 2019 to 2020, continuing a trend that began in 2008. This decrease in net imports is expected to continue as Appalachian production growth displaces some imports of Canadian natural gas to U.S. Midwest markets.

Natural Gas Inventories. As of June 26, 2020, U.S. working gas inventories were 3,077 Bcf, 30% more than the year-ago level and 18% more than the five-year (2015–19) average level. A warmer-than-normal winter led to the smallest total storage withdrawal since the 2015–16 winter, and inventories at the end of the winter heating season on March 31 were 18% more than the five-year average. Weekly storage injections so far during the April–October injection season have been close to the five-year average rate as falling production has been offset by falling demand from the industrial sector and LNG exports. EIA expects declining natural gas production will cause injections to fall short of the five-year average later in the summer. However, because of the high starting point for inventories during this injection season, EIA forecasts inventories will reach a record 4,039 Bcf by the end of October, which would be 8% more than the five-year average for that time period.

Natural Gas Prices. Henry Hub spot prices averaged $1.63 per million British thermal units (MMBtu) in June, down 12 cents/MMBtu from May and the lowest inflation adjusted monthly average price since at least 1989. Currently, the effects of reduced natural gas demand are outweighing the effects of falling U.S. natural gas production and are contributing to low natural gas prices. EIA expects that these conditions will largely persist in the coming months, keeping

the third quarter average price at $1.65/MMBtu. However, EIA expects general upward price pressures to emerge later in 2020 as demand for natural gas increases and production continues to decline, particularly in the fourth quarter when space heating demand rises. EIA forecasts that the Henry Hub spot price will average $2.46/MMBtu in the fourth quarter of 2020, bringing the 2020 annual average to $1.93/MMBtu. EIA expects the Henry Hub price will average $3.10/MMBtu in 2021 as falling natural gas production levels continue to exert upward price pressures.

Coal

Coal Supply. Initial data show U.S. coal production was 113 million short tons (MMst) in the second quarter of 2020, down 37% from the same period a year ago. Coal production has declined primarily because of falling electric power sector demand for coal amid low natural gas prices. As a result of COVID-19 mitigation efforts, some coal mines have either been idled or shut down. Steam coal production has been more affected by lower demand from the domestic electric power sector, but metallurgical coal production has been more affected by falling demand for U.S. exports. EIA expects that U.S. coal production will be 501 MMst in 2020, down 29% from 2019. EIA's forecast coal production rises 7% in 2021 to 536 MMst, driven primarily by a recovery in Western region production.

Coal Consumption. EIA expects U.S. coal consumption to decline by 28% in 2020 as a result of a decline in coal use for electricity generation, which is the effect of both lower overall electricity generation and low natural gas prices that make coal less competitive as a generation fuel. The largest drops in coal use for power generation occur in the Midwest, Southeast, and mid-Atlantic. However, EIA forecasts that U.S. coal consumption will rise by 21% in 2021 largely because of an expected increase in natural gas prices that will cause some coal-fired generation units to become more economic to dispatch.

Coal Trade. EIA forecasts that U.S. coal exports will decrease in 2020 by 32% to 63 MMst. U.S. Atlantic ports, which are the primary outlet for U.S. coal exports, are seeing decreased demand because of the global economic slowdown. Based on an assumed increase in global coal demand in 2021, EIA expects U.S. coal exports to increase by 7% next year. EIA expects increases in 2021 to be limited because of less demand for U.S. coal in India. India, the top destination for U.S. exports, has decreased consumption of both steam and coking coals by nearly 50% this year. India has also opened up domestic mining options to private companies.

Coal Prices. EIA estimates the delivered coal price to U.S. electricity generators averaged $2.02 per million British thermal units (MMBtu) in 2019, which was 4 cents/MMBtu lower than in 2018. EIA forecasts that coal prices will decrease in 2020 to $1.98/MMBtu and increase in 2021 to $2.04/MMBtu.

Electricity

Electricity Consumption. EIA forecasts that consumption of electricity in the United States, including direct use of electricity by combined-heat-and-power plants, will decline by 4% in 2020

and then grow by 1% in 2021. This decline in expected consumption reflects significant changes in electricity consumption patterns resulting from efforts to mitigate COVID-19. These mitigation and reopening efforts are currently evolving, which introduces heightened uncertainty into the STEO's electricity forecasts.

Most of EIA's expected decline during 2020 occurs in the commercial and industrial sectors. EIA forecasts that retail sales of electricity to the U.S. commercial sector will be 7% lower than in 2019. Commercial electricity demand was slightly lower in the first quarter of 2020 compared with 2019 as a result of mild winter temperatures. The stay-at-home orders in the late spring months especially affected commercial businesses such as restaurants, hotels, and similar establishments because they were required to cease operations. In addition, many office employees worked from home instead of their normal workplaces. EIA's most recent survey data indicate that commercial retail electricity sales in April 2020 were 11% lower than in April 2019. EIA estimates similar year-over-year declines have occurred in May and June. The relaxing of stay-at-home orders will likely result in slowed growth in electricity consumption in the commercial sector, but social distancing guidelines that remain in place will likely keep consumption less than 2019 levels.

Retail sales of electricity to the industrial sector have generally been declining over the past 10 years. However, the economic slowdown resulting from COVID-19 mitigation efforts has intensified declines in electricity sales in recent months. Although retail sales of electricity to the U.S. industrial sector during the first quarter of 2020 were slightly higher than the same period in 2019, EIA estimates industrial electricity consumption during the second quarter of 2020 was 8% lower than for the same period last year. EIA expects similar year-over-year declines through the end of the year, leading to a forecast annual decline of 6% in U.S. retail industrial electricity sales during 2020.

Residential electricity consumption during the first quarter of 2020 was 6% lower than for the same period last year as a result of milder winter temperatures. Since late March, the residential sector has generally been consuming more electricity as a result of stay-at-home orders and social distancing guidelines related to COVID-19. U.S. retail sales of electricity to the residential sector in April 2020, when most states had implemented stay-at-home guidance, was 8% higher than in April 2019. Some of this year-over-year increase was likely a result of increased electricity use for heating because the April temperatures were generally colder than in April 2019, but it is likely the increase in consumption was also a result of people spending more time in their homes. EIA assumes this extra use of electricity related to COVID-19 mitigation efforts will decrease gradually through the third quarter of 2020. EIA forecasts 2020 annual residential electricity sales will be essentially the same amount as in 2019.

In 2021, assumed increases in economic activity drive EIA's forecast that residential electricity sales will grow by 1% and commercial electricity sales will grow by 3%. EIA expects industrial electricity consumption in 2021 to remain essentially flat as some manufacturers boost production while others increase the efficiency of their electricity usage.

Electricity Generation. EIA's expectation for less electricity demand overall drives the forecast of a 5% decrease in U.S. electric power sector generation during 2020 compared with 2019. Electric power sector generation in the forecast increases by 1% in 2021.

Coal-fired electricity generation has been the energy source most affected by the reduction in electricity demand resulting from COVID-19 mitigation measures. EIA estimates that U.S. electric power sector coal generation was 314 billion kilowatthours (kWh) during the first half of 2020 compared with 467 billion kWh during the first half of 2019. Coal-fired generation has been falling faster than the overall level of electricity demand as a result of competition from other energy sources. In particular, the cost of natural gas has fallen to its lowest levels in 25 years. In addition, significant levels of new generating capacity using renewable energy sources have been added. EIA expects the share of total U.S. generation from coal-fired power plants will average 18% in 2020 compared with 24% in 2019.

Although the cost of natural gas for power generation has been relatively low for the past few years, recent prices have fallen even farther. EIA expects the cost of natural gas delivered to electric generators in 2020 will average $2.05 per million British thermal units, which would be 29% below the 2019 average and the lowest annual price since 1995. These sustained low prices drive EIA's forecast that natural gas-fired power generators will supply 41% of total U.S. electricity generation in 2020, up from 37% in 2019. Most of the projected increase in natural gas-fired generation occurs in the midwestern and eastern regions of the United States.

EIA also expects generation from renewable energy sources will increase in 2020. Slightly higher precipitation levels in the Pacific Northwest drive EIA's forecast that conventional hydroelectric generation will provide 8% of total U.S. generation in 2020, compared with 7% last year. Most of the expected increase in generation from renewables is a result of new solar and wind generation capacity additions. EIA expects the generation share from renewable energy sources other than hydropower will increase to 13% in 2020 compared with 11% in 2019.

Five nuclear reactors retired in 2019 or are scheduled to retire before the end of 2021. EIA expects the electric power sector will generate 794 billion kWh in 2020, down from 809 billion kWh last year. The forecast level of U.S. nuclear generation corresponds with a generation share of 21%.

In 2021, rising natural gas prices and continued additions of renewable generating capacity drive EIA's forecast for the U.S. electricity generation fuel mix. EIA forecasts the U.S. average delivered cost of natural gas in 2021 will rise to $3.43 per million Btu. These higher natural gas prices cause the forecast share of generation from natural gas-fired power plants to decline to 36% in 2021 from 41% in 2020. Conversely, coal-fired power plants become more economically competitive, and EIA forecasts the U.S. coal generation share in 2021 will average 21% compared with 18% in 2020. Nonhydro renewables provide a forecast share of 15% in 2021, up from an expected share of 13% this year.

Renewables Capacity. After adding 5 gigawatts (GW) of capacity in 2019, EIA forecasts 13 GW of utility-scale solar photovoltaic (PV) capacity will be added in 2020 and 11 GW more will be

added in 2021. Fewer capacity additions in 2021 takes into consideration some effects of the Investment Tax Credit (ITC) phase-down. Based on the latest available data that EIA has received, the impact of COVID-19 on PV capacity in development is limited; therefore, the forecast for utility-scale PV capacity additions in 2020 and 2021 is only slightly lower than the forecast in the January STEO.

EIA also expects a total of 9 GW of small-scale solar PV capacity will be installed during 2020 and 2021, mostly in the residential sector. EIA expects small-scale solar to continue to grow, although at a slower pace than the level forecasted in the January STEO. Various state and federal policies support EIA's forecast solar capacity growth, including California's requirement that all new home construction has rooftop solar panels beginning this year. The National Renewable Energy Laboratory (NREL) estimates that 15% of detached single-family homes in California currently have solar PV systems.

Electricity Prices. EIA expects wholesale electricity prices throughout the United States will be lower in 2020 than they were in 2019, reflecting the lower cost for natural gas as a fuel for power generation and less overall electricity demand. The expected declines in wholesale electricity prices range from 11% lower at the Midcontinent Illinois hub to an expected decline of 53% at the ERCOT North hub in Texas, where prices spiked during some hours in 2019.

EIA forecasts the U.S. retail electricity price for the residential sector will average 13.1 cents per kWh in 2020, which is 1.2% higher than the average retail price in 2019. These higher retail prices reflect the power industry's increased expenditures for generation and transmission infrastructure during the past few years. Forecast residential prices rise by an additional 1.2% in 2021.

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

The STEO is based on macroeconomic forecasts by IHS Markit (for the United States). EIA used the June 2020 version of the IHS Markit macroeconomic model with EIA's energy price forecasts as model inputs to develop the economic forecasts in STEO.

Using the IHS Markit model, EIA assumes U.S. real gross domestic product (GDP) will decline by 8.2% in 2020 and grow by 5.1% in 2021, compared with 2.3% growth in 2019. EIA assumes that total industrial production will decrease 14.9% in 2020 and increase 1.4% in 2021, compared with 0.9% growth in 2019. In the forecast, nonfarm employment, which grew by 1.4% in 2019, decreases by 7.0% in 2020 and will increase by 4.9% in 2021.

Energy-Related Carbon Dioxide Emissions. After decreasing by 2.8%—150 million metric tons (MMmt)—in 2019 EIA forecasts that energy-related carbon dioxide (CO_2) emissions will decrease by 12.2% (624 MMmt) in 2020 and increase by 6.0% (268 MMmt) in 2021. This forecast is highly dependent on assumptions regarding the economic impact and subsequent recovery from COVID-19. In addition to economic growth, energy-related CO_2 emissions are sensitive to changes in weather, energy prices, and fuel mix.

The relative prices of coal and natural gas are especially important in determining the fuel mix for electricity generation because these substitutes for one another in the generation dispatch order. Because natural gas typically has a 30% advantage in terms of generation efficiency, even when coal prices are slightly lower on a dollars-per-MMBtu basis, natural gas generation will be dispatched first since it would have a lower dollars-per-MWh cost.

In 2020, EIA forecasts natural gas prices for electric generators to decline by 29% to $2.05/MMBtu, while forecast coal prices decline by 2% to $1.98/MMBtu. This price pattern shifts more electricity generation toward natural gas. However, in 2021 EIA expects natural gas prices for the power sector to increase by 67% to $3.43/MMBtu and coal prices to increase by 3% to $2.04/MMBtu, leading to an 11% decline in natural gas generation and a 22% increase in coal generation. This fuel shift contributes to a 164 MMmt increase in coal emissions in 2021, which more than offsets the 78 MMmt decline in natural gas CO_2 emissions. Petroleum-related CO_2 emissions are forecast to decline by 12% (279 MMmt) in 2020 as vehicle miles traveled (VMT) decline by 11% because of restricted travel and work-from-home orders.

Notable forecast changes

- EIA forecasts Brent crude oil spot prices will average $41 per barrel (b) in 2020 and $50/b in 2021 and West Texas Intermediate spot prices will average $38/b in 2020 and $46/b in 2021. All of these prices are $2/b higher than forecast in the June STEO. The higher price forecast largely reflects lower expected global oil inventory builds during the first half of 2020.

- This STEO incorporates the extension of May and June supply reductions from OPEC+ through July. Largely as a result of this extension, EIA expects global production of crude oil and other liquid fuels to average 90.8 million barrels per day (b/d) in the third quarter of 2020, 1.1 million b/d lower than forecast last month.

- Based on a forecast of higher crude oil prices, EIA expects U.S. production of crude oil to average 11.0 million b/d in 2021, up 0.2 million b/d from last month's forecast. The U.S. crude oil production forecast for 2020 is mostly unchanged.

- EIA expects U.S. consumption of petroleum and other liquid fuels will average 18.3 million b/d in 2020 and 19.9 million b/d in 2021. Those forecasts are almost 0.3 million b/d and 0.5 million b/d more, respectively, than in the June STEO. The main driver of the higher forecast in both years is more expected gasoline consumption. EIA raised its forecast for U.S. gasoline consumption after incorporating the IHS Markit macroeconomic forecast that shows higher expected employment levels over the next 18 months. EIA also raised its forecast for hydrocarbon gas liquids (HGL) consumption based on incoming data. April HGL consumption in the *Petroleum Supply Monthly* was more than EIA's estimate from the June STEO, which indicates higher utilization rates at ethane-fed petrochemical plants than previously expected.

- EIA's forecast Henry Hub natural gas spot price averages $2.05 per million British thermal units (MMBtu) in the second half of 2020, down from a forecast of $2.26/MMBtu last month. The lower price forecast in this STEO reflects EIA's reduction in forecast U.S. liquefied natural gas (LNG) exports during the third quarter of 2020.

- EIA expects U.S. LNG exports will average 2.6 billion cubic feet per day (Bcf/d) in the third quarter of 2020, down 1.0 Bcf/d from the last forecast as a result of low global demand for natural gas.

- 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, 2020

West Texas Intermediate (WTI) crude oil price and NYMEX confidence intervals
dollars per barrel
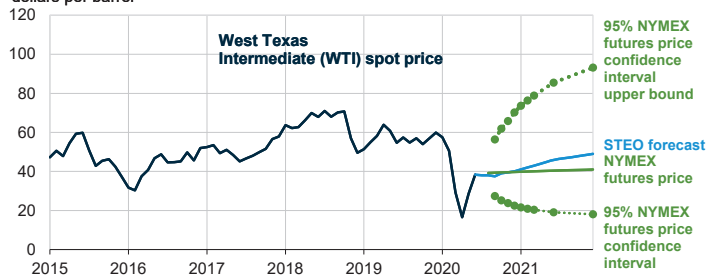
Note: Confidence interval derived from options market information for the five trading days ending Jul 1, 2020. Intervals not calculated for months with sparse trading in near-the-money options contracts.

Sources: Short-Term Energy Outlook, July 2020, CME Group, and Bloomberg, L.P.

U.S. gasoline and crude oil prices
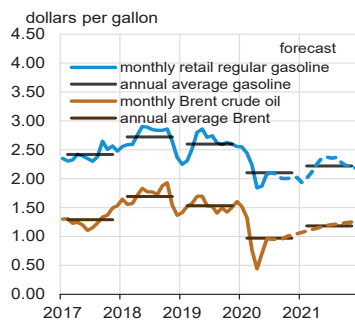
dollars per gallon

Components of annual gasoline price changes

dollars per gallon

Source: Short-Term Energy Outlook, July 2020
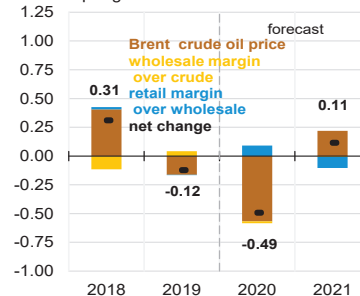
U.S. diesel and crude oil prices

dollars per gallon

- monthly retail diesel
- annual average diesel
- monthly Brent crude oil
- Brent annual average

forecast
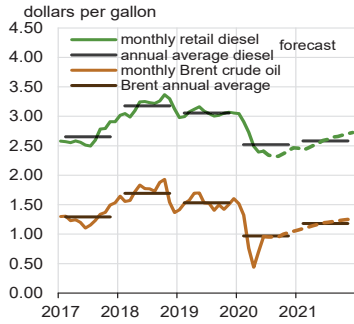
Source: Short-Term Energy Outlook, July 2020

Components of annual diesel prices changes

dollars per gallon

forecast

- Brent crude oil price
- wholesale margin over crude
- retail margin over wholesale
- net change

0.53   0.07

-0.13

-0.54

eia
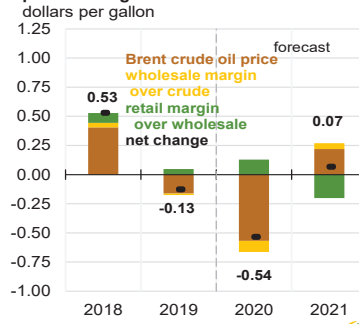
Henry Hub natural gas price and NYMEX confidence intervals

dollars per million Btu
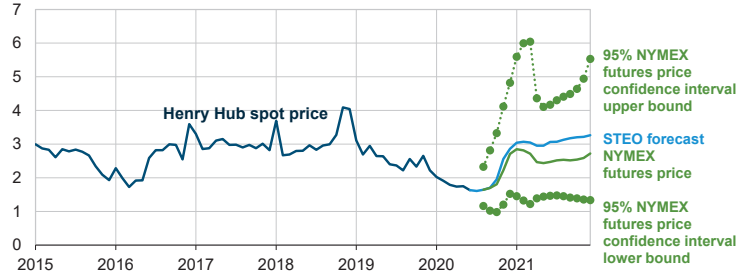
Henry Hub spot price

95% NYMEX futures price confidence interval upper bound

STEO forecast

NYMEX futures price

95% NYMEX futures price confidence interval lower bound

Note: Confidence interval derived from options market information for the five trading days ending Jul 1, 2020. Intervals not calculated for months with sparse trading in near-the-money options contracts.

Sources: Short-Term Energy Outlook, July 2020, and CME Group

eia

U.S. natural gas prices

dollars per thousand cubic feet

forecast

- monthly residential price
- annual average residential
- monthly Henry Hub spot price
- Henry Hub annual average
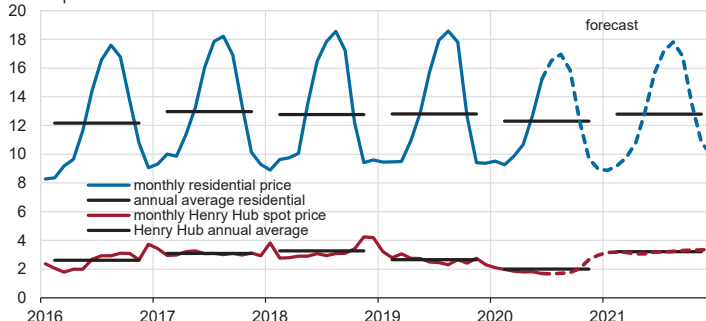
Sources: Short-Term Energy Outlook, July 2020, and Refinitiv

eia

World liquid fuels production and consumption balance
million barrels per day
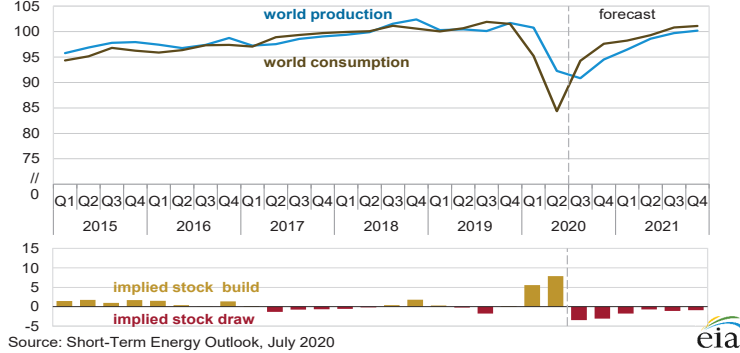
Source: Short-Term Energy Outlook, July 2020

Estimated unplanned liquid fuels production outages among OPEC and non-OPEC producers
million barrels per day
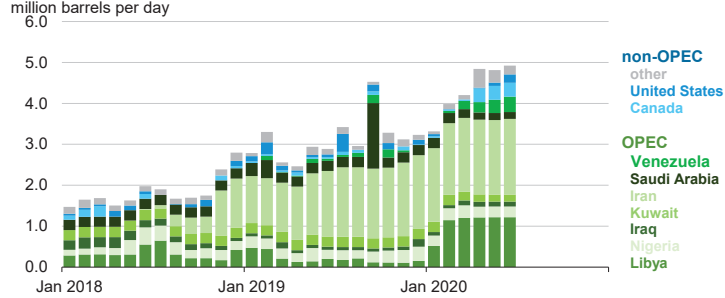
Source: Short-Term Energy Outlook, July 2020

World liquid fuels consumption
million barrels per day
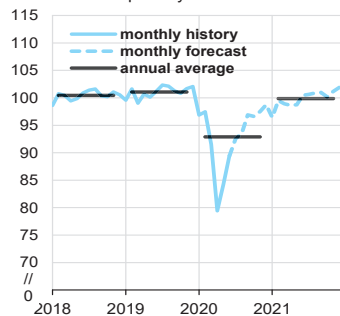
Components of annual change
million barrels per day

Source: Short-Term Energy Outlook, July 2020
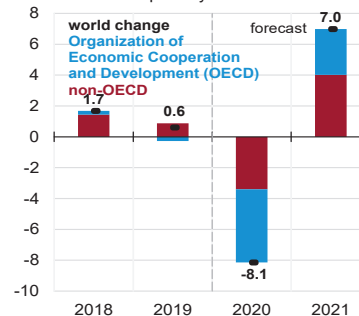
Annual change in world liquid fuels consumption
million barrels per day
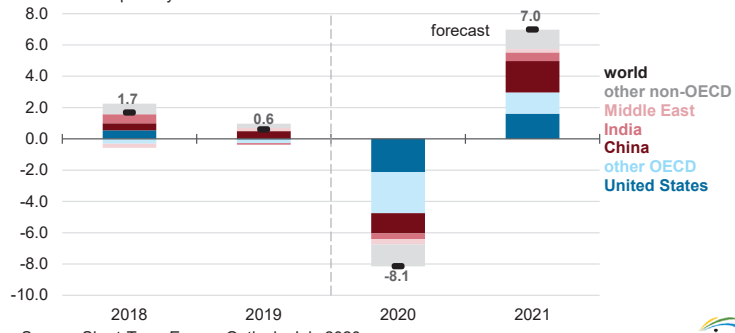
Source: Short-Term Energy Outlook, July 2020

World crude oil and liquid fuels production
million barrels per day

Source: Short-Term Energy Outlook, July 2020

Components of annual change
million barrels per day

World liquid fuels production
million barrels per day

World liquid fuels consumption
million barrels per day

Source: Short-Term Energy Outlook, July 2020

**Organization of the Petroleum Exporting Countries (OPEC)
surplus crude oil production capacity**
million barrels per day
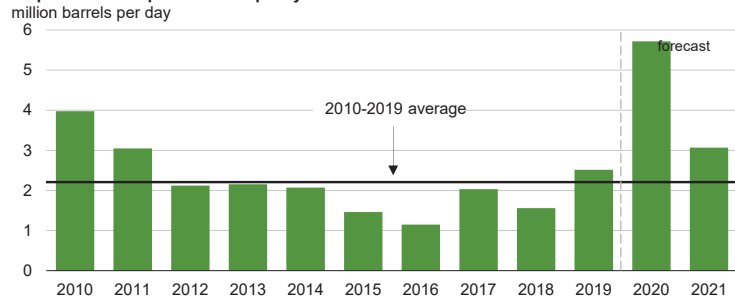
Note: Black line represents 2010-2019 average (2.2 million barrels per day).

Source: Short-Term Energy Outlook, July 2020

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

monthly range from January 2015 - December 2019

forecast
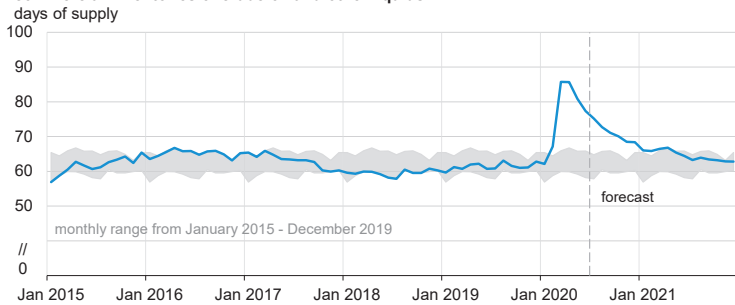
Source: Short-Term Energy Outlook, July 2020

U.S. crude oil production
million barrels per day

- monthly history
- monthly forecast
- annual average

Components of annual change
million barrels per day

Federal Gulf of Mexico (GOM)
Lower 48 excluding GOM
Alaska
net change

forecast

1.64   1.24   -0.60   -0.62
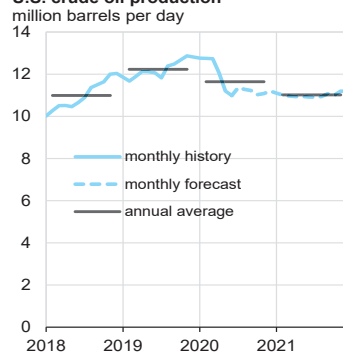
Source: Short-Term Energy Outlook, July 2020
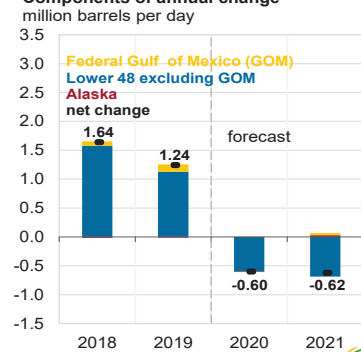
U.S. commercial crude oil inventories
million barrels

monthly range from January 2015 - December 2019

forecast

Source: Short-Term Energy Outlook, July 2020

eia

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

— total monthly production
- - - forecast
— annual average

Source: Short-Term Energy Outlook, July 2020

Components of annual change
million barrels per day

forecast

2.3

1.7

-0.7   -0.4

ethanol
and biodiesel
natural gas
plant liquids
crude oil
net change

2018   2019   2020   2021

eia

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

— monthly history
- - - monthly forecast
— annual average

Source: Short-Term Energy Outlook, July 2020

Components of annual change
million barrels per day

forecast   1.60

0.55

-0.04

-2.13

motor gasoline
distillate fuel
jet fuel
hydrocarbon gas liquids
other fuels
net change

2018   2019   2020   2021

eia
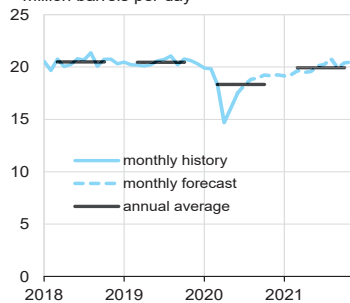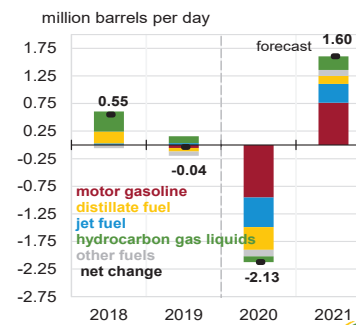
U.S. gasoline and distillate inventories
million barrels
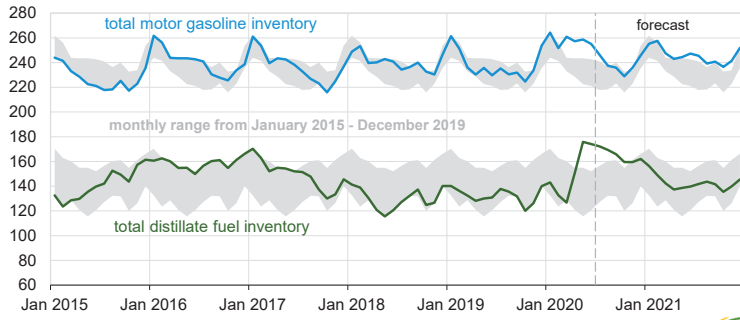
Source: Short-Term Energy Outlook, July 2020

U.S. net imports of crude oil and liquid fuels
million barrels per day
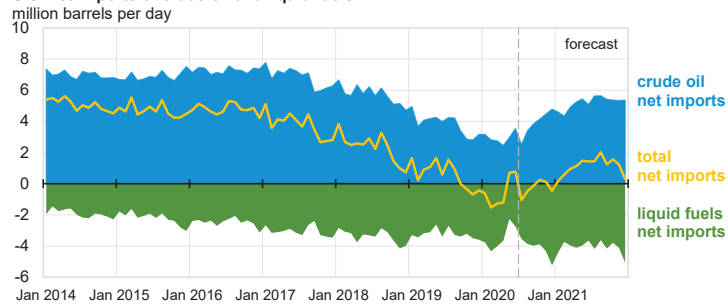
Note: Liquids fuels include: gasoline, distillate fuels, hydrocarbon gas liquids, jet fuel, residual fuel oil, unfinished oils, other hydrocarbons/oxygenates, and other oils.

Source: Short-Term Energy Outlook, July 2020

U.S. natural gas plant liquids production
million barrels per day
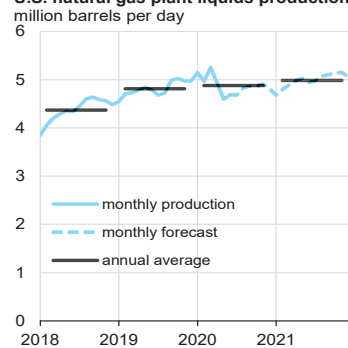
Components of annual change
million barrels per day

Source: Short-Term Energy Outlook, July 2020
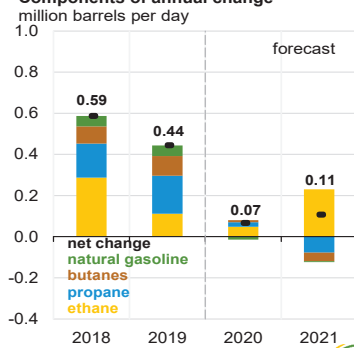
U.S. hydrocarbon gas liquids
product supplied (consumption)
million barrels per day

monthly history
monthly forecast
annual average

Source: Short-Term Energy Outlook, July 2020

Components of annual change

million barrels per day

0.36

forecast

0.24

0.12

net change
natural gasoline
ethane
propane
butanes

-0.11
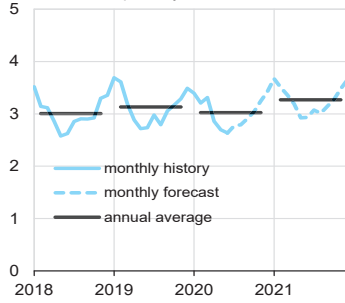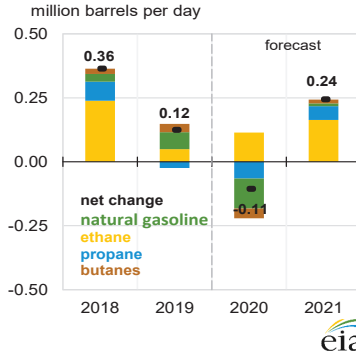
U.S. net trade of hydrocarbon gas liquids (HGL)
million barrels per day

forecast

net imports
net exports

net trade
propane
ethane
natural gasoline
butanes
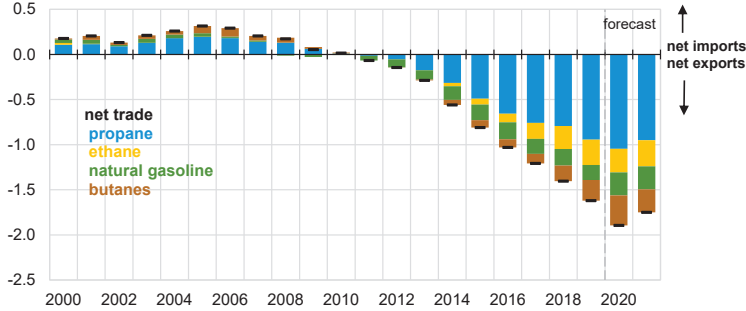
Source: Short-Term Energy Outlook, July 2020

U.S. commercial propane inventories
million barrels

forecast

monthly range from January 2015 - December 2019
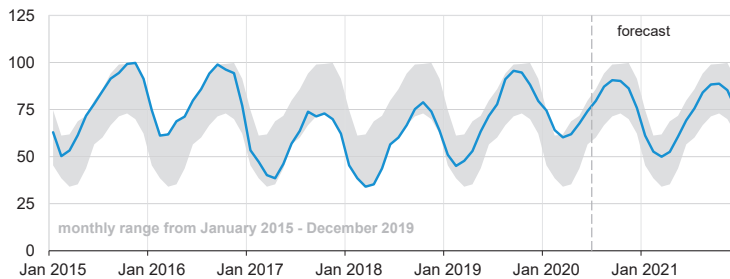
Note: Excludes refinery propylene.

Source: Short-Term Energy Outlook, July 2020

U.S. marketed natural gas production
billion cubic feet per day
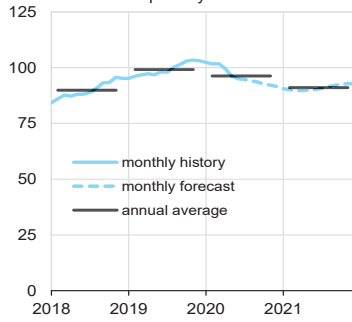
- monthly history
- monthly forecast
- annual average

2018 2019 2020 2021

Source: Short-Term Energy Outlook, July 2020

Components of annual change
billion cubic feet per day

forecast

9.9 9.3 -2.9 -5.2

U.S. non-Gulf of Mexico
U.S. Gulf of Mexico
net change

2018 2019 2020 2021

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

- monthly history
- monthly forecast
- annual average

2018 2019 2020 2021

Source: Short-Term Energy Outlook, July 2020

Components of annual change
billion cubic feet per day

forecast

8.0 2.6 -2.6 -3.7

net change
industrial
electric power
residential and commercial
other

2018 2019 2020 2021
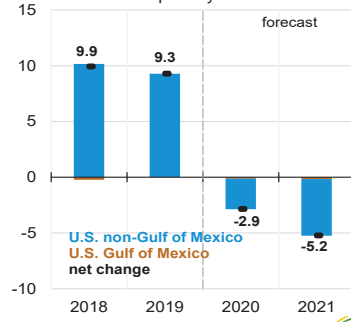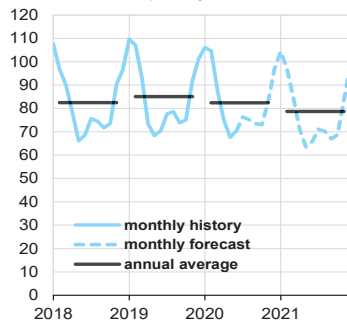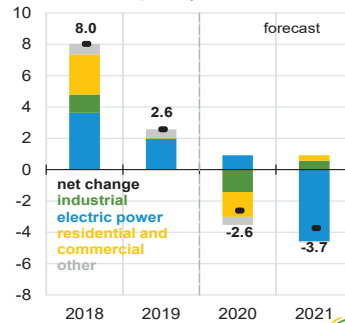
U.S. natural gas production, consumption, and net imports
billion cubic feet per day

consumption

forecast

production

net trade (imports minus exports)

Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4
2015 2016 2017 2018 2019 2020 2021

net storage builds

net storage withdrawals
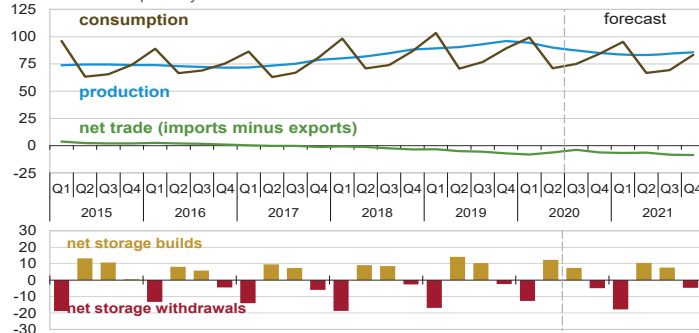
Source: Short-Term Energy Outlook, July 2020

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

forecast

gross imports
as liquefied
natural gas
by pipeline

net trade

gross exports
by pipeline
as liquefied
natural gas

-0.3
-2.0
-5.2
-6.1
-7.5

Source: Short-Term Energy Outlook, July 2020

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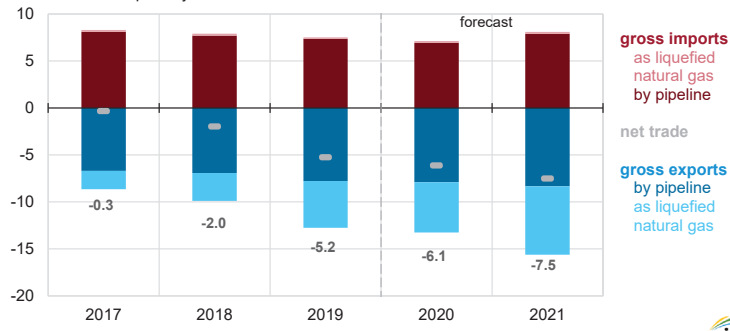
U.S. working natural gas in storage
billion cubic feet

storage level

forecast

monthly range from January 2015 - December 2019

Jan 2015   Jan 2016   Jan 2017   Jan 2018   Jan 2019   Jan 2020   Jan 2021
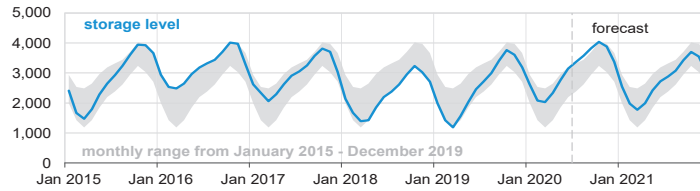
Percent deviation from 2015 - 2019 average

forecast

Source: Short-Term Energy Outlook, July 2020

eia

U.S. coal production
million short tons
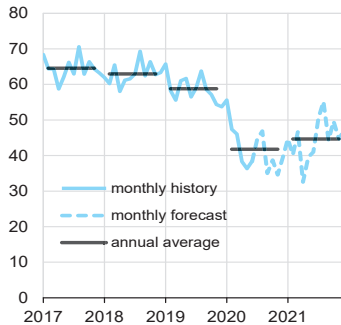
monthly history
monthly forecast
annual average

2017   2018   2019   2020   2021

Source: Short-Term Energy Outlook, July 2020

Components of annual change
million short tons

forecast

35
-18
-51
-204

Western region
Appalachian region
Interior region
net change

2018   2019   2020   2021

eia

U.S. coal consumption
million short tons

- monthly history
- monthly forecast
- annual average

Source: Short-Term Energy Outlook, July 2020

Components of annual change
million short tons

coke plants
electric power
retail and other industry
net change

forecast

-29
-101
-164
88

2018 2019 2020 2021

eia
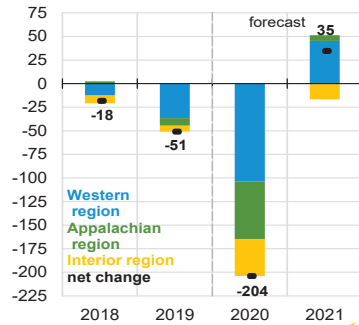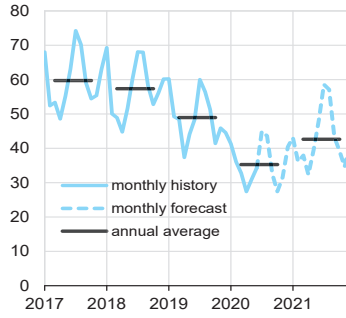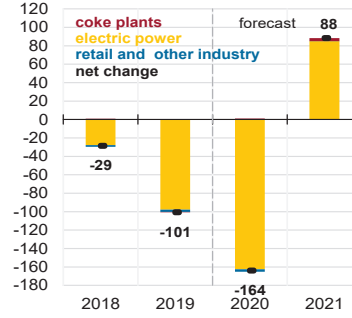
U.S. electric power coal inventories
million short tons
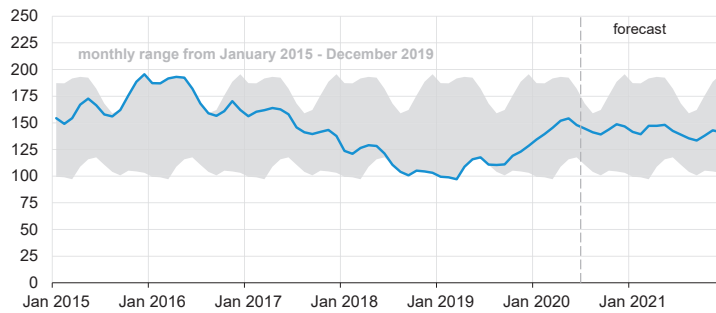
monthly range from January 2015 - December 2019

forecast

Jan 2015 Jan 2016 Jan 2017 Jan 2018 Jan 2019 Jan 2020 Jan 2021

Source: Short-Term Energy Outlook, July 2020

eia

U.S. electricity consumption
billion kilowatthours

- monthly history
- monthly forecast
- annual average

2017 2018 2019 2020 2021
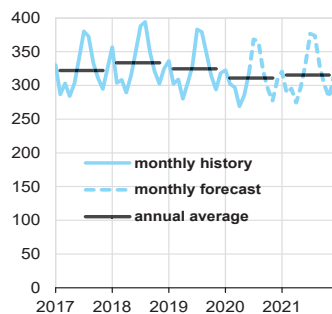
Source: Short-Term Energy Outlook, July 2020

Components of annual change
billion kilowatthours

forecast

residential sales
industrial sales
commercial and
  transportation sales
direct use
net change

139
-108
-165
55

2018 2019 2020 2021

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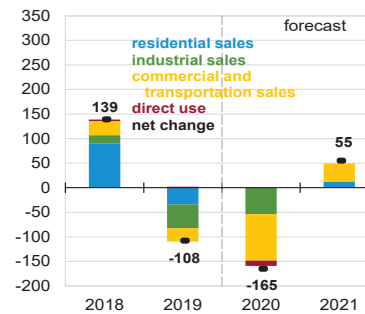
U.S. monthly residential electricity price
cents per kilowatthour

— history
--- forecast
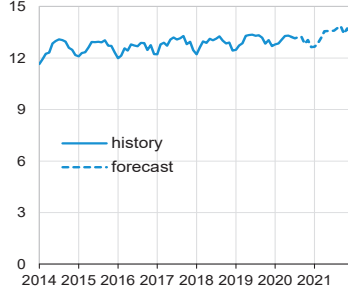
Source: Short-Term Energy Outlook, July 2020

Annual growth in residential electricity prices
percent

3.2% 1.1% -0.8% 2.7% -0.1% 1.3% forecast 0.2% 2.8%
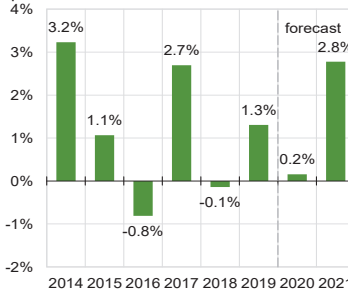
U.S. electricity generation by fuel, all sectors
trillion kilowatthours

forecast

coal
natural gas
nuclear
non-hydro renewables
hydropower
other

percent share

forecast
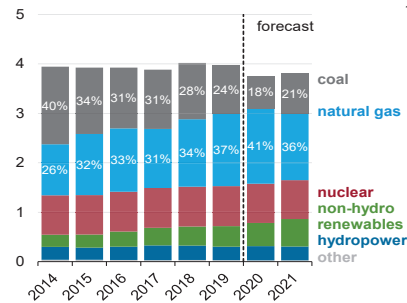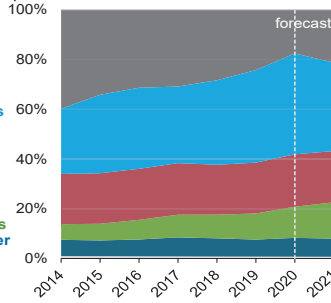
Note: Labels show percentage share of total generation provided by coal and natural gas.
Source: Short-Term Energy Outlook, July 2020

U.S. renewable energy supply
quadrillion British thermal units

forecast
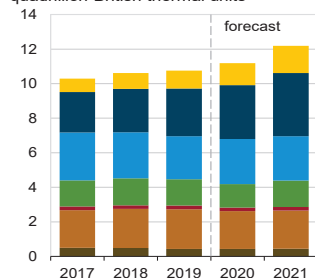
Components of annual change
quadrillion British thermal units

forecast 1.00

0.32 0.15 0.43

net change
solar
wind
hydropower
liquid biofuels
geothermal
wood biomass
waste biomass
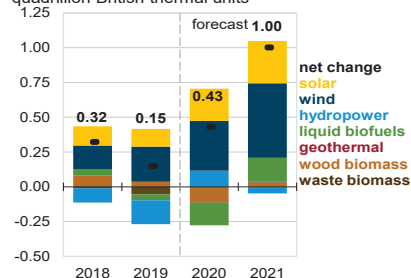
Note: Hydropower excludes pumped storage generation. Liquid biofuels include ethanol and biodiesel. Other biomass includes municipal waste from biogenic sources, landfill gas, and other non-wood waste.
Source: Short-Term Energy Outlook, July 2020

U.S. annual carbon emissions by source
million metric tons
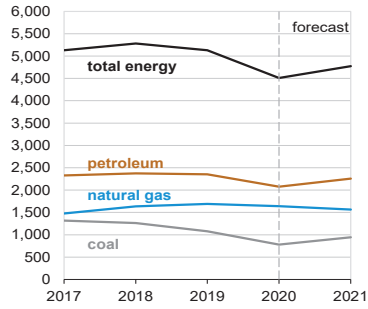
Source: Short-Term Energy Outlook, July 2020

Components of annual change
million metric tons
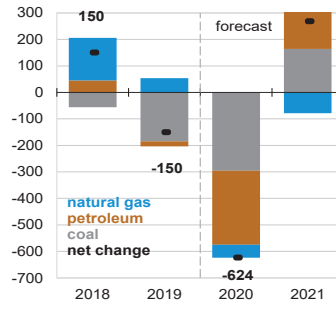
U.S. annual energy expenditures
share of gross domestic product
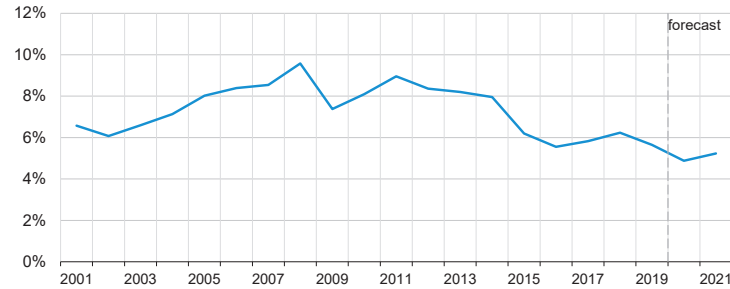
Source: Short-Term Energy Outlook, July 2020

U.S. summer cooling degree days
population-weighted
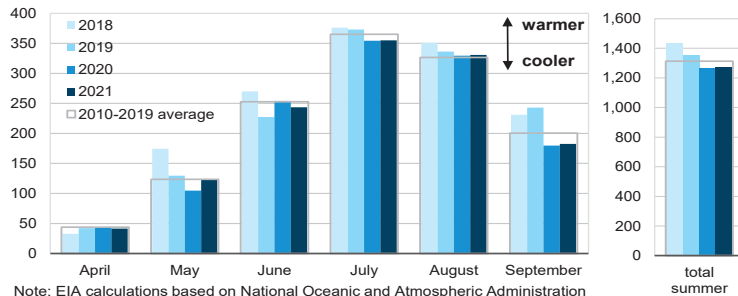
Note: EIA calculations based on National Oceanic and Atmospheric Administration (NOAA) data. Projections reflect NOAA's 14-16 month outlook.

Source: Short-Term Energy Outlook, July 2020

U.S. winter heating degree days
population-weighted
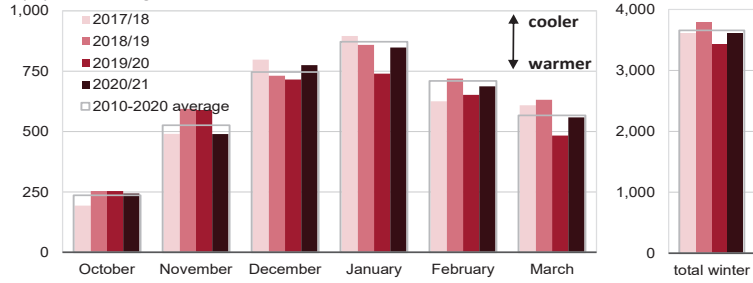
Legend:
- 2017/18
- 2018/19
- 2019/20
- 2020/21
- 2010-2020 average

cooler / warmer

Months: October, November, December, January, February, March — total winter

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

Source: Short-Term Energy Outlook, July 2020

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U.S. Census regions and divisions

West — Midwest — Northeast

Mountain division, Pacific Contiguous division, Pacific Noncontiguous division, West North Central division, East North Central division, New England division, Middle Atlantic division, South Atlantic division, East South Central division, West South Central division, South
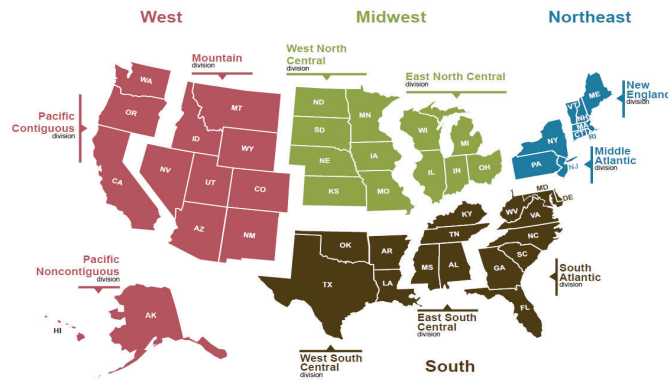
Source: U.S. Energy Information Administration, *Short-Term Energy Outlook*

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Table 1. U.S. Energy Markets Summary
U.S. Energy Information Administration | Short-Term Energy Outlook - July 2020

	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2021 Q1	2021 Q2	2021 Q3	2021 Q4	Year 2019	Year 2020	Year 2021
Energy Supply															
Crude Oil Production (a) (million barrels per day)	11.81	12.10	12.23	12.78	12.74	11.41	11.29	11.10	11.02	10.93	10.97	11.13	12.23	11.63	11.01
Dry Natural Gas Production (billion cubic feet per day)	89.32	90.50	92.98	95.97	94.50	89.91	87.27	85.37	83.48	83.25	84.53	85.63	92.21	89.24	84.23
Coal Production (million short tons)	180	179	181	165	149	113	127	113	132	113	150	141	705	501	536
Energy Consumption															
Liquid Fuels (million barrels per day)	20.30	20.31	20.67	20.57	19.33	16.11	18.67	19.22	19.36	19.73	20.33	20.34	20.46	18.34	19.94
Natural Gas (billion cubic feet per day)	103.32	70.74	76.74	89.33	99.25	70.96	75.02	84.24	95.24	66.79	69.40	83.28	84.97	82.35	78.62
Coal (b) (million short tons)	158	130	168	132	110	93	121	99	117	120	159	115	587	423	511
Electricity (billion kilowatt hours per day)	10.53	10.02	12.06	10.07	10.13	9.59	11.48	9.56	10.05	9.94	11.73	9.75	10.67	10.19	10.37
Renewables (c) (quadrillion Btu)	2.81	3.08	2.80	2.79	2.91	3.00	2.93	2.97	3.21	3.36	3.16	3.17	11.48	11.81	12.90
Total Energy Consumption (d) (quadrillion Btu)	26.54	23.43	24.97	25.22	25.11	20.33	22.68	23.29	24.54	22.42	23.83	24.16	100.17	91.41	94.95
Energy Prices															
Crude Oil West Texas Intermediate Spot (dollars per barrel)	54.82	59.94	56.35	56.86	45.34	27.78	37.84	39.50	42.07	45.00	46.99	48.52	57.02	37.55	45.70
Natural Gas Henry Hub Spot (dollars per million Btu)	2.92	2.56	2.38	2.40	1.91	1.71	1.65	2.46	3.05	2.99	3.12	3.23	2.57	1.93	3.10
Coal (dollars per million Btu)	2.08	2.05	2.00	1.95	1.92	2.00	2.00	2.00	2.04	2.05	2.04	2.04	2.02	1.98	2.04
Macroeconomic															
Real Gross Domestic Product (billion chained 2012 dollars - SAAR)	18,927	19,022	19,121	19,222	18,975	16,559	17,066	17,467	17,930	18,327	18,599	18,817	19,073	17,517	18,418
Percent change from prior year	2.7	2.3	2.1	2.3	0.3	-12.9	-10.7	-9.1	-5.5	10.7	9.0	7.7	2.3	-8.2	5.1
GDP Implicit Price Deflator (Index, 2012=100)	111.5	112.2	112.7	113.0	113.4	113.1	113.5	113.6	113.7	114.0	114.3	114.6	112.3	113.4	114.2
Percent change from prior year	2.0	1.8	1.7	1.6	1.7	0.8	0.7	0.5	0.3	0.8	0.7	0.9	1.8	1.0	0.6
Real Disposable Personal Income (billion chained 2012 dollars - SAAR)	14,878	14,934	15,012	15,091	15,126	16,330	15,769	15,232	15,272	15,427	15,524	15,594	14,979	15,614	15,454
Percent change from prior year	3.3	3.0	2.7	2.6	1.7	9.3	5.0	0.9	1.0	-5.5	-1.5	2.4	2.9	4.2	-1.0
Manufacturing Production Index (Index, 2012=100)	106.5	105.7	105.9	105.8	104.3	83.6	81.9	82.5	85.9	89.3	91.4	92.9	106.0	88.1	89.9
Percent change from prior year	1.6	0.1	-0.6	-1.1	-2.1	-20.9	-22.6	-22.0	-17.6	6.9	11.6	12.6	0.0	-16.9	2.1
Weather															
U.S. Heating Degree-Days	2,210	480	56	1,558	1,875	542	69	1,508	2,094	483	71	1,506	4,304	3,994	4,154
U.S. Cooling Degree-Days	46	399	952	105	71	402	864	96	46	409	868	96	1,502	1,432	1,419

- = no data available

Prices are not adjusted for inflation.

(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).

Notes: 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; *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.

Projections: EIA Regional Short-Term Energy Model. U.S. macroeconomic projections are based on the IHS Markit model of the U.S. Economy. Weather projections from National Oceanic and Atmospheric Administration.

Table 2. Energy Prices

U.S. Energy Information Administration | Short-Term Energy Outlook - July 2020

	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2021 Q1	2021 Q2	2021 Q3	2021 Q4	Year 2019	Year 2020	Year 2021
Crude Oil (dollars per barrel)															
West Texas Intermediate Spot Average	54.82	59.94	56.35	56.86	45.34	27.78	37.84	39.50	42.07	45.00	46.99	48.52	57.02	37.55	45.70
Brent Spot Average	63.14	69.07	61.90	63.30	49.97	29.34	40.00	43.00	46.07	49.00	50.99	52.52	64.37	40.50	49.70
U.S. Imported Average	55.35	62.98	57.30	55.57	43.69	28.92	36.34	37.37	39.57	42.39	44.24	45.50	57.97	36.62	43.08
U.S. Refiner Average Acquisition Cost	57.08	63.54	58.67	58.05	47.45	31.94	40.41	39.85	41.05	43.41	45.24	46.51	59.36	40.25	44.12
U.S. Liquid Fuels (cents per gallon)															
Refiner Prices for Resale															
Gasoline	167	205	189	182	153	100	126	128	133	157	157	146	186	128	149
Diesel Fuel	192	203	192	197	160	101	123	132	140	154	162	167	196	129	156
Heating Oil	189	195	184	191	160	93	110	124	141	149	160	166	190	124	148
Refiner Prices to End Users															
Jet Fuel	193	204	194	197	165	84	112	120	133	142	153	160	197	128	148
No. 6 Residual Fuel Oil (a)	153	163	155	162	176	104	129	131	102	104	106	110	158	134	106
Retail Prices Including Taxes															
Gasoline Regular Grade (b)	236	279	265	259	241	194	206	201	202	233	233	221	260	211	223
Gasoline All Grades (b)	245	288	274	269	251	203	217	214	215	246	247	234	269	222	236
On-highway Diesel Fuel	302	312	302	306	289	243	233	241	245	254	264	270	306	252	259
Heating Oil	300	305	290	301	280	206	213	236	245	249	259	276	300	247	258
Natural Gas															
Henry Hub Spot (dollars per thousand cubic feet)	3.03	2.66	2.47	2.49	1.98	1.77	1.72	2.55	3.17	3.11	3.24	3.35	2.66	2.00	3.22
Henry Hub Spot (dollars per million Btu)	2.92	2.56	2.38	2.40	1.91	1.71	1.65	2.46	3.05	2.99	3.12	3.23	2.57	1.93	3.10
U.S. Retail Prices (dollars per thousand cubic feet)															
Industrial Sector	4.67	3.74	3.30	3.74	3.52	2.72	2.50	3.41	4.33	3.94	4.04	4.50	3.91	3.07	4.22
Commercial Sector	7.59	7.97	8.40	7.22	7.21	7.60	7.73	6.95	7.25	8.04	8.65	8.01	7.62	7.25	7.76
Residential Sector	9.47	12.48	18.10	9.88	9.51	12.13	16.44	9.76	9.22	12.31	17.25	10.83	10.56	10.52	10.65
U.S. Electricity															
Power Generation Fuel Costs (dollars per million Btu)															
Coal	2.08	2.05	2.00	1.95	1.92	2.00	2.00	2.00	2.04	2.05	2.04	2.04	2.02	1.98	2.04
Natural Gas	3.71	2.73	2.51	2.78	2.40	1.85	1.55	2.63	3.57	3.24	3.33	3.61	2.88	2.05	3.43
Residual Fuel Oil (c)	12.21	13.39	12.79	12.52	12.15	7.23	7.30	7.75	8.68	9.93	9.72	9.78	12.72	8.52	9.54
Distillate Fuel Oil	14.83	15.77	15.01	15.10	13.29	8.43	9.73	10.54	11.07	12.15	12.68	13.10	15.16	10.52	12.29
Retail Prices (cents per kilowatthour)															
Industrial Sector	6.66	6.71	7.25	6.66	6.38	6.62	7.16	6.75	6.69	6.93	7.59	6.94	6.83	6.73	7.05
Commercial Sector	10.43	10.64	11.00	10.53	10.35	10.56	10.83	10.38	10.32	10.76	11.23	10.87	10.66	10.54	10.82
Residential Sector	12.68	13.33	13.27	12.85	12.90	13.26	13.20	12.82	12.87	13.57	13.72	13.45	13.04	13.06	13.42

- = no data available

Prices are not adjusted for inflation.

(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.

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

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.

WTI and Brent crude oils, and Henry Hub natural gas spot prices from Reuter's News Service (http://www.reuters.com).

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

Projections: EIA Regional Short-Term Energy Model.

Table 3a. International Petroleum and Other Liquids Production, Consumption, and Inventories
U.S. Energy Information Administration | Short-Term Energy Outlook - July 2020

	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2021 Q1	2021 Q2	2021 Q3	2021 Q4	Year 2019	Year 2020	Year 2021
Supply (million barrels per day) (a)															
OECD	31.04	31.29	31.45	32.76	32.89	29.39	29.78	30.40	30.44	30.54	30.74	31.38	31.64	30.61	30.78
U.S. (50 States)	18.85	19.32	19.42	20.21	20.22	18.08	18.38	18.40	18.26	18.46	18.55	18.79	19.45	18.77	18.52
Canada	5.44	5.47	5.47	5.63	5.63	4.58	4.76	5.28	5.38	5.46	5.51	5.73	5.50	5.06	5.52
Mexico	1.91	1.91	1.93	1.93	2.00	1.90	1.80	1.77	1.79	1.79	1.75	1.74	1.92	1.86	1.77
Other OECD	4.85	4.59	4.63	4.99	5.03	4.84	4.84	4.95	5.02	4.83	4.93	5.13	4.77	4.91	4.97
Non-OECD	69.27	69.15	68.68	68.94	67.89	62.87	61.05	64.14	66.04	68.06	68.99	68.79	69.01	63.98	67.98
OPEC	35.44	34.97	33.93	34.38	33.62	30.49	28.32	31.00	33.02	33.96	34.30	34.33	34.67	30.85	33.90
Crude Oil Portion	29.94	29.47	28.66	29.02	28.29	25.77	23.68	26.35	28.26	29.26	29.61	29.64	29.27	26.02	29.20
Other Liquids (b)	5.50	5.50	5.27	5.37	5.33	4.72	4.64	4.65	4.76	4.69	4.69	4.69	5.41	4.83	4.71
Eurasia	14.87	14.43	14.59	14.67	14.74	13.18	12.74	13.22	13.74	14.13	14.31	14.44	14.64	13.47	14.16
China	4.89	4.92	4.89	4.88	4.96	4.88	4.86	4.92	4.82	4.86	4.86	4.91	4.89	4.91	4.86
Other Non-OECD	14.07	14.83	15.27	15.01	14.56	14.32	15.13	15.00	14.47	15.11	15.52	15.11	14.80	14.76	15.06
Total World Supply	100.31	100.44	100.13	101.70	100.78	92.26	90.83	94.54	96.49	98.60	99.73	100.17	100.65	94.59	98.76
Non-OPEC Supply	64.87	65.48	66.20	67.32	67.15	61.78	62.51	63.54	63.47	64.64	65.43	65.84	65.98	63.74	64.85
Consumption (million barrels per day) (c)															
OECD	47.44	46.75	47.86	47.52	45.26	37.70	43.10	44.50	45.05	44.81	46.17	46.39	47.39	42.65	45.61
U.S. (50 States)	20.30	20.31	20.67	20.57	19.33	16.11	18.67	19.22	19.36	19.73	20.33	20.34	20.46	18.34	19.94
U.S. Territories	0.16	0.15	0.15	0.16	0.16	0.14	0.14	0.15	0.16	0.14	0.14	0.15	0.15	0.15	0.15
Canada	2.45	2.44	2.57	2.54	2.54	2.09	2.40	2.44	2.45	2.40	2.51	2.48	2.50	2.36	2.46
Europe	13.90	14.05	14.53	13.94	13.21	11.14	12.88	12.96	13.01	13.25	13.78	13.53	14.11	12.55	13.39
Japan	4.09	3.41	3.44	3.76	3.70	2.72	3.03	3.40	3.67	3.03	3.12	3.44	3.67	3.22	3.31
Other OECD	6.55	6.40	6.48	6.55	6.32	5.50	5.97	6.33	6.41	6.26	6.30	6.46	6.49	6.03	6.36
Non-OECD	52.59	53.92	54.06	54.01	49.97	46.68	51.18	53.13	53.20	54.48	54.66	54.70	53.65	50.25	54.26
Eurasia	5.01	5.06	5.45	5.30	4.91	4.48	5.27	5.23	5.00	5.08	5.47	5.33	5.21	4.97	5.22
Europe	0.77	0.76	0.78	0.78	0.72	0.71	0.74	0.74	0.72	0.72	0.74	0.74	0.77	0.73	0.73
China	14.45	14.65	14.37	14.58	13.10	12.15	13.10	14.50	15.11	15.36	15.09	15.34	14.51	13.21	15.22
Other Asia	13.77	14.14	13.76	14.10	13.28	11.81	13.09	13.81	14.19	14.38	13.98	14.35	13.95	13.00	14.22
Other Non-OECD	18.59	19.31	19.70	19.24	17.96	17.52	18.99	18.85	18.17	18.94	19.39	18.95	19.21	18.34	18.87
Total World Consumption	100.03	100.67	101.91	101.53	95.23	84.37	94.28	97.63	98.25	99.29	100.83	101.09	101.04	92.89	99.88
Total Crude Oil and Other Liquids Inventory Net Withdrawals (million barrels per day)															
U.S. (50 States)	0.26	-0.64	0.05	0.29	-0.43	-1.69	0.64	0.70	0.31	-0.28	-0.02	0.36	-0.01	-0.19	0.09
Other OECD	-0.20	0.01	-0.16	0.27	-0.54	-1.92	0.91	0.77	0.48	0.31	0.36	0.18	-0.02	-0.19	0.33
Other Stock Draws and Balance	-0.34	0.86	1.89	-0.74	-4.58	-4.29	1.90	1.63	0.98	0.67	0.76	0.38	0.42	-1.32	0.70
Total Stock Draw	-0.28	0.23	1.78	-0.18	-5.55	-7.89	3.45	3.09	1.76	0.69	1.10	0.92	0.39	-1.70	1.12
End-of-period Commercial Crude Oil and Other Liquids Inventories (million barrels)															
U.S. Commercial Inventory	1,241	1,304	1,299	1,282	1,321	1,452	1,398	1,345	1,329	1,357	1,360	1,329	1,282	1,345	1,329
OECD Commercial Inventory	2,860	2,921	2,932	2,890	2,978	3,283	3,146	3,022	2,962	2,963	2,932	2,885	2,890	3,022	2,885

- = 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.

(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.

Notes: 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.

Projections: EIA Regional Short-Term Energy Model.

Table 3b. Non-OPEC Petroleum and Other Liquids Production (million barrels per day)
U.S. Energy Information Administration | Short-Term Energy Outlook - July 2020

	2019				2020				2021				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2019	2020	2021
North America	26.19	26.70	26.82	27.77	27.86	24.56	24.94	25.45	25.43	25.71	25.81	26.26	26.87	25.70	25.80
Canada	5.44	5.47	5.47	5.63	5.63	4.58	4.76	5.28	5.38	5.46	5.51	5.73	5.50	5.06	5.52
Mexico	1.91	1.91	1.93	1.93	2.00	1.90	1.80	1.77	1.79	1.79	1.75	1.74	1.92	1.86	1.77
United States	18.85	19.32	19.42	20.21	20.22	18.08	18.38	18.40	18.26	18.46	18.55	18.79	19.45	18.77	18.52
Central and South America	5.44	6.22	6.80	6.45	6.03	6.05	6.86	6.60	6.08	6.79	7.19	6.79	6.23	6.39	6.71
Argentina	0.66	0.70	0.70	0.70	0.67	0.57	0.67	0.67	0.66	0.67	0.68	0.67	0.69	0.65	0.67
Brazil	2.90	3.65	4.23	3.89	3.43	3.86	4.30	4.00	3.50	4.32	4.69	4.26	3.67	3.90	4.20
Colombia	0.92	0.92	0.91	0.91	0.90	0.81	0.84	0.88	0.87	0.79	0.82	0.85	0.92	0.86	0.83
Ecuador	0.53	0.53	0.55	0.52	0.54	0.33	0.53	0.53	0.52	0.51	0.49	0.48	0.53	0.48	0.50
Other Central and S. America	0.42	0.41	0.42	0.43	0.49	0.47	0.52	0.53	0.52	0.50	0.51	0.52	0.42	0.50	0.51
Europe	4.26	3.97	3.96	4.29	4.43	4.30	4.27	4.36	4.43	4.25	4.35	4.56	4.12	4.34	4.40
Norway	1.79	1.58	1.66	1.96	2.06	2.03	2.02	2.04	2.12	2.08	2.12	2.22	1.75	2.04	2.14
United Kingdom	1.25	1.17	1.11	1.15	1.19	1.15	1.11	1.15	1.14	1.01	1.07	1.17	1.17	1.15	1.10
Eurasia	14.87	14.43	14.59	14.67	14.74	13.18	12.74	13.22	13.74	14.13	14.31	14.44	14.64	13.47	14.16
Azerbaijan	0.82	0.79	0.78	0.77	0.78	0.69	0.68	0.71	0.73	0.74	0.75	0.75	0.79	0.71	0.74
Kazakhstan	2.03	1.85	1.96	2.02	2.06	1.87	1.79	1.89	1.97	1.91	1.94	1.98	1.97	1.90	1.95
Russia	11.58	11.41	11.48	11.50	11.52	10.23	9.88	10.24	10.67	11.12	11.25	11.35	11.49	10.47	11.10
Turkmenistan	0.29	0.23	0.22	0.23	0.24	0.25	0.25	0.25	0.24	0.24	0.24	0.24	0.24	0.25	0.24
Other Eurasia	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.13	0.13	0.13	0.13	0.15	0.14	0.13
Middle East	3.11	3.11	3.12	3.12	3.21	3.16	3.09	3.15	3.23	3.23	3.25	3.25	3.11	3.15	3.24
Oman	0.98	0.98	0.98	0.99	1.01	0.93	0.87	0.92	0.97	0.97	0.99	0.99	0.98	0.93	0.98
Qatar	2.00	2.00	2.00	2.00	2.06	2.06	2.06	2.06	2.10	2.10	2.10	2.10	2.00	2.06	2.10
Asia and Oceania	9.48	9.51	9.37	9.47	9.42	9.10	9.17	9.32	9.19	9.17	9.16	9.19	9.46	9.25	9.18
Australia	0.42	0.47	0.51	0.54	0.49	0.52	0.53	0.55	0.54	0.53	0.52	0.52	0.49	0.52	0.53
China	4.89	4.92	4.89	4.88	4.96	4.88	4.86	4.92	4.82	4.86	4.86	4.91	4.89	4.91	4.86
India	1.01	0.99	0.98	0.99	0.96	0.89	0.90	0.91	0.91	0.89	0.88	0.89	0.99	0.91	0.89
Indonesia	0.93	0.94	0.92	0.91	0.88	0.89	0.88	0.87	0.86	0.85	0.84	0.83	0.93	0.88	0.84
Malaysia	0.75	0.73	0.65	0.72	0.72	0.55	0.59	0.67	0.65	0.65	0.66	0.65	0.71	0.63	0.65
Vietnam	0.25	0.25	0.23	0.22	0.22	0.21	0.21	0.21	0.20	0.20	0.19	0.19	0.24	0.21	0.20
Africa	1.52	1.54	1.55	1.54	1.47	1.43	1.44	1.43	1.37	1.36	1.35	1.36	1.54	1.44	1.36
Egypt	0.66	0.65	0.65	0.65	0.60	0.60	0.60	0.60	0.56	0.56	0.56	0.56	0.65	0.60	0.56
South Sudan	0.17	0.18	0.18	0.18	0.18	0.15	0.17	0.17	0.17	0.17	0.17	0.17	0.18	0.17	0.17
Total non-OPEC liquids	64.87	65.48	66.20	67.32	67.15	61.78	62.51	63.54	63.47	64.64	65.43	65.84	65.98	63.74	64.85
OPEC non-crude liquids	5.50	5.50	5.27	5.37	5.33	4.72	4.64	4.65	4.76	4.69	4.69	4.69	5.41	4.83	4.71
Non-OPEC + OPEC non-crude	70.37	70.97	71.48	72.69	72.48	66.50	67.15	68.18	68.23	69.33	70.12	70.53	71.38	68.57	69.56
Unplanned non-OPEC Production Outages	0.35	0.26	0.39	0.31	0.16	0.76	n/a	n/a	n/a	n/a	n/a	n/a	0.33	n/a	n/a

- = 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: 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.

Projections: EIA Regional Short-Term Energy Model.

Table 3c. OPEC Crude Oil (excluding condensates) Production (million barrels per day)
U.S. Energy Information Administration | Short-Term Energy Outlook - July 2020

	2019				2020				2021				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2019	2020	2021
Crude Oil															
Algeria	1.01	1.02	1.02	1.02	1.03	0.90	-	-	-	-	-	-	1.02	-	-
Angola	1.50	1.43	1.40	1.36	1.36	1.26	-	-	-	-	-	-	1.42	-	-
Congo (Brazzaville)	0.33	0.33	0.33	0.32	0.29	0.28	-	-	-	-	-	-	0.32	-	-
Equatorial Guinea	0.11	0.11	0.13	0.13	0.13	0.12	-	-	-	-	-	-	0.12	-	-
Gabon	0.20	0.20	0.20	0.20	0.19	0.18	-	-	-	-	-	-	0.20	-	-
Iran	2.63	2.33	2.10	2.03	2.02	1.97	-	-	-	-	-	-	2.27	-	-
Iraq	4.75	4.70	4.70	4.65	4.56	4.17	-	-	-	-	-	-	4.70	-	-
Kuwait	2.74	2.72	2.70	2.70	2.77	2.51	-	-	-	-	-	-	2.72	-	-
Libya	0.93	1.14	1.13	1.17	0.35	0.08	-	-	-	-	-	-	1.09	-	-
Nigeria	1.58	1.65	1.71	1.67	1.72	1.55	-	-	-	-	-	-	1.65	-	-
Saudi Arabia	10.00	9.92	9.38	9.83	9.80	9.31	-	-	-	-	-	-	9.78	-	-
United Arab Emirates	3.12	3.12	3.13	3.20	3.30	2.91	-	-	-	-	-	-	3.14	-	-
Venezuela	1.05	0.79	0.73	0.73	0.77	0.53	-	-	-	-	-	-	0.83	-	-
OPEC Total	29.94	29.47	28.66	29.02	28.29	25.77	23.68	26.35	28.26	29.26	29.61	29.64	29.27	26.02	29.20
Other Liquids (a)	5.50	5.50	5.27	5.37	5.33	4.72	4.64	4.65	4.76	4.69	4.69	4.69	5.41	4.83	4.71
Total OPEC Supply	35.44	34.97	33.93	34.38	33.62	30.49	28.32	31.00	33.02	33.96	34.30	34.33	34.67	30.85	33.90
Crude Oil Production Capacity															
Middle East	25.66	25.53	24.58	24.74	25.61	26.02	26.07	26.17	26.27	26.29	26.28	26.28	25.12	25.97	26.28
Other	6.71	6.68	6.65	6.60	5.83	5.63	5.52	6.08	5.98	5.96	6.00	6.02	6.66	5.77	5.99
OPEC Total	32.37	32.22	31.22	31.34	31.44	31.66	31.59	32.25	32.24	32.25	32.28	32.30	31.78	31.73	32.27
Surplus Crude Oil Production Capacity															
Middle East	2.43	2.75	2.57	2.32	3.15	5.15	6.95	5.29	3.87	2.89	2.58	2.58	2.52	5.14	2.97
Other	0.00	0.00	0.00	0.00	0.00	0.74	0.95	0.61	0.12	0.10	0.09	0.08	0.00	0.58	0.10
OPEC Total	2.43	2.75	2.57	2.32	3.15	5.89	7.90	5.90	3.98	2.99	2.67	2.66	2.52	5.72	3.07
Unplanned OPEC Production Outages	2.52	2.51	3.24	2.91	3.67	4.10	n/a	n/a	n/a	n/a	n/a	n/a	2.80	n/a	n/a

- = no data available

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).

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

Notes: 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.

Projections: EIA Regional Short-Term Energy Model.

Table 3d. World Petroleum and Other Liquids Consumption (million barrels per day)
U.S. Energy Information Administration | Short-Term Energy Outlook - July 2020

	2019				2020				2021						
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2019	2020	2021
North America	24.69	24.70	25.19	24.98	23.69	19.82	22.82	23.53	23.63	23.98	24.67	24.67	24.89	22.47	24.24
Canada	2.45	2.44	2.57	2.54	2.54	2.09	2.40	2.44	2.45	2.40	2.51	2.48	2.50	2.36	2.46
Mexico	1.93	1.94	1.93	1.86	1.82	1.61	1.74	1.87	1.82	1.84	1.83	1.84	1.92	1.76	1.83
United States	20.30	20.31	20.67	20.57	19.33	16.11	18.67	19.22	19.36	19.73	20.33	20.34	20.46	18.34	19.94
Central and South America	6.70	6.82	6.92	6.93	6.45	6.08	6.61	6.76	6.54	6.71	6.85	6.86	6.84	6.48	6.74
Brazil	3.03	3.10	3.19	3.18	2.98	2.74	3.11	3.19	3.05	3.13	3.24	3.24	3.13	3.01	3.16
Europe	14.66	14.81	15.31	14.72	13.93	11.84	13.61	13.71	13.73	13.98	14.51	14.27	14.88	13.27	14.13
Eurasia	5.01	5.06	5.45	5.30	4.91	4.48	5.27	5.23	5.00	5.08	5.47	5.33	5.21	4.97	5.22
Russia	3.64	3.74	4.04	3.89	3.60	3.24	3.93	3.87	3.72	3.82	4.14	3.99	3.83	3.66	3.92
Middle East	8.10	8.66	9.04	8.38	7.86	7.90	8.81	8.28	7.95	8.54	8.93	8.28	8.55	8.21	8.43
Asia and Oceania	36.36	36.09	35.57	36.59	34.04	30.04	32.89	35.63	37.04	36.65	36.10	37.21	36.15	33.15	36.75
China	14.45	14.65	14.37	14.58	13.10	12.15	13.10	14.50	15.11	15.36	15.09	15.34	14.51	13.21	15.22
Japan	4.09	3.41	3.44	3.76	3.70	2.72	3.03	3.40	3.67	3.03	3.12	3.44	3.67	3.22	3.31
India	4.68	4.95	4.66	4.94	4.63	3.75	4.51	4.90	5.04	5.11	4.77	5.08	4.81	4.45	5.00
Africa	4.50	4.52	4.44	4.63	4.35	4.21	4.27	4.49	4.35	4.37	4.29	4.48	4.52	4.33	4.37
Total OECD Liquid Fuels Consumption	47.44	46.75	47.86	47.52	45.26	37.70	43.10	44.50	45.05	44.81	46.17	46.39	47.39	42.65	45.61
Total non-OECD Liquid Fuels Consumption	52.59	53.92	54.06	54.01	49.97	46.68	51.18	53.13	53.20	54.48	54.66	54.70	53.65	50.25	54.26
Total World Liquid Fuels Consumption	100.03	100.67	101.91	101.53	95.23	84.37	94.28	97.63	98.25	99.29	100.83	101.09	101.04	92.89	99.88
Oil-weighted Real Gross Domestic Product (a)															
World Index, 2015 Q1 = 100	112.0	112.8	112.8	112.4	109.0	101.2	105.9	108.2	110.7	112.5	113.5	114.3	112.5	106.1	112.8
Percent change from prior year	2.4	2.2	1.9	1.4	-2.6	-10.3	-6.1	-3.7	1.5	11.2	7.2	5.6	2.0	-5.7	6.3
OECD Index, 2015 Q1 = 100	108.9	109.9	110.0	109.4	108.0	96.2	101.8	104.2	106.5	108.6	109.6	110.0	109.6	102.6	108.7
Percent change from prior year	1.9	1.8	1.8	1.5	-0.8	-12.5	-7.4	-4.7	-1.4	12.8	7.6	5.6	1.7	-6.4	5.9
Non-OECD Index, 2015 Q1 = 100	115.0	115.7	115.5	115.3	110.0	106.1	109.9	112.1	114.8	116.4	117.4	118.5	115.3	109.5	116.8
Percent change from prior year	2.8	2.5	2.0	1.4	-4.3	-8.3	-4.9	-2.8	4.4	9.8	6.9	5.7	2.2	-5.1	6.6
Real U.S. Dollar Exchange Rate (a)															
Index, 2015 Q1 = 100	105.36	106.01	106.52	106.36	106.93	108.54	107.50	106.85	106.07	105.80	105.34	104.65	106.06	107.45	105.46
Percent change from prior year	4.6	3.1	0.8	0.0	1.5	2.4	0.9	0.5	-0.8	-2.5	-2.0	-2.1	2.1	1.3	-1.9

- = 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.

(a) Weighted geometric mean of real indices for various countries with weights equal to each country's share of world oil consumption in the base period. Exchange rate is measured in foreign currency per U.S. dollar. GDP and exchange rate data are from Oxford Economics, and oil consumption data are from EIA.

Notes: 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.

Projections: EIA Regional Short-Term Energy Model.

Table 4a. U.S. Petroleum and Other Liquids Supply, Consumption, and Inventories
U.S. Energy Information Administration | Short-Term Energy Outlook - July 2020

	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2021 Q1	2021 Q2	2021 Q3	2021 Q4	Year 2019	Year 2020	Year 2021
Supply (million barrels per day)															
Crude Oil Supply															
Domestic Production (a)	11.81	12.10	12.23	12.78	12.74	11.41	11.29	11.10	11.02	10.93	10.97	11.13	12.23	11.63	11.01
Alaska	0.49	0.47	0.43	0.48	0.48	0.42	0.45	0.49	0.50	0.49	0.46	0.49	0.47	0.46	0.49
Federal Gulf of Mexico (b)	1.85	1.93	1.82	1.94	1.96	1.77	1.91	1.92	1.98	1.96	1.88	1.90	1.88	1.89	1.93
Lower 48 States (excl GOM)	9.47	9.70	9.98	10.36	10.31	9.22	8.93	8.70	8.54	8.48	8.63	8.74	9.88	9.29	8.60
Crude Oil Net Imports (c)	4.25	4.14	3.95	2.94	2.90	2.98	3.24	4.46	4.61	5.25	5.55	5.35	3.82	3.40	5.19
SPR Net Withdrawals	0.00	0.05	0.00	0.11	0.00	-0.25	0.06	0.12	0.12	0.03	0.01	0.03	0.04	-0.02	0.05
Commercial Inventory Net Withdrawals	-0.19	-0.05	0.41	-0.07	-0.54	-0.60	0.54	0.08	-0.25	0.15	0.24	-0.01	0.03	-0.13	0.03
Crude Oil Adjustment (d)	0.33	0.53	0.38	0.56	0.67	-0.38	0.21	0.15	0.22	0.22	0.23	0.16	0.45	0.16	0.21
Total Crude Oil Input to Refineries	16.20	16.76	16.97	16.32	15.77	13.16	15.33	15.91	15.72	16.57	16.99	16.65	16.56	15.05	16.49
Other Supply															
Refinery Processing Gain	1.06	1.07	1.07	1.10	1.02	0.89	1.03	1.12	1.10	1.15	1.14	1.14	1.08	1.02	1.13
Natural Gas Plant Liquids Production	4.66	4.81	4.80	4.99	5.12	4.74	4.79	4.86	4.79	4.98	5.05	5.11	4.81	4.88	4.99
Renewables and Oxygenate Production (e)	1.10	1.14	1.12	1.12	1.11	0.84	1.06	1.10	1.13	1.17	1.18	1.19	1.12	1.03	1.17
Fuel Ethanol Production	1.01	1.05	1.02	1.04	1.02	0.71	0.92	0.96	0.98	1.00	1.01	1.02	1.03	0.90	1.00
Petroleum Products Adjustment (f)	0.22	0.20	0.21	0.21	0.22	0.21	0.21	0.22	0.21	0.22	0.22	0.22	0.21	0.21	0.22
Product Net Imports (c)	-3.30	-3.04	-3.13	-3.43	-4.03	-2.88	-3.80	-4.49	-4.05	-3.90	-3.99	-4.32	-3.22	-3.80	-4.07
Hydrocarbon Gas Liquids	-1.33	-1.65	-1.66	-1.83	-1.99	-1.96	-1.87	-1.76	-1.59	-1.79	-1.83	-1.78	-1.62	-1.89	-1.75
Unfinished Oils	0.21	0.47	0.47	0.50	0.31	0.21	0.48	0.37	0.35	0.45	0.44	0.32	0.41	0.34	0.39
Other HC/Oxygenates	-0.08	-0.07	-0.05	-0.05	-0.10	-0.08	-0.10	-0.11	-0.14	-0.13	-0.12	-0.13	-0.06	-0.10	-0.13
Motor Gasoline Blend Comp.	0.43	0.79	0.70	0.46	0.39	0.33	0.33	0.19	0.47	0.71	0.48	0.21	0.60	0.31	0.46
Finished Motor Gasoline	-0.82	-0.63	-0.62	-0.87	-0.72	-0.15	-0.34	-0.60	-0.80	-0.71	-0.63	-0.73	-0.74	-0.45	-0.72
Jet Fuel	-0.08	-0.01	-0.05	-0.09	-0.07	0.09	-0.18	-0.22	-0.21	-0.17	-0.02	-0.09	-0.06	-0.10	-0.12
Distillate Fuel Oil	-0.91	-1.29	-1.30	-0.99	-1.19	-0.86	-1.47	-1.49	-1.36	-1.47	-1.49	-1.28	-1.12	-1.25	-1.40
Residual Fuel Oil	-0.08	-0.15	-0.08	-0.03	-0.02	0.07	-0.09	-0.04	-0.07	-0.13	-0.11	-0.02	-0.08	-0.02	-0.09
Other Oils (g)	-0.64	-0.50	-0.52	-0.54	-0.65	-0.53	-0.55	-0.84	-0.69	-0.66	-0.70	-0.82	-0.55	-0.64	-0.72
Product Inventory Net Withdrawals	0.44	-0.64	-0.36	0.26	0.11	-0.84	0.04	0.49	0.44	-0.47	-0.26	0.35	-0.07	-0.05	0.01
Total Supply	20.38	20.31	20.67	20.57	19.33	16.11	18.67	19.22	19.36	19.73	20.33	20.34	20.48	18.34	19.94
Consumption (million barrels per day)															
Hydrocarbon Gas Liquids	3.49	2.78	2.94	3.31	3.31	2.73	2.82	3.24	3.51	3.01	3.07	3.47	3.13	3.02	3.27
Unfinished Oils	-0.03	0.09	0.04	0.10	0.14	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.04	0.00
Motor Gasoline	8.96	9.48	9.49	9.16	8.49	7.19	8.75	8.83	8.63	9.24	9.36	9.11	9.27	8.32	9.09
Fuel Ethanol blended into Motor Gasoline	0.91	0.97	0.95	0.96	0.85	0.73	0.86	0.90	0.87	0.94	0.94	0.93	0.95	0.84	0.92
Jet Fuel	1.65	1.78	1.79	1.74	1.56	0.66	1.20	1.39	1.38	1.49	1.68	1.62	1.74	1.20	1.54
Distillate Fuel Oil	4.28	4.01	3.94	4.10	3.97	3.50	3.53	3.68	3.78	3.75	3.79	3.93	4.08	3.67	3.81
Residual Fuel Oil	0.27	0.23	0.32	0.27	0.17	0.18	0.26	0.26	0.24	0.21	0.25	0.26	0.27	0.22	0.24
Other Oils (g)	1.68	1.95	2.14	1.88	1.68	1.81	2.11	1.82	1.81	2.02	2.18	1.94	1.91	1.86	1.99
Total Consumption	20.30	20.31	20.67	20.57	19.33	16.11	18.67	19.22	19.36	19.73	20.33	20.34	20.46	18.34	19.94
Total Petroleum and Other Liquids Net Imports	0.95	1.10	0.83	-0.49	-1.13	0.09	-0.56	-0.03	0.57	1.34	1.57	1.03	0.59	-0.40	1.13
End-of-period Inventories (million barrels)															
Commercial Inventory															
Crude Oil (excluding SPR)	459.3	464.0	426.5	432.9	482.5	537.1	487.6	480.0	502.8	489.1	467.3	468.6	432.9	480.0	468.6
Hydrocarbon Gas Liquids	156.9	224.1	262.8	211.7	180.8	222.8	256.7	214.2	176.1	225.0	261.5	218.9	211.7	214.2	218.9
Unfinished Oils	92.0	95.9	92.2	89.4	100.1	88.2	88.9	83.4	93.5	91.3	90.5	84.9	89.4	83.4	84.9
Other HC/Oxygenates	30.8	29.0	28.4	27.8	33.6	26.0	25.8	25.5	26.8	25.8	25.1	25.7	27.8	25.5	25.7
Total Motor Gasoline	236.1	229.7	231.9	253.8	260.8	255.0	235.9	245.8	247.3	247.2	240.7	251.8	253.8	245.8	251.8
Finished Motor Gasoline	21.7	21.0	23.0	26.0	22.6	24.0	24.7	24.8	24.0	22.7	23.7	24.2	26.0	24.8	24.2
Motor Gasoline Blend Comp.	214.4	208.8	208.9	227.9	238.3	231.1	211.2	220.9	223.3	224.5	217.0	227.7	227.9	220.9	227.7
Jet Fuel	41.6	40.6	44.4	40.5	39.9	42.3	43.9	42.0	41.3	41.9	43.9	40.9	40.5	42.0	40.9
Distillate Fuel Oil	132.4	130.8	131.7	140.0	126.7	174.1	165.9	162.1	142.2	139.6	141.6	145.4	140.0	162.1	145.4
Residual Fuel Oil	28.7	30.3	29.9	30.9	34.4	41.8	35.6	32.6	33.7	34.4	32.3	33.8	30.9	32.6	33.8
Other Oils (g)	63.2	59.1	51.2	54.6	62.0	64.4	58.0	59.7	64.8	63.0	57.0	58.9	54.6	59.7	58.9
Total Commercial Inventory	1,241	1,304	1,299	1,282	1,321	1,452	1,398	1,345	1,329	1,357	1,360	1,329	1,282	1,345	1,329
Crude Oil in SPR	649	645	645	635	635	658	652	642	631	628	627	624	635	642	624

- = no data available
(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.
(f) Petroleum products adjustment includes hydrogen/oxygenates/renewables/other hydrocarbons, motor gasoline blend components, and finished motor gasoline.
(g) "Other Oils" inludes 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.
Notes: The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.
SPR: Strategic Petroleum Reserve
HC: Hydrocarbons
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.
Projections: EIA Regional Short-Term Energy Model.

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 2020

	2019				2020				2021				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2019	2020	2021
HGL Production															
Natural Gas Processing Plants															
Ethane	1.87	1.87	1.71	1.85	1.93	1.72	1.87	1.98	2.02	2.12	2.11	2.17	1.83	1.87	2.10
Propane	1.50	1.56	1.61	1.67	1.72	1.62	1.55	1.53	1.49	1.52	1.55	1.56	1.59	1.61	1.53
Butanes	0.79	0.84	0.87	0.89	0.91	0.87	0.83	0.82	0.78	0.81	0.83	0.84	0.85	0.86	0.82
Natural Gasoline (Pentanes Plus)	0.49	0.55	0.60	0.57	0.56	0.54	0.54	0.52	0.50	0.54	0.57	0.54	0.55	0.54	0.54
Refinery and Blender Net Production															
Ethane/Ethylene	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Propane	0.28	0.30	0.29	0.29	0.29	0.24	0.27	0.28	0.28	0.30	0.30	0.30	0.29	0.27	0.29
Propylene (refinery-grade)	0.28	0.28	0.28	0.28	0.25	0.26	0.27	0.28	0.28	0.29	0.28	0.29	0.28	0.26	0.29
Butanes/Butylenes	-0.09	0.26	0.18	-0.23	-0.08	0.23	0.18	-0.20	-0.09	0.26	0.18	-0.20	0.03	0.03	0.04
Renewable Fuels and Oxygenate Plant Net Production															
Natural Gasoline (Pentanes Plus)	-0.02	-0.02	-0.02	-0.02	-0.02	-0.01	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
HGL Net Imports															
Ethane	-0.27	-0.27	-0.28	-0.31	-0.30	-0.24	-0.24	-0.27	-0.27	-0.29	-0.31	-0.30	-0.28	-0.26	-0.29
Propane/Propylene	-0.75	-0.99	-0.97	-1.07	-1.12	-1.04	-1.00	-1.02	-0.85	-0.97	-0.97	-1.01	-0.94	-1.05	-0.95
Butanes/Butylenes	-0.14	-0.26	-0.26	-0.25	-0.30	-0.42	-0.36	-0.25	-0.22	-0.28	-0.29	-0.23	-0.23	-0.33	-0.25
Natural Gasoline (Pentanes Plus)	-0.17	-0.14	-0.15	-0.21	-0.27	-0.25	-0.27	-0.23	-0.26	-0.25	-0.26	-0.25	-0.17	-0.26	-0.25
HGL Refinery and Blender Net Inputs															
Butanes/Butylenes	0.46	0.29	0.33	0.54	0.46	0.17	0.27	0.49	0.40	0.29	0.33	0.51	0.40	0.35	0.38
Natural Gasoline (Pentanes Plus)	0.14	0.17	0.18	0.18	0.15	0.14	0.18	0.19	0.17	0.18	0.18	0.18	0.17	0.16	0.18
HGL Consumption															
Ethane/Ethylene	1.61	1.49	1.47	1.55	1.70	1.53	1.65	1.69	1.75	1.78	1.82	1.87	1.53	1.64	1.81
Propane	1.20	0.58	0.65	1.05	1.09	0.65	0.63	0.95	1.19	0.61	0.65	0.98	0.87	0.83	0.86
Propylene (refinery-grade)	0.29	0.30	0.29	0.31	0.26	0.27	0.28	0.29	0.30	0.30	0.30	0.30	0.30	0.28	0.30
Butanes/Butylenes	0.20	0.21	0.30	0.24	0.17	0.22	0.20	0.21	0.19	0.23	0.21	0.21	0.24	0.20	0.21
Natural Gasoline (Pentanes Plus)	0.20	0.20	0.23	0.17	0.09	0.06	0.07	0.10	0.08	0.08	0.10	0.11	0.20	0.08	0.09
HGL Inventories (million barrels)															
Ethane	48.14	56.18	56.46	58.84	52.57	47.01	44.57	47.99	47.45	52.38	51.83	53.58	54.94	48.03	51.33
Propane	47.77	71.72	95.60	79.63	60.28	74.20	90.66	75.80	49.99	69.31	88.34	75.41	79.63	75.80	75.41
Propylene (at refineries only)	1.68	1.76	2.65	1.66	1.41	1.83	2.39	2.93	2.93	3.40	3.86	4.28	1.66	2.93	4.28
Butanes/Butylenes	39.30	70.72	85.88	52.15	43.58	70.26	87.73	58.10	47.92	72.04	89.50	59.87	52.15	58.10	59.87
Natural Gasoline (Pentanes Plus)	18.12	19.71	21.28	20.90	23.99	30.33	30.71	29.49	26.46	27.15	27.62	26.54	20.90	29.49	26.54
Refinery and Blender Net Inputs															
Crude Oil	16.20	16.76	16.97	16.32	15.77	13.16	15.33	15.91	15.72	16.57	16.99	16.65	16.56	15.05	16.49
Hydrocarbon Gas Liquids	0.59	0.46	0.51	0.72	0.61	0.31	0.45	0.67	0.57	0.47	0.51	0.69	0.57	0.51	0.56
Other Hydrocarbons/Oxygenates	1.16	1.21	1.22	1.19	1.12	0.94	1.08	1.13	1.13	1.20	1.19	1.18	1.19	1.07	1.18
Unfinished Oils	0.18	0.34	0.46	0.43	0.05	0.31	0.47	0.43	0.24	0.47	0.45	0.38	0.35	0.32	0.39
Motor Gasoline Blend Components	0.63	0.94	0.77	0.40	0.41	0.40	0.65	0.26	0.57	0.84	0.66	0.26	0.68	0.43	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	18.76	19.70	19.93	19.07	17.97	15.12	17.99	18.40	18.23	19.55	19.81	19.17	19.37	17.37	19.20
Refinery Processing Gain	1.06	1.07	1.07	1.10	1.02	0.89	1.03	1.12	1.10	1.15	1.14	1.14	1.08	1.02	1.13
Refinery and Blender Net Production															
Hydrocarbon Gas Liquids	0.48	0.84	0.76	0.34	0.47	0.73	0.73	0.37	0.48	0.85	0.78	0.39	0.61	0.57	0.62
Finished Motor Gasoline	9.84	10.15	10.20	10.16	9.30	7.31	9.18	9.57	9.52	10.04	10.06	9.98	10.09	8.84	9.90
Jet Fuel	1.73	1.78	1.88	1.79	1.63	0.60	1.40	1.59	1.58	1.67	1.72	1.68	1.80	1.30	1.66
Distillate Fuel	5.05	5.21	5.18	5.11	4.95	4.81	4.83	5.06	4.89	5.13	5.23	5.18	5.14	4.91	5.11
Residual Fuel	0.36	0.39	0.39	0.31	0.23	0.19	0.29	0.27	0.33	0.35	0.34	0.30	0.36	0.24	0.33
Other Oils (a)	2.37	2.40	2.58	2.46	2.41	2.36	2.59	2.68	2.55	2.66	2.82	2.78	2.45	2.51	2.70
Total Refinery and Blender Net Production	19.82	20.78	21.00	20.17	18.99	16.01	19.02	19.52	19.34	20.70	20.95	20.31	20.44	18.39	20.33
Refinery Distillation Inputs	16.48	17.14	17.44	16.86	16.36	13.60	15.77	16.23	16.02	16.79	17.23	16.88	16.98	15.49	16.73
Refinery Operable Distillation Capacity	18.78	18.80	18.81	18.81	18.98	18.98	18.98	19.00	19.00	19.00	19.00	19.03	18.80	18.98	19.01
Refinery Distillation Utilization Factor	0.88	0.91	0.93	0.90	0.86	0.72	0.83	0.85	0.84	0.88	0.91	0.89	0.90	0.82	0.88

- = no data available

(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.

Notes: 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.

Projections: EIA Regional Short-Term Energy Model.

Table 4c. U.S. Regional Motor Gasoline Prices and Inventories
U.S. Energy Information Administration | Short-Term Energy Outlook - July 2020

	2019				2020				2021				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2019	2020	2021
Prices (cents per gallon)															
Refiner Wholesale Price	167	205	189	182	153	100	*126*	*128*	*133*	*157*	*157*	*146*	186	*128*	*149*
Gasoline Regular Grade Retail Prices Including Taxes															
PADD 1	233	268	256	247	236	191	*195*	*192*	*196*	*223*	*226*	*215*	251	*204*	*215*
PADD 2	223	269	257	244	226	179	*194*	*190*	*189*	*226*	*224*	*209*	249	*198*	*213*
PADD 3	206	246	234	224	210	163	*180*	*176*	*180*	*205*	*206*	*193*	228	*183*	*196*
PADD 4	226	285	270	276	247	200	*206*	*195*	*197*	*226*	*231*	*216*	265	*212*	*218*
PADD 5	297	356	331	350	311	257	*272*	*266*	*256*	*290*	*291*	*279*	334	*277*	*280*
U.S. Average	236	279	265	259	241	194	*206*	*201*	*202*	*233*	*233*	*221*	260	*211*	*223*
Gasoline All Grades Including Taxes	245	288	274	269	251	203	*217*	*214*	*215*	*246*	*247*	*234*	269	*222*	*236*
End-of-period Inventories (million barrels)															
Total Gasoline Inventories															
PADD 1	62.4	59.7	64.9	65.6	71.0	74.1	*61.1*	*62.8*	*66.7*	*69.3*	*63.9*	*68.1*	65.6	*62.8*	*68.1*
PADD 2	53.9	49.6	51.0	55.0	60.2	52.3	*49.8*	*51.5*	*54.3*	*53.6*	*52.9*	*50.5*	55.0	*51.5*	*50.5*
PADD 3	82.5	82.4	81.5	91.8	84.8	90.8	*88.4*	*92.2*	*88.3*	*87.3*	*87.0*	*93.3*	91.8	*92.2*	*93.3*
PADD 4	6.9	7.5	7.7	8.3	9.2	7.5	*6.9*	*7.2*	*7.6*	*7.8*	*7.5*	*7.8*	8.3	*7.2*	*7.8*
PADD 5	30.4	30.6	26.8	33.2	35.6	30.3	*29.7*	*32.1*	*30.4*	*29.3*	*29.5*	*32.2*	33.2	*32.1*	*32.2*
U.S. Total	236.1	229.7	231.9	253.8	260.8	255.0	*235.9*	*245.8*	*247.3*	*247.2*	*240.7*	*251.8*	253.8	*245.8*	*251.8*
Finished Gasoline Inventories															
U.S. Total	21.7	21.0	23.0	26.0	22.6	24.0	*24.7*	*24.8*	*24.0*	*22.7*	*23.7*	*24.2*	26.0	*24.8*	*24.2*
Gasoline Blending Components Inventories															
U.S. Total	214.4	208.8	208.9	227.9	238.3	231.1	*211.2*	*220.9*	*223.3*	*224.5*	*217.0*	*227.7*	227.9	*220.9*	*227.7*

- = no data available

Prices are not adjusted for inflation.

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

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.

Projections: EIA Regional Short-Term Energy Model.

Table 5a. U.S. Natural Gas Supply, Consumption, and Inventories
U.S. Energy Information Administration | Short-Term Energy Outlook - July 2020

	2019 Q1	Q2	Q3	Q4	2020 Q1	Q2	Q3	Q4	2021 Q1	Q2	Q3	Q4	Year 2019	2020	2021
Supply (billion cubic feet per day)															
Total Marketed Production	96.08	97.44	99.91	103.16	101.93	96.93	94.15	92.16	90.18	89.98	91.42	92.66	99.17	96.27	91.07
Alaska	0.96	0.93	0.79	0.93	0.96	0.81	0.77	0.94	0.99	0.86	0.80	0.95	0.90	0.87	0.90
Federal GOM (a)	2.80	2.75	2.51	2.72	2.72	2.45	2.56	2.50	2.53	2.45	2.30	2.27	2.69	2.55	2.39
Lower 48 States (excl GOM)	92.32	93.76	96.61	99.51	98.25	93.67	90.82	88.72	86.66	86.68	88.32	89.44	95.57	92.85	87.78
Total Dry Gas Production	89.32	90.50	92.98	95.97	94.50	89.91	87.27	85.37	83.48	83.25	84.53	85.63	92.21	89.24	84.23
LNG Gross Imports	0.28	0.03	0.06	0.20	0.24	0.10	0.18	0.20	0.32	0.18	0.18	0.20	0.14	0.18	0.22
LNG Gross Exports	4.01	4.55	4.95	6.40	7.92	5.48	2.62	5.43	7.07	6.42	7.56	8.07	4.98	5.35	7.28
Pipeline Gross Imports	8.35	6.73	7.10	7.30	7.64	6.23	6.50	7.37	8.45	7.50	7.68	7.92	7.37	6.94	7.88
Pipeline Gross Exports	7.86	7.18	7.80	8.25	8.13	7.09	7.92	8.40	8.44	7.67	8.59	8.62	7.77	7.89	8.33
Supplemental Gaseous Fuels	0.20	0.16	0.15	0.17	0.19	0.17	0.16	0.15	0.15	0.15	0.15	0.15	0.17	0.17	0.15
Net Inventory Withdrawals	16.93	-14.18	-10.41	2.44	12.74	-12.29	-7.42	4.95	17.78	-10.44	-7.65	4.67	-1.37	-0.51	1.03
Total Supply	103.20	71.52	77.14	91.43	99.26	71.56	76.14	84.21	94.67	66.56	68.74	81.88	85.77	82.78	77.90
Balancing Item (b)	0.11	-0.79	-0.39	-2.10	-0.01	-0.60	-1.12	0.03	0.57	0.23	0.66	1.40	-0.80	-0.43	0.72
Total Primary Supply	103.32	70.74	76.74	89.33	99.25	70.96	75.02	84.24	95.24	66.79	69.40	83.28	84.97	82.35	78.62
Consumption (billion cubic feet per day)															
Residential	27.15	7.34	3.53	17.00	22.79	8.09	3.74	16.51	25.64	7.01	3.26	16.45	13.70	12.77	13.04
Commercial	16.19	6.36	4.68	11.45	14.07	6.46	4.74	10.76	14.83	6.39	4.73	10.45	9.65	9.00	9.08
Industrial	25.12	21.74	21.31	23.79	24.55	19.98	19.32	22.35	23.20	21.09	20.67	23.52	22.98	21.55	22.12
Electric Power (c)	26.83	28.13	39.74	29.09	29.60	29.48	40.77	27.67	24.31	25.60	33.75	25.52	30.98	31.89	27.32
Lease and Plant Fuel	4.93	5.00	5.13	5.29	5.23	4.97	4.83	4.73	4.63	4.62	4.69	4.75	5.09	4.94	4.67
Pipeline and Distribution Use	2.96	2.03	2.20	2.56	2.85	1.86	1.51	2.07	2.49	1.94	2.15	2.44	2.44	2.07	2.25
Vehicle Use	0.13	0.13	0.14	0.15	0.16	0.12	0.12	0.14	0.14	0.15	0.15	0.15	0.14	0.13	0.14
Total Consumption	103.32	70.74	76.74	89.33	99.25	70.96	75.02	84.24	95.24	66.79	69.40	83.28	84.97	82.35	78.62
End-of-period Inventories (billion cubic feet)															
Working Gas Inventory	1,185	2,461	3,415	3,189	2,030	3,144	3,826	3,371	1,771	2,720	3,424	2,995	3,189	3,371	2,995
East Region (d)	216	537	845	764	385	659	908	729	242	527	784	608	764	729	608
Midwest Region (d)	242	579	990	885	472	757	1,065	929	363	613	927	777	885	929	777
South Central Region (d)	519	917	1,049	1,095	857	1,223	1,287	1,218	814	1,094	1,164	1,142	1,095	1,218	1,142
Mountain Region (d)	63	135	200	167	92	173	216	177	123	162	202	165	167	177	165
Pacific Region (d)	115	259	294	245	200	305	323	291	203	299	322	278	245	291	278
Alaska	30	33	37	33	23	26	26	26	26	26	26	26	33	26	26

- = no data available
(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/ngs/notes.html)*.
Notes: The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.
LNG: liquefied natural gas.
Historical data: Latest data available from Energy Information Administration databases supporting the following reports: *Natural Gas Monthly*, DOE/EIA-0130; and *Electric Power Monthly*, DOE/EIA-0226.
Minor discrepancies with published historical data are due to independent rounding.
Projections: EIA Regional Short-Term Energy Model.

Table 5b. U.S. Regional Natural Gas Prices (dollars per thousand cubic feet)
U.S. Energy Information Administration | Short-Term Energy Outlook - July 2020

	2019				2020				2021				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2019	2020	2021
Wholesale/Spot															
Henry Hub Spot Price	3.03	2.66	2.47	2.49	1.98	1.77	1.72	2.55	3.17	3.11	3.24	3.35	2.66	2.00	3.22
Residential Retail															
New England	14.44	15.56	19.31	14.05	13.80	14.68	16.86	12.62	12.50	13.73	16.93	13.22	14.78	13.79	13.20
Middle Atlantic	10.79	13.08	18.50	11.38	10.80	12.12	15.81	9.89	9.40	12.03	16.88	11.22	11.74	11.05	10.79
E. N. Central	7.27	10.48	19.03	7.68	6.99	9.36	15.56	7.63	7.34	10.52	16.51	8.43	8.41	8.01	8.67
W. N. Central	7.93	10.67	18.16	8.16	7.30	9.47	15.96	8.05	7.37	10.59	16.98	9.16	8.81	8.27	8.86
S. Atlantic	11.63	18.34	26.03	12.90	12.17	15.94	21.78	11.63	10.63	16.14	22.47	12.66	13.83	13.24	12.84
E. S. Central	9.64	14.84	21.40	10.43	9.74	13.53	20.61	12.19	10.28	15.20	22.27	13.85	11.05	11.48	12.58
W. S. Central	8.29	13.38	21.45	10.54	8.55	14.25	19.85	11.34	9.25	14.97	20.86	12.45	10.54	11.26	11.90
Mountain	7.73	9.46	13.40	7.75	7.52	9.65	13.12	7.78	7.77	9.77	13.71	8.74	8.37	8.29	8.86
Pacific	12.44	12.75	13.50	12.06	13.41	14.75	14.17	12.61	13.04	13.98	14.82	13.83	12.50	13.51	13.66
U.S. Average	9.47	12.48	18.10	9.88	9.51	12.13	16.44	9.76	9.22	12.31	17.25	10.83	10.56	10.52	10.65
Commercial Retail															
New England	11.21	11.42	11.61	10.13	10.38	10.46	8.61	8.53	9.27	9.78	10.09	10.21	10.95	9.80	9.77
Middle Atlantic	8.43	7.72	6.86	7.47	7.91	7.11	6.31	6.91	7.29	7.37	7.64	7.63	7.85	7.26	7.37
E. N. Central	6.27	7.19	8.85	6.04	5.75	6.62	7.98	6.01	6.20	7.52	9.09	7.20	6.51	6.13	6.93
W. N. Central	6.79	7.11	8.20	6.16	5.97	6.21	7.43	6.21	6.89	7.61	8.94	7.49	6.73	6.19	7.34
S. Atlantic	8.85	9.54	9.64	8.82	8.56	9.26	9.32	8.38	8.53	9.57	10.02	9.08	9.05	8.72	9.05
E. S. Central	8.61	9.78	10.06	8.54	8.36	8.76	8.78	7.73	7.76	9.14	9.91	9.05	8.91	8.27	8.61
W. S. Central	6.02	6.57	7.42	6.38	5.70	6.35	6.88	6.51	6.77	7.55	8.32	7.86	6.41	6.19	7.45
Mountain	6.40	6.72	7.41	6.16	6.07	7.96	8.12	6.78	7.05	7.42	8.31	7.43	6.47	6.81	7.37
Pacific	9.08	8.82	9.14	8.90	9.60	9.18	8.53	7.94	8.42	8.77	9.19	8.95	8.99	8.85	8.77
U.S. Average	7.59	7.97	8.40	7.22	7.21	7.60	7.73	6.95	7.25	8.04	8.65	8.01	7.62	7.25	7.76
Industrial Retail															
New England	9.17	8.27	6.92	7.29	8.09	7.49	6.43	7.40	8.18	7.66	7.15	8.16	8.08	7.49	7.87
Middle Atlantic	8.76	7.65	6.99	6.95	7.46	6.75	6.38	6.67	7.45	7.13	7.36	7.72	7.86	6.98	7.45
E. N. Central	5.75	5.38	5.64	5.14	4.88	4.63	4.44	4.79	5.97	5.98	6.09	6.12	5.49	4.76	6.03
W. N. Central	5.16	3.94	3.37	4.19	3.94	3.15	2.93	4.02	5.06	4.54	4.57	5.32	4.24	3.59	4.92
S. Atlantic	5.52	4.60	4.40	4.52	4.17	3.72	3.63	4.38	5.31	4.92	4.99	5.37	4.80	4.01	5.16
E. S. Central	4.93	4.04	3.59	4.07	3.90	3.42	3.33	4.19	4.99	4.70	4.72	5.18	4.20	3.74	4.91
W. S. Central	3.47	2.88	2.53	2.64	2.17	1.89	1.87	2.60	3.31	3.21	3.45	3.58	2.89	2.14	3.39
Mountain	5.31	4.80	5.00	4.72	4.41	4.23	4.48	4.73	5.28	5.28	5.77	5.96	4.96	4.47	5.57
Pacific	7.68	6.66	6.49	6.83	7.54	6.37	5.69	5.70	6.64	6.43	6.71	6.88	6.97	6.39	6.68
U.S. Average	4.67	3.74	3.30	3.74	3.52	2.72	2.50	3.41	4.33	3.94	4.04	4.50	3.91	3.07	4.22

- = no data available

Prices are not adjusted for inflation.

Notes: 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 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.

Projections: EIA Regional Short-Term Energy Model.

Table 6. U.S. Coal Supply, Consumption, and Inventories
U.S. Energy Information Administration | Short-Term Energy Outlook - July 2020

	2019				2020				2021				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2019	2020	2021
Supply (million short tons)															
Production	179.5	179.2	181.4	165.2	149.1	113.0	126.5	112.7	131.6	113.0	149.9	141.3	705.3	501.3	535.9
Appalachia	49.6	52.5	46.6	44.3	39.7	32.0	32.8	27.2	31.5	33.1	38.1	34.8	193.0	131.6	137.5
Interior	35.4	32.3	32.4	30.6	25.8	20.2	23.6	22.0	23.5	13.3	18.4	19.8	130.7	91.6	74.9
Western	94.5	94.4	102.4	90.3	83.6	60.9	70.1	63.5	76.6	66.7	93.5	86.7	381.7	278.1	323.4
Primary Inventory Withdrawals	-1.5	1.3	-1.2	-1.4	-0.5	1.2	-1.5	-1.2	1.5	1.7	2.0	-1.8	-2.7	-2.1	3.4
Imports	1.7	1.6	1.7	1.7	1.3	1.3	1.5	1.4	1.2	1.3	1.5	1.4	6.7	5.5	5.4
Exports	25.2	25.3	21.9	20.4	20.0	16.0	13.9	13.2	22.3	17.2	14.4	13.4	92.9	63.1	67.2
Metallurgical Coal	13.9	15.1	13.5	12.6	11.7	9.9	8.4	8.0	13.4	10.5	8.7	8.0	55.1	38.0	40.7
Steam Coal	11.3	10.2	8.4	7.8	8.3	6.1	5.5	5.1	8.9	6.7	5.6	5.3	37.7	25.1	26.5
Total Primary Supply	154.5	156.7	159.9	145.2	129.9	99.5	112.5	99.8	112.0	98.8	139.1	127.5	616.4	441.7	477.4
Secondary Inventory Withdrawals	6.2	-21.0	6.4	-17.5	-16.7	-2.8	8.6	-7.2	-0.5	4.5	8.8	-7.5	-26.0	-18.1	5.3
Waste Coal (a)	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.0	2.0	2.0	2.0	9.3	9.2	8.0
Total Supply	163.1	138.0	168.6	130.0	115.5	99.0	123.4	94.8	113.5	105.3	149.9	122.0	599.7	432.7	490.6
Consumption (million short tons)															
Coke Plants	4.5	4.7	4.5	4.3	4.9	4.1	4.9	5.1	4.9	5.3	5.7	6.3	17.9	19.0	22.2
Electric Power Sector (b)	145.3	118.0	156.2	119.9	97.6	81.8	110.0	87.6	105.4	108.2	146.6	101.9	539.4	376.9	462.0
Retail and Other Industry	8.1	7.2	7.2	7.5	7.6	6.8	6.3	6.6	6.8	6.7	6.7	7.1	30.0	27.3	27.3
Residential and Commercial	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.9	1.0	0.8
Other Industrial	7.8	7.0	7.0	7.3	7.5	6.5	6.0	6.3	6.6	6.5	6.6	6.9	29.1	26.3	26.5
Total Consumption	157.9	129.9	167.8	131.8	110.1	92.6	121.1	99.3	117.1	120.1	158.9	115.4	587.3	423.2	511.5
Discrepancy (c)	5.2	8.2	0.8	-1.9	5.4	6.3	2.3	-4.5	-3.6	-14.8	-9.1	6.6	12.4	9.5	-20.9
End-of-period Inventories (million short tons)															
Primary Inventories (d)	23.2	21.9	23.1	24.4	24.9	23.8	25.3	26.5	25.0	23.3	21.3	23.1	24.4	26.5	23.1
Secondary Inventories	102.2	123.2	116.8	134.3	151.0	153.8	145.2	152.4	152.9	148.5	139.7	147.2	134.3	152.4	147.2
Electric Power Sector	97.1	117.7	111.0	128.5	145.5	147.9	139.2	146.6	147.2	142.4	133.4	141.1	128.5	146.6	141.1
Retail and General Industry	2.8	3.0	3.2	3.3	3.7	3.6	3.7	3.5	3.8	3.7	3.8	3.6	3.3	3.5	3.6
Coke Plants	2.0	2.3	2.5	2.3	1.7	2.1	2.2	2.2	1.7	2.2	2.3	2.3	2.3	2.2	2.3
Coal Market Indicators															
Coal Miner Productivity															
(Tons per hour)	6.37	6.37	6.37	6.37	6.37	6.37	6.37	6.37	6.32	6.32	6.32	6.32	6.37	6.37	6.32
Total Raw Steel Production															
(Million short tons per day)	0.273	0.271	0.264	0.265	0.268	0.174	0.213	0.255	0.256	0.242	0.247	0.259	0.268	0.227	0.251
Cost of Coal to Electric Utilities															
(Dollars per million Btu)	2.08	2.05	2.00	1.95	1.92	2.00	2.00	2.00	2.04	2.05	2.04	2.04	2.02	1.98	2.04

- = no data available
(a) Waste coal includes waste coal and cloal 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.
Notes: 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*, DOE/EIA-0226.
Minor discrepancies with published historical data are due to independent rounding.
Projections: EIA Regional Short-Term Energy Model.

Table 7a. U.S. Electricity Industry Overview

U.S. Energy Information Administration | Short-Term Energy Outlook - July 2020

	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2021 Q1	2021 Q2	2021 Q3	2021 Q4	Year 2019	Year 2020	Year 2021
Electricity Supply (billion kilowatthours)															
Electricity Generation	995	974	1,173	976	962	920	1,105	921	935	959	1,122	939	4,118	3,908	3,955
Electric Power Sector (a)	955	935	1,131	934	921	883	1,068	885	899	922	1,083	901	3,956	3,758	3,806
Industrial Sector (b)	37	36	38	38	38	33	33	32	33	33	35	35	149	137	136
Commercial Sector (b)	3	3	4	3	3	3	3	3	3	3	4	3	14	13	13
Net Imports	9	9	11	10	11	12	15	11	12	13	15	11	39	50	50
Total Supply	1,004	983	1,184	986	973	932	1,121	932	948	971	1,137	950	4,157	3,958	4,005
Losses and Unaccounted for (c)	57	71	74	59	51	59	65	52	43	66	57	53	262	227	220
Electricity Consumption (billion kilowatthours unless noted)															
Retail Sales	911	877	1072	889	885	846	1022	848	872	872	1044	862	3750	3601	3651
Residential Sector	361	309	434	331	340	339	435	322	352	340	435	321	1435	1435	1447
Commercial Sector	320	328	382	325	313	286	351	310	305	306	367	320	1355	1260	1297
Industrial Sector	228	238	254	232	231	219	235	214	213	225	240	220	952	899	899
Transportation Sector	2	2	2	2	2	2	2	2	2	2	2	2	8	8	8
Direct Use (d)	36	35	38	37	37	33	33	32	33	33	35	34	146	135	135
Total Consumption	948	912	1110	927	922	873	1056	880	904	905	1080	897	3896	3730	3785
Average residential electricity usage per customer (kWh)	2,677	2,290	3,213	2,450	2,494	2,472	3,191	2,362	2,565	2,477	3,176	2,339	10,631	10,519	10,558
Prices															
Power Generation Fuel Costs (dollars per million Btu)															
Coal	2.08	2.05	2.00	1.95	1.92	2.00	2.00	2.00	2.04	2.05	2.04	2.04	2.02	1.98	2.04
Natural Gas	3.71	2.73	2.51	2.78	2.40	1.85	1.55	2.63	3.57	3.24	3.33	3.61	2.88	2.05	3.43
Residual Fuel Oil	12.21	13.39	12.79	12.52	12.15	7.23	7.30	7.75	8.68	9.93	9.72	9.78	12.72	8.52	9.54
Distillate Fuel Oil	14.83	15.77	15.01	15.10	13.29	8.43	9.73	10.54	11.07	12.15	12.68	13.10	15.16	10.52	12.29
Retail Prices (cents per kilowatthour)															
Residential Sector	12.68	13.33	13.27	12.85	12.90	13.26	13.20	12.82	12.87	13.57	13.72	13.45	13.04	13.06	13.42
Commercial Sector	10.43	10.64	11.00	10.53	10.35	10.56	10.83	10.38	10.32	10.76	11.23	10.87	10.66	10.54	10.82
Industrial Sector	6.66	6.71	7.25	6.66	6.38	6.62	7.16	6.75	6.69	6.93	7.59	6.94	6.83	6.73	7.05
Wholesale Electricity Prices (dollars per megawatthour)															
ERCOT North hub	28.41	28.34	139.81	28.40	23.41	24.00	29.14	28.20	30.48	33.38	36.71	31.61	56.24	26.19	33.05
CAISO SP15 zone	50.42	23.30	37.32	41.57	28.64	19.21	27.40	32.94	33.20	30.85	33.90	35.64	38.15	27.05	33.40
ISO-NE Internal hub	47.40	27.15	29.52	35.48	24.61	20.24	20.11	29.36	41.01	23.71	25.47	30.23	34.89	23.58	30.11
NYISO Hudson Valley zone	41.77	25.68	27.76	27.04	21.82	18.04	19.58	21.64	24.23	22.73	24.24	23.96	30.56	20.27	23.79
PJM Western hub	33.79	28.54	31.17	29.89	22.47	20.79	27.70	25.90	27.04	27.36	30.15	27.50	30.85	24.22	28.01
Midcontinent ISO Illinois hub	31.44	27.81	30.71	28.09	24.43	23.00	29.97	27.82	27.61	29.01	32.15	29.58	29.51	26.30	29.59
SPP ISO South hub	29.15	27.14	31.51	23.64	20.06	19.61	26.01	22.69	20.61	22.48	27.17	23.32	27.86	22.09	23.40
SERC index, Into Southern	30.74	29.87	31.08	29.31	23.58	18.23	31.30	28.66	28.80	30.64	34.56	30.73	30.25	25.44	31.18
FRCC index, Florida Reliability	30.71	29.57	30.64	29.47	26.24	18.53	26.65	28.81	29.77	30.05	31.52	31.23	30.10	25.06	30.64
Northwest index, Mid-Columbia	55.74	18.55	32.74	37.47	22.77	14.49	22.18	27.31	27.09	23.70	28.12	29.51	36.12	21.69	27.10
Southwest index, Palo Verde	44.23	18.45	42.00	36.37	22.07	19.60	25.22	28.95	29.18	28.02	31.48	31.80	35.26	23.96	30.12

Notes: 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 colocated 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.

Projections: EIA Regional Short-Term Energy Model.

Table 7b. U.S. Regional Electricity Retail Sales (billion kilowatthours)
U.S. Energy Information Administration | Short-Term Energy Outlook - July 2020

	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2021 Q1	2021 Q2	2021 Q3	2021 Q4	Year 2019	Year 2020	Year 2021
Residential Sector															
New England	12.4	9.7	13.1	10.9	11.7	11.2	13.6	11.0	12.4	11.1	13.4	10.8	46.1	47.4	47.7
Middle Atlantic	35.3	27.7	40.3	29.8	32.2	31.5	40.7	29.3	33.7	30.9	40.0	29.2	133.1	133.7	133.8
E. N. Central	50.0	38.1	54.3	43.4	46.4	44.6	53.7	42.8	48.2	44.0	53.2	42.5	185.9	187.5	187.9
W. N. Central	29.9	21.6	29.0	24.9	27.6	25.2	30.8	24.4	27.5	25.0	30.2	24.2	105.4	107.9	106.8
S. Atlantic	88.3	84.5	111.4	84.4	83.7	87.7	109.3	80.9	89.5	88.8	110.7	80.6	368.5	361.6	369.7
E. S. Central	30.6	25.9	36.9	27.8	29.0	26.2	36.3	26.1	31.1	26.8	37.1	26.1	121.1	117.6	121.0
W. S. Central	51.7	49.0	75.8	50.6	48.6	53.5	75.7	48.2	49.2	54.1	76.7	48.3	227.1	226.0	228.3
Mountain	23.1	22.0	33.0	22.1	22.5	25.6	33.6	21.9	22.4	25.3	33.4	22.0	100.2	103.6	103.1
Pacific contiguous	39.0	29.6	38.7	35.8	36.7	32.4	39.6	35.8	36.4	32.3	39.3	35.8	143.1	144.5	143.9
AK and HI	1.2	1.1	1.2	1.3	1.3	1.2	1.2	1.3	1.2	1.1	1.2	1.2	4.7	4.9	4.8
Total	361.4	309.2	433.8	330.7	339.7	339.0	434.5	321.6	351.6	339.5	435.3	320.6	1,435.1	1,434.8	1,447.0
Commercial Sector															
New England	12.8	12.1	13.9	12.4	12.2	10.2	12.7	11.8	11.8	10.4	12.9	12.0	51.2	46.9	47.2
Middle Atlantic	38.6	36.3	41.9	35.9	35.9	30.1	36.1	32.0	33.3	33.7	39.0	33.9	152.6	134.1	139.9
E. N. Central	44.6	43.1	50.4	43.5	43.1	37.9	45.4	41.4	41.9	41.7	48.5	43.2	181.6	167.8	175.3
W. N. Central	25.6	24.2	27.9	24.8	24.7	21.4	26.0	24.2	24.3	21.7	26.5	24.6	102.5	96.2	97.1
S. Atlantic	72.1	79.4	90.1	75.5	71.4	66.9	82.3	72.1	70.1	72.1	87.1	75.3	317.0	292.7	304.6
E. S. Central	21.0	22.5	27.0	21.8	20.7	18.8	24.8	20.9	20.4	20.1	25.8	21.4	92.3	85.1	87.7
W. S. Central	43.2	47.6	58.0	46.9	43.9	44.0	55.4	45.9	43.7	46.6	57.5	47.1	195.7	189.2	194.9
Mountain	22.6	23.9	28.3	23.4	22.5	21.6	26.9	23.1	22.2	22.9	27.9	23.7	98.2	94.1	96.7
Pacific contiguous	38.0	37.9	42.9	39.0	36.9	34.4	40.0	37.4	35.3	35.2	40.3	37.4	157.9	148.8	148.2
AK and HI	1.4	1.4	1.5	1.4	1.4	1.2	1.4	1.5	1.4	1.4	1.4	1.4	5.7	5.5	5.7
Total	319.9	328.2	381.8	324.6	312.7	286.4	350.9	310.3	304.6	305.8	366.9	320.0	1,354.5	1,260.3	1,297.3
Industrial Sector															
New England	3.8	3.8	4.0	3.8	3.7	3.5	3.7	3.5	3.4	3.5	3.7	3.5	15.4	14.4	14.2
Middle Atlantic	17.7	17.5	19.8	18.2	18.0	16.3	18.7	17.1	16.8	16.7	19.0	17.6	73.2	70.1	70.1
E. N. Central	44.8	45.4	47.7	43.6	44.0	38.2	40.5	37.1	38.1	37.7	39.8	36.5	181.5	159.8	152.0
W. N. Central	21.1	22.0	23.4	21.8	21.7	20.3	21.6	20.0	20.1	21.5	22.8	21.2	88.3	83.6	85.6
S. Atlantic	33.0	34.8	36.2	33.4	33.0	31.5	33.2	30.9	30.8	32.5	34.2	31.8	137.5	128.6	129.4
E. S. Central	23.4	23.9	24.5	22.9	23.3	21.4	22.3	20.9	21.3	22.3	23.1	21.7	94.7	87.9	88.4
W. S. Central	44.8	47.7	50.2	46.6	46.5	45.5	47.4	44.1	44.0	47.8	49.5	46.2	189.5	183.4	187.6
Mountain	19.2	21.1	23.5	20.2	20.0	21.0	23.3	19.8	19.5	21.8	24.1	20.6	84.1	84.1	86.0
Pacific contiguous	19.1	20.4	23.4	20.2	19.2	20.1	23.1	19.6	18.3	19.9	22.8	19.4	83.1	82.0	80.5
AK and HI	1.1	1.2	1.3	1.3	1.2	1.1	1.3	1.2	1.1	1.1	1.3	1.2	4.9	4.8	4.8
Total	228.2	237.7	254.2	232.1	230.5	218.8	235.1	214.2	213.5	224.9	240.3	219.9	952.1	898.6	898.6
Total All Sectors (a)															
New England	29.1	25.6	31.3	27.2	27.7	25.0	30.1	26.4	27.8	25.2	30.2	26.5	113.3	109.2	109.6
Middle Atlantic	92.6	82.4	103.0	84.8	87.0	78.7	96.5	79.4	84.9	82.2	99.1	81.6	362.8	341.7	347.8
E. N. Central	139.6	126.7	152.6	130.7	133.7	120.8	139.8	121.4	128.4	123.5	141.6	122.4	549.6	515.7	515.8
W. N. Central	76.7	67.7	80.4	71.5	74.0	66.8	78.4	68.5	71.9	68.2	79.6	69.9	296.2	287.8	289.6
S. Atlantic	193.7	199.0	238.1	193.6	188.4	186.4	225.1	184.3	190.9	193.7	232.4	188.1	824.3	784.2	805.0
E. S. Central	75.0	72.3	88.3	72.4	73.0	66.4	83.3	67.8	72.8	69.3	85.9	69.2	308.1	290.6	297.2
W. S. Central	139.8	144.3	184.1	144.2	139.1	143.0	178.5	138.2	136.9	148.6	183.8	141.7	612.4	598.8	611.0
Mountain	65.0	67.1	84.8	65.7	65.0	68.3	83.8	64.9	64.1	70.1	85.4	66.3	282.7	282.0	285.9
Pacific contiguous	96.3	88.1	105.2	95.2	93.1	87.1	103.0	93.0	90.2	87.7	102.7	92.9	384.9	376.2	373.5
AK and HI	3.7	3.6	4.0	4.0	3.8	3.4	3.9	4.0	3.8	3.6	4.0	3.9	15.2	15.1	15.3
Total	911.5	876.9	1,071.8	889.3	884.8	846.0	1,022.5	848.0	871.7	872.1	1,044.4	862.5	3,749.5	3,601.3	3,650.8

- = no data available

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

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

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

Projections: EIA Regional Short-Term Energy Model.

Table 7c. U.S. Regional Retail Electricity Prices (Cents per Kilowatthour)
U.S. Energy Information Administration | Short-Term Energy Outlook - July 2020

	2019				2020				2021				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2019	2020	2021
Residential Sector															
New England	21.53	21.57	20.70	20.87	21.76	21.38	20.32	20.18	20.97	21.30	21.03	21.91	21.14	20.90	21.27
Middle Atlantic	15.19	16.06	16.15	15.78	15.47	15.62	15.75	15.50	15.44	16.25	16.90	16.61	15.79	15.60	16.32
E. N. Central	12.92	13.86	13.27	13.29	13.10	13.67	13.31	13.50	13.46	14.39	14.11	14.19	13.30	13.39	14.03
W. N. Central	10.71	12.78	12.93	11.24	10.99	12.51	13.06	11.64	11.45	13.18	13.81	12.12	11.87	12.08	12.67
S. Atlantic	11.70	12.17	12.11	11.87	11.80	11.98	11.89	11.60	11.41	11.92	12.11	12.09	11.97	11.83	11.89
E. S. Central	11.10	11.70	11.37	11.23	11.25	11.58	11.53	11.80	11.68	12.06	11.95	12.14	11.34	11.53	11.95
W. S. Central	10.88	11.50	11.36	11.24	11.05	11.36	11.17	11.08	10.90	11.54	11.66	11.77	11.25	11.17	11.49
Mountain	11.51	12.18	12.23	11.59	11.42	12.04	12.14	11.61	11.60	12.46	12.70	12.13	11.91	11.85	12.28
Pacific	14.86	15.88	17.31	14.64	15.69	16.72	17.58	14.52	15.62	17.06	18.06	14.99	15.68	16.15	16.45
U.S. Average	12.68	13.33	13.27	12.85	12.90	13.26	13.20	12.82	12.87	13.57	13.72	13.45	13.04	13.06	13.42
Commercial Sector															
New England	16.83	16.24	15.97	15.76	16.23	16.14	15.77	15.46	15.99	16.14	16.17	16.28	16.19	15.89	16.14
Middle Atlantic	11.57	12.18	13.03	11.97	11.69	11.90	12.35	11.37	11.42	12.37	13.22	12.17	12.21	11.84	12.33
E. N. Central	10.14	10.29	10.09	10.05	9.95	10.25	10.04	10.07	10.10	10.54	10.49	10.50	10.14	10.07	10.41
W. N. Central	8.98	10.04	10.41	9.11	9.07	10.27	10.70	9.44	9.51	10.88	11.39	9.88	9.65	9.87	10.42
S. Atlantic	9.44	9.37	9.35	9.35	9.26	9.25	9.15	9.11	9.10	9.18	9.31	9.49	9.37	9.19	9.28
E. S. Central	10.70	10.70	10.65	10.62	10.75	10.94	10.90	11.11	11.36	11.35	11.33	11.45	10.67	10.92	11.37
W. S. Central	8.12	8.00	8.30	8.06	7.89	7.85	8.09	7.88	7.80	7.91	8.38	8.17	8.13	7.94	8.09
Mountain	9.20	9.71	10.00	9.18	8.99	9.79	10.03	9.21	9.09	10.04	10.40	9.56	9.55	9.52	9.81
Pacific	12.98	14.15	16.35	14.44	13.52	14.13	16.12	14.21	13.39	14.36	16.76	15.18	14.54	14.54	14.99
U.S. Average	10.43	10.64	11.00	10.53	10.35	10.56	10.83	10.38	10.32	10.76	11.23	10.87	10.66	10.54	10.82
Industrial Sector															
New England	13.45	12.89	12.66	12.70	12.74	12.40	12.13	12.53	12.95	12.85	12.77	12.82	12.92	12.45	12.85
Middle Atlantic	6.73	6.52	6.54	6.40	6.34	6.20	6.11	6.30	6.62	6.57	6.65	6.48	6.55	6.24	6.58
E. N. Central	7.03	6.84	6.83	6.76	6.51	6.66	6.76	6.91	6.87	7.00	7.19	7.15	6.87	6.70	7.05
W. N. Central	7.13	7.33	8.09	6.87	6.94	7.57	8.41	7.19	7.31	7.81	8.70	7.39	7.37	7.53	7.83
S. Atlantic	6.22	6.28	6.72	6.18	5.97	6.18	6.45	6.11	6.10	6.43	6.80	6.25	6.36	6.18	6.41
E. S. Central	5.69	5.78	5.95	5.61	5.45	5.52	5.76	5.63	5.66	5.70	6.04	5.73	5.76	5.59	5.79
W. S. Central	5.25	5.28	6.05	5.29	5.05	5.10	5.81	5.37	5.48	5.48	6.37	5.59	5.48	5.33	5.74
Mountain	6.14	6.25	6.78	5.89	5.73	6.04	6.58	5.86	5.85	6.28	6.91	6.02	6.29	6.07	6.30
Pacific	8.65	9.45	11.26	10.16	8.97	10.03	11.67	10.58	9.47	10.57	12.33	11.02	9.95	10.37	10.93
U.S. Average	6.66	6.71	7.25	6.66	6.38	6.62	7.16	6.75	6.69	6.93	7.59	6.94	6.83	6.73	7.05
All Sectors (a)															
New England	18.35	17.72	17.50	17.34	18.07	17.93	17.33	16.99	17.80	17.92	17.87	18.07	17.73	17.57	17.91
Middle Atlantic	12.01	12.27	12.99	12.10	11.97	12.19	12.56	11.79	12.06	12.64	13.43	12.51	12.37	12.14	12.69
E. N. Central	10.13	10.12	10.20	10.03	9.90	10.37	10.34	10.31	10.40	10.83	10.92	10.78	10.12	10.23	10.74
W. N. Central	9.14	10.03	10.64	9.17	9.16	10.30	10.99	9.56	9.63	10.76	11.54	9.90	9.76	10.02	10.48
S. Atlantic	9.92	10.01	10.24	9.90	9.80	10.02	10.08	9.70	9.70	9.97	10.28	10.05	10.03	9.91	10.01
E. S. Central	9.30	9.43	9.65	9.27	9.25	9.44	9.80	9.69	9.83	9.80	10.18	9.92	9.42	9.56	9.94
W. S. Central	8.22	8.28	8.94	8.28	8.04	8.29	8.79	8.20	8.17	8.45	9.21	8.55	8.47	8.36	8.64
Mountain	9.12	9.43	9.98	8.98	8.83	9.48	9.92	8.99	8.98	9.74	10.31	9.31	9.42	9.35	9.64
Pacific	12.87	13.63	15.55	13.60	13.42	14.14	15.67	13.55	13.49	14.48	16.26	14.22	13.96	14.24	14.66
U.S. Average	10.37	10.52	11.03	10.38	10.29	10.62	10.99	10.39	10.46	10.86	11.43	10.83	10.60	10.59	10.92

- = no data available

Prices are not adjusted for inflation.

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

Notes: 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 Energy Information Administration databases supporting the following reports: *Electric Power Monthly* , DOE/EIA-0226; and *Electric Power Annual* , DOE/EIA-0348.

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

Projections: EIA Regional Short-Term Energy Model.

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 2020

	2019				2020				2021				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2019	2020	2021
United States															
Natural Gas	317.1	330.9	473.7	353.0	355.0	345.6	483.2	341.9	299.7	317.0	417.2	321.7	1,474.7	1,525.8	1,355.7
Coal	257.9	208.9	279.4	213.3	170.2	143.4	193.6	153.1	182.9	189.9	258.6	176.7	959.5	660.3	808.1
Nuclear	203.5	196.5	210.2	199.2	204.2	189.0	203.3	197.1	198.1	188.7	204.3	194.6	809.4	793.5	785.7
Renewable Energy Sources:	169.9	192.9	161.3	163.9	185.5	199.5	182.5	188.2	213.6	220.5	197.7	202.6	688.0	755.8	834.4
Conventional Hydropower	71.2	81.7	60.8	58.7	71.3	79.9	70.7	63.0	74.9	77.1	64.2	61.5	272.4	284.8	277.7
Wind	74.2	78.6	66.2	80.8	87.0	83.0	72.2	96.4	106.2	98.6	85.2	106.8	299.8	338.6	396.8
Solar (a)	13.3	21.8	22.6	13.9	16.4	26.1	28.4	18.2	21.2	33.7	36.6	23.1	71.5	89.1	114.6
Biomass	7.2	7.0	7.6	6.9	7.0	6.7	7.0	6.8	7.7	7.3	7.6	7.3	28.8	27.5	29.9
Geothermal	4.0	3.9	4.1	3.6	3.8	3.9	4.2	3.9	3.6	3.8	4.2	3.8	15.6	15.8	15.4
Pumped Storage Hydropower	-1.1	-0.9	-1.9	-1.4	-1.0	-0.9	-1.8	-1.3	-1.0	-0.9	-1.8	-1.3	-5.3	-5.1	-5.1
Petroleum (b)	4.9	4.2	4.8	3.5	4.0	4.1	4.4	3.8	3.4	4.4	4.4	3.8	17.3	16.2	16.0
Other Gases	1.1	1.0	1.2	1.0	1.1	0.8	1.1	0.8	1.0	0.8	1.1	0.8	4.3	3.8	3.7
Other Nonrenewable Fuels (c)	1.9	1.9	2.0	1.9	1.9	2.0	2.0	1.8	1.7	1.9	1.8	1.7	7.7	7.7	7.2
Total Generation	955.2	935.5	1,130.7	934.4	920.9	883.5	1,068.3	885.4	899.2	922.4	1,083.4	900.6	3,955.8	3,758.1	3,805.5
New England (ISO-NE)															
Natural Gas	10.6	10.0	14.8	11.5	11.1	9.8	15.4	11.1	8.5	8.1	13.4	11.5	46.9	47.3	41.5
Coal	0.3	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.4	0.0	0.1	0.1	0.5	0.3	0.6
Nuclear	8.6	6.8	7.3	7.1	7.3	5.0	7.2	6.2	7.0	7.1	7.2	5.5	29.8	25.8	26.9
Conventional hydropower	2.1	1.9	1.5	1.6	2.1	1.9	1.5	1.6	2.1	1.9	1.4	1.5	7.0	7.1	7.0
Nonhydro renewables (d)	2.6	2.7	2.6	2.5	2.6	2.7	2.7	2.8	3.4	2.8	2.7	2.9	10.3	10.8	11.8
Other energy sources (e)	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.3	0.3	0.3	0.4	1.5	1.5	1.4
Total generation	24.5	21.7	26.5	23.3	23.5	19.8	27.3	22.1	21.7	20.4	25.1	22.0	96.1	92.7	89.2
Net energy for load (f)	29.5	25.8	31.9	28.0	27.7	25.3	32.0	27.8	28.9	26.6	31.6	27.8	115.2	112.8	114.9
New York (NYISO)															
Natural Gas	11.9	11.1	18.4	12.6	12.8	14.5	23.8	17.6	15.8	18.5	25.3	20.3	54.0	68.8	79.8
Coal	0.3	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1	0.0
Nuclear	10.4	10.8	11.8	11.8	10.7	9.5	8.6	9.1	8.8	7.5	7.1	6.8	44.9	37.9	30.2
Conventional hydropower	7.4	7.3	7.4	7.4	7.8	7.3	7.9	7.4	8.0	7.4	7.5	7.1	29.5	30.4	29.9
Nonhydro renewables (d)	1.6	1.8	1.5	1.6	1.9	1.9	1.6	1.8	2.1	2.1	2.0	2.5	6.5	7.1	8.8
Other energy sources (e)	0.4	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.9	0.7	0.8
Total generation	32.1	31.1	39.3	33.6	33.5	33.4	42.1	36.1	34.9	35.6	42.0	36.9	136.2	145.1	149.5
Net energy for load (f)	37.4	34.3	43.3	35.7	35.2	33.4	43.3	35.6	36.3	35.9	42.9	35.8	150.6	147.5	151.0
Mid-Atlantic (PJM)															
Natural Gas	69.3	64.2	90.9	70.7	77.9	73.3	106.3	73.5	76.9	72.9	97.6	71.3	295.1	331.0	318.7
Coal	53.5	39.9	52.0	38.9	33.7	28.8	27.0	25.1	39.1	33.3	32.9	26.2	184.3	114.7	131.6
Nuclear	69.6	68.5	71.7	68.1	68.9	65.9	71.0	69.1	67.5	65.7	71.8	68.3	277.9	274.9	273.2
Conventional hydropower	3.4	3.0	1.9	2.2	3.2	2.6	1.8	2.2	3.3	2.6	1.7	2.1	10.6	9.9	9.7
Nonhydro renewables (d)	8.8	9.3	7.1	8.9	10.2	9.9	8.0	10.4	11.8	11.1	9.3	11.2	34.1	38.5	43.4
Other energy sources (e)	0.9	0.7	0.5	0.4	0.6	0.7	0.4	0.4	0.6	0.7	0.4	0.4	2.5	2.2	2.1
Total generation	205.4	185.6	224.1	189.2	194.6	181.3	214.5	180.7	199.3	186.3	213.6	179.5	804.4	771.1	778.7
Net energy for load (f)	195.1	173.0	212.3	180.4	181.9	163.2	203.8	174.5	186.9	174.0	203.4	175.7	760.9	723.4	740.0
Southeast (SERC)															
Natural Gas	56.3	59.2	77.8	59.6	61.9	61.4	80.9	64.9	59.8	60.9	73.4	63.9	252.9	269.0	258.1
Coal	35.1	38.0	53.3	33.5	23.9	23.3	31.2	22.6	25.8	33.2	43.9	26.7	159.8	101.1	129.5
Nuclear	52.3	52.8	53.7	52.2	53.0	50.5	54.3	52.6	52.0	51.6	55.4	53.9	211.0	210.4	213.0
Conventional hydropower	10.9	9.3	7.1	8.2	11.1	8.6	6.7	8.0	11.2	8.5	6.4	7.6	35.5	34.4	33.7
Nonhydro renewables (d)	2.6	3.8	3.9	2.8	3.3	4.7	4.4	3.2	3.7	5.5	5.4	3.7	13.2	15.7	18.2
Other energy sources (e)	0.0	-0.2	-0.6	-0.4	-0.1	-0.1	-0.6	-0.4	-0.1	-0.1	-0.6	-0.4	-1.2	-1.1	-1.2
Total generation	157.2	162.9	195.2	155.8	153.1	148.3	177.0	151.0	152.5	159.6	183.8	155.5	671.1	629.4	651.4
Net energy for load (f)	163.9	158.5	197.9	157.3	158.5	141.9	179.1	148.8	156.3	157.0	186.0	153.2	677.6	628.3	652.4
Florida (FRCC)															
Natural Gas	35.5	46.4	52.6	39.9	40.1	46.4	53.6	39.7	35.5	41.8	47.7	36.9	174.4	179.8	161.8
Coal	3.7	4.8	5.3	4.8	2.1	2.7	2.2	2.1	4.5	7.6	6.5	4.6	18.6	9.1	23.2
Nuclear	7.6	6.4	7.7	7.3	7.3	7.3	7.5	7.7	7.8	7.0	7.2	7.4	29.1	29.8	29.4
Conventional hydropower	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.2	0.2	0.2
Nonhydro renewables (d)	1.5	1.7	1.6	1.4	1.8	2.3	2.3	1.9	2.5	3.2	3.1	2.6	6.2	8.4	11.4
Other energy sources (e)	0.8	0.9	0.8	0.7	0.9	0.8	0.7	0.7	0.9	0.8	0.7	0.7	3.1	3.1	3.1
Total generation	49.3	60.2	68.1	54.1	52.2	59.7	66.4	52.2	51.2	60.5	65.2	52.3	231.7	230.5	229.1
Net energy for load (f)	48.0	58.4	69.4	53.1	48.0	56.8	67.2	51.1	47.0	58.2	66.9	51.2	229.0	223.1	223.2

Notes: 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.

(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.

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

Projections: EIA Regional Short-Term Energy Model.

	2019				2020				2021				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2019	2020	2021
Midwest (MISO)															
Natural Gas	35.9	40.9	58.1	42.3	44.1	44.7	60.9	43.9	36.1	38.4	49.7	39.3	177.2	193.6	163.5
Coal	77.5	61.2	76.2	61.3	51.1	39.8	56.8	41.0	47.4	49.5	73.0	49.8	276.2	188.7	219.7
Nuclear	25.3	23.2	27.1	26.7	26.6	22.1	24.9	24.3	24.9	23.9	25.0	23.7	102.3	98.0	97.5
Conventional hydropower	2.2	2.3	1.7	1.8	2.3	2.2	1.7	1.8	2.4	2.2	1.6	1.8	8.0	8.0	8.0
Nonhydro renewables (d)	16.7	17.3	13.5	18.6	20.0	18.9	16.0	23.3	24.7	23.2	19.4	25.8	66.1	78.2	93.1
Other energy sources (e)	2.0	1.4	1.7	0.9	1.4	1.5	1.7	1.4	0.8	1.9	1.6	1.4	6.0	6.0	5.7
Total generation	159.5	146.3	178.2	151.7	145.6	129.2	162.0	135.7	136.3	139.2	170.3	141.7	635.7	572.4	587.4
Net energy for load (f)	159.6	151.5	180.6	153.8	152.5	135.6	162.7	139.7	142.8	145.7	168.4	145.1	645.6	590.5	602.0
Central (Southwest Power Pool)															
Natural Gas	14.0	15.8	26.1	15.3	17.3	17.6	24.7	13.5	12.2	14.4	20.4	11.9	71.1	73.1	58.8
Coal	27.3	19.1	27.3	19.5	17.0	13.5	21.8	12.1	12.5	9.6	22.5	11.9	93.3	64.4	56.5
Nuclear	4.4	4.4	4.1	3.4	4.4	4.4	4.4	3.5	3.9	3.3	4.4	4.4	16.2	16.7	16.0
Conventional hydropower	3.9	4.1	2.7	3.0	4.2	3.6	2.5	2.9	4.2	3.7	2.3	2.8	13.7	13.2	13.0
Nonhydro renewables (d)	18.1	18.5	17.5	20.9	20.6	19.0	16.9	23.9	26.1	24.0	21.1	27.0	75.0	80.4	98.2
Other energy sources (e)	0.2	0.3	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.0	0.1	0.8	0.6	0.4
Total generation	68.0	62.1	77.7	62.3	63.6	58.3	70.5	56.0	59.0	55.2	70.8	58.1	270.1	248.4	243.1
Net energy for load (f)	62.5	68.4	73.6	61.8	62.4	67.4	71.6	56.1	56.6	59.4	71.7	57.2	266.2	257.7	244.9
Texas (ERCOT)															
Natural Gas	34.7	43.1	62.3	40.1	36.8	44.2	56.6	29.8	22.2	32.3	41.2	23.4	180.1	167.4	119.1
Coal	18.1	18.3	21.6	17.2	13.1	11.8	12.8	12.9	14.5	17.5	25.5	18.0	75.2	50.5	75.5
Nuclear	10.4	9.8	11.0	10.2	10.4	9.6	11.0	10.0	10.7	9.8	10.3	9.6	41.3	41.0	40.4
Conventional hydropower	0.3	0.2	0.1	0.1	0.3	0.2	0.1	0.1	0.3	0.2	0.1	0.1	0.7	0.7	0.6
Nonhydro renewables (d)	19.3	21.4	19.5	20.9	22.7	24.5	24.1	26.4	28.4	31.1	30.6	30.1	81.1	97.6	120.3
Other energy sources (e)	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.3	0.4	0.4	1.6	1.5	1.4
Total generation	83.2	93.2	114.9	88.9	83.8	90.6	104.8	79.5	76.5	91.3	108.1	81.5	380.2	358.7	357.4
Net energy for load (f)	83.2	93.2	114.9	88.9	83.8	90.6	104.8	79.5	76.5	91.3	108.1	81.5	380.2	358.7	357.4
Northwest															
Natural Gas	20.1	16.7	29.4	23.1	23.5	16.2	19.7	16.3	13.6	12.1	14.7	14.1	89.2	75.7	54.4
Coal	29.7	18.0	29.4	27.9	22.0	14.2	29.2	27.2	28.9	26.1	40.0	29.4	105.1	92.5	124.5
Nuclear	2.5	1.3	2.5	2.6	2.4	2.1	2.4	2.4	2.4	1.1	2.4	2.4	8.9	9.4	8.4
Conventional hydropower	30.5	36.5	24.6	26.4	33.9	40.2	33.8	30.6	37.1	37.6	29.3	30.5	118.0	138.6	134.4
Nonhydro renewables (d)	11.2	13.4	12.0	11.8	13.8	13.6	13.3	14.3	17.2	16.3	15.5	16.2	48.4	54.9	65.2
Other energy sources (e)	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.9	0.9	0.7
Total generation	94.3	86.2	98.1	92.0	95.9	86.5	98.6	90.9	99.3	93.4	102.0	92.8	370.5	371.9	387.6
Net energy for load (f)	94.5	83.1	92.2	87.7	87.8	78.9	90.5	85.1	85.7	81.5	90.3	85.2	357.4	342.4	342.8
Southwest															
Natural Gas	10.4	12.7	19.1	14.3	11.9	12.6	15.2	9.1	5.4	8.0	10.6	8.1	56.5	48.7	32.2
Coal	9.7	7.9	11.8	7.4	5.3	6.6	10.1	7.2	7.9	9.8	11.8	7.2	36.7	29.2	36.8
Nuclear	8.6	7.6	8.6	7.2	8.3	7.5	8.6	7.6	8.4	7.6	8.6	7.6	31.9	32.0	32.2
Conventional hydropower	3.0	4.3	4.0	2.6	2.6	3.8	4.3	2.7	2.7	3.7	4.0	2.6	13.9	13.4	13.0
Nonhydro renewables (d)	2.1	2.8	2.7	2.4	2.5	3.1	2.8	2.8	4.1	4.5	4.0	3.9	9.9	11.3	16.4
Other energy sources (e)	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total generation	33.8	35.3	46.1	33.7	30.6	33.6	41.1	29.4	28.6	33.7	39.1	29.3	148.9	134.7	130.6
Net energy for load (f)	18.2	23.1	34.0	22.3	21.8	26.0	34.2	22.9	22.0	27.1	34.5	23.3	97.7	104.9	106.9
California															
Natural Gas	17.7	10.2	23.4	22.9	16.8	10.2	25.6	21.9	12.9	8.9	22.7	20.1	74.2	74.4	64.7
Coal	2.2	1.2	1.9	2.2	1.4	2.2	1.9	2.4	1.5	2.6	1.9	2.4	7.5	7.9	8.4
Nuclear	3.8	4.9	4.7	2.8	4.8	4.9	3.5	4.5	4.5	4.1	4.9	4.9	16.2	17.7	18.4
Conventional hydropower	7.1	12.4	9.6	4.9	3.2	9.2	9.9	5.1	3.1	8.9	9.5	5.0	34.0	27.5	26.4
Nonhydro renewables (d)	13.8	18.3	18.5	13.1	14.5	18.6	19.2	14.1	14.4	19.1	20.1	14.7	63.7	66.4	68.2
Other energy sources (e)	-0.2	0.2	0.2	0.0	0.0	0.1	0.2	0.0	-0.1	0.1	0.2	0.0	0.2	0.2	0.2
Total generation	44.4	47.2	58.3	45.9	40.7	45.2	60.2	48.0	36.4	43.6	59.3	47.1	195.8	194.2	186.4
Net energy for load (f)	59.9	62.5	76.3	61.6	57.6	60.5	75.2	60.2	56.6	62.1	75.6	60.7	260.2	253.6	254.9

Notes: 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.

(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.

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

Projections: EIA Regional Short-Term Energy Model.

Table 8a. U.S. Renewable Energy Consumption (Quadrillion Btu)
U.S. Energy Information Administration | Short-Term Energy Outlook - July 2020

	2019				2020				2021				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2019	2020	2021
Electric Power Sector															
Geothermal	0.037	0.035	0.037	0.033	0.034	0.036	0.039	0.035	0.033	0.035	0.038	0.035	0.142	0.144	0.140
Hydroelectric Power (a)	0.649	0.743	0.553	0.534	0.649	0.733	0.639	0.575	0.689	0.716	0.585	0.561	2.480	2.596	2.551
Solar (b)	0.122	0.201	0.208	0.128	0.151	0.241	0.262	0.168	0.195	0.311	0.337	0.213	0.659	0.821	1.056
Waste Biomass (c)	0.059	0.058	0.059	0.060	0.060	0.056	0.058	0.057	0.061	0.060	0.060	0.060	0.236	0.232	0.240
Wood Biomass	0.053	0.052	0.058	0.048	0.050	0.047	0.050	0.049	0.059	0.053	0.059	0.054	0.211	0.195	0.225
Wind	0.683	0.724	0.610	0.745	0.802	0.764	0.665	0.888	0.978	0.909	0.785	0.984	2.762	3.120	3.656
Subtotal	1.603	1.813	1.526	1.547	1.746	1.876	1.713	1.772	2.015	2.083	1.863	1.907	6.490	7.107	7.868
Industrial Sector															
Biofuel Losses and Co-products (d)	0.194	0.203	0.199	0.203	0.197	0.137	0.179	0.187	0.188	0.194	0.197	0.199	0.799	0.699	0.778
Geothermal	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.004	0.004	0.004
Hydroelectric Power (a)	0.003	0.003	0.002	0.003	0.003	0.003	0.002	0.003	0.003	0.003	0.002	0.003	0.010	0.010	0.010
Solar (b)	0.006	0.008	0.009	0.006	0.007	0.010	0.010	0.007	0.007	0.011	0.011	0.008	0.029	0.033	0.037
Waste Biomass (c)	0.042	0.038	0.037	0.043	0.043	0.040	0.040	0.042	0.042	0.040	0.040	0.042	0.160	0.165	0.165
Wood Biomass	0.373	0.363	0.369	0.368	0.343	0.340	0.349	0.350	0.340	0.337	0.351	0.354	1.473	1.382	1.382
Subtotal	0.617	0.613	0.614	0.622	0.591	0.524	0.575	0.588	0.577	0.580	0.596	0.604	2.466	2.278	2.358
Commercial Sector															
Geothermal	0.006	0.006	0.006	0.006	0.005	0.006	0.006	0.005	0.005	0.005	0.005	0.005	0.024	0.021	0.021
Solar (b)	0.022	0.032	0.032	0.022	0.026	0.037	0.037	0.026	0.029	0.042	0.042	0.030	0.108	0.125	0.143
Waste Biomass (c)	0.010	0.008	0.009	0.009	0.009	0.008	0.009	0.009	0.009	0.008	0.009	0.009	0.036	0.035	0.035
Wood Biomass	0.021	0.021	0.021	0.021	0.021	0.020	0.022	0.021	0.021	0.020	0.022	0.021	0.084	0.085	0.084
Subtotal	0.065	0.074	0.075	0.065	0.067	0.076	0.080	0.067	0.071	0.083	0.086	0.072	0.280	0.290	0.311
Residential Sector															
Geothermal	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.040	0.040	0.040
Solar (e)	0.050	0.076	0.078	0.052	0.058	0.088	0.090	0.061	0.066	0.102	0.103	0.071	0.257	0.298	0.342
Wood Biomass	0.130	0.132	0.133	0.133	0.124	0.132	0.133	0.133	0.124	0.132	0.133	0.133	0.529	0.522	0.522
Subtotal	0.190	0.218	0.221	0.195	0.192	0.230	0.233	0.205	0.200	0.243	0.247	0.214	0.825	0.860	0.904
Transportation Sector															
Biomass-based Diesel (f)	0.058	0.071	0.070	0.066	0.061	0.067	0.063	0.069	0.084	0.089	0.079	0.085	0.265	0.259	0.337
Ethanol (f)	0.274	0.293	0.291	0.296	0.257	0.223	0.265	0.275	0.262	0.284	0.288	0.284	1.154	1.020	1.118
Subtotal	0.333	0.365	0.361	0.361	0.318	0.290	0.328	0.343	0.346	0.373	0.367	0.369	1.419	1.280	1.455
All Sectors Total															
Biomass-based Diesel (f)	0.058	0.071	0.070	0.066	0.061	0.067	0.063	0.069	0.084	0.089	0.079	0.085	0.265	0.259	0.337
Biofuel Losses and Co-products (d)	0.194	0.203	0.199	0.203	0.197	0.137	0.179	0.187	0.188	0.194	0.197	0.199	0.799	0.699	0.778
Ethanol (f)	0.285	0.305	0.302	0.307	0.267	0.232	0.275	0.285	0.272	0.295	0.300	0.295	1.199	1.060	1.161
Geothermal	0.054	0.052	0.054	0.050	0.050	0.052	0.055	0.051	0.049	0.051	0.055	0.051	0.209	0.209	0.206
Hydroelectric Power (a)	0.652	0.747	0.556	0.537	0.652	0.736	0.642	0.578	0.692	0.720	0.588	0.564	2.492	2.608	2.564
Solar (b)(e)	0.198	0.315	0.324	0.206	0.239	0.376	0.398	0.261	0.298	0.465	0.494	0.321	1.043	1.274	1.578
Waste Biomass (c)	0.111	0.105	0.105	0.112	0.112	0.105	0.107	0.109	0.112	0.109	0.109	0.111	0.433	0.433	0.440
Wood Biomass	0.578	0.568	0.582	0.570	0.538	0.538	0.554	0.553	0.543	0.542	0.565	0.563	2.297	2.184	2.214
Wind	0.683	0.724	0.610	0.745	0.802	0.764	0.665	0.888	0.978	0.909	0.785	0.984	2.762	3.120	3.656
Total Consumption	2.809	3.084	2.798	2.791	2.914	2.997	2.929	2.975	3.209	3.362	3.159	3.166	11.481	11.815	12.897

- = no data available

(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) distributed solar photovoltaic systems.

(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 the residential sector in heating oil.

Notes: 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 Supply Monthly,* DOE/EIA-0109.

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

Projections: EIA Regional Short-Term Energy Model.

Table 8b. U.S. Renewable Electricity Generation and Capacity
U.S. Energy Information Administration | Short-Term Energy Outlook - July 2020

	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2021 Q1	2021 Q2	2021 Q3	2021 Q4	Year 2019	Year 2020	Year 2021
Renewable Energy Electric Generating Capacity (megawatts, end of period)															
Electric Power Sector (a)															
Biomass	6,804	6,757	6,658	6,668	6,669	6,587	6,592	6,625	6,625	6,627	6,547	6,635	6,668	6,625	6,635
Waste	4,001	3,969	3,960	3,942	3,942	3,860	3,865	3,899	3,899	3,901	3,821	3,909	3,942	3,899	3,909
Wood	2,803	2,788	2,699	2,727	2,727	2,727	2,727	2,727	2,727	2,727	2,727	2,727	2,727	2,727	2,727
Conventional Hydroelectric	79,601	79,580	79,403	79,460	79,473	79,509	79,635	79,659	79,741	79,699	79,776	79,795	79,460	79,659	79,795
Geothermal	2,488	2,488	2,488	2,508	2,508	2,508	2,508	2,508	2,508	2,508	2,508	2,550	2,508	2,508	2,550
Large-Scale Solar (b)	32,686	33,149	33,811	36,891	38,675	41,236	42,750	49,566	49,975	53,978	55,467	60,936	36,891	49,566	60,936
Wind	96,616	98,091	99,672	103,397	105,745	107,806	112,282	127,088	127,834	128,919	129,540	133,882	103,397	127,088	133,882
Other Sectors (c)															
Biomass	6,565	6,513	6,513	6,447	6,455	6,455	6,471	6,451	6,451	6,399	6,399	6,399	6,447	6,451	6,399
Waste	782	784	784	784	784	784	800	800	800	800	800	800	784	800	800
Wood	5,782	5,730	5,730	5,663	5,672	5,672	5,672	5,652	5,652	5,599	5,599	5,599	5,663	5,652	5,599
Conventional Hydroelectric	289	289	289	289	289	289	289	289	289	292	290	290	289	289	290
Large-Scale Solar (b)	406	412	423	429	429	440	440	444	444	444	444	444	429	444	444
Small-Scale Solar (d)	20,284	21,137	22,103	23,211	24,259	25,118	25,945	26,865	27,908	29,094	30,384	31,754	23,211	26,865	31,754
Residential Sector	12,271	12,840	13,526	14,229	14,963	15,550	16,116	16,695	17,368	18,170	19,023	19,928	14,229	16,695	19,928
Commercial Sector	6,402	6,609	6,841	7,186	7,429	7,665	7,874	8,158	8,468	8,791	9,164	9,563	7,186	8,158	9,563
Industrial Sector	1,611	1,688	1,736	1,796	1,867	1,904	1,955	2,012	2,072	2,132	2,197	2,263	1,796	2,012	2,263
Wind	118	118	118	118	118	353	353	353	353	353	353	353	118	353	353
Renewable Electricity Generation (billion kilowatthours)															
Electric Power Sector (a)															
Biomass	7.2	7.0	7.6	6.9	7.0	6.7	7.0	6.8	7.7	7.3	7.6	7.3	28.8	27.5	29.9
Waste	3.9	3.9	4.0	3.9	4.0	3.8	3.9	3.8	4.0	4.0	4.0	4.0	15.7	15.4	16.0
Wood	3.3	3.1	3.6	3.0	3.1	2.9	3.1	3.0	3.6	3.3	3.6	3.4	13.0	12.1	13.9
Conventional Hydroelectric	71.2	81.7	60.8	58.7	71.3	79.9	70.7	63.0	74.9	77.1	64.2	61.5	272.4	284.8	277.7
Geothermal	4.0	3.9	4.1	3.6	3.8	3.9	4.2	3.9	3.6	3.8	4.2	3.8	15.6	15.8	15.4
Large-Scale Solar (b)	13.3	21.8	22.6	13.9	16.4	26.1	28.4	18.2	21.2	33.7	36.6	23.1	71.5	89.1	114.6
Wind	74.2	78.6	66.2	80.8	87.0	83.0	72.2	96.4	106.2	98.6	85.2	106.8	299.8	338.6	396.8
Other Sectors (c)															
Biomass	7.4	7.3	7.6	7.4	7.4	7.3	7.6	7.4	7.3	7.3	7.6	7.4	29.7	29.6	29.6
Waste	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	2.8	2.8	2.8
Wood	6.7	6.6	6.9	6.6	6.7	6.6	6.9	6.6	6.6	6.6	6.9	6.6	26.8	26.8	26.8
Conventional Hydroelectric	0.3	0.4	0.3	0.3	0.4	0.4	0.3	0.3	0.4	0.4	0.3	0.3	1.3	1.3	1.3
Large-Scale Solar (b)	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.7	0.8	0.7
Small-Scale Solar (d)	6.9	10.4	10.6	7.1	8.3	12.2	12.4	8.5	9.5	14.3	14.5	10.1	35.0	41.4	48.5
Residential Sector	4.0	6.2	6.4	4.3	5.0	7.4	7.5	5.2	5.7	8.8	9.0	6.2	20.9	25.1	29.7
Commercial Sector	2.3	3.3	3.3	2.2	2.6	3.8	3.8	2.6	3.0	4.4	4.4	3.1	11.1	12.9	14.9
Industrial Sector	0.6	0.9	0.9	0.6	0.7	1.0	1.0	0.7	0.8	1.1	1.2	0.8	3.0	3.5	3.9
Wind	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.6	0.9

-- = no data available

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

(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 one 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 one megawatt).

(d) Solar photovoltaic systems smaller than one megawatt, as measured in alternating current.

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.

Projections: EIA-860M database, EIA-826 Solar PV database, and EIA Regional Short-Term Energy Model.

Table 9a. U.S. Macroeconomic Indicators and CO2 Emissions
U.S. Energy Information Administration | Short-Term Energy Outlook - July 2020

	2019				2020				2021				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2019	2020	2021
Macroeconomic															
Real Gross Domestic Product															
(billion chained 2012 dollars - SAAR)	18,927	19,022	19,121	19,222	18,975	16,559	17,066	17,467	17,930	18,327	18,599	18,817	19,073	17,517	18,418
Real Personal Consumption Expend.															
(billion chained 2012 dollars - SAAR)	13,103	13,250	13,353	13,414	13,181	10,996	11,861	12,284	12,429	12,578	12,731	12,907	13,280	12,080	12,661
Real Private Fixed Investment															
(billion chained 2012 dollars - SAAR)	3,349	3,337	3,330	3,326	3,305	2,956	2,830	2,896	2,981	3,075	3,151	3,201	3,336	2,997	3,102
Business Inventory Change															
(billion chained 2012 dollars - SAAR)	113	75	67	18	-43	-97	-343	-427	-197	-11	95	144	68	-228	8
Real Government Expenditures															
(billion chained 2012 dollars - SAAR)	3,258	3,297	3,310	3,331	3,338	3,279	3,308	3,336	3,355	3,376	3,393	3,406	3,299	3,315	3,383
Real Exports of Goods & Services															
(billion chained 2012 dollars - SAAR)	2,554	2,517	2,523	2,536	2,479	1,918	1,964	2,117	2,336	2,440	2,490	2,541	2,533	2,120	2,452
Real Imports of Goods & Services															
(billion chained 2012 dollars - SAAR)	3,498	3,498	3,514	3,437	3,295	2,709	2,571	2,777	3,001	3,146	3,278	3,405	3,487	2,838	3,208
Real Disposable Personal Income															
(billion chained 2012 dollars - SAAR)	14,878	14,934	15,012	15,091	15,126	16,330	15,769	15,232	15,272	15,427	15,524	15,594	14,979	15,614	15,454
Non-Farm Employment															
(millions)	150.2	150.6	151.2	151.8	151.9	131.4	137.5	140.8	144.2	147.0	148.6	149.6	150.9	140.4	147.4
Civilian Unemployment Rate															
(percent)	3.9	3.6	3.6	3.5	3.8	14.1	11.2	9.8	8.2	7.0	6.4	6.1	3.7	9.7	6.9
Housing Starts															
(millions - SAAR)	1.20	1.26	1.29	1.43	1.48	0.91	0.94	1.02	1.12	1.20	1.24	1.28	1.30	1.09	1.21
Industrial Production Indices (Index, 2012=100)															
Total Industrial Production	109.8	109.2	109.5	109.6	107.6	89.5	87.7	88.1	90.8	93.9	95.9	97.5	109.5	93.2	94.5
Manufacturing	106.5	105.7	105.9	105.8	104.3	83.6	81.9	82.5	85.9	89.3	91.4	92.9	106.0	88.1	89.9
Food	115.1	115.3	114.6	116.1	116.3	106.9	114.0	116.8	118.7	120.1	121.0	121.8	115.3	113.5	120.4
Paper	94.2	91.8	92.6	93.6	94.7	90.1	88.6	88.6	88.8	89.9	91.2	92.3	93.0	90.5	90.5
Petroleum and Coal Products	106.3	104.9	106.7	104.9	104.8	84.1	94.7	98.3	101.5	103.1	104.6	105.5	105.7	95.5	103.7
Chemicals	101.4	99.9	100.6	100.3	99.6	94.6	95.5	96.4	98.6	100.8	102.7	104.1	100.5	96.5	101.5
Nonmetallic Mineral Products	119.7	119.0	119.7	119.3	121.8	101.7	101.2	101.0	101.8	103.5	106.1	109.6	119.4	106.4	105.2
Primary Metals	97.9	96.7	96.4	96.6	94.3	69.7	75.1	76.0	78.1	81.0	83.4	85.2	96.9	78.8	81.9
Coal-weighted Manufacturing (a)	106.9	105.6	106.0	106.4	106.3	91.1	90.2	90.7	93.0	95.8	98.0	99.8	106.2	94.6	96.6
Distillate-weighted Manufacturing (a)	98.5	97.9	98.3	98.6	98.5	83.3	85.9	86.9	88.7	90.7	92.4	94.0	98.3	88.7	91.4
Electricity-weighted Manufacturing (a)	106.5	105.3	105.6	105.9	105.0	87.5	90.6	91.8	94.2	96.8	99.1	100.9	105.8	93.7	97.7
Natural Gas-weighted Manufacturing (a)	108.7	107.7	108.0	108.2	107.7	92.7	95.2	96.5	99.0	101.7	104.0	105.6	108.1	98.0	102.6
Price Indexes															
Consumer Price Index (all urban consumers)															
(index, 1982-1984=1.00)	2.53	2.55	2.56	2.58	2.59	2.56	2.57	2.58	2.59	2.61	2.62	2.64	2.56	2.58	2.61
Producer Price Index: All Commodities															
(index, 1982=1.00)	2.01	2.00	1.99	2.00	1.97	1.91	1.95	1.98	2.02	2.05	2.08	2.09	2.00	1.95	2.06
Producer Price Index: Petroleum															
(index, 1982=1.00)	1.81	2.08	1.95	1.93	1.74	1.14	1.44	1.48	1.44	1.60	1.63	1.60	1.94	1.45	1.57
GDP Implicit Price Deflator															
(index, 2012=100)	111.5	112.2	112.7	113.0	113.4	113.1	113.5	113.6	113.7	114.0	114.3	114.6	112.3	113.4	114.2
Miscellaneous															
Vehicle Miles Traveled (b)															
(million miles/day)	8,295	9,331	9,286	8,899	7,762	6,918	8,480	8,553	8,027	9,067	9,156	8,926	8,955	7,931	8,797
Air Travel Capacity															
(Available ton-miles/day, thousands)	643	685	707	688	599	491	701	670	672	706	744	732	681	616	713
Aircraft Utilization															
(Revenue ton-miles/day, thousands)	380	426	427	406	334	214	367	369	388	427	436	418	410	321	417
Airline Ticket Price Index															
(index, 1982-1984=100)	255.7	278.3	263.8	263.8	250.8	212.2	175.0	172.8	172.0	181.8	174.7	182.0	265.4	202.7	177.6
Raw Steel Production															
(million short tons per day)	0.273	0.271	0.264	0.265	0.268	0.174	0.213	0.255	0.256	0.242	0.247	0.259	0.268	0.227	0.251
Carbon Dioxide (CO2) Emissions (million metric tons)															
Petroleum	575	587	597	596	552	445	530	548	539	558	580	581	2,354	2,075	2,257
Natural Gas	507	350	384	448	492	351	375	422	467	330	347	417	1,689	1,641	1,562
Coal	289	239	307	242	203	170	223	184	217	222	292	214	1,076	780	944
Total Energy (c)	1,374	1,178	1,291	1,288	1,250	969	1,131	1,157	1,226	1,112	1,222	1,216	5,130	4,507	4,775

- = no data available

SAAR = Seasonally-adjusted annual rate

(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.

Notes: 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 Aviation Administration. Minor discrepancies with published historical data are due to independent rounding.

Projections: EIA Regional Short-Term Energy Model. U.S. macroeconomic projections 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 2020

	2019				2020				2021				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2019	2020	2021
Real Gross State Product (Billion $2009)															
New England	996	999	1,004	1,009	992	846	875	898	924	946	962	975	1,002	903	952
Middle Atlantic	2,772	2,782	2,791	2,802	2,764	2,297	2,369	2,449	2,531	2,603	2,653	2,696	2,787	2,470	2,621
E. N. Central	2,528	2,535	2,545	2,557	2,522	2,152	2,230	2,293	2,356	2,412	2,450	2,479	2,541	2,299	2,424
W. N. Central	1,181	1,187	1,193	1,198	1,183	1,066	1,093	1,115	1,139	1,160	1,175	1,185	1,190	1,114	1,164
S. Atlantic	3,353	3,367	3,383	3,403	3,362	2,980	3,078	3,145	3,227	3,296	3,340	3,375	3,376	3,141	3,309
E. S. Central	832	835	840	844	833	743	769	785	804	821	831	839	838	782	824
W. S. Central	2,347	2,370	2,392	2,406	2,377	2,136	2,175	2,203	2,244	2,281	2,309	2,331	2,379	2,223	2,291
Mountain	1,252	1,261	1,269	1,277	1,259	1,134	1,166	1,189	1,220	1,244	1,260	1,272	1,265	1,187	1,249
Pacific	3,700	3,719	3,739	3,761	3,717	3,235	3,343	3,423	3,517	3,597	3,653	3,699	3,730	3,430	3,617
Industrial Output, Manufacturing (Index, Year 2012=100)															
New England	99.4	98.6	98.8	98.8	97.6	78.0	76.2	76.9	80.1	83.4	85.4	86.8	98.9	82.1	83.9
Middle Atlantic	99.1	98.2	98.1	98.1	97.1	74.1	72.4	73.0	76.1	79.2	81.5	83.1	98.4	79.2	80.0
E. N. Central	108.4	107.1	107.0	106.7	105.0	80.1	78.3	79.4	82.9	86.7	88.6	90.6	107.3	85.7	87.2
W. N. Central	106.0	105.2	105.3	105.2	103.7	84.7	83.0	84.0	87.8	91.3	93.1	94.4	105.4	88.9	91.7
S. Atlantic	111.0	110.3	110.8	111.1	109.1	88.4	87.0	87.4	90.8	94.3	96.6	98.0	110.8	93.0	94.9
E. S. Central	110.8	109.8	110.2	110.0	109.0	84.2	83.2	84.1	87.8	91.6	94.1	95.7	110.2	90.1	92.3
W. S. Central	101.7	101.1	101.4	101.5	99.7	83.6	81.0	81.2	84.3	87.2	89.1	90.4	101.4	86.4	87.7
Mountain	116.5	115.8	116.6	116.2	114.6	94.6	92.2	93.0	97.0	100.8	103.0	104.5	116.3	98.6	101.3
Pacific	105.1	104.2	104.1	104.3	102.3	82.3	81.8	81.6	84.3	87.4	89.6	90.8	104.4	87.0	88.0
Real Personal Income (Billion $2009)															
New England	899	900	896	900	901	930	899	878	886	898	905	910	899	902	899
Middle Atlantic	2,287	2,301	2,298	2,306	2,308	2,361	2,281	2,229	2,249	2,281	2,298	2,310	2,298	2,294	2,284
E. N. Central	2,444	2,448	2,458	2,473	2,475	2,581	2,494	2,433	2,452	2,483	2,502	2,514	2,456	2,495	2,488
W. N. Central	1,153	1,154	1,168	1,174	1,174	1,242	1,194	1,164	1,172	1,186	1,196	1,202	1,162	1,193	1,189
S. Atlantic	3,203	3,221	3,230	3,250	3,265	3,498	3,379	3,279	3,299	3,336	3,357	3,369	3,226	3,355	3,340
E. S. Central	890	893	897	903	907	979	939	903	907	919	926	930	896	932	921
W. S. Central	1,997	2,005	2,017	2,030	2,038	2,148	2,067	2,005	2,011	2,032	2,046	2,056	2,012	2,065	2,036
Mountain	1,178	1,187	1,198	1,204	1,208	1,288	1,245	1,211	1,218	1,231	1,239	1,244	1,192	1,238	1,233
Pacific	2,789	2,816	2,810	2,826	2,833	2,930	2,846	2,797	2,828	2,864	2,885	2,899	2,810	2,851	2,869
Households (Thousands)															
New England	5,936	5,941	5,957	5,966	5,973	5,974	5,972	5,975	5,976	5,980	5,989	6,001	5,966	5,975	6,001
Middle Atlantic	16,243	16,263	16,305	16,328	16,346	16,351	16,351	16,361	16,368	16,378	16,403	16,436	16,328	16,361	16,436
E. N. Central	19,087	19,112	19,166	19,197	19,224	19,243	19,251	19,271	19,286	19,302	19,337	19,382	19,197	19,271	19,382
W. N. Central	8,688	8,708	8,740	8,760	8,777	8,786	8,792	8,804	8,812	8,824	8,845	8,869	8,760	8,804	8,869
S. Atlantic	25,689	25,762	25,877	25,965	26,044	26,082	26,114	26,164	26,213	26,272	26,356	26,458	25,965	26,164	26,458
E. S. Central	7,651	7,663	7,689	7,706	7,721	7,727	7,732	7,742	7,750	7,760	7,779	7,802	7,706	7,742	7,802
W. S. Central	14,813	14,856	14,923	14,974	15,019	15,046	15,070	15,106	15,140	15,180	15,234	15,295	14,974	15,106	15,295
Mountain	9,404	9,448	9,506	9,551	9,592	9,616	9,639	9,668	9,694	9,724	9,762	9,806	9,551	9,668	9,806
Pacific	18,903	18,952	18,994	19,034	19,069	19,088	19,108	19,146	19,182	19,221	19,275	19,336	19,034	19,146	19,336
Total Non-farm Employment (Millions)															
New England	7.5	7.5	7.5	7.5	7.5	6.2	6.5	6.7	6.9	7.1	7.2	7.2	7.5	6.7	7.1
Middle Atlantic	20.0	20.0	20.1	20.1	20.1	16.3	17.2	17.8	18.3	18.7	19.0	19.2	20.0	17.9	18.8
E. N. Central	22.3	22.3	22.3	22.3	22.3	18.8	19.8	20.4	20.9	21.3	21.5	21.7	22.3	20.3	21.4
W. N. Central	10.8	10.8	10.8	10.8	10.8	9.7	10.1	10.3	10.5	10.6	10.7	10.7	10.8	10.2	10.6
S. Atlantic	29.0	29.1	29.2	29.3	29.4	26.0	27.1	27.7	28.4	29.0	29.3	29.5	29.1	27.5	29.1
E. S. Central	8.3	8.3	8.3	8.3	8.3	7.4	7.7	7.9	8.1	8.2	8.3	8.3	8.3	7.8	8.2
W. S. Central	17.6	17.7	17.8	17.9	18.0	16.2	16.8	17.0	17.3	17.5	17.7	17.8	17.8	17.0	17.6
Mountain	11.0	11.0	11.1	11.2	11.2	10.0	10.4	10.7	10.9	11.1	11.2	11.3	11.1	10.6	11.1
Pacific	23.6	23.7	23.9	24.0	24.0	20.6	21.7	22.2	22.7	23.2	23.4	23.6	23.8	22.1	23.2

- = no data available

Notes: 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.

Projections: Macroeconomic projections 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 2020

	2019 Q1	Q2	Q3	Q4	2020 Q1	Q2	Q3	Q4	2021 Q1	Q2	Q3	Q4	Year 2019	2020	2021
Heating Degree Days															
New England	3,227	892	135	2,277	2,726	999	121	2,156	3,166	876	124	2,156	6,531	6,002	6,322
Middle Atlantic	2,987	634	68	2,065	2,471	851	78	1,982	2,932	701	75	1,982	5,754	5,383	5,690
E. N. Central	3,326	760	64	2,277	2,788	862	115	2,228	3,151	731	119	2,228	6,428	5,993	6,230
W. N. Central	3,648	772	107	2,546	3,038	796	151	2,401	3,234	701	157	2,401	7,073	6,386	6,493
South Atlantic	1,335	128	2	918	1,106	258	12	953	1,382	184	11	951	2,383	2,329	2,528
E. S. Central	1,711	193	1	1,275	1,484	345	20	1,281	1,780	231	17	1,281	3,180	3,129	3,309
W. S. Central	1,209	90	0	853	974	103	4	756	1,089	77	4	755	2,152	1,837	1,925
Mountain	2,429	786	127	1,966	2,216	647	134	1,790	2,185	690	147	1,790	5,308	4,787	4,811
Pacific	1,685	574	95	1,180	1,538	507	80	1,190	1,505	577	85	1,190	3,534	3,315	3,356
U.S. Average	2,210	480	56	1,558	1,875	542	69	1,508	2,094	483	71	1,506	4,304	3,994	4,154
Heating Degree Days, Prior 10-year Average															
New England	3,165	820	111	2,122	3,152	822	105	2,127	3,132	858	108	2,115	6,218	6,206	6,213
Middle Atlantic	2,956	650	76	1,941	2,949	644	69	1,944	2,913	679	71	1,926	5,623	5,606	5,589
E. N. Central	3,196	697	112	2,198	3,198	698	102	2,197	3,157	732	103	2,183	6,203	6,195	6,175
W. N. Central	3,255	702	140	2,380	3,287	702	131	2,379	3,247	728	131	2,376	6,477	6,500	6,482
South Atlantic	1,480	176	11	964	1,459	169	10	952	1,393	181	10	922	2,631	2,589	2,506
E. S. Central	1,861	222	17	1,292	1,849	214	15	1,277	1,772	232	16	1,255	3,392	3,356	3,274
W. S. Central	1,183	85	4	808	1,199	83	3	794	1,140	86	3	788	2,079	2,079	2,018
Mountain	2,164	714	139	1,855	2,192	718	135	1,844	2,182	699	134	1,845	4,873	4,890	4,860
Pacific	1,444	582	83	1,175	1,456	580	85	1,161	1,462	551	82	1,157	3,283	3,282	3,251
U.S. Average	2,150	475	68	1,518	2,149	472	64	1,509	2,108	482	64	1,493	4,212	4,194	4,147
Cooling Degree Days															
New England	0	68	468	0	0	134	430	1	0	84	420	1	536	566	505
Middle Atlantic	0	144	632	8	0	181	553	4	0	153	548	4	784	738	706
E. N. Central	0	175	651	7	2	224	543	7	0	218	544	7	832	776	769
W. N. Central	0	223	729	2	6	299	678	11	3	267	676	11	954	994	957
South Atlantic	153	756	1,298	309	198	630	1,166	235	129	672	1,185	236	2,516	2,229	2,222
E. S. Central	29	549	1,214	87	72	430	1,041	68	30	538	1,080	68	1,879	1,612	1,716
W. S. Central	72	819	1,691	168	174	833	1,510	211	99	890	1,534	211	2,750	2,728	2,733
Mountain	10	342	985	60	9	451	954	79	19	428	934	79	1,397	1,494	1,460
Pacific	22	167	590	67	24	198	602	59	27	168	586	59	846	884	840
U.S. Average	46	399	952	105	71	402	864	96	46	409	868	96	1,502	1,432	1,419
Cooling Degree Days, Prior 10-year Average															
New England	0	79	455	1	0	83	470	1	0	84	462	1	536	554	548
Middle Atlantic	0	165	589	6	0	170	609	6	0	165	597	6	760	786	769
E. N. Central	3	242	548	7	3	240	579	8	3	235	566	7	799	829	811
W. N. Central	7	298	669	11	7	296	697	11	7	295	688	11	985	1,011	1,001
South Atlantic	120	684	1,180	239	127	696	1,202	247	143	681	1,189	254	2,224	2,272	2,268
E. S. Central	36	555	1,049	67	36	557	1,082	72	42	532	1,062	73	1,706	1,746	1,710
W. S. Central	103	897	1,552	205	100	892	1,575	207	114	879	1,567	210	2,757	2,774	2,771
Mountain	25	438	932	81	24	433	939	81	24	443	941	82	1,476	1,476	1,490
Pacific	31	185	631	76	31	185	624	78	31	193	636	79	923	918	939
U.S. Average	46	417	873	97	47	420	892	100	52	416	887	102	1,433	1,459	1,456

- = no data available

Notes: 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 Oceanic and Atmospheric Administration (NOAA).
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).
Projections: Based on forecasts by the NOAA Climate Prediction Center (http://www.cpc.ncep.noaa.gov/pacdir/DDdir/NHOME3.shtml).