



## Short-Term Energy Outlook

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### Forecast highlights

#### *Winter Fuels Outlook*

- We forecast that average U.S. household expenditures for all major home heating fuels will increase significantly this winter primarily because of higher expected fuel costs as well as more consumption of energy due to a colder winter. Average increases vary by fuel, region, and weather assumptions. Compared with last winter, we forecast propane expenditures will rise by 54%, heating oil by 43%, natural gas by 30%, and electricity by 6%. We expect space heating demand to generally be higher this winter based on forecasts from the National Oceanic and Atmospheric Administration (NOAA) that U.S. average heating degree days will be 3% higher than last winter ([Winter Fuels Outlook](#)). Altering our assumptions for a 10% colder-than-expected winter significantly increases forecast expenditures, while a 10% warmer-than-expected winter still results in increased expenditures, because of price increases.

#### *Global liquid fuels*

- The October *Short-Term Energy Outlook* (STEO) remains subject to heightened levels of uncertainty related to the ongoing recovery from the COVID-19 pandemic. U.S. economic activity continues to rise after reaching multiyear lows in the second quarter of 2020 (2Q20). U.S. gross domestic product (GDP) declined by 3.4% in 2020 from 2019 levels. This STEO assumes U.S. GDP will grow by 5.7% in 2021 and by 4.5% in 2022. The U.S. macroeconomic assumptions in this outlook are based on forecasts by IHS Markit. Our forecast assumes continuing economic growth and increasing mobility. Any developments that would cause deviations from these assumptions would likely cause energy consumption and prices to deviate from our forecast.
- Brent crude oil spot prices averaged \$74 per barrel (b) in September, up \$4/b from August and up \$34/b from September 2020. Brent spot prices have risen from their September average to more than \$80/b in early October. Oil prices have increased over the past year as result of steady draws on global oil inventories, which averaged 1.9 million barrels per day (b/d) during the first three quarters of 2021. In addition to sustained inventory draws, prices increased after the October 4 announcement by OPEC+ that the group would keep current production targets unchanged.

- We expect Brent prices will remain near current levels for the remainder of 2021, averaging \$81/b during the fourth quarter of 2021, which is \$10/b higher than our previous forecast. The higher forecast reflects our expectation that global oil inventories will fall at a faster rate than we had previously expected owing largely to lower global oil supply in late 2021 across a range of producers. In 2022, we expect that growth in production from OPEC+, U.S. tight oil, and other non-OPEC countries will outpace slowing growth in global oil consumption and contribute to Brent prices declining from current levels to an annual average of \$72/b.
- U.S. regular gasoline retail prices averaged \$3.18 per gallon (gal) in September, up 2 cents/gal from August and almost \$1/gal higher than in September 2020. Recent gasoline price increases reflect increasing crude oil prices outweighing falling gasoline wholesale margins. We forecast that retail gasoline prices will average \$3.21/gal in October before falling to \$3.05/gal in December.
- Total U.S. crude oil production averaged 11.3 million b/d in July —the most recent monthly historical data point. We estimate that domestic production fell to 10.6 million b/d in September because of [disruptions from Hurricane Ida](#). We forecast production will be 11.0 million b/d in October and rise to 11.3 million b/d in December. We forecast 2021 production will average 11.0 million b/d, increasing to 11.7 million b/d in 2022 as tight oil production rises in the United States. Growth will come as a result of operators increasing rig counts, which we expect will offset production decline rates.

### **Natural Gas**

- In September, the natural gas spot price at Henry Hub averaged \$5.16 per million British thermal units (MMBtu), which was up from the August average of \$4.07/MMBtu and up from an average of \$3.25/MMBtu in the first half of 2021. The rising prices in recent months reflect U.S. natural gas inventory levels that are below the five-year average and continuing demand for natural gas for power generation use at relatively high prices.
- We expect the Henry Hub spot price will average \$5.80/MMBtu in fourth-quarter 2021, which is \$1.80/MMBtu higher than we forecast in the September STEO. In the current forecast, Henry Hub prices reach a monthly average peak of \$5.90/MMBtu in January and generally decline through 2022, averaging \$4.01/MMBtu for the year amid rising U.S. natural gas production and slowing growth in LNG exports. We raised our Henry Hub price forecast through the end of 2022 compared with last month. The increase reflects a higher starting point for our price forecast that incorporates recent developments in U.S. and global natural gas markets. We forecast that U.S. inventory draws will be slightly more than the five-year average this winter, and we expect that factor, along with rising U.S. natural gas exports and relatively flat production through January will keep U.S. natural gas prices near recent levels before downward pressures emerge. Given low natural gas inventories in both U.S. and European natural gas

storage facilities and uncertainty around seasonal demand, we expect natural gas prices to remain volatile over the coming months, with winter temperatures being a key driver of demand and prices.

- We estimate that U.S. LNG exports averaged 9.3 billion cubic feet per day (Bcf/d) in September 2021, down 4% from August. Despite the recent monthly decline, these were the most U.S. LNG exports for September since the United States began exporting LNG from the Lower 48 states in February 2016. Even though September exports were a record for the month, they were limited by weather conditions, which led to the suspension of piloting services for several days at [Sabine Pass](#), [Cameron](#), and [Corpus Christi](#). We expect that LNG exports will average 9.1 Bcf/d in October and then increase in the coming months. Cove Point LNG terminal is scheduled to complete its annual maintenance by mid-October and resume exports this month. Through this winter, LNG exports in the forecast average 10.7 Bcf/d as global natural gas demand remains high and several new LNG export trains—the sixth train at Sabine Pass LNG and the first trains at the new LNG export facility [Calcasieu Pass LNG](#)—enter service.
- We estimate that U.S. natural gas inventories ended September 2021 at about 3.3 trillion cubic feet (Tcf), 5% less than the five-year (2016–20) average for this time of year. [Injections into storage this summer have been below the previous five-year average](#), largely as a result of more electricity consumption in June due to hot weather, and increased exports even as domestic natural gas production has remained flat. We forecast that inventories will end the 2021 injection season (at the end of October) at almost 3.6 Tcf, which would be 5% less than the previous five-year average. We expect natural gas inventories to fall by 2.1 Tcf this winter, ending March at less than 1.5 Tcf, which would be 12% less than the 2017–21 average for that time of year.
- We estimate dry natural gas production averaged 93.3 Bcf/d in the United States during the third quarter of 2021—up from 91.6 Bcf/d in the first half of 2021. Production in the forecast rises to an average of 94.0 Bcf/d during the winter, and averages 96.4 Bcf/d during 2022, driven by natural gas and crude oil prices, which we expect to remain at levels that will support enough drilling to sustain production growth.

### ***Electricity, coal, renewables, and emissions***

- We expect the share of electricity generation produced by natural gas in the United States will average 36% in 2021 and 35% in 2022, down from 39% in 2020. In 2021, our forecast share for natural gas as a generation fuel declines in response to our expectation of a higher delivered natural gas price for electricity generators, which we forecast will average \$5.15/MMBtu compared with \$2.39/MMBtu in 2020. As a result of the higher expected natural gas prices, the forecast share of electricity generation from coal rises from 20% in 2020 to about 24% in 2021 and 23% in 2022. For renewable energy sources, new additions of solar and wind generating capacity are offset

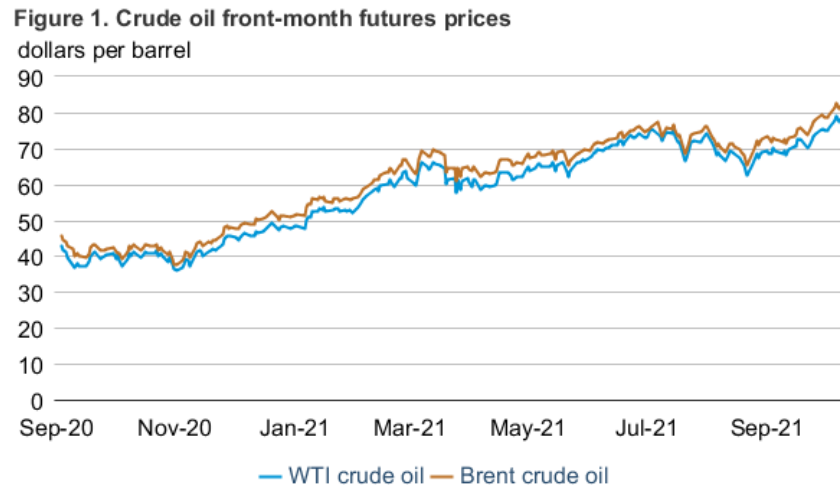
somewhat by reduced generation from hydropower this year, resulting in the forecast share of all renewables in U.S. electricity generation to average 20% in 2021, about the same as last year, before rising to 22% in 2022. The nuclear share of U.S. electricity generation declines from 21% in 2020 to 20% in 2021 and 2022.

- Electricity generation from coal-fired power plants has not increased as much in response to rising natural gas prices as it has in the past, or by as much as our models forecasted in recent STEOs. The lower price responsiveness of coal for electricity generation, which is likely the result of constraints on coal supply and low coal stocks, is contributing to upward pressure on natural gas prices. To reflect the lower price responsiveness of coal-fired electricity generation, we have lowered our forecast for U.S. coal generation for the fourth quarter of 2021 and the first half of 2022 by an average of 7 billion kWh (9%) each month, and we have raised our forecast for natural gas generation 5 billion kWh (5%) each month.
- We forecast that planned additions to U.S. wind and solar capacity in 2021 and 2022 will increase electricity generation from those sources. We estimate that the U.S. electric power sector added 14.6 gigawatts (GW) of [new wind capacity in 2020](#). We expect 17.1 GW of new wind capacity will come online in 2021 and 6.5 GW in 2022. Utility-scale solar capacity rose by an estimated 10.5 GW in 2020. Our forecast for added utility-scale solar capacity is 16.0 GW for 2021 and 18.3 GW for 2022. We expect significant [solar capacity additions in Texas](#) during the forecast period. In addition, we project that after increasing by 4.5 GW in 2020, small-scale solar capacity (systems less than 1 megawatt) will grow 5.8 GW and 7.8 GW in 2021 and 2022, respectively.
- Coal production in our forecast totals 588 million short tons (MMst) in 2021, 53 MMst more than in 2020. We expect demand for coal from the electric power sector to increase by 84 MMst in 2021. Production growth is unlikely to match the increases in demand in the near term due to many coal mines operating at a reduced capacity and limited available transportation. In 2022, we expect coal production to increase by 34 MMst to 622 MMst, as the production and transportation constraints experienced in 2021 ease. Secondary inventories of coal at electric utilities decreased in the first half of 2021, and we forecast this trend will continue into the second half of 2021 and 2022.
- We estimate that U.S. energy-related carbon dioxide (CO<sub>2</sub>) emissions [decreased by 11% in 2020](#) as a result of less energy consumption related to reduced economic activity and responses to COVID-19. For 2021, we forecast energy-related CO<sub>2</sub> emissions will increase about 8% from the 2020 level as economic activity increases and leads to rising energy use. We expect almost no change in energy-related CO<sub>2</sub> emissions in 2022. We forecast that after declining by 19% in 2020, coal-related CO<sub>2</sub> emissions will rise by 20% in 2021 and then fall by 5% in 2022. Short-term changes in energy-related CO<sub>2</sub> can be affected by temperature. A recent [STEO supplement](#) examines these dynamics.

# Petroleum and natural gas markets review

## Crude oil

**Prices:** The front-month futures price for Brent crude oil settled at \$81.95 per barrel (b) on October 7, 2021, up \$10.36/b from \$71.59/b on September 1. The front-month futures price for West Texas Intermediate (WTI) crude oil for delivery at Cushing, Oklahoma, increased by \$9.71/b during the same period, settling at \$78.30/b on October 7 (**Figure 1**).

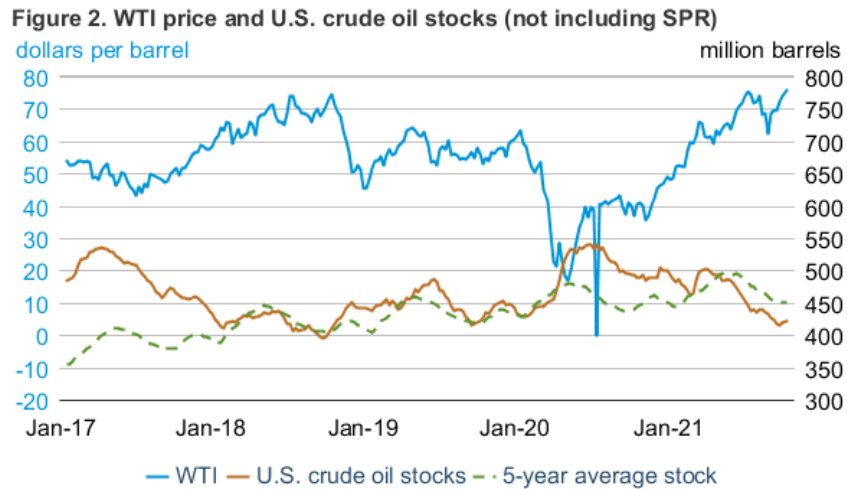


Sources: Graph by EIA, based on CME Group and Intercontinental Exchange, compiled by Bloomberg L.P.  
Note: WTI=West Texas Intermediate

WTI crude oil prices reached nearly seven-year highs on October 5 after gradually increasing throughout September and the first few trading days of October. Several developments during the past month are contributing to higher oil prices. First, U.S. crude oil inventories have decreased because of [Hurricane Ida's impact on crude oil production](#) in the Gulf of Mexico. Second, [OPEC+ members decided](#) to follow their scheduled crude oil production increase of 400,000 barrels per day (b/d) in November rather than increase production by more, like some market participants expected based on recent price movements. Third, [trade press](#) reports increased purchases of oil and petroleum products as a result of high natural gas prices because electric power generators in parts of Asia and Europe may implement natural gas-to-oil [fuel switching](#) to decrease fuel costs. Lastly, crude oil prices continue to rise due to steady and sizable global oil inventory draws. We estimate that global inventories fell by 1.9 million b/d in third-quarter 2021 (3Q21), marking the fifth consecutive quarter of draws; quarterly draws averaged 2.2 million b/d over those five quarters.

We estimate U.S. crude oil inventories ended September at 420.9 million barrels, the lowest level since September 2018 (**Figure 2**). U.S. crude oil stocks have decreased each of the past six months, decreasing by 81.0 million barrels (16%) since March, the largest six-month withdrawal on record in our crude oil data for all inventories outside of the Strategic Petroleum Reserve,

which go back to 1973. Furthermore, according to weekly data in our [Weekly Petroleum Status Report](#), crude oil stocks on September 17 were 37.0 million barrels (8.2%) below the five-year average for that time of year, the largest percentage below the five-year average since July 4, 2008. Like domestic stocks, we estimate OECD commercial petroleum stocks at the end of September to be at their lowest levels in more than three years.



 U.S. Energy Information Administration

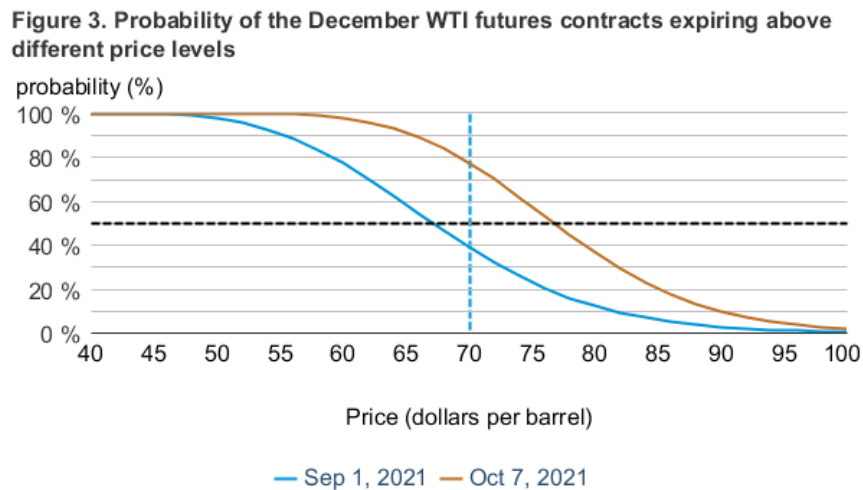
A major factor contributing to the stock draws has been low crude oil production, which has been outpaced by increases in demand. U.S. oil production averaged 11.0 million b/d from January through August (compared with 12.0 million b/d in the same months in 2019) and decreased to 10.6 million b/d in September because of lower U.S. offshore oil production in the Gulf of Mexico after Hurricane Ida. According to the [Bureau of Safety and Environmental Enforcement \(BSEE\)](#), from August 28 through September 6, [more than 80%](#) of oil production in the Gulf of Mexico was shut in, and [more than 15%](#) of Gulf of Mexico oil remained shut in through September 23, when BSEE issued its final outage report for Hurricane Ida. In total, disruptions in the Gulf of Mexico reduced crude oil production by about 30 million barrels since Hurricane Ida formed in late August.


Global liquid fuels production has also risen more slowly than global demand this year. Production increased by 2.7 million b/d (3%) from January to September, whereas global consumption increased by 6.3 million b/d (7%) during the same period. Despite relatively low global production and rising crude oil prices, [OPEC+ members reaffirmed](#) a previously agreed on production increase of 400,000 b/d in November, as opposed to a higher production increase for the month. Following this announcement on October 4, the price of Brent crude oil settled at \$81.26, after beginning the day at \$79.28.

In this forecast, we now expect that global oil inventories in 4Q21 and 1Q22 will fall at a faster rate than we had previously expected, which largely reflects lower global oil supply during this

period across a range of producers. We have also raised our expectations for global oil demand during winter 2021–22. In the October STEO, we have increased our forecast for Brent crude oil prices. We now expect falling global oil inventories will keep Brent prices near \$80/b this winter, averaging \$81/b in 4Q21 and \$78/b in 1Q21, both of which are \$10/b higher than forecast last month.

**Market-derived probabilities:** In our most recent forecast, we expect WTI prices to average \$78/b in 4Q21. The upward price pressure and market uncertainties are apparent in market-derived price probabilities that are based on futures and options prices. The [market-derived probability](#) of the December WTI futures contract expiring higher than \$70/b was 77% on October 7, and the probability of the contract expiring higher than \$80/b was 37% (**Figure 3**). On September 1, the market-derived probability of the December WTI futures contract expiring higher than \$70/b had been 39%, and the probability of the contract expiring higher than \$80/b was 12%. The increase in market-derived price expectations for the December WTI contract from September 1 to October 7 conveys the market’s reaction to factors such as decreasing stocks and the potential for natural gas-to-oil switching. The December WTI contract has not expired at more than \$70/b since 2014 and has not expired at more than \$80/b since 2013.



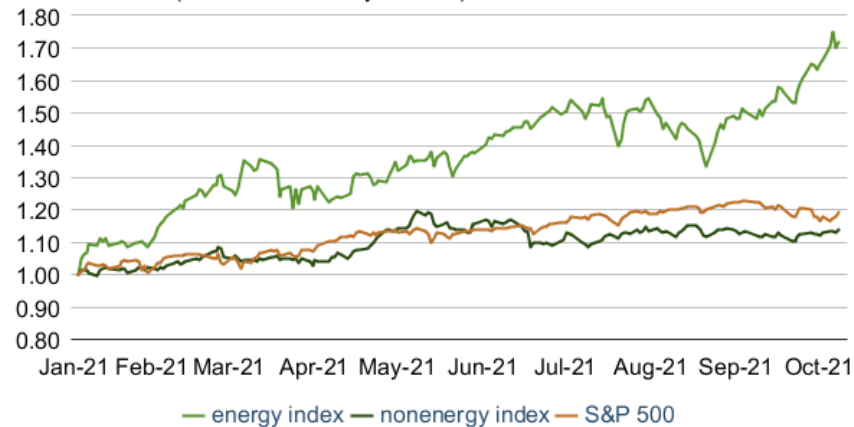
 U.S. Energy Information Administration, CME Group  
 Note: WTI=West Texas Intermediate

**Commodity Prices:** In 2021, energy commodity prices have increased more than other commodities and asset classes, especially since May, primarily as a result of production and supply developments specific to energy markets. The S&P GSCI (formerly the Goldman Sachs Commodity Index) is an index comprising 24 individual weighted commodity price contracts organized into 5 subindexes, and we use it for comparing energy commodities to other categories of commodities.

As of October 7, the non-energy index (an index consisting of agricultural, livestock, precious metal, and industrial metal commodities) was up 14% from the beginning of 2021 but down 5%

from its peak on May 7. Energy commodities, on the other hand, have increased 27% since May 7 and are up 72% from January 1. The S&P 500, which is up by 19% from January 1, has also increased since May 7, but only by 4% (**Figure 4**).

**Figure 4. Energy versus nonenergy commodities and equities**  
sub-index level (indexed to January 1, 2021)



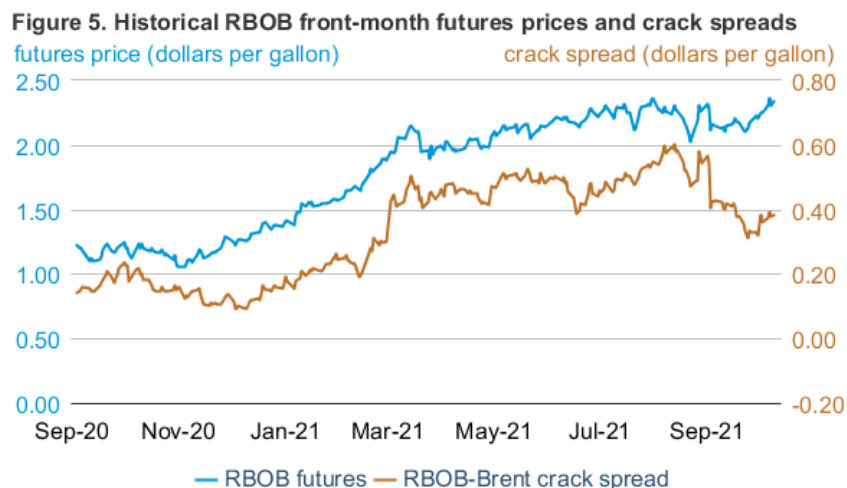
 Source: S&P Dow Jones, Bloomberg L.P.

Whereas general economic growth likely explained a portion of the increase in energy prices from January 1 through May 7, the growth in energy commodities since then has mostly been a result of factors specific to petroleum markets, such as production increases lagging demand increases. Brent and WTI make up 70% of the energy sub-index’s weight. Thus, the price increases from around \$50/b for Brent and WTI at the beginning of the year to around \$80/b in early October explains a significant portion of the increase in the energy sub-index. Higher prices for petroleum products, which make up 25% of the index, and for Henry Hub natural gas, which makes up the remaining 5% of the index, have also contributed to the rest of the growth in the energy sub-index.

## Petroleum products

**Gasoline prices:** The front-month futures price of RBOB (the petroleum component of gasoline used in many parts of the country) settled at \$2.33 per gallon (gal) on October 7, up 22 cents/gal from September 1 (**Figure 5**). The RBOB–Brent crack spread (the difference between the price of RBOB and the price of Brent crude oil) decreased by 2 cents/gal to settle at 38 cents/gal during the same period. The average RBOB–Brent crack spread in September was 38 cents/gal, an increase of 20 cents/gal compared with September 2020.

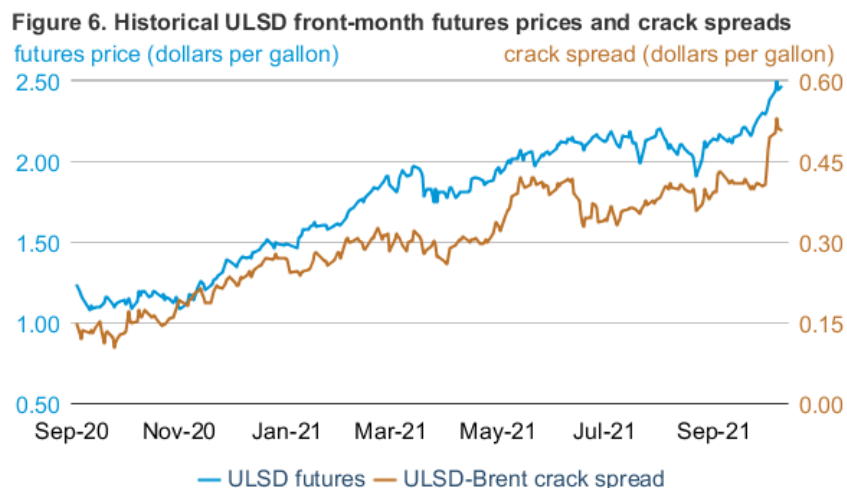




Source: Graph by EIA, based on data from CME Group, as compiled by Bloomberg L.P.  
 Note: RBOB is the petroleum component of gasoline used in many parts of the country.

After the RBOB–Brent crack spread averaged 55 cents/gal in August, it fell in September because of rising crude oil prices and lower gasoline prices. Lower gasoline prices compared with August reflect expected lower seasonal demand for gasoline as well as the price decrease for winter grade gasoline, which is relatively less expensive for refiners to produce because of less stringent Reid Vapor Pressure (RVP) requirements. The shift from summer to winter grade gasoline primarily takes place in September, putting downward pressure on the futures contract price in September onward. Temporary weather-related refinery outages along the U.S. Gulf Coast contributed to reduced production and draws on gasoline inventories earlier in September and limited some of the downward pressure on crack spreads. Compared with August 2021, U.S. demand for gasoline in September was an estimated 0.4 million barrels per day (b/d) lower. We estimate U.S. gasoline consumption averaged 9.1 million b/d in September, which is 0.5 million b/d (6%) higher than in September 2020 but also 0.1 million b/d (1%) lower than September 2019 level. We expect gasoline consumption to remain just below 2019 levels through the end of 2022. Combined with high net imports and lower demand, inventories increased during the second half of September; however, lost production from earlier in the month resulted in gasoline stocks ending September at 225.1 million barrels, the lowest end-of-September inventory level since 2017. Overall lower inventories may also have contributed to increasing gasoline crack spreads from October 4 through October 7.

**Ultra-low sulfur diesel prices:** The front-month futures price for ultra-low sulfur diesel (ULSD) for delivery in New York Harbor settled at \$2.46/gal on October 7, up 33 cents/gal from September 1 (Figure 6). The ULSD-Brent crack spread (the difference between the price of ULSD and the price of Brent crude oil) increased 8 cents/gal during the same period and settled at 51 cents/gal on October 7. The ULSD–Brent crack spread averaged 41 cents/gal in September.

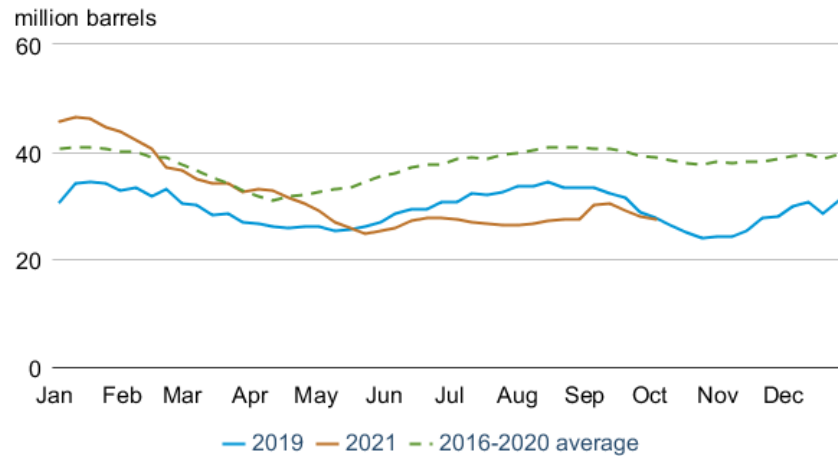


Source: Graph by EIA, based on data from CME Group, as compiled by Bloomberg L.P.  
 Note: ULSD=ultra-low sulfur diesel

High distillate demand and low distillate production resulted in the highest ULSD-Brent crack spreads seen this year, continuing a trend of rising ULSD crack spreads in recent months. We estimate that distillate consumption was 4 million b/d in September—the highest September level since 2018. Hurricane-related disruptions, including refinery shutdowns and brief closures of Colonial Pipeline Line 2, contributed to reduced production and higher inventory withdrawals. Also, increases in the [American Trucking Associations’ Truck Tonnage Index](#) and the [Cass Freight Index](#) suggest trucking demand remains high as supply chains continue to navigate a backlog of shipping orders. Rapidly rising shipping activity will likely contribute to high distillate demand. While we forecast gasoline demand to remain below 2019 levels throughout 2022, we forecast distillate demand to increase next year to its highest level since 2018.

Rising crack spreads also likely reflect relatively low distillate fuel inventories. Distillate inventories typically increase in the summer to prepare for growth in demand in the fall and winter, when diesel-powered agricultural equipment is used to harvest crops and the winter heating season begins. This year, distillate inventories did not build as much as usual due to high distillate demand and relatively low production. Second- and third-quarter distillate production was 5.5% and 5.1% below the five-year (2016–20) average, respectively. Our estimate of 4.5 million b/d for production this September is 6.9% below the five-year average. As a result, U.S. distillate stocks are below average for this time of year. In the Northeast, where 4.14 million households will use heating oil as their primary source of heat this winter, distillate inventories declined to 27.4 million barrels (30% below the five-year average), according to the latest *Weekly Petroleum Status Report (Figure 7)*. Our *Winter Fuels Outlook* forecasts a 43% increase in heating oil expenditure over last year and the highest price per gallon for heating oil since the 2012–13 winter.

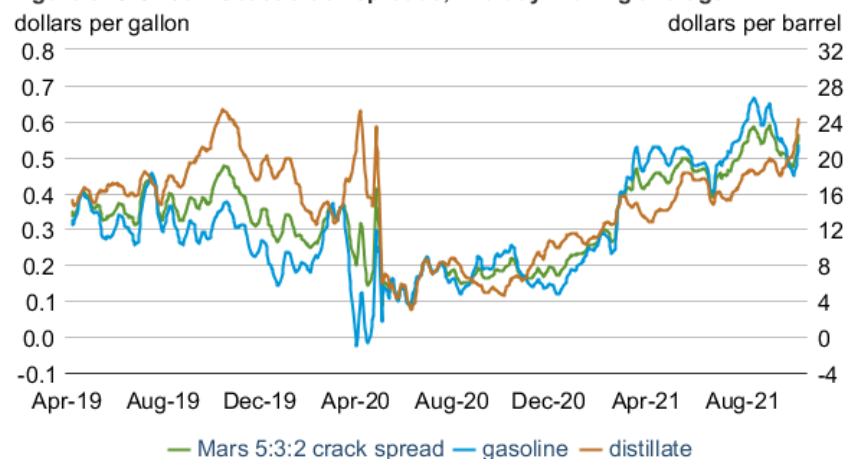
**Figure 7. Northeast (PADD 1A and 1B) total distillate inventories**



 U.S. Energy Information Administration, Weekly Petroleum Status Report

**U.S. Gulf Coast crack spreads:** The Mars crude oil 5:3:2 crack spread at the U.S. Gulf Coast is an indicator of profitability of gasoline and diesel-producing refinery operations for high-conversion refineries along the U.S. Gulf Coast that are able to process denser, more sour crude oil grades, such as Mars. On August 31, the five-day moving average crack spread reached 56 cents/gal, its highest point in 2021 (**Figure 8**). The high overall crack spread primarily reflects increased gasoline cracks, which also reached an annual high in August. Gasoline crack spreads in the first half of September were elevated because of temporary hurricane outages, which supported the 5:3:2 crack through the middle of the month, continuing the trend from August, as well as increasing distillate crack spreads as the outages resulted in distillate inventory withdrawals. As supply constraints were resolved and refineries came back online, gasoline cracks decreased while distillate cracks continued to increase.

**Figure 8. U.S. Gulf Coast crack spreads, five-day moving average**

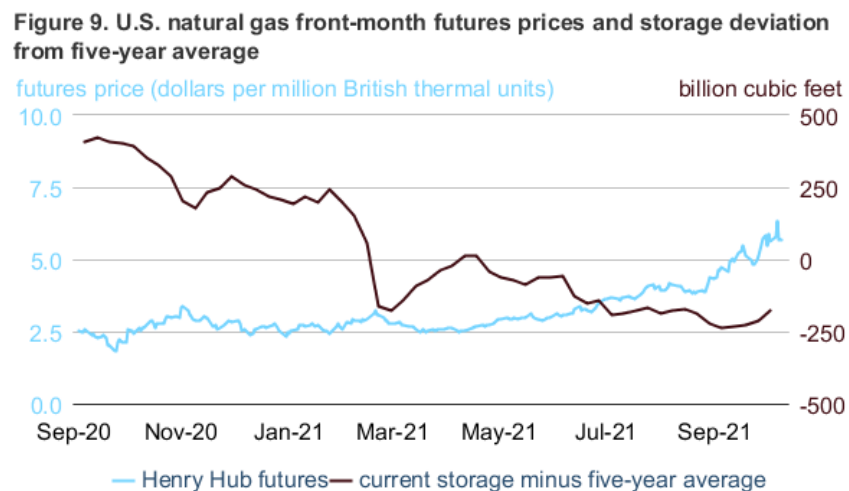


 Bloomberg L.P.

Higher crude oil costs, pressure on gasoline prices from the shift to winter grade, decreasing prices for renewable identification numbers (RINs), and seasonally lower demand has contributed to decreases in gasoline crack spreads in the latter half of September, while lower inventories and increasing seasonal demand continued to contribute to increasing diesel cracks. In addition to elevated crude oil prices globally, production outages in the Gulf Coast limited heavy sour crude oil production in August, and Mars grade in particular has faced extended [production outages](#). As gasoline cracks decreased and distillate cracks increased, the distillate crack spread overtook the gasoline crack spread on September 23 and has remained higher so far into October. The relatively larger reduction in gasoline cracks compared with increasing distillate cracks contributed to decreases in the Mars 5:3:2 crack, which fell from 49 cents/gal on September 15 to 45 cents/gal on September 30. Since October 1, the gasoline and diesel crack five-day average crack spreads have both been increasing, contributing to increases in the Mars 5:3:2 crack as well.

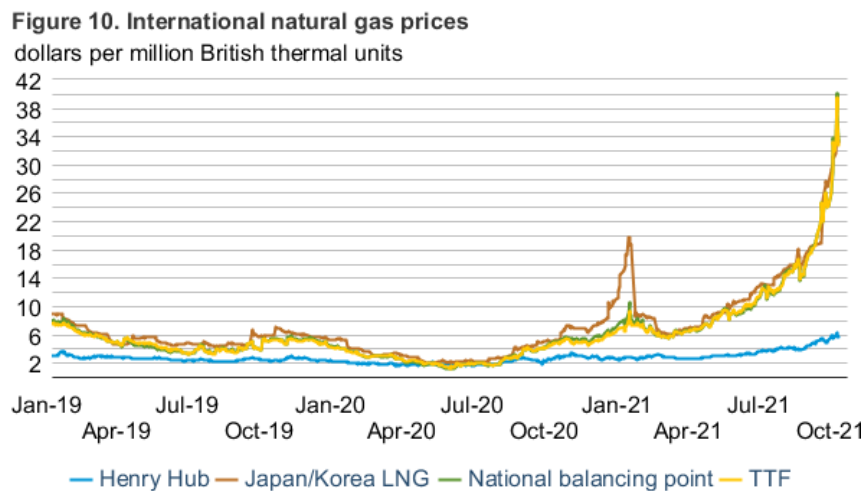
## Natural Gas

**Prices:** The front-month natural gas futures contract for delivery at the Henry Hub settled at \$5.68 per million British thermal units (MMBtu) on October 7, 2021, which was up \$1.06/MMBtu from September 1, 2021 (**Figure 9**). The average price for front-month natural gas futures contracts in September was \$5.11/MMBtu, the highest monthly average since February 2014. Henry Hub natural gas prices during much of the summer were supported by inventory builds that were below the previous five-year (2016–20) averages. Over the past month, increases in Henry Hub prices have coincided with sharp increases in international prices for natural gas, especially in Europe and Asia, and high international prices have contributed to strong demand for more U.S. liquefied natural gas (LNG) cargoes.



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

**International natural gas prices:** LNG spot and forward prices in Europe and Northern Asia ended September at record-high levels. On September 30, 2021, LNG spot prices for Japan/Korea reached \$31.10/MMBtu, and the price at the European natural gas benchmark, Title Transfer Facility (TTF), reached \$33.20/MMBtu (**Figure 10**). From the end of January to the end of September, the price spread between LNG prices in Asia and Henry Hub has increased from \$6.31/MMBtu to \$25.23/MMBtu. The price spread between European spot natural gas prices at TTF and Henry Hub increased from \$4.49/MMBtu to \$27.34/MMBtu over the same period. These large price differences have supported record LNG exports from the United States to Europe and Asia. U.S. LNG exports also increased because of new export capacity added in 2020. The final liquefaction units were commissioned at [Freeport](#), [Cameron](#), and [Corpus Christi LNG](#), and the remaining small-scale units were placed in service at [Elba Island LNG](#). Additionally, we expect Sabine Pass train 6 and Calcasieu Pass LNG facility to begin exporting by the end of the year.



Source: Graph by EIA, based on data from CME Group, as compiled by Bloomberg L.P.  
Note: TTF=Title Transfer Facility

High natural gas demand in Asia, particularly in China because of [disruptions in coal availability](#), contributed to increased demand for spot LNG shipments in addition to volumes supplied under long-term contracts. [U.S. exports of LNG to China nearly quadrupled](#), increasing from 0.3 billion cubic feet per day (Bcf/d) for the first seven months of 2020 to 1.1 Bcf/d for the same period in 2021. U.S. LNG exports to Japan and South Korea increased by 64% and 62%, respectively, over the same period.

[Low European natural gas storage inventories this year](#) have led to high natural gas spot prices in that region as well. According to data from Gas Infrastructure Europe’s (GIE) [Aggregated Gas Storage Inventory \(AGSI+\)](#), natural gas stocks in Europe ended September at 2.7 trillion cubic feet, 16% below the five-year average and 8% below the five-year minimum. Colder-than-normal weather late in the 2020–21 heating season and a [cold spell in April](#) led to rapid

drawdowns of natural gas inventories early in 2021, contributing to the low inventory levels that are putting upward pressure on prices.

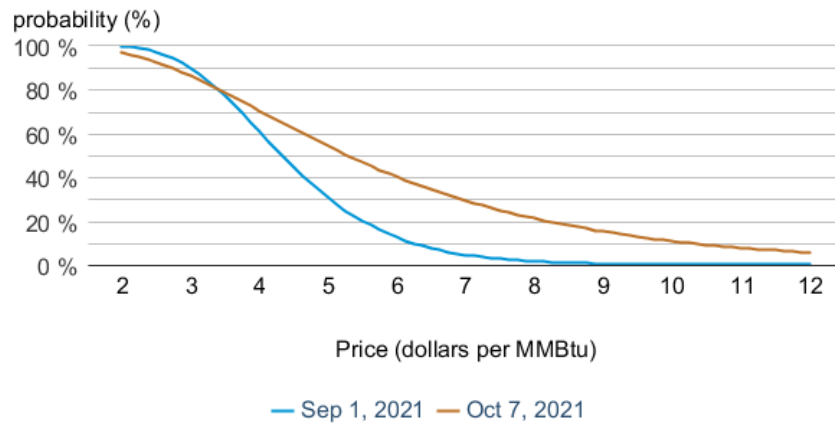
**U.S. consumption and price outlook:** Consumption of natural gas in the United States tends to decrease in September and October as temperatures are mild. U.S. consumption of natural gas decreased in September by 6.1 billion cubic feet per day (Bcf/d), or 7.9%, compared with August. This decrease was driven by a 6.7 Bcf/d decrease in natural gas consumption in the electric power sector that was partially offset by increases in the commercial, residential, and industrial sectors. U.S. exports of LNG also decreased in September, averaging 9.3 Bcf/d for the month, down from 9.7 Bcf/d in August. Annual [maintenance at the Cove Point LNG facility](#) in Maryland began in mid-September, and a power outage in Houston following Hurricane Nicholas resulted in the [Freeport LNG terminal shutting down](#) for a few days. Both of these events contributed to lower LNG exports in September. We expect LNG exports to average 10.7 Bcf/d this winter (October–March), a record high for that time period.

We estimate that U.S. working natural gas inventories ended September at 3,304 Bcf, 5.5% below the 2016–2020 average. This level is a decrease in the deficit to the 2016–2020 average when compared with August, which ended the month at 7.4% below the 2016–2020 average.

We expect that Henry Hub prices will remain high this winter, averaging \$5.67/MMBtu in the forecast for October through March, which would be the highest winter average since winter 2007–08. However, the price outlook for this winter is very uncertain. Given that natural gas inventories in the United States are below average levels from recent years, the possibility that prices could be volatile is high, particularly if any area in the United States experiences a severe cold snap. Uncertainty in the price forecast also results from linkages between U.S. natural gas markets and global markets. With high demand for U.S. natural gas exports, increases in global natural gas prices have coincided with smaller price increases at Henry Hub.

Given the uncertainty surrounding natural gas prices, [market-derived probabilities](#) based on futures and options contracts are showing very wide range of market-implied price outcomes for the January Henry Hub futures contract (**Figure 11**). As of October 7, the market-derived probabilities implied that the January contract had about a 10% chance of expiring below \$2.70/MMBtu and an equal chance of expiring above \$10.25/MMBtu. A month earlier that probability range was bounded by \$3.00/MMBtu on the low end and about \$6.25/MMBtu on the high end. This shift shows that the market is increasingly pricing in the possibility of large price shifts in the coming months.

**Figure 11. Probability of January 2022 natural gas futures contracts expiring above different price levels**



 U.S. Energy Information Administration, CME Group

## Notable forecast changes

- We forecast Brent crude oil prices will average \$81 per barrel (b) during the fourth quarter of 2021 (4Q21) and \$78/b during 1Q22, both of which are \$10/b higher than our previous forecast. The higher forecast reflects much tighter oil markets during this period than we previously expected. We now expect that global oil inventories in 4Q21 and 1Q22 will decline at an average rate of 0.5 million barrels per day (b/d), compared with a forecast of mostly unchanged inventories during that period in last month's STEO.
- We expect crude oil production in the Federal Offshore Gulf of Mexico will average 1.5 million b/d in 4Q21, more than 0.2 million b/d lower than forecast last month. The lower forecast is mostly the result of Shell's announcement that platforms damaged by Hurricane Ida would remain offline through the end of the year.
- We forecast Henry Hub spot prices will average \$5.80 per million British thermal units (MMBtu) in 4Q21, an increase of \$1.80/MMBtu from last month's STEO. In this outlook, we expect prices to remain elevated through the first quarter of 2022. Forecast Henry Hub prices for 2022 average \$4.01/MMBtu, up 54 cents/MMBtu from last month's STEO.
- In mid-September, Exelon announced that it will continue operating its nuclear reactors at the Byron and Dresden power plants in Illinois. These nuclear plants were previously scheduled to be retired next year. As a result of this decision, we raised our forecast for U.S. nuclear generation in 2022 by 4% above the level forecast in last month's STEO.

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



# Short-Term Energy Outlook Chart Gallery



October 13, 2021

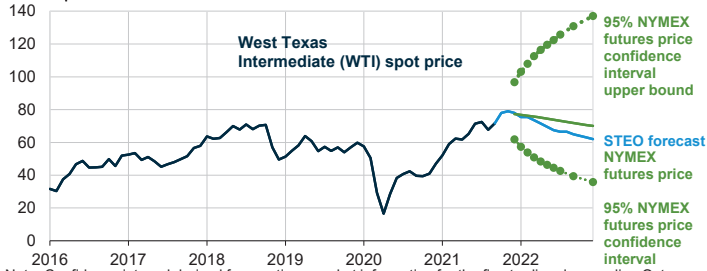


U.S. Energy Information Administration

Independent Statistics & Analysis | www.eia.gov

**West Texas Intermediate (WTI) crude oil price and NYMEX confidence intervals**

dollars per barrel



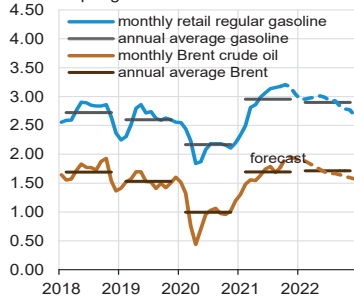
Note: Confidence interval derived from options market information for the five trading days ending Oct 7, 2021. Intervals not calculated for months with sparse trading in near-the-money options contracts.

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



**U.S. gasoline and crude oil prices**

dollars per gallon

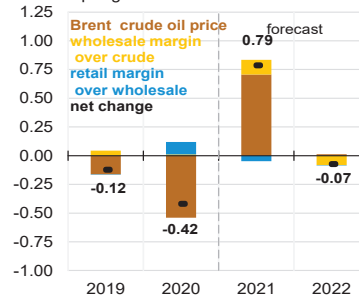


Source: U.S. Energy Information Administration, Short-Term Energy Outlook, October 2021, and Refinitiv an LSEG Business

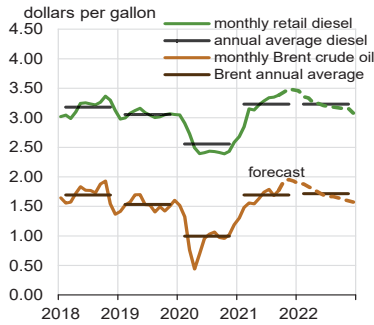


**Components of annual gasoline price changes**

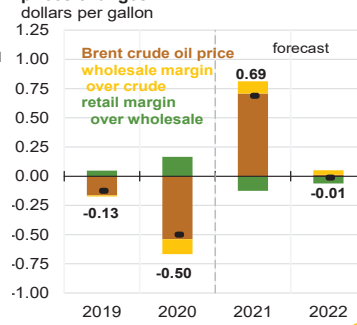
dollars per gallon



### U.S. diesel and crude oil prices



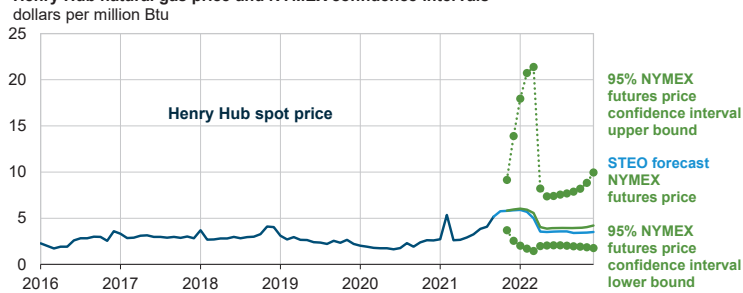
### Components of annual diesel prices changes



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



### Henry Hub natural gas price and NYMEX confidence intervals

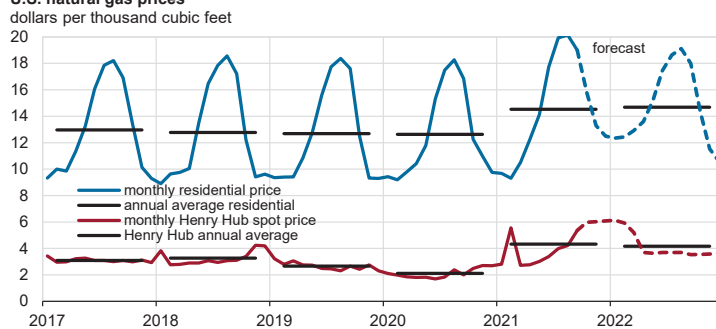


Note: Confidence interval derived from options market information for the five trading days ending Oct 7, 2021. Intervals not calculated for months with sparse trading in near-the-money options contracts.

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



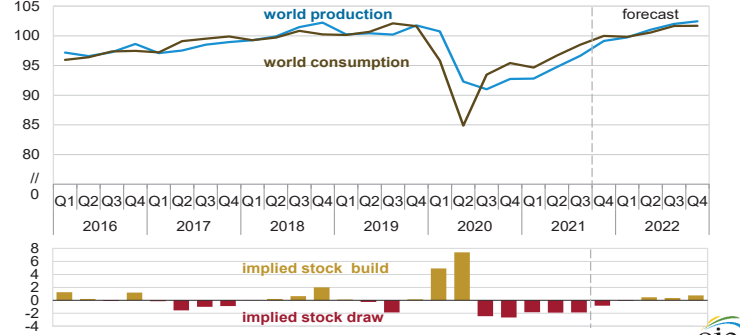
### U.S. natural gas prices



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



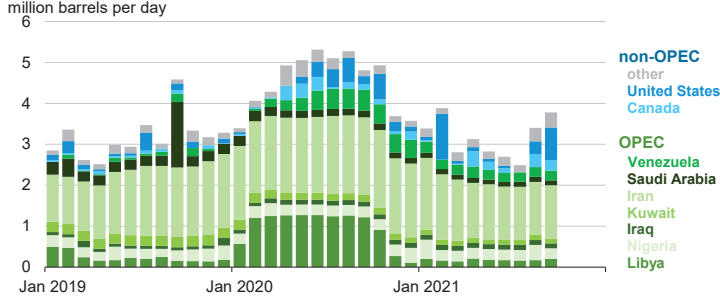
**World liquid fuels production and consumption balance**  
million barrels per day



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



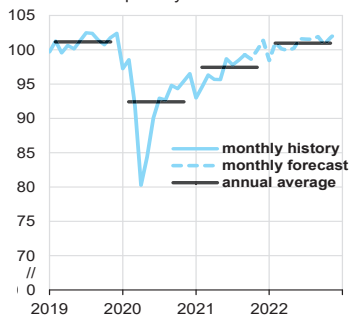
**Estimated unplanned liquid fuels production outages among OPEC and non-OPEC producers**  
million barrels per day



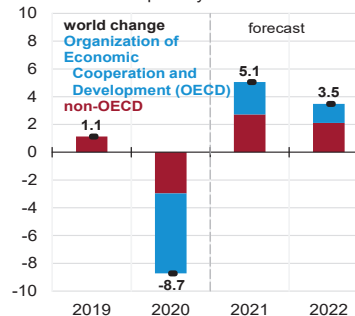
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, October 2021



**World liquid fuels consumption**  
million barrels per day



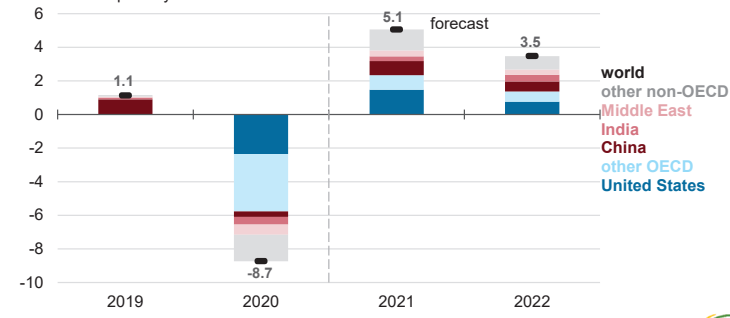
**Components of annual change**  
million barrels per day



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



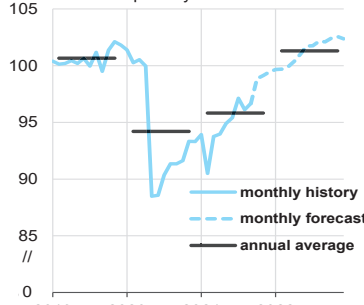
**Annual change in world liquid fuels consumption**  
million barrels per day



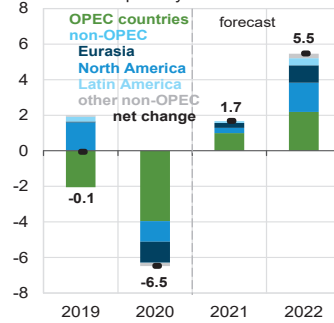
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, October 2021



**World crude oil and liquid fuels production**  
million barrels per day



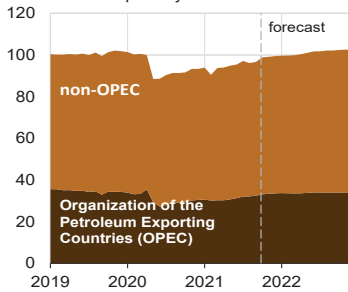
**Components of annual change**  
million barrels per day



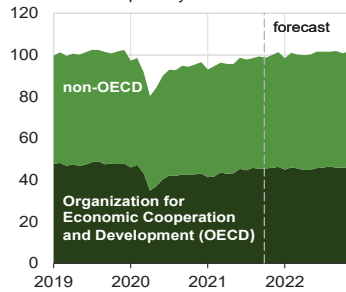
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, October 2021



**World liquid fuels production**  
million barrels per day



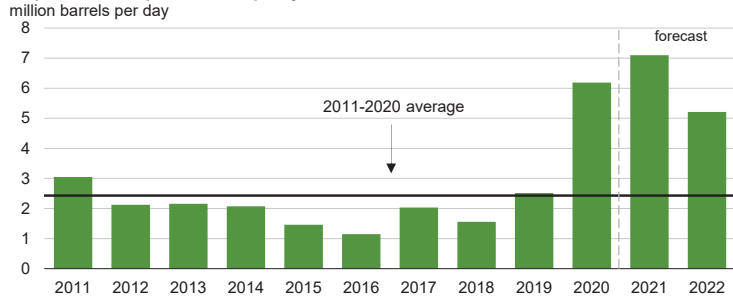
**World liquid fuels consumption**  
million barrels per day



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



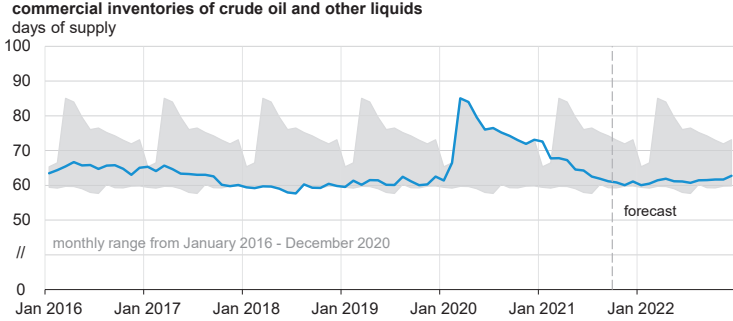
**Organization of the Petroleum Exporting Countries (OPEC)  
surplus crude oil production capacity**



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



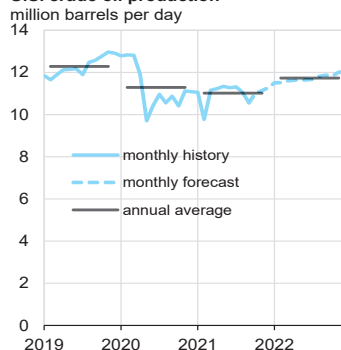
**Organization for Economic Cooperation and Development (OECD)  
commercial inventories of crude oil and other liquids**



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

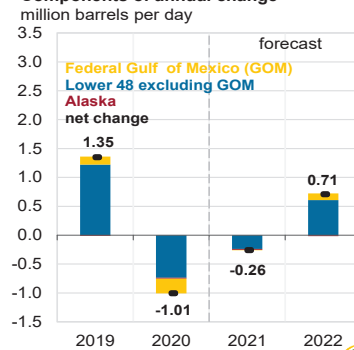


**U.S. crude oil production**

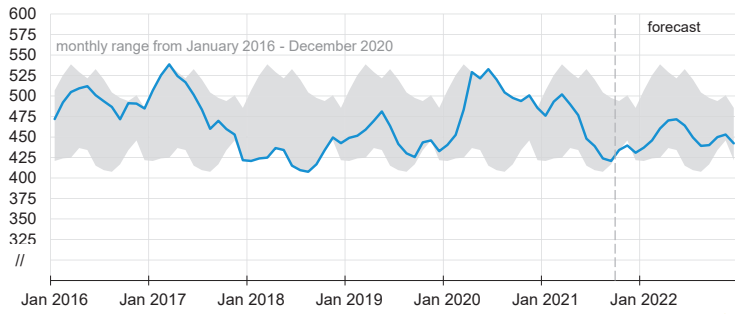


Source: U.S. Energy Information Administration, Short-Term Energy Outlook, October 2021

**Components of annual change**



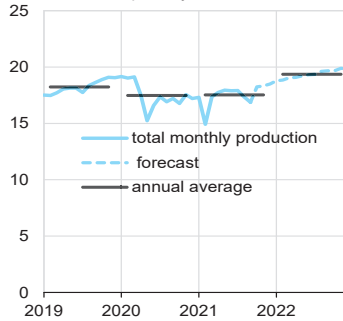
**U.S. commercial crude oil inventories**  
million barrels



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



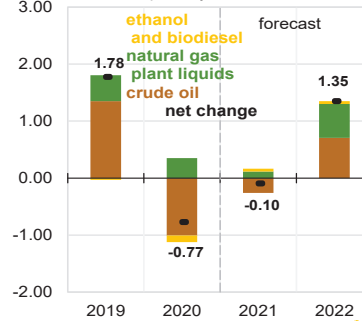
**U.S. crude oil and liquid fuels production**  
million barrels per day



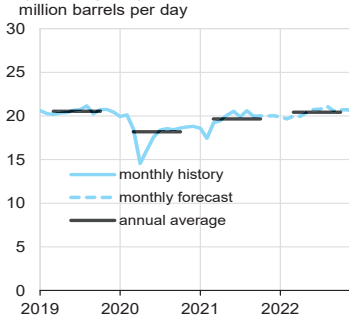
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, October



**Components of annual change**  
million barrels per day



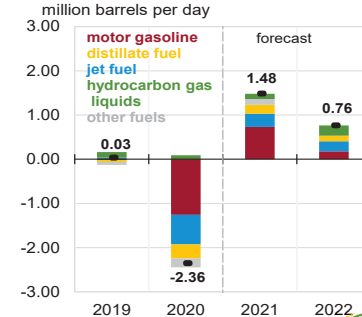
**U.S. liquid fuels product supplied (consumption)**  
million barrels per day



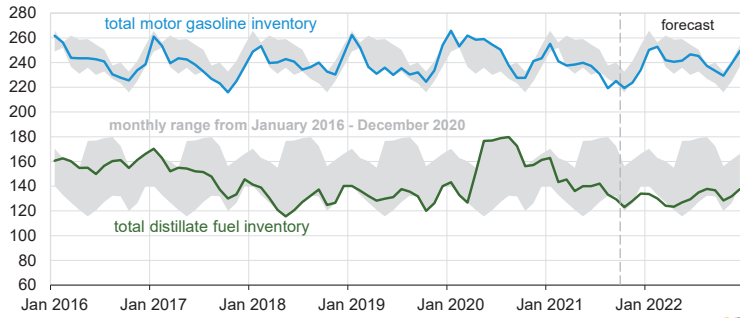
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, October 2021



**Components of annual change**  
million barrels per day



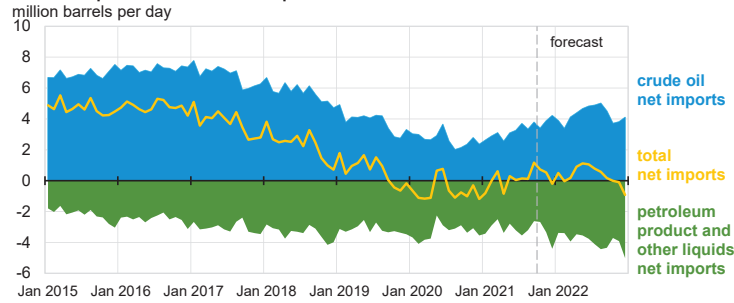
**U.S. gasoline and distillate inventories**  
million barrels



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



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

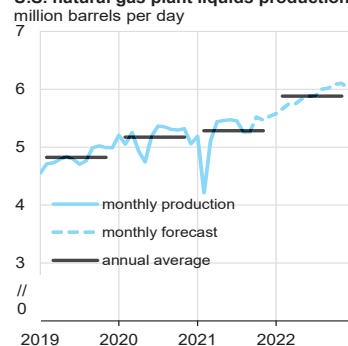


Note: Petroleum product and other liquids include: gasoline, distillate fuels, hydrocarbon gas liquids, jet fuel, residual fuel oil, unfinished oils, other hydrocarbons/oxygenates, and other oils.

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

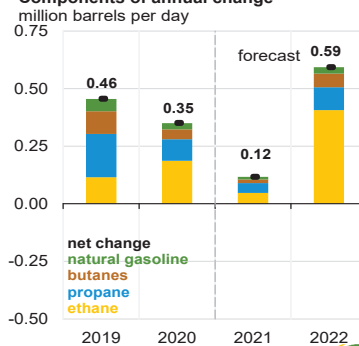


**U.S. natural gas plant liquids production**

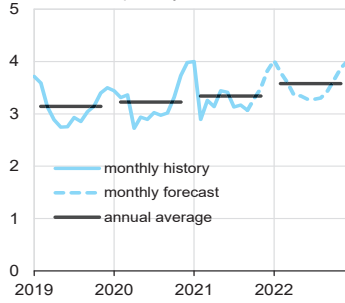


Source: U.S. Energy Information Administration, Short-Term Energy Outlook, October 2021

**Components of annual change**

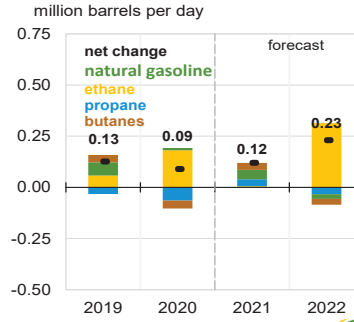


**U.S. hydrocarbon gas liquids product supplied (consumption)**  
million barrels per day

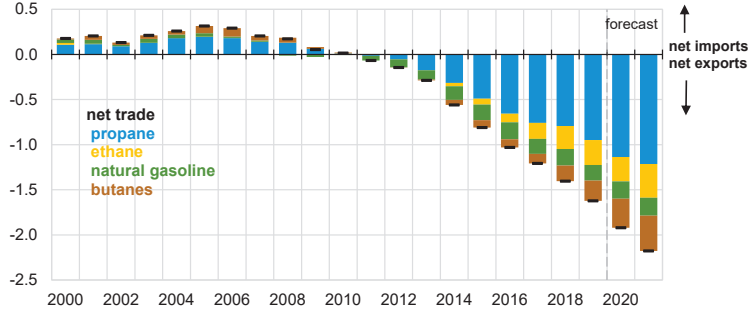


Source: U.S. Energy Information Administration, Short-Term Energy Outlook, October 2021

**Components of annual change**  
million barrels per day



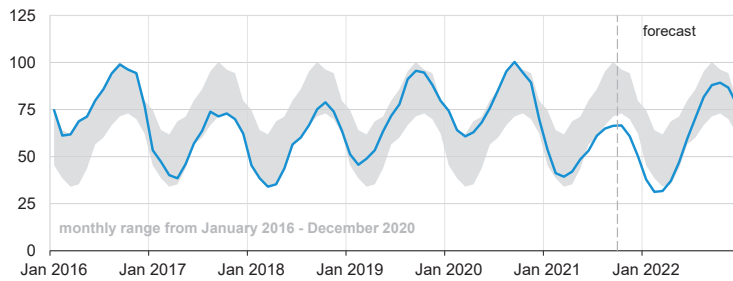
**U.S. net trade of hydrocarbon gas liquids (HGL)**  
million barrels per day



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



**U.S. commercial propane inventories**  
million barrels



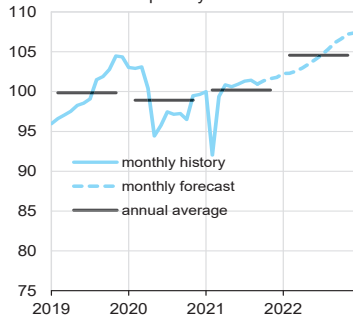
Note: Excludes propylene.

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





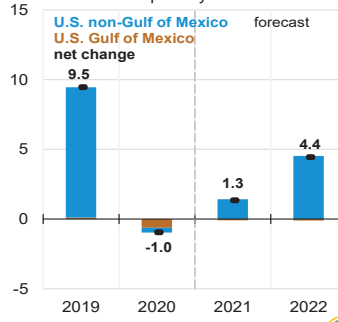
**U.S. marketed natural gas production**  
billion cubic feet per day



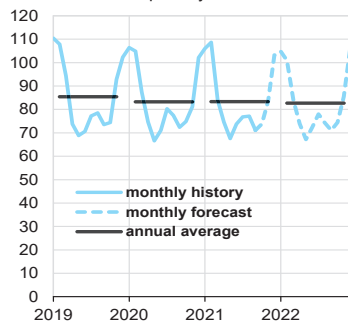
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, October 2021



**Components of annual change**  
billion cubic feet per day



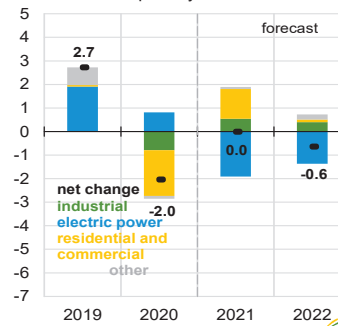
**U.S. natural gas consumption**  
billion cubic feet per day



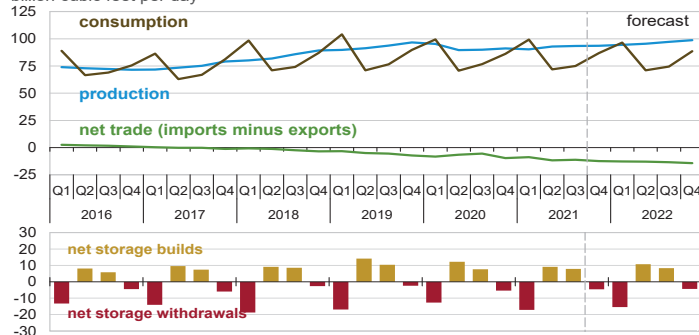
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, October 2021



**Components of annual change**  
billion cubic feet per day



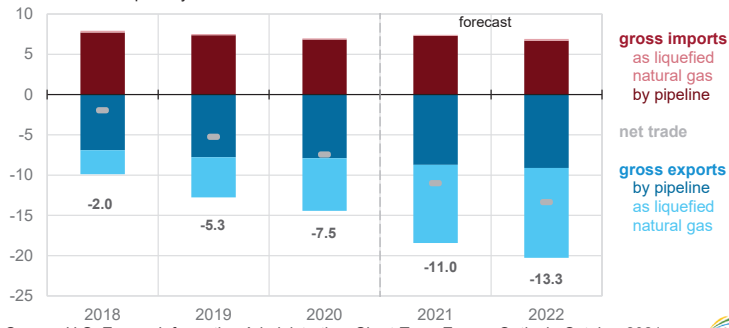
**U.S. natural gas production, consumption, and net imports**  
billion cubic feet per day



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



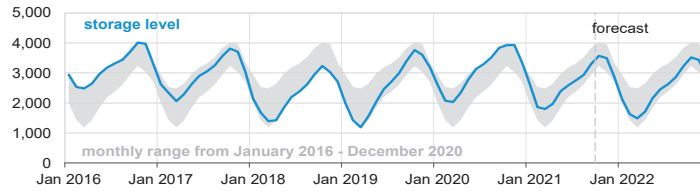
**U.S. annual natural gas trade**  
billion cubic feet per day



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



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



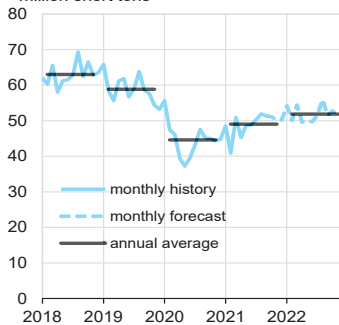
**Percent deviation from 2016 - 2020 average**



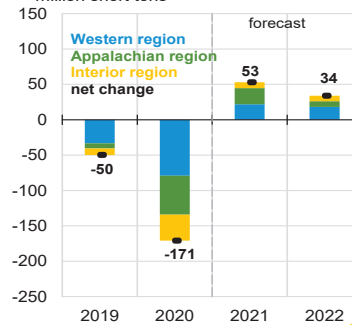
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, October 2021



**U.S. coal production**  
million short tons



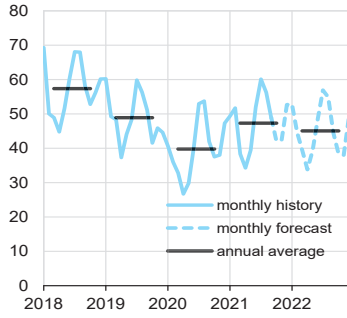
**Components of annual change**  
million short tons



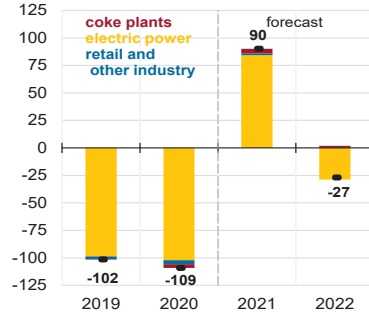
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, October 2021



**U.S. coal consumption**  
million short tons



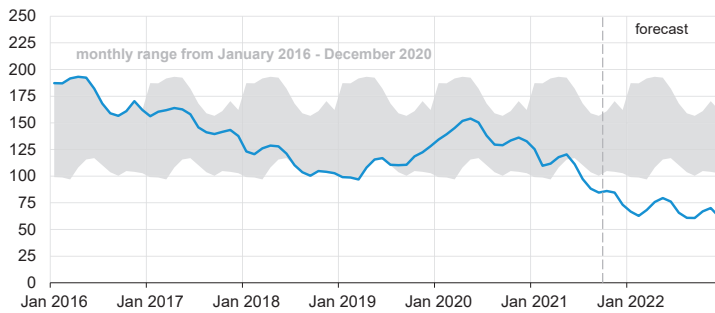
**Components of annual change**  
million short tons



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



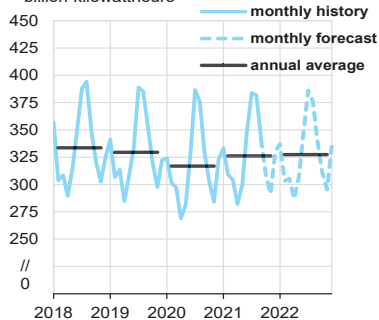
**U.S. electric power coal inventories**  
million short tons



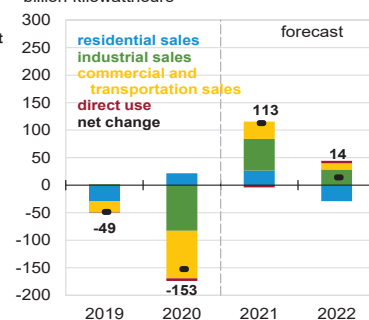
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, October 2021



**U.S. electricity consumption**  
billion kilowatthours



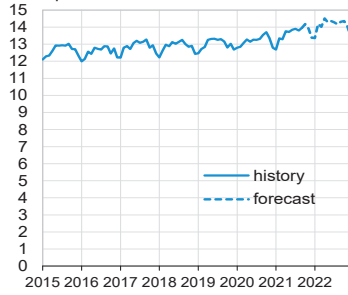
**Components of annual change**  
billion kilowatthours



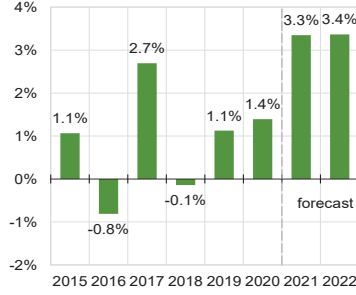
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, October 2021



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



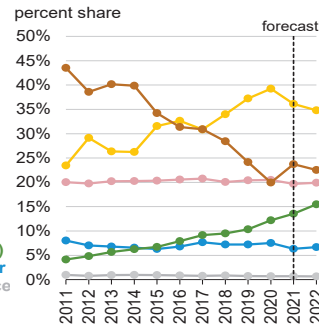
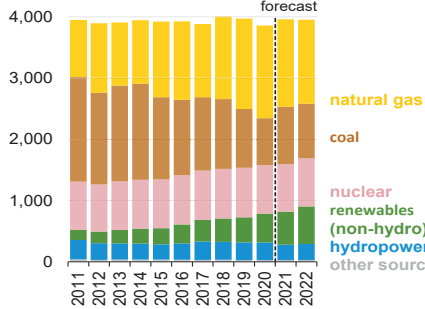
**Annual growth in nominal residential electricity prices**  
percent



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



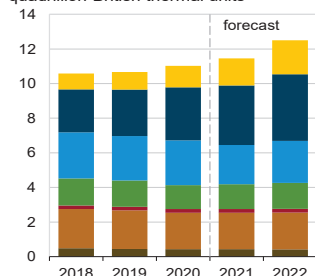
**U.S. electricity generation by fuel, all sectors**  
billion kilowatthours



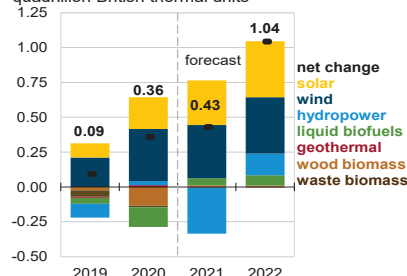
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, October 2021



**U.S. renewable energy supply**  
quadrillion British thermal units



**Components of annual change**  
quadrillion British thermal units

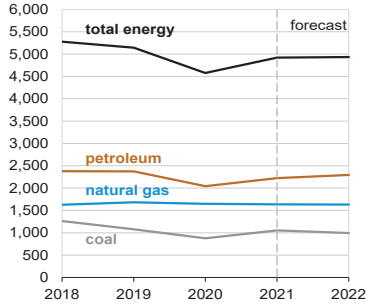


Note: Hydropower excludes pumped storage generation. Liquid biofuels include ethanol and biodiesel. Other biomass includes municipal waste from biogenic sources, landfill gas, and other non-wood waste.

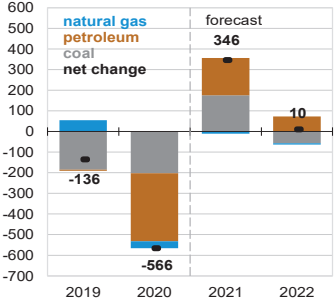
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, October 2021



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



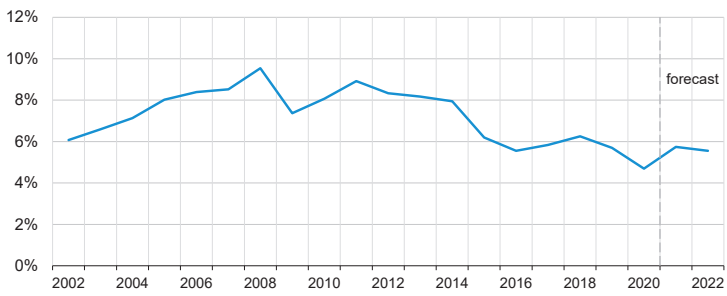
**Components of annual change**  
million metric tons



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



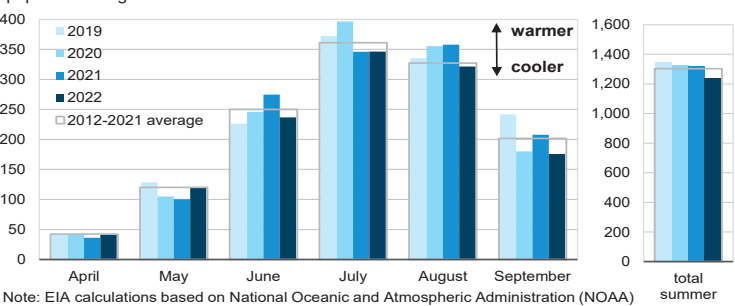
**U.S. annual energy expenditures**  
share of gross domestic product



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



**U.S. summer cooling degree days**  
population-weighted

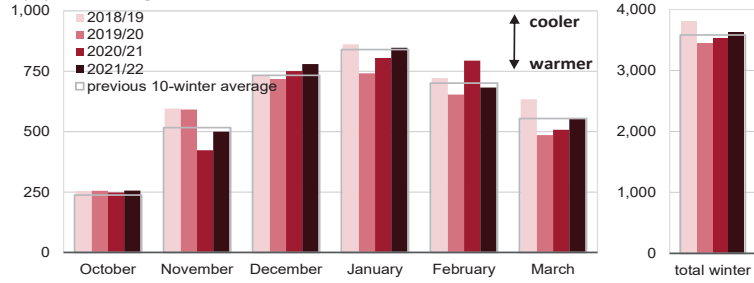


Note: EIA calculations based on National Oceanic and Atmospheric Administration (NOAA) data. Projections reflect NOAA's 14-16 month outlook.

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



**U.S. winter heating degree days**  
population-weighted

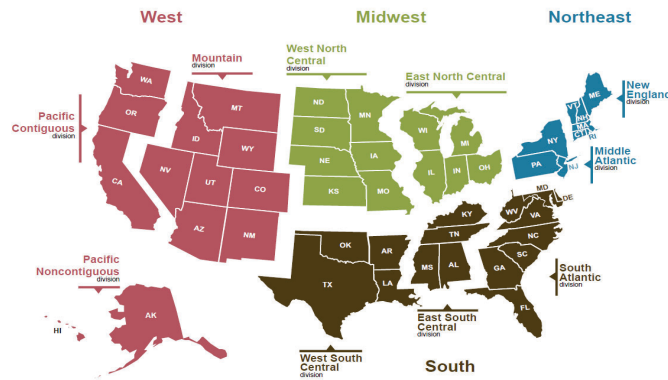


Note: EIA calculations based on National Oceanic and Atmospheric Administration (NOAA) data. Projections reflect NOAA's 14-16 month outlook.

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



**U.S. Census regions and divisions**



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



**Table WF01. Average Consumer Prices and Expenditures for Heating Fuels During the Winter**

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

Fuel / Region	Winter of							Forecast	
	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	% Change
<b>Natural Gas</b>									
<b>Northeast</b>									
Consumption (Mcf**)	72.2	57.4	61.5	65.3	66.8	61.1	62.1	64.2	3.4
Price (\$/mcf)	10.80	10.18	10.70	11.37	11.67	11.72	11.77	13.46	14.4
Expenditures (\$)	780	584	659	742	779	716	731	865	18.2
<b>Midwest</b>									
Consumption (Mcf)	79.1	63.6	64.8	73.9	76.9	69.7	70.6	72.5	2.7
Price (\$/mcf)	8.54	7.55	8.28	7.83	7.82	7.44	7.80	11.28	44.7
Expenditures (\$)	676	480	536	578	601	519	551	818	48.6
<b>South</b>									
Consumption (Mcf)	50.9	40.3	38.0	45.6	46.0	41.5	44.9	44.8	-0.2
Price (\$/mcf)	10.75	10.72	12.04	11.23	10.61	11.03	11.40	13.90	21.9
Expenditures (\$)	548	432	457	512	488	458	512	623	21.6
<b>West</b>									
Consumption (Mcf)	40.1	44.7	45.7	43.9	48.9	47.5	46.5	47.8	2.7
Price (\$/mcf)	10.71	9.92	10.68	10.25	10.14	10.44	11.38	13.69	20.3
Expenditures (\$)	430	444	488	450	496	496	530	654	23.5
<b>U.S. Average</b>									
Consumption (Mcf)	60.7	51.8	53.0	57.6	60.3	55.5	56.3	57.7	2.4
Price (\$/mcf)	9.89	9.28	10.06	9.82	9.72	9.72	10.17	12.92	27.1
Expenditures (\$)	601	481	533	565	586	540	573	746	30.2
<b>Heating Oil</b>									
<b>U.S. Average</b>									
Consumption (gallons)	548.2	436.6	468.3	495.6	512.0	467.9	474.8	511.1	7.7
Price (\$/gallon)	3.04	2.06	2.41	2.78	3.07	2.89	2.55	3.39	33.1
Expenditures (\$)	1,668	900	1,128	1,376	1,570	1,353	1,210	1,734	43.3
<b>Electricity</b>									
<b>Northeast</b>									
Consumption (kWh***)	8,927	7,705	8,050	8,345	8,481	8,014	8,172	8,346	2.1
Price (\$/kwh)	0.168	0.164	0.165	0.169	0.169	0.171	0.172	0.184	7.3
Expenditures (\$)	1,501	1,263	1,324	1,407	1,435	1,374	1,404	1,538	9.6
<b>Midwest</b>									
Consumption (kWh)	10,816	9,366	9,480	10,383	10,711	10,006	10,157	10,336	1.8
Price (\$/kwh)	0.118	0.122	0.124	0.124	0.123	0.124	0.126	0.130	3.0
Expenditures (\$)	1,274	1,138	1,173	1,289	1,320	1,245	1,284	1,346	4.9
<b>South</b>									
Consumption (kWh)	10,306	8,786	8,516	9,550	9,544	8,901	9,460	9,498	0.4
Price (\$/kwh)	0.111	0.110	0.111	0.112	0.113	0.115	0.116	0.123	6.4
Expenditures (\$)	1,142	968	949	1,065	1,074	1,021	1,098	1,173	6.8
<b>West</b>									
Consumption (kWh)	7,836	8,448	8,568	8,339	8,998	8,824	8,772	8,939	1.9
Price (\$/kwh)	0.127	0.130	0.132	0.136	0.136	0.138	0.147	0.149	0.9
Expenditures (\$)	993	1,096	1,129	1,131	1,224	1,218	1,294	1,330	2.8
<b>U.S. Average</b>									
Consumption (kWh)	9,421	8,459	8,428	9,054	9,261	8,767	9,079	9,193	1.3
Price (\$/kwh)	0.123	0.124	0.125	0.126	0.127	0.129	0.131	0.138	5.0
Expenditures (\$)	1,159	1,045	1,056	1,143	1,174	1,128	1,192	1,268	6.3

**Table WF01. Average Consumer Prices and Expenditures for Heating Fuels During the Winter**

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

Fuel / Region	Winter of							Forecast	
	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	% Change
<b>Propane</b>									
<b>Northeast</b>									
Consumption (gallons)	629.7	505.7	542.6	569.2	585.7	538.4	545.0	563.7	3.4
Price* (\$/gallon)	3.00	2.71	3.03	3.24	3.19	2.50	2.51	3.57	42.2
Expenditures (\$)	1,889	1,370	1,644	1,844	1,869	1,346	1,368	2,012	47.1
<b>Midwest</b>									
Consumption (gallons)	756.0	618.3	629.0	715.2	747.0	679.5	685.4	702.2	2.5
Price* (\$/gallon)	1.91	1.47	1.58	1.82	1.72	1.53	1.56	2.57	64.7
Expenditures (\$)	1,444	909	994	1,302	1,285	1,040	1,069	1,805	68.8
<b>South</b>									
Consumption (gallons)	560.7	449.0	428.1	504.6	504.5	459.2	493.8	496.2	0.5
Price* (\$/gallon)	2.98	2.27	2.45	2.59	2.63	2.31	2.33	3.31	42.3
Expenditures (\$)	1,671	1,020	1,047	1,308	1,326	1,063	1,148	1,643	43.0
<b>Number of households by primary space heating fuel (thousands)</b>									
<b>Northeast</b>									
Natural gas	11,705	11,802	11,918	12,063	12,183	12,349	12,516	12,670	1.2
Heating oil	5,097	4,923	4,774	4,724	4,610	4,448	4,304	4,144	-3.7
Propane	856	884	933	977	1,019	1,039	1,042	1,077	3.3
Electricity	3,093	3,253	3,326	3,387	3,482	3,585	3,713	3,818	2.8
Wood	569	511	471	469	462	351	218	162	-26.0
Other/None	437	433	433	441	447	469	508	533	4.9
<b>Midwest</b>									
Natural gas	18,206	18,241	18,236	18,319	18,372	18,211	18,045	18,063	0.1
Heating oil	319	301	286	278	273	262	247	234	-5.2
Propane	2,085	2,077	2,057	2,115	2,184	2,218	2,248	2,274	1.2
Electricity	5,514	5,747	5,871	5,978	6,027	6,221	6,507	6,681	2.7
Wood	617	587	552	527	507	471	426	378	-11.4
Other/None	351	354	359	361	349	362	395	405	2.7
<b>South</b>									
Natural gas	13,919	13,948	13,913	13,970	14,037	14,160	14,321	14,380	0.4
Heating oil	681	653	619	609	583	553	534	508	-4.9
Propane	1,925	1,899	1,858	1,852	1,862	1,893	1,908	1,891	-0.9
Electricity	28,843	29,509	29,873	30,326	30,708	30,965	31,360	31,910	1.8
Wood	593	552	509	484	475	464	452	446	-1.3
Other/None	407	413	426	434	454	483	506	540	6.7
<b>West</b>									
Natural gas	15,227	15,312	15,427	15,570	15,650	15,646	15,613	15,637	0.2
Heating oil	225	219	214	214	217	204	187	180	-3.6
Propane	915	923	935	963	987	967	943	941	-0.1
Electricity	8,927	9,228	9,351	9,490	9,646	9,847	10,104	10,309	2.0
Wood	749	719	700	689	677	666	666	664	-0.2
Other/None	1,075	1,087	1,058	1,089	1,091	1,121	1,223	1,282	4.9
<b>U.S. Totals</b>									
Natural gas	59,057	59,303	59,494	59,922	60,241	60,366	60,495	60,751	0.4
Heating oil	6,322	6,095	5,893	5,825	5,683	5,466	5,272	5,066	-3.9
Propane	5,781	5,783	5,784	5,906	6,053	6,117	6,140	6,183	0.7
Electricity	46,377	47,737	48,420	49,180	49,863	50,617	51,685	52,718	2.0
Wood	2,528	2,369	2,232	2,170	2,121	1,953	1,763	1,650	-6.4
Other/None	2,271	2,287	2,277	2,326	2,340	2,436	2,632	2,761	4.9
<b>Heating degree days</b>									
Northeast	5,647	4,320	4,699	5,014	5,165	4,656	4,738	4,928	4.0
Midwest	6,003	4,689	4,792	5,577	5,846	5,228	5,297	5,457	3.0
South	2,692	2,015	1,884	2,353	2,361	2,074	2,284	2,293	0.4
West	2,570	2,958	3,043	2,890	3,300	3,190	3,106	3,214	3.5
U.S. Average	3,890	3,209	3,264	3,622	3,801	3,444	3,529	3,620	2.6

Note: Winter covers the period October 1 through March 31. Fuel prices are nominal prices. Fuel consumption per household is based only on households that use that fuel as the primary space-heating fuel. Included in fuel consumption is consumption for water heating, appliances, electronics, and lighting (electricity). Per-household consumption based on EIA's 2015 Residential Energy Consumption Surveys corrected for actual and projected heating degree days. Number of households using heating oil includes kerosene.

\* Prices exclude taxes

\*\* thousand cubic feet



**Table WF01. Average Consumer Prices and Expenditures for Heating Fuels During the Winter**

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

Fuel / Region	Winter of						Forecast	
	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22

\*\*\* kilowatthour

**Table 1. U.S. Energy Markets Summary**

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

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>Energy Supply</b>															
Crude Oil Production (a) (million barrels per day) .....	<b>12.81</b>	<b>10.67</b>	<b>10.79</b>	<b>10.87</b>	<b>10.69</b>	<b>11.28</b>	<b>10.98</b>	<i>11.13</i>	<i>11.54</i>	<i>11.64</i>	<i>11.78</i>	<i>11.96</i>	<b>11.28</b>	<i>11.02</i>	<i>11.73</i>
Dry Natural Gas Production (billion cubic feet per day) .....	<b>95.29</b>	<b>89.57</b>	<b>89.99</b>	<b>91.14</b>	<b>90.30</b>	<b>92.89</b>	<b>93.32</b>	<i>93.65</i>	<i>94.38</i>	<i>95.41</i>	<i>97.12</i>	<i>98.69</i>	<b>91.49</b>	<i>92.55</i>	<i>96.41</i>
Coal Production (million short tons) .....	<b>149</b>	<b>116</b>	<b>136</b>	<b>134</b>	<b>140</b>	<b>143</b>	<b>154</b>	<i>152</i>	<i>159</i>	<i>149</i>	<i>159</i>	<i>155</i>	<b>535</b>	<i>588</i>	<i>622</i>
<b>Energy Consumption</b>															
Liquid Fuels (million barrels per day) .....	<b>19.50</b>	<b>16.07</b>	<b>18.45</b>	<b>18.72</b>	<b>18.45</b>	<b>20.03</b>	<b>20.15</b>	<i>20.01</i>	<i>19.85</i>	<i>20.37</i>	<i>20.83</i>	<i>20.66</i>	<b>18.19</b>	<i>19.67</i>	<i>20.43</i>
Natural Gas (billion cubic feet per day) .....	<b>99.44</b>	<b>70.72</b>	<b>76.76</b>	<b>86.12</b>	<b>99.28</b>	<b>71.92</b>	<b>75.08</b>	<i>86.88</i>	<i>96.42</i>	<i>71.11</i>	<i>74.47</i>	<i>88.54</i>	<b>83.25</b>	<i>83.23</i>	<i>82.59</i>
Coal (b) (million short tons) .....	<b>110</b>	<b>96</b>	<b>149</b>	<b>123</b>	<b>139</b>	<b>126</b>	<b>165</b>	<i>137</i>	<i>137</i>	<i>122</i>	<i>156</i>	<i>126</i>	<b>477</b>	<i>567</i>	<i>540</i>
Electricity (billion kilowatt hours per day) .....	<b>10.14</b>	<b>9.64</b>	<b>11.87</b>	<b>9.89</b>	<b>10.52</b>	<b>10.22</b>	<b>12.03</b>	<i>10.12</i>	<i>10.51</i>	<i>10.34</i>	<i>11.97</i>	<i>10.23</i>	<b>10.39</b>	<i>10.73</i>	<i>10.76</i>
Renewables (c) (quadrillion Btu) .....	<b>2.93</b>	<b>3.00</b>	<b>2.83</b>	<b>2.91</b>	<b>2.95</b>	<b>3.16</b>	<b>2.99</b>	<i>3.09</i>	<i>3.23</i>	<i>3.51</i>	<i>3.19</i>	<i>3.28</i>	<b>11.66</b>	<i>12.19</i>	<i>13.20</i>
Total Energy Consumption (d) (quadrillion Btu) .....	<b>25.17</b>	<b>20.62</b>	<b>23.46</b>	<b>23.80</b>	<b>25.04</b>	<b>23.20</b>	<b>24.24</b>	<i>24.68</i>	<i>25.23</i>	<i>23.31</i>	<i>24.49</i>	<i>25.04</i>	<b>93.05</b>	<i>97.16</i>	<i>98.08</i>
<b>Energy Prices</b>															
Crude Oil West Texas Intermediate Spot (dollars per barrel) .....	<b>45.34</b>	<b>27.96</b>	<b>40.89</b>	<b>42.50</b>	<b>58.09</b>	<b>66.19</b>	<b>70.61</b>	<i>78.32</i>	<i>74.76</i>	<i>69.44</i>	<i>66.01</i>	<i>62.98</i>	<b>39.17</b>	<i>68.48</i>	<i>68.24</i>
Natural Gas Henry Hub Spot (dollars per million Btu) .....	<b>1.91</b>	<b>1.71</b>	<b>2.00</b>	<b>2.53</b>	<b>3.56</b>	<b>2.94</b>	<b>4.36</b>	<i>5.80</i>	<i>5.53</i>	<i>3.53</i>	<i>3.51</i>	<i>3.45</i>	<b>2.03</b>	<i>4.17</i>	<i>4.01</i>
Coal (dollars per million Btu) .....	<b>1.93</b>	<b>1.91</b>	<b>1.93</b>	<b>1.92</b>	<b>1.91</b>	<b>1.92</b>	<b>2.02</b>	<i>2.02</i>	<i>2.04</i>	<i>2.03</i>	<i>2.00</i>	<i>1.98</i>	<b>1.92</b>	<i>1.97</i>	<i>2.01</i>
<b>Macroeconomic</b>															
Real Gross Domestic Product (billion chained 2012 dollars - SAAR) .....	<b>18,952</b>	<b>17,258</b>	<b>18,561</b>	<b>18,768</b>	<b>19,056</b>	<b>19,361</b>	<b>19,517</b>	<i>19,801</i>	<i>20,034</i>	<i>20,237</i>	<i>20,399</i>	<i>20,531</i>	<b>18,385</b>	<i>19,433</i>	<i>20,300</i>
Percent change from prior year .....	<b>0.6</b>	<b>-9.1</b>	<b>-2.9</b>	<b>-2.3</b>	<b>0.5</b>	<b>12.2</b>	<b>5.2</b>	<i>5.5</i>	<i>5.1</i>	<i>4.5</i>	<i>4.5</i>	<i>3.7</i>	<b>-3.4</b>	<i>5.7</i>	<i>4.5</i>
GDP Implicit Price Deflator (Index, 2012=100) .....	<b>113.4</b>	<b>113.0</b>	<b>114.0</b>	<b>114.6</b>	<b>115.8</b>	<b>117.5</b>	<b>119.0</b>	<i>120.0</i>	<i>120.5</i>	<i>120.9</i>	<i>121.4</i>	<i>122.0</i>	<b>113.7</b>	<i>118.1</i>	<i>121.2</i>
Percent change from prior year .....	<b>1.7</b>	<b>0.7</b>	<b>1.3</b>	<b>1.5</b>	<b>2.1</b>	<b>4.1</b>	<b>4.4</b>	<i>4.7</i>	<i>4.0</i>	<i>2.9</i>	<i>2.0</i>	<i>1.7</i>	<b>1.3</b>	<i>3.8</i>	<i>2.6</i>
Real Disposable Personal Income (billion chained 2012 dollars - SAAR) .....	<b>14,963</b>	<b>16,520</b>	<b>15,783</b>	<b>15,443</b>	<b>17,219</b>	<b>15,699</b>	<b>15,434</b>	<i>15,216</i>	<i>15,232</i>	<i>15,399</i>	<i>15,558</i>	<i>15,644</i>	<b>15,677</b>	<i>15,892</i>	<i>15,458</i>
Percent change from prior year .....	<b>1.6</b>	<b>12.5</b>	<b>6.9</b>	<b>4.0</b>	<b>15.1</b>	<b>-5.0</b>	<b>-2.2</b>	<i>-1.5</i>	<i>-11.5</i>	<i>-1.9</i>	<i>0.8</i>	<i>2.8</i>	<b>6.2</b>	<i>1.4</i>	<i>-2.7</i>
Manufacturing Production Index (Index, 2017=100) .....	<b>97.6</b>	<b>84.2</b>	<b>94.2</b>	<b>96.7</b>	<b>97.3</b>	<b>98.6</b>	<b>100.5</b>	<i>101.3</i>	<i>102.8</i>	<i>104.4</i>	<i>105.6</i>	<i>106.6</i>	<b>93.2</b>	<i>99.5</i>	<i>104.9</i>
Percent change from prior year .....	<b>-2.7</b>	<b>-15.3</b>	<b>-5.2</b>	<b>-2.4</b>	<b>-0.2</b>	<b>17.1</b>	<b>6.7</b>	<i>4.8</i>	<i>5.6</i>	<i>5.8</i>	<i>5.1</i>	<i>5.2</i>	<b>-6.4</b>	<i>6.8</i>	<i>5.4</i>
<b>Weather</b>															
U.S. Heating Degree-Days .....	<b>1,880</b>	<b>544</b>	<b>71</b>	<b>1,422</b>	<b>2,107</b>	<b>473</b>	<b>49</b>	<i>1,535</i>	<i>2,085</i>	<i>484</i>	<i>78</i>	<i>1,522</i>	<b>3,917</b>	<i>4,164</i>	<i>4,170</i>
U.S. Cooling Degree-Days .....	<b>70</b>	<b>393</b>	<b>932</b>	<b>120</b>	<b>49</b>	<b>411</b>	<b>912</b>	<i>92</i>	<i>46</i>	<i>398</i>	<i>844</i>	<i>96</i>	<b>1,515</b>	<i>1,464</i>	<i>1,384</i>

(a) Includes lease condensate.

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

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

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

(d) The conversion from physical units to Btu is calculated using a subset of conversion factors used in the calculations of gross energy consumption in EIA's Monthly Energy Review (MER). Consequently, the historical data may not precisely match those published in the MER or the Annual Energy Review (AER).

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

- = no data available

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

Prices are not adjusted for inflation.

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

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

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

Weather forecasts from National Oceanic and Atmospheric Administration.

**Table 2. Energy Prices**

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

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>Crude Oil (dollars per barrel)</b>															
West Texas Intermediate Spot Average .....	<b>45.34</b>	<b>27.96</b>	<b>40.89</b>	<b>42.50</b>	<b>58.09</b>	<b>66.19</b>	<b>70.61</b>	<i>78.32</i>	<i>74.76</i>	<i>69.44</i>	<i>66.01</i>	<i>62.98</i>	<b>39.17</b>	<i>68.48</i>	<i>68.24</i>
Brent Spot Average .....	<b>49.97</b>	<b>29.52</b>	<b>42.97</b>	<b>44.34</b>	<b>61.12</b>	<b>68.91</b>	<b>73.45</b>	<i>81.32</i>	<i>78.26</i>	<i>72.94</i>	<i>69.67</i>	<i>66.98</i>	<b>41.69</b>	<i>71.38</i>	<i>71.91</i>
U.S. Imported Average .....	<b>43.75</b>	<b>26.24</b>	<b>39.87</b>	<b>40.69</b>	<b>55.27</b>	<b>64.80</b>	<b>68.44</b>	<i>76.33</i>	<i>72.50</i>	<i>67.19</i>	<i>63.54</i>	<i>60.47</i>	<b>37.22</b>	<i>67.12</i>	<i>65.79</i>
U.S. Refiner Average Acquisition Cost .....	<b>47.48</b>	<b>26.76</b>	<b>40.79</b>	<b>42.09</b>	<b>57.12</b>	<b>66.11</b>	<b>69.91</b>	<i>77.33</i>	<i>73.55</i>	<i>68.20</i>	<i>64.52</i>	<i>61.47</i>	<b>39.73</b>	<i>67.92</i>	<i>66.78</i>
<b>U.S. Liquid Fuels (cents per gallon)</b>															
<b>Refiner Prices for Resale</b>															
Gasoline .....	<b>153</b>	<b>104</b>	<b>137</b>	<b>133</b>	<b>180</b>	<b>216</b>	<b>232</b>	<i>232</i>	<i>220</i>	<i>218</i>	<i>209</i>	<i>191</i>	<b>133</b>	<i>216</i>	<i>209</i>
Diesel Fuel .....	<b>160</b>	<b>97</b>	<b>124</b>	<b>133</b>	<b>178</b>	<b>204</b>	<b>217</b>	<i>239</i>	<i>229</i>	<i>218</i>	<i>211</i>	<i>205</i>	<b>129</b>	<i>210</i>	<i>216</i>
Fuel Oil .....	<b>160</b>	<b>87</b>	<b>113</b>	<b>121</b>	<b>162</b>	<b>180</b>	<b>196</b>	<i>222</i>	<i>218</i>	<i>200</i>	<i>188</i>	<i>191</i>	<b>125</b>	<i>199</i>	<i>204</i>
<b>Refiner Prices to End Users</b>															
Jet Fuel .....	<b>165</b>	<b>85</b>	<b>116</b>	<b>125</b>	<b>163</b>	<b>182</b>	<b>198</b>	<i>227</i>	<i>225</i>	<i>216</i>	<i>209</i>	<i>203</i>	<b>131</b>	<i>195</i>	<i>213</i>
No. 6 Residual Fuel Oil (a) .....	<b>177</b>	<b>93</b>	<b>116</b>	<b>119</b>	<b>162</b>	<b>181</b>	<b>181</b>	<i>181</i>	<i>175</i>	<i>167</i>	<i>155</i>	<i>148</i>	<b>126</b>	<i>176</i>	<i>160</i>
<b>Retail Prices Including Taxes</b>															
Gasoline Regular Grade (b) .....	<b>241</b>	<b>194</b>	<b>218</b>	<b>215</b>	<b>256</b>	<b>297</b>	<b>316</b>	<i>314</i>	<i>296</i>	<i>300</i>	<i>289</i>	<i>274</i>	<b>218</b>	<i>297</i>	<i>290</i>
Gasoline All Grades (b) .....	<b>251</b>	<b>203</b>	<b>227</b>	<b>224</b>	<b>265</b>	<b>306</b>	<b>325</b>	<i>326</i>	<i>309</i>	<i>313</i>	<i>303</i>	<i>288</i>	<b>227</b>	<i>307</i>	<i>303</i>
On-highway Diesel Fuel .....	<b>289</b>	<b>243</b>	<b>243</b>	<b>247</b>	<b>290</b>	<b>321</b>	<b>336</b>	<i>346</i>	<i>338</i>	<i>323</i>	<i>318</i>	<i>313</i>	<b>256</b>	<i>324</i>	<i>323</i>
Heating Oil .....	<b>280</b>	<b>200</b>	<b>214</b>	<b>230</b>	<b>272</b>	<b>283</b>	<b>302</b>	<i>342</i>	<i>338</i>	<i>309</i>	<i>286</i>	<i>287</i>	<b>244</b>	<i>300</i>	<i>312</i>
<b>Natural Gas</b>															
Henry Hub Spot (dollars per thousand cubic feet) .....	<b>1.98</b>	<b>1.77</b>	<b>2.07</b>	<b>2.63</b>	<b>3.70</b>	<b>3.06</b>	<b>4.53</b>	<i>6.03</i>	<i>5.75</i>	<i>3.67</i>	<i>3.64</i>	<i>3.59</i>	<b>2.11</b>	<i>4.33</i>	<i>4.16</i>
Henry Hub Spot (dollars per million Btu) .....	<b>1.91</b>	<b>1.71</b>	<b>2.00</b>	<b>2.53</b>	<b>3.56</b>	<b>2.94</b>	<b>4.36</b>	<i>5.80</i>	<i>5.53</i>	<i>3.53</i>	<i>3.51</i>	<i>3.45</i>	<b>2.03</b>	<i>4.17</i>	<i>4.01</i>
<b>U.S. Retail Prices (dollars per thousand cubic feet)</b>															
Industrial Sector .....	<b>3.56</b>	<b>2.87</b>	<b>2.90</b>	<b>3.81</b>	<b>5.73</b>	<b>4.09</b>	<b>5.11</b>	<i>6.94</i>	<i>7.26</i>	<i>5.15</i>	<i>4.64</i>	<i>4.80</i>	<b>3.32</b>	<i>5.52</i>	<i>5.50</i>
Commercial Sector .....	<b>7.18</b>	<b>7.61</b>	<b>8.47</b>	<b>7.51</b>	<b>7.54</b>	<b>8.85</b>	<b>9.86</b>	<i>9.70</i>	<i>10.03</i>	<i>10.11</i>	<i>9.74</i>	<i>8.45</i>	<b>7.49</b>	<i>8.68</i>	<i>9.51</i>
Residential Sector .....	<b>9.44</b>	<b>11.74</b>	<b>17.50</b>	<b>10.53</b>	<b>9.75</b>	<b>13.87</b>	<b>19.70</b>	<i>13.27</i>	<i>12.53</i>	<i>14.81</i>	<i>18.55</i>	<i>11.48</i>	<b>10.76</b>	<i>12.10</i>	<i>12.95</i>
<b>U.S. Electricity</b>															
<b>Power Generation Fuel Costs (dollars per million Btu)</b>															
Coal .....	<b>1.93</b>	<b>1.91</b>	<b>1.93</b>	<b>1.92</b>	<b>1.91</b>	<b>1.92</b>	<b>2.02</b>	<i>2.02</i>	<i>2.04</i>	<i>2.03</i>	<i>2.00</i>	<i>1.98</i>	<b>1.92</b>	<i>1.97</i>	<i>2.01</i>
Natural Gas .....	<b>2.39</b>	<b>2.08</b>	<b>2.26</b>	<b>2.87</b>	<b>7.26</b>	<b>3.26</b>	<b>4.44</b>	<i>6.17</i>	<i>6.15</i>	<i>3.75</i>	<i>3.70</i>	<i>3.82</i>	<b>2.39</b>	<i>5.15</i>	<i>4.26</i>
Residual Fuel Oil (c) .....	<b>12.15</b>	<b>6.65</b>	<b>8.85</b>	<b>8.90</b>	<b>11.28</b>	<b>13.09</b>	<b>13.18</b>	<i>13.86</i>	<i>14.55</i>	<i>14.56</i>	<i>13.15</i>	<i>12.53</i>	<b>9.15</b>	<i>12.80</i>	<i>13.69</i>
Distillate Fuel Oil .....	<b>13.27</b>	<b>8.39</b>	<b>10.37</b>	<b>10.54</b>	<b>13.59</b>	<b>15.20</b>	<b>16.43</b>	<i>18.29</i>	<i>17.84</i>	<i>16.94</i>	<i>16.32</i>	<i>15.92</i>	<b>10.73</b>	<i>15.56</i>	<i>16.83</i>
<b>Retail Prices (cents per kilowatt-hour)</b>															
Industrial Sector .....	<b>6.38</b>	<b>6.63</b>	<b>7.08</b>	<b>6.53</b>	<b>7.15</b>	<b>6.90</b>	<b>7.42</b>	<i>6.78</i>	<i>7.12</i>	<i>6.94</i>	<i>7.32</i>	<i>6.67</i>	<b>6.66</b>	<i>7.06</i>	<i>7.02</i>
Commercial Sector .....	<b>10.33</b>	<b>10.63</b>	<b>10.97</b>	<b>10.62</b>	<b>11.11</b>	<b>11.07</b>	<b>11.61</b>	<i>11.19</i>	<i>11.67</i>	<i>11.61</i>	<i>11.99</i>	<i>11.39</i>	<b>10.65</b>	<i>11.26</i>	<i>11.68</i>
Residential Sector .....	<b>12.90</b>	<b>13.24</b>	<b>13.35</b>	<b>13.25</b>	<b>13.09</b>	<b>13.78</b>	<b>13.88</b>	<i>13.79</i>	<i>13.83</i>	<i>14.38</i>	<i>14.25</i>	<i>13.93</i>	<b>13.20</b>	<i>13.64</i>	<i>14.10</i>

(a) Average for all sulfur contents.

(b) Average self-service cash price.

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

- = no data available

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

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

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

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

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

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

**Forecasts:** EIA Short-Term Integrated Forecasting System.

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

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

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>Supply (million barrels per day) (a)</b>															
OECD .....	<b>33.05</b>	<b>29.27</b>	<b>29.95</b>	<b>30.66</b>	<b>30.18</b>	<b>30.86</b>	<b>30.87</b>	<i>31.73</i>	<i>32.37</i>	<i>32.51</i>	<i>32.74</i>	<i>33.27</i>	<b>30.73</b>	<i>30.91</i>	<i>32.72</i>
U.S. (50 States) .....	<b>20.33</b>	<b>17.44</b>	<b>18.29</b>	<b>18.29</b>	<b>17.62</b>	<b>19.05</b>	<b>18.56</b>	<i>18.98</i>	<i>19.54</i>	<i>19.83</i>	<i>20.18</i>	<i>20.45</i>	<b>18.58</b>	<i>18.55</i>	<i>20.01</i>
Canada .....	<b>5.64</b>	<b>4.90</b>	<b>4.94</b>	<b>5.54</b>	<b>5.63</b>	<b>5.39</b>	<b>5.56</b>	<i>5.79</i>	<i>5.83</i>	<i>5.80</i>	<i>5.82</i>	<i>5.85</i>	<b>5.26</b>	<i>5.59</i>	<i>5.82</i>
Mexico .....	<b>2.00</b>	<b>1.94</b>	<b>1.91</b>	<b>1.90</b>	<b>1.93</b>	<b>1.95</b>	<b>1.91</b>	<i>1.91</i>	<i>1.94</i>	<i>1.90</i>	<i>1.86</i>	<i>1.83</i>	<b>1.94</b>	<i>1.92</i>	<i>1.88</i>
Other OECD .....	<b>5.08</b>	<b>4.99</b>	<b>4.81</b>	<b>4.93</b>	<b>5.00</b>	<b>4.47</b>	<b>4.85</b>	<i>5.04</i>	<i>5.06</i>	<i>4.97</i>	<i>4.87</i>	<i>5.14</i>	<b>4.95</b>	<i>4.84</i>	<i>5.01</i>
Non-OECD .....	<b>67.69</b>	<b>63.03</b>	<b>61.06</b>	<b>62.09</b>	<b>62.62</b>	<b>63.90</b>	<b>65.76</b>	<i>67.42</i>	<i>67.39</i>	<i>68.53</i>	<i>69.26</i>	<i>69.18</i>	<b>63.46</b>	<i>64.94</i>	<i>68.60</i>
OPEC .....	<b>33.50</b>	<b>30.72</b>	<b>28.65</b>	<b>30.00</b>	<b>30.37</b>	<b>30.78</b>	<b>32.24</b>	<i>33.39</i>	<i>33.66</i>	<i>33.84</i>	<i>34.01</i>	<i>34.05</i>	<b>30.71</b>	<i>31.71</i>	<i>33.89</i>
Crude Oil Portion .....	<b>28.28</b>	<b>25.65</b>	<b>23.63</b>	<b>24.88</b>	<b>25.08</b>	<b>25.51</b>	<b>26.88</b>	<i>27.96</i>	<i>28.06</i>	<i>28.38</i>	<i>28.49</i>	<i>28.49</i>	<b>25.60</b>	<i>26.37</i>	<i>28.36</i>
Other Liquids (b) .....	<b>5.22</b>	<b>5.07</b>	<b>5.02</b>	<b>5.12</b>	<b>5.29</b>	<b>5.27</b>	<b>5.36</b>	<i>5.43</i>	<i>5.59</i>	<i>5.47</i>	<i>5.52</i>	<i>5.56</i>	<b>5.11</b>	<i>5.34</i>	<i>5.53</i>
Eurasia .....	<b>14.72</b>	<b>13.16</b>	<b>12.70</b>	<b>13.12</b>	<b>13.38</b>	<b>13.61</b>	<b>13.61</b>	<i>14.21</i>	<i>14.46</i>	<i>14.66</i>	<i>14.77</i>	<i>14.97</i>	<b>13.42</b>	<i>13.71</i>	<i>14.72</i>
China .....	<b>4.96</b>	<b>4.92</b>	<b>4.96</b>	<b>4.91</b>	<b>5.05</b>	<b>5.09</b>	<b>5.06</b>	<i>5.07</i>	<i>5.06</i>	<i>5.09</i>	<i>5.09</i>	<i>5.14</i>	<b>4.94</b>	<i>5.07</i>	<i>5.09</i>
Other Non-OECD .....	<b>14.51</b>	<b>14.22</b>	<b>14.75</b>	<b>14.06</b>	<b>13.82</b>	<b>14.42</b>	<b>14.84</b>	<i>14.74</i>	<i>14.22</i>	<i>14.93</i>	<i>15.39</i>	<i>15.02</i>	<b>14.38</b>	<i>14.46</i>	<i>14.89</i>
Total World Supply .....	<b>100.74</b>	<b>92.30</b>	<b>91.02</b>	<b>92.75</b>	<b>92.80</b>	<b>94.76</b>	<b>96.64</b>	<i>99.15</i>	<i>99.75</i>	<i>101.04</i>	<i>102.00</i>	<i>102.45</i>	<b>94.19</b>	<i>95.86</i>	<i>101.32</i>
Non-OPEC Supply .....	<b>67.24</b>	<b>61.58</b>	<b>62.36</b>	<b>62.75</b>	<b>62.43</b>	<b>63.98</b>	<b>64.39</b>	<i>65.76</i>	<i>66.10</i>	<i>67.19</i>	<i>67.99</i>	<i>68.41</i>	<b>63.48</b>	<i>64.15</i>	<i>67.43</i>
<b>Consumption (million barrels per day) (c)</b>															
OECD .....	<b>45.50</b>	<b>37.45</b>	<b>42.27</b>	<b>42.84</b>	<b>42.29</b>	<b>43.86</b>	<b>45.31</b>	<i>45.90</i>	<i>45.52</i>	<i>45.14</i>	<i>46.13</i>	<i>46.07</i>	<b>42.02</b>	<i>44.35</i>	<i>45.72</i>
U.S. (50 States) .....	<b>19.50</b>	<b>16.07</b>	<b>18.45</b>	<b>18.72</b>	<b>18.45</b>	<b>20.03</b>	<b>20.15</b>	<i>20.01</i>	<i>19.85</i>	<i>20.37</i>	<i>20.83</i>	<i>20.66</i>	<b>18.19</b>	<i>19.67</i>	<i>20.43</i>
U.S. Territories .....	<b>0.17</b>	<b>0.15</b>	<b>0.16</b>	<b>0.17</b>	<b>0.20</b>	<b>0.18</b>	<b>0.18</b>	<i>0.19</i>	<i>0.20</i>	<i>0.18</i>	<i>0.19</i>	<i>0.20</i>	<b>0.16</b>	<i>0.19</i>	<i>0.19</i>
Canada .....	<b>2.42</b>	<b>1.97</b>	<b>2.25</b>	<b>2.14</b>	<b>2.12</b>	<b>2.10</b>	<b>2.38</b>	<i>2.41</i>	<i>2.38</i>	<i>2.33</i>	<i>2.43</i>	<i>2.41</i>	<b>2.19</b>	<i>2.25</i>	<i>2.39</i>
Europe .....	<b>13.34</b>	<b>11.01</b>	<b>12.88</b>	<b>12.51</b>	<b>11.90</b>	<b>12.56</b>	<b>13.69</b>	<i>13.65</i>	<i>13.25</i>	<i>13.27</i>	<i>13.57</i>	<i>13.21</i>	<b>12.43</b>	<i>12.96</i>	<i>13.32</i>
Japan .....	<b>3.78</b>	<b>2.93</b>	<b>3.06</b>	<b>3.53</b>	<b>3.73</b>	<b>3.08</b>	<b>3.03</b>	<i>3.44</i>	<i>3.66</i>	<i>2.98</i>	<i>3.08</i>	<i>3.40</i>	<b>3.33</b>	<i>3.32</i>	<i>3.28</i>
Other OECD .....	<b>6.30</b>	<b>5.34</b>	<b>5.47</b>	<b>5.77</b>	<b>5.89</b>	<b>5.91</b>	<b>5.86</b>	<i>6.20</i>	<i>6.17</i>	<i>6.00</i>	<i>6.04</i>	<i>6.20</i>	<b>5.72</b>	<i>5.97</i>	<i>6.10</i>
Non-OECD .....	<b>50.33</b>	<b>47.44</b>	<b>51.21</b>	<b>52.59</b>	<b>52.37</b>	<b>52.81</b>	<b>53.21</b>	<i>54.08</i>	<i>54.32</i>	<i>55.43</i>	<i>55.54</i>	<i>55.63</i>	<b>50.40</b>	<i>53.12</i>	<i>55.23</i>
Eurasia .....	<b>4.86</b>	<b>4.48</b>	<b>5.28</b>	<b>5.17</b>	<b>4.94</b>	<b>5.03</b>	<b>5.42</b>	<i>5.27</i>	<i>5.08</i>	<i>5.15</i>	<i>5.54</i>	<i>5.39</i>	<b>4.95</b>	<i>5.17</i>	<i>5.29</i>
Europe .....	<b>0.71</b>	<b>0.69</b>	<b>0.71</b>	<b>0.72</b>	<b>0.73</b>	<b>0.74</b>	<b>0.74</b>	<i>0.75</i>	<i>0.74</i>	<i>0.74</i>	<i>0.74</i>	<i>0.75</i>	<b>0.71</b>	<i>0.74</i>	<i>0.74</i>
China .....	<b>13.89</b>	<b>14.08</b>	<b>14.65</b>	<b>15.11</b>	<b>15.25</b>	<b>15.46</b>	<b>14.97</b>	<i>15.44</i>	<i>15.84</i>	<i>16.01</i>	<i>15.72</i>	<i>15.99</i>	<b>14.43</b>	<i>15.28</i>	<i>15.89</i>
Other Asia .....	<b>13.35</b>	<b>11.63</b>	<b>12.59</b>	<b>13.61</b>	<b>13.77</b>	<b>13.33</b>	<b>13.18</b>	<i>13.90</i>	<i>14.30</i>	<i>14.47</i>	<i>14.04</i>	<i>14.44</i>	<b>12.80</b>	<i>13.54</i>	<i>14.31</i>
Other Non-OECD .....	<b>17.53</b>	<b>16.55</b>	<b>17.98</b>	<b>17.99</b>	<b>17.67</b>	<b>18.25</b>	<b>18.90</b>	<i>18.72</i>	<i>18.36</i>	<i>19.07</i>	<i>19.50</i>	<i>19.06</i>	<b>17.51</b>	<i>18.39</i>	<i>19.00</i>
Total World Consumption .....	<b>95.83</b>	<b>84.90</b>	<b>93.47</b>	<b>95.43</b>	<b>94.66</b>	<b>96.67</b>	<b>98.52</b>	<i>99.98</i>	<i>99.84</i>	<i>100.57</i>	<i>101.67</i>	<i>101.70</i>	<b>92.42</b>	<i>97.47</i>	<i>100.95</i>
<b>Total Crude Oil and Other Liquids Inventory Net Withdrawals (million barrels per day)</b>															
U.S. (50 States) .....	<b>-0.49</b>	<b>-1.67</b>	<b>0.53</b>	<b>0.91</b>	<b>0.47</b>	<b>0.51</b>	<b>0.54</b>	<i>0.52</i>	<i>-0.14</i>	<i>-0.71</i>	<i>-0.09</i>	<i>0.38</i>	<b>-0.18</b>	<i>0.51</i>	<i>-0.14</i>
Other OECD .....	<b>-0.51</b>	<b>-1.16</b>	<b>0.04</b>	<b>0.69</b>	<b>0.77</b>	<b>0.14</b>	<b>0.43</b>	<i>0.10</i>	<i>0.07</i>	<i>0.08</i>	<i>-0.08</i>	<i>-0.36</i>	<b>-0.23</b>	<i>0.36</i>	<i>-0.07</i>
Other Stock Draws and Balance .....	<b>-3.91</b>	<b>-4.57</b>	<b>1.90</b>	<b>1.08</b>	<b>0.62</b>	<b>1.26</b>	<b>0.91</b>	<i>0.22</i>	<i>0.15</i>	<i>0.17</i>	<i>-0.17</i>	<i>-0.78</i>	<b>-1.36</b>	<i>0.75</i>	<i>-0.16</i>
Total Stock Draw .....	<b>-4.91</b>	<b>-7.40</b>	<b>2.46</b>	<b>2.68</b>	<b>1.86</b>	<b>1.91</b>	<b>1.88</b>	<i>0.84</i>	<i>0.09</i>	<i>-0.46</i>	<i>-0.33</i>	<i>-0.75</i>	<b>-1.77</b>	<i>1.62</i>	<i>-0.37</i>
<b>End-of-period Commercial Crude Oil and Other Liquids Inventories (million barrels)</b>															
U.S. Commercial Inventory .....	<b>1,327</b>	<b>1,458</b>	<b>1,423</b>	<b>1,343</b>	<b>1,302</b>	<b>1,271</b>	<b>1,226</b>	<i>1,198</i>	<i>1,210</i>	<i>1,275</i>	<i>1,283</i>	<i>1,257</i>	<b>1,343</b>	<i>1,198</i>	<i>1,257</i>
OECD Commercial Inventory .....	<b>2,970</b>	<b>3,206</b>	<b>3,168</b>	<b>3,025</b>	<b>2,914</b>	<b>2,872</b>	<b>2,786</b>	<i>2,749</i>	<i>2,754</i>	<i>2,812</i>	<i>2,827</i>	<i>2,834</i>	<b>3,025</b>	<i>2,749</i>	<i>2,834</i>

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

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

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

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

- = no data available

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

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

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

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

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

**Forecasts:** EIA Short-Term Integrated Forecasting System.

**Table 3b. Non-OPEC Petroleum and Other Liquids Production (million barrels per day)**

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

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>North America</b> .....	<b>27.97</b>	<b>24.28</b>	<b>25.14</b>	<b>25.73</b>	<b>25.18</b>	<b>26.38</b>	<b>26.02</b>	<i>26.69</i>	<i>27.31</i>	<i>27.53</i>	<i>27.87</i>	<i>28.13</i>	<b>25.78</b>	<i>26.07</i>	<i>27.71</i>
Canada .....	<b>5.64</b>	<b>4.90</b>	<b>4.94</b>	<b>5.54</b>	<b>5.63</b>	<b>5.39</b>	<b>5.56</b>	<i>5.79</i>	<i>5.83</i>	<i>5.80</i>	<i>5.82</i>	<i>5.85</i>	<b>5.26</b>	<i>5.59</i>	<i>5.82</i>
Mexico .....	<b>2.00</b>	<b>1.94</b>	<b>1.91</b>	<b>1.90</b>	<b>1.93</b>	<b>1.95</b>	<b>1.91</b>	<i>1.91</i>	<i>1.94</i>	<i>1.90</i>	<i>1.86</i>	<i>1.83</i>	<b>1.94</b>	<i>1.92</i>	<i>1.88</i>
United States .....	<b>20.33</b>	<b>17.44</b>	<b>18.29</b>	<b>18.29</b>	<b>17.62</b>	<b>19.05</b>	<b>18.56</b>	<i>18.98</i>	<i>19.54</i>	<i>19.83</i>	<i>20.18</i>	<i>20.45</i>	<b>18.58</b>	<i>18.55</i>	<i>20.01</i>
<b>Central and South America</b> .....	<b>6.01</b>	<b>6.05</b>	<b>6.63</b>	<b>5.89</b>	<b>5.61</b>	<b>6.26</b>	<b>6.73</b>	<i>6.51</i>	<i>5.97</i>	<i>6.73</i>	<i>7.21</i>	<i>6.87</i>	<b>6.15</b>	<i>6.28</i>	<i>6.70</i>
Argentina .....	<b>0.69</b>	<b>0.60</b>	<b>0.64</b>	<b>0.62</b>	<b>0.63</b>	<b>0.67</b>	<b>0.70</b>	<i>0.69</i>	<i>0.71</i>	<i>0.72</i>	<i>0.74</i>	<i>0.73</i>	<b>0.64</b>	<i>0.67</i>	<i>0.73</i>
Brazil .....	<b>3.44</b>	<b>3.89</b>	<b>4.29</b>	<b>3.52</b>	<b>3.23</b>	<b>3.90</b>	<b>4.27</b>	<i>4.05</i>	<i>3.44</i>	<i>4.27</i>	<i>4.66</i>	<i>4.20</i>	<b>3.79</b>	<i>3.87</i>	<i>4.14</i>
Colombia .....	<b>0.90</b>	<b>0.78</b>	<b>0.77</b>	<b>0.79</b>	<b>0.77</b>	<b>0.74</b>	<b>0.76</b>	<i>0.78</i>	<i>0.80</i>	<i>0.72</i>	<i>0.73</i>	<i>0.78</i>	<b>0.81</b>	<i>0.76</i>	<i>0.76</i>
Ecuador .....	<b>0.54</b>	<b>0.36</b>	<b>0.52</b>	<b>0.51</b>	<b>0.51</b>	<b>0.50</b>	<b>0.51</b>	<i>0.53</i>	<i>0.53</i>	<i>0.53</i>	<i>0.53</i>	<i>0.53</i>	<b>0.48</b>	<i>0.51</i>	<i>0.53</i>
Other Central and S. America .....	<b>0.45</b>	<b>0.42</b>	<b>0.41</b>	<b>0.45</b>	<b>0.47</b>	<b>0.45</b>	<b>0.49</b>	<i>0.47</i>	<i>0.49</i>	<i>0.49</i>	<i>0.55</i>	<i>0.64</i>	<b>0.43</b>	<i>0.47</i>	<i>0.54</i>
<b>Europe</b> .....	<b>4.44</b>	<b>4.35</b>	<b>4.16</b>	<b>4.30</b>	<b>4.38</b>	<b>3.89</b>	<b>4.23</b>	<i>4.43</i>	<i>4.44</i>	<i>4.35</i>	<i>4.24</i>	<i>4.52</i>	<b>4.31</b>	<i>4.23</i>	<i>4.39</i>
Norway .....	<b>2.05</b>	<b>2.00</b>	<b>1.96</b>	<b>2.02</b>	<b>2.11</b>	<b>1.90</b>	<b>2.07</b>	<i>2.18</i>	<i>2.19</i>	<i>2.13</i>	<i>2.12</i>	<i>2.29</i>	<b>2.01</b>	<i>2.07</i>	<i>2.18</i>
United Kingdom .....	<b>1.17</b>	<b>1.16</b>	<b>0.99</b>	<b>1.06</b>	<b>1.07</b>	<b>0.82</b>	<b>0.96</b>	<i>1.03</i>	<i>1.04</i>	<i>1.02</i>	<i>0.92</i>	<i>1.03</i>	<b>1.10</b>	<i>0.97</i>	<i>1.00</i>
<b>Eurasia</b> .....	<b>14.72</b>	<b>13.16</b>	<b>12.70</b>	<b>13.12</b>	<b>13.38</b>	<b>13.61</b>	<b>13.61</b>	<i>14.21</i>	<i>14.46</i>	<i>14.66</i>	<i>14.77</i>	<i>14.97</i>	<b>13.42</b>	<i>13.71</i>	<i>14.72</i>
Azerbaijan .....	<b>0.76</b>	<b>0.69</b>	<b>0.66</b>	<b>0.69</b>	<b>0.74</b>	<b>0.69</b>	<b>0.72</b>	<i>0.78</i>	<i>0.81</i>	<i>0.80</i>	<i>0.78</i>	<i>0.81</i>	<b>0.70</b>	<i>0.74</i>	<i>0.80</i>
Kazakhstan .....	<b>2.06</b>	<b>1.86</b>	<b>1.71</b>	<b>1.81</b>	<b>1.87</b>	<b>1.86</b>	<b>1.73</b>	<i>1.92</i>	<i>1.98</i>	<i>1.98</i>	<i>1.94</i>	<i>2.00</i>	<b>1.86</b>	<i>1.84</i>	<i>1.97</i>
Russia .....	<b>11.54</b>	<b>10.25</b>	<b>9.97</b>	<b>10.26</b>	<b>10.43</b>	<b>10.72</b>	<b>10.81</b>	<i>11.14</i>	<i>11.30</i>	<i>11.51</i>	<i>11.69</i>	<i>11.80</i>	<b>10.50</b>	<i>10.78</i>	<i>11.57</i>
Turkmenistan .....	<b>0.25</b>	<b>0.25</b>	<b>0.25</b>	<b>0.25</b>	<b>0.24</b>	<b>0.24</b>	<b>0.24</b>	<i>0.24</i>	<i>0.23</i>	<i>0.23</i>	<i>0.23</i>	<i>0.23</i>	<b>0.25</b>	<i>0.24</i>	<i>0.23</i>
Other Eurasia .....	<b>0.11</b>	<b>0.11</b>	<b>0.11</b>	<b>0.11</b>	<b>0.10</b>	<b>0.10</b>	<b>0.11</b>	<i>0.13</i>	<i>0.14</i>	<i>0.14</i>	<i>0.14</i>	<i>0.14</i>	<b>0.11</b>	<i>0.11</i>	<i>0.14</i>
<b>Middle East</b> .....	<b>3.16</b>	<b>3.13</b>	<b>3.09</b>	<b>3.13</b>	<b>3.16</b>	<b>3.19</b>	<b>3.19</b>	<i>3.24</i>	<i>3.26</i>	<i>3.26</i>	<i>3.25</i>	<i>3.25</i>	<b>3.13</b>	<i>3.19</i>	<i>3.25</i>
Oman .....	<b>1.01</b>	<b>0.95</b>	<b>0.92</b>	<b>0.95</b>	<b>0.96</b>	<b>0.97</b>	<b>0.98</b>	<i>1.03</i>	<i>1.04</i>	<i>1.04</i>	<i>1.04</i>	<i>1.04</i>	<b>0.96</b>	<i>0.99</i>	<i>1.04</i>
Qatar .....	<b>1.84</b>	<b>1.87</b>	<b>1.88</b>	<b>1.88</b>	<b>1.89</b>	<b>1.91</b>	<b>1.92</b>	<i>1.92</i>	<i>1.94</i>	<i>1.94</i>	<i>1.94</i>	<i>1.94</i>	<b>1.87</b>	<i>1.91</i>	<i>1.94</i>
<b>Asia and Oceania</b> .....	<b>9.45</b>	<b>9.17</b>	<b>9.22</b>	<b>9.18</b>	<b>9.32</b>	<b>9.24</b>	<b>9.27</b>	<i>9.29</i>	<i>9.33</i>	<i>9.33</i>	<i>9.31</i>	<i>9.32</i>	<b>9.25</b>	<i>9.28</i>	<i>9.32</i>
Australia .....	<b>0.49</b>	<b>0.50</b>	<b>0.50</b>	<b>0.49</b>	<b>0.47</b>	<b>0.42</b>	<b>0.48</b>	<i>0.47</i>	<i>0.47</i>	<i>0.47</i>	<i>0.47</i>	<i>0.46</i>	<b>0.49</b>	<i>0.46</i>	<i>0.47</i>
China .....	<b>4.96</b>	<b>4.92</b>	<b>4.96</b>	<b>4.91</b>	<b>5.05</b>	<b>5.09</b>	<b>5.06</b>	<i>5.07</i>	<i>5.06</i>	<i>5.09</i>	<i>5.09</i>	<i>5.14</i>	<b>4.94</b>	<i>5.07</i>	<i>5.09</i>
India .....	<b>0.96</b>	<b>0.90</b>	<b>0.92</b>	<b>0.91</b>	<b>0.92</b>	<b>0.92</b>	<b>0.93</b>	<i>0.93</i>	<i>0.94</i>	<i>0.92</i>	<i>0.92</i>	<i>0.92</i>	<b>0.92</b>	<i>0.93</i>	<i>0.93</i>
Indonesia .....	<b>0.92</b>	<b>0.90</b>	<b>0.88</b>	<b>0.89</b>	<b>0.88</b>	<b>0.86</b>	<b>0.88</b>	<i>0.87</i>	<i>0.87</i>	<i>0.86</i>	<i>0.85</i>	<i>0.84</i>	<b>0.90</b>	<i>0.87</i>	<i>0.85</i>
Malaysia .....	<b>0.73</b>	<b>0.62</b>	<b>0.64</b>	<b>0.65</b>	<b>0.66</b>	<b>0.63</b>	<b>0.57</b>	<i>0.58</i>	<i>0.62</i>	<i>0.62</i>	<i>0.61</i>	<i>0.60</i>	<b>0.66</b>	<i>0.61</i>	<i>0.61</i>
Vietnam .....	<b>0.23</b>	<b>0.22</b>	<b>0.21</b>	<b>0.21</b>	<b>0.21</b>	<b>0.21</b>	<b>0.21</b>	<i>0.21</i>	<i>0.20</i>	<i>0.20</i>	<i>0.20</i>	<i>0.19</i>	<b>0.22</b>	<i>0.21</i>	<i>0.20</i>
<b>Africa</b> .....	<b>1.48</b>	<b>1.44</b>	<b>1.42</b>	<b>1.40</b>	<b>1.41</b>	<b>1.41</b>	<b>1.34</b>	<i>1.40</i>	<i>1.34</i>	<i>1.34</i>	<i>1.34</i>	<i>1.34</i>	<b>1.43</b>	<i>1.39</i>	<i>1.34</i>
Egypt .....	<b>0.62</b>	<b>0.61</b>	<b>0.60</b>	<b>0.58</b>	<b>0.59</b>	<b>0.60</b>	<b>0.60</b>	<i>0.61</i>	<i>0.56</i>	<i>0.56</i>	<i>0.56</i>	<i>0.56</i>	<b>0.60</b>	<i>0.60</i>	<i>0.56</i>
South Sudan .....	<b>0.15</b>	<b>0.15</b>	<b>0.17</b>	<b>0.17</b>	<b>0.16</b>	<b>0.16</b>	<b>0.15</b>	<i>0.18</i>	<i>0.18</i>	<i>0.18</i>	<i>0.18</i>	<i>0.18</i>	<b>0.16</b>	<i>0.16</i>	<i>0.18</i>
<b>Total non-OPEC liquids</b> .....	<b>67.24</b>	<b>61.58</b>	<b>62.36</b>	<b>62.75</b>	<b>62.43</b>	<b>63.98</b>	<b>64.39</b>	<i>65.76</i>	<i>66.10</i>	<i>67.19</i>	<i>67.99</i>	<i>68.41</i>	<b>63.48</b>	<i>64.15</i>	<i>67.43</i>
<b>OPEC non-crude liquids</b> .....	<b>5.22</b>	<b>5.07</b>	<b>5.02</b>	<b>5.12</b>	<b>5.29</b>	<b>5.27</b>	<b>5.36</b>	<i>5.43</i>	<i>5.59</i>	<i>5.47</i>	<i>5.52</i>	<i>5.56</i>	<b>5.11</b>	<i>5.34</i>	<i>5.53</i>
<b>Non-OPEC + OPEC non-crude</b> .....	<b>72.46</b>	<b>66.65</b>	<b>67.39</b>	<b>67.87</b>	<b>67.72</b>	<b>69.26</b>	<b>69.76</b>	<i>71.19</i>	<i>71.69</i>	<i>72.66</i>	<i>73.51</i>	<i>73.96</i>	<b>68.59</b>	<i>69.49</i>	<i>72.96</i>
<b>Unplanned non-OPEC Production Outages</b> .....	<b>0.18</b>	<b>0.92</b>	<b>0.72</b>	<b>0.62</b>	<b>0.61</b>	<b>0.50</b>	<b>0.84</b>	-	-	-	-	-	<b>0.61</b>	-	-

- = no data available

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

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

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

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

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

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

**Forecasts:** EIA Short-Term Integrated Forecasting System.

**Table 3c. OPEC Crude Oil (excluding condensates) Production (million barrels per day)**

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

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>Crude Oil</b>															
Algeria .....	1.02	0.90	0.84	0.86	0.87	0.88	0.92	-	-	-	-	-	0.90	-	-
Angola .....	1.35	1.27	1.19	1.13	1.11	1.08	1.11	-	-	-	-	-	1.23	-	-
Congo (Brazzaville) .....	0.29	0.29	0.28	0.26	0.28	0.27	0.26	-	-	-	-	-	0.28	-	-
Equatorial Guinea .....	0.13	0.12	0.11	0.11	0.11	0.12	0.11	-	-	-	-	-	0.11	-	-
Gabon .....	0.19	0.18	0.15	0.17	0.16	0.17	0.18	-	-	-	-	-	0.17	-	-
Iran .....	2.02	1.97	1.90	1.95	2.18	2.47	2.50	-	-	-	-	-	1.96	-	-
Iraq .....	4.56	4.16	3.70	3.84	3.94	3.98	4.07	-	-	-	-	-	4.06	-	-
Kuwait .....	2.77	2.48	2.25	2.30	2.33	2.36	2.45	-	-	-	-	-	2.45	-	-
Libya .....	0.35	0.08	0.11	0.92	1.18	1.16	1.17	-	-	-	-	-	0.36	-	-
Nigeria .....	1.72	1.55	1.44	1.44	1.31	1.32	1.28	-	-	-	-	-	1.54	-	-
Saudi Arabia .....	9.80	9.28	8.77	9.01	8.49	8.53	9.55	-	-	-	-	-	9.21	-	-
United Arab Emirates .....	3.30	2.88	2.55	2.50	2.61	2.65	2.76	-	-	-	-	-	2.81	-	-
Venezuela .....	0.77	0.50	0.35	0.40	0.52	0.53	0.53	-	-	-	-	-	0.50	-	-
OPEC Total .....	28.28	25.65	23.63	24.88	25.08	25.51	26.88	27.96	28.06	28.38	28.49	28.49	25.60	26.37	28.36
<b>Other Liquids (a)</b> .....	5.22	5.07	5.02	5.12	5.29	5.27	5.36	5.43	5.59	5.47	5.52	5.56	5.11	5.34	5.53
<b>Total OPEC Supply</b> .....	33.50	30.72	28.65	30.00	30.37	30.78	32.24	33.39	33.66	33.84	34.01	34.05	30.71	31.71	33.89
<b>Crude Oil Production Capacity</b>															
Middle East .....	25.61	26.02	26.06	26.22	26.55	26.85	26.88	26.88	26.98	27.09	27.19	27.19	25.98	26.79	27.11
Other .....	5.82	5.60	5.48	6.33	6.73	6.71	6.73	6.53	6.50	6.47	6.44	6.41	5.81	6.67	6.46
OPEC Total .....	31.43	31.63	31.54	32.56	33.28	33.56	33.61	33.41	33.48	33.56	33.63	33.61	31.79	33.46	33.57
<b>Surplus Crude Oil Production Capacity</b>															
Middle East .....	3.15	5.27	6.90	6.62	7.00	6.87	5.56	4.87	4.81	4.62	4.62	4.62	5.49	6.07	4.67
Other .....	0.00	0.71	1.02	1.06	1.19	1.18	1.16	0.58	0.61	0.56	0.52	0.49	0.70	1.03	0.55
OPEC Total .....	3.15	5.98	7.92	7.68	8.19	8.06	6.72	5.45	5.42	5.18	5.14	5.11	6.19	7.10	5.21
<b>Unplanned OPEC Production Outages</b> .....	3.72	4.18	4.35	3.45	2.73	2.38	2.37	-	-	-	-	-	3.92	-	-

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

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

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

Forecasts are not published for individual OPEC countries.

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

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

**Forecasts:** EIA Short-Term Integrated Forecasting System.

**Table 3d. World Petroleum and Other Liquids Consumption (million barrels per day)**

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

	2020				2021				2022				2020	2021	2022
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
<b>North America</b> .....	<b>23.77</b>	<b>19.44</b>	<b>22.21</b>	<b>22.44</b>	<b>22.20</b>	<b>23.77</b>	<b>24.33</b>	<i>24.22</i>	<i>23.96</i>	<i>24.44</i>	<i>24.99</i>	<i>24.81</i>	<b>21.97</b>	<i>23.64</i>	<i>24.56</i>
Canada .....	<b>2.42</b>	<b>1.97</b>	<b>2.25</b>	<b>2.14</b>	<b>2.12</b>	<b>2.10</b>	<b>2.38</b>	<i>2.41</i>	<i>2.38</i>	<i>2.33</i>	<i>2.43</i>	<i>2.41</i>	<b>2.19</b>	<i>2.25</i>	<i>2.39</i>
Mexico .....	<b>1.85</b>	<b>1.40</b>	<b>1.50</b>	<b>1.58</b>	<b>1.62</b>	<b>1.63</b>	<b>1.78</b>	<i>1.80</i>	<i>1.72</i>	<i>1.74</i>	<i>1.73</i>	<i>1.73</i>	<b>1.58</b>	<i>1.71</i>	<i>1.73</i>
United States .....	<b>19.50</b>	<b>16.07</b>	<b>18.45</b>	<b>18.72</b>	<b>18.45</b>	<b>20.03</b>	<b>20.15</b>	<i>20.01</i>	<i>19.85</i>	<i>20.37</i>	<i>20.83</i>	<i>20.66</i>	<b>18.19</b>	<i>19.67</i>	<i>20.43</i>
<b>Central and South America</b> .....	<b>6.13</b>	<b>5.60</b>	<b>6.03</b>	<b>6.31</b>	<b>6.16</b>	<b>6.30</b>	<b>6.53</b>	<i>6.56</i>	<i>6.36</i>	<i>6.52</i>	<i>6.65</i>	<i>6.66</i>	<b>6.02</b>	<i>6.39</i>	<i>6.55</i>
Brazil .....	<b>2.89</b>	<b>2.67</b>	<b>2.97</b>	<b>3.06</b>	<b>2.94</b>	<b>3.06</b>	<b>3.19</b>	<i>3.20</i>	<i>3.04</i>	<i>3.12</i>	<i>3.22</i>	<i>3.22</i>	<b>2.90</b>	<i>3.10</i>	<i>3.15</i>
<b>Europe</b> .....	<b>14.04</b>	<b>11.70</b>	<b>13.59</b>	<b>13.23</b>	<b>12.63</b>	<b>13.30</b>	<b>14.43</b>	<i>14.40</i>	<i>13.99</i>	<i>14.02</i>	<i>14.31</i>	<i>13.96</i>	<b>13.14</b>	<i>13.70</i>	<i>14.07</i>
<b>Eurasia</b> .....	<b>4.86</b>	<b>4.48</b>	<b>5.28</b>	<b>5.17</b>	<b>4.94</b>	<b>5.03</b>	<b>5.42</b>	<i>5.27</i>	<i>5.08</i>	<i>5.15</i>	<i>5.54</i>	<i>5.39</i>	<b>4.95</b>	<i>5.17</i>	<i>5.29</i>
Russia .....	<b>3.65</b>	<b>3.33</b>	<b>4.04</b>	<b>3.92</b>	<b>3.73</b>	<b>3.84</b>	<b>4.17</b>	<i>4.01</i>	<i>3.84</i>	<i>3.94</i>	<i>4.26</i>	<i>4.11</i>	<b>3.74</b>	<i>3.94</i>	<i>4.04</i>
<b>Middle East</b> .....	<b>7.90</b>	<b>7.43</b>	<b>8.43</b>	<b>8.05</b>	<b>7.82</b>	<b>8.22</b>	<b>8.79</b>	<i>8.35</i>	<i>8.19</i>	<i>8.72</i>	<i>9.11</i>	<i>8.46</i>	<b>7.95</b>	<i>8.30</i>	<i>8.62</i>
<b>Asia and Oceania</b> .....	<b>34.95</b>	<b>32.20</b>	<b>33.86</b>	<b>35.94</b>	<b>36.58</b>	<b>35.71</b>	<b>34.76</b>	<i>36.71</i>	<i>37.78</i>	<i>37.23</i>	<i>36.65</i>	<i>37.82</i>	<b>34.24</b>	<i>35.94</i>	<i>37.37</i>
China .....	<b>13.89</b>	<b>14.08</b>	<b>14.65</b>	<b>15.11</b>	<b>15.25</b>	<b>15.46</b>	<b>14.97</b>	<i>15.44</i>	<i>15.84</i>	<i>16.01</i>	<i>15.72</i>	<i>15.99</i>	<b>14.43</b>	<i>15.28</i>	<i>15.89</i>
Japan .....	<b>3.78</b>	<b>2.93</b>	<b>3.06</b>	<b>3.53</b>	<b>3.73</b>	<b>3.08</b>	<b>3.03</b>	<i>3.44</i>	<i>3.66</i>	<i>2.98</i>	<i>3.08</i>	<i>3.40</i>	<b>3.33</b>	<i>3.32</i>	<i>3.28</i>
India .....	<b>4.83</b>	<b>3.76</b>	<b>4.17</b>	<b>4.93</b>	<b>5.00</b>	<b>4.45</b>	<b>4.49</b>	<i>4.86</i>	<i>5.15</i>	<i>5.20</i>	<i>4.85</i>	<i>5.15</i>	<b>4.42</b>	<i>4.70</i>	<i>5.09</i>
<b>Africa</b> .....	<b>4.18</b>	<b>4.05</b>	<b>4.07</b>	<b>4.29</b>	<b>4.33</b>	<b>4.35</b>	<b>4.26</b>	<i>4.47</i>	<i>4.49</i>	<i>4.49</i>	<i>4.41</i>	<i>4.60</i>	<b>4.15</b>	<i>4.35</i>	<i>4.50</i>
<b>Total OECD Liquid Fuels Consumption</b> .....	<b>45.50</b>	<b>37.45</b>	<b>42.27</b>	<b>42.84</b>	<b>42.29</b>	<b>43.86</b>	<b>45.31</b>	<i>45.90</i>	<i>45.52</i>	<i>45.14</i>	<i>46.13</i>	<i>46.07</i>	<b>42.02</b>	<i>44.35</i>	<i>45.72</i>
<b>Total non-OECD Liquid Fuels Consumption</b> .....	<b>50.33</b>	<b>47.44</b>	<b>51.21</b>	<b>52.59</b>	<b>52.37</b>	<b>52.81</b>	<b>53.21</b>	<i>54.08</i>	<i>54.32</i>	<i>55.43</i>	<i>55.54</i>	<i>55.63</i>	<b>50.40</b>	<i>53.12</i>	<i>55.23</i>
<b>Total World Liquid Fuels Consumption</b> .....	<b>95.83</b>	<b>84.90</b>	<b>93.47</b>	<b>95.43</b>	<b>94.66</b>	<b>96.67</b>	<b>98.52</b>	<i>99.98</i>	<i>99.84</i>	<i>100.57</i>	<i>101.67</i>	<i>101.70</i>	<b>92.42</b>	<i>97.47</i>	<i>100.95</i>
<b>Real Gross Domestic Product (a)</b>															
World Index, 2015 Q1 = 100 .....	<b>112.6</b>	<b>105.4</b>	<b>113.0</b>	<b>115.2</b>	<b>116.1</b>	<b>117.3</b>	<b>118.5</b>	<i>120.5</i>	<i>121.9</i>	<i>123.2</i>	<i>124.4</i>	<i>125.8</i>	<b>111.6</b>	<i>118.1</i>	<i>123.8</i>
Percent change from prior year .....	<b>-1.3</b>	<b>-8.7</b>	<b>-2.5</b>	<b>-0.8</b>	<b>3.0</b>	<b>11.3</b>	<b>4.8</b>	<i>4.7</i>	<i>5.0</i>	<i>5.0</i>	<i>5.0</i>	<i>4.4</i>	<b>-3.3</b>	<i>5.9</i>	<i>4.8</i>
OECD Index, 2015 = 100 .....	<b>103.7</b>	<b>109.1</b>	<b>113.6</b>	<b>118.1</b>	<b>123.4</b>	<b>130.0</b>	<b>136.6</b>	<i>143.7</i>	<i>150.1</i>	<i>157.2</i>	<i>164.3</i>	<i>171.4</i>	<b>103.7</b>	<i>109.1</i>	<i>113.6</i>
Percent change from prior year .....	<b>-4.7</b>	<b>5.2</b>	<b>4.1</b>	<b>3.8</b>	<b>4.4</b>	<b>5.0</b>	<b>5.6</b>	<i>5.1</i>	<i>5.7</i>	<i>5.8</i>	<i>5.9</i>	<i>6.0</i>	<b>-4.7</b>	<i>5.2</i>	<i>4.1</i>
Non-OECD Index, 2015 = 100 .....	<b>116.1</b>	<b>123.4</b>	<b>130.0</b>	<b>136.6</b>	<b>143.7</b>	<b>150.1</b>	<b>157.2</b>	<i>164.3</i>	<i>171.4</i>	<i>178.5</i>	<i>185.6</i>	<i>192.7</i>	<b>116.1</b>	<i>123.4</i>	<i>130.0</i>
Percent change from prior year .....	<b>-2.2</b>	<b>6.3</b>	<b>5.3</b>	<b>4.8</b>	<b>5.4</b>	<b>6.0</b>	<b>6.6</b>	<i>6.1</i>	<i>6.3</i>	<i>6.4</i>	<i>6.5</i>	<i>6.6</i>	<b>-2.2</b>	<i>6.3</i>	<i>5.3</i>
<b>Nominal U.S. Dollar Index (b)</b>															
Index, 2015 Q1 = 100 .....	<b>111.7</b>	<b>115.9</b>	<b>111.5</b>	<b>108.3</b>	<b>106.8</b>	<b>106.3</b>	<b>107.6</b>	<i>107.9</i>	<i>107.9</i>	<i>107.8</i>	<i>107.7</i>	<i>107.7</i>	<b>111.9</b>	<i>107.2</i>	<i>107.8</i>
Percent change from prior year .....	<b>2.8</b>	<b>5.8</b>	<b>0.9</b>	<b>-1.9</b>	<b>-4.4</b>	<b>-8.3</b>	<b>-3.5</b>	<i>-0.4</i>	<i>1.0</i>	<i>1.4</i>	<i>0.1</i>	<i>-0.2</i>	<b>1.9</b>	<i>-4.2</i>	<i>0.6</i>

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

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

- = no data available

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

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

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

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

**Forecasts:** EIA Short-Term Integrated Forecasting System.

**Table 4a. U.S. Petroleum and Other Liquids Supply, Consumption, and Inventories**  
U.S. Energy Information Administration | Short-Term Energy Outlook - October 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>Supply (million barrels per day)</b>															
<b>Crude Oil Supply</b>															
Domestic Production (a) .....	<b>12.81</b>	<b>10.67</b>	<b>10.79</b>	<b>10.87</b>	<b>10.69</b>	<b>11.28</b>	<b>10.98</b>	<i>11.13</i>	<i>11.54</i>	<i>11.64</i>	<i>11.78</i>	<i>11.96</i>	<b>11.28</b>	<i>11.02</i>	<i>11.73</i>
Alaska .....	<b>0.48</b>	<b>0.41</b>	<b>0.44</b>	<b>0.46</b>	<b>0.46</b>	<b>0.44</b>	<b>0.39</b>	<i>0.44</i>	<i>0.43</i>	<i>0.42</i>	<i>0.39</i>	<i>0.43</i>	<b>0.45</b>	<i>0.43</i>	<i>0.42</i>
Federal Gulf of Mexico (b) .....	<b>1.99</b>	<b>1.66</b>	<b>1.43</b>	<b>1.50</b>	<b>1.80</b>	<b>1.79</b>	<b>1.46</b>	<i>1.50</i>	<i>1.76</i>	<i>1.73</i>	<i>1.74</i>	<i>1.77</i>	<b>1.64</b>	<i>1.64</i>	<i>1.75</i>
Lower 48 States (excl GOM) .....	<b>10.35</b>	<b>8.60</b>	<b>8.92</b>	<b>8.91</b>	<b>8.44</b>	<b>9.05</b>	<b>9.13</b>	<i>9.20</i>	<i>9.34</i>	<i>9.49</i>	<i>9.65</i>	<i>9.76</i>	<b>9.19</b>	<i>8.95</i>	<i>9.56</i>
Crude Oil Net Imports (c) .....	<b>2.89</b>	<b>3.06</b>	<b>2.24</b>	<b>2.50</b>	<b>2.87</b>	<b>2.96</b>	<b>3.60</b>	<i>3.82</i>	<i>3.80</i>	<i>4.62</i>	<i>4.81</i>	<i>3.87</i>	<b>2.67</b>	<i>3.32</i>	<i>4.28</i>
SPR Net Withdrawals .....	<b>0.00</b>	<b>-0.23</b>	<b>0.15</b>	<b>0.04</b>	<b>0.00</b>	<b>0.18</b>	<b>0.04</b>	<i>0.22</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.10</i>	<b>-0.01</b>	<i>0.11</i>	<i>0.03</i>
Commercial Inventory Net Withdrawals .....	<b>-0.56</b>	<b>-0.54</b>	<b>0.38</b>	<b>0.13</b>	<b>-0.18</b>	<b>0.59</b>	<b>0.29</b>	<i>-0.11</i>	<i>-0.33</i>	<i>-0.04</i>	<i>0.26</i>	<i>-0.02</i>	<b>-0.14</b>	<i>0.15</i>	<i>-0.03</i>
Crude Oil Adjustment (d) .....	<b>0.63</b>	<b>0.20</b>	<b>0.46</b>	<b>0.36</b>	<b>0.42</b>	<b>0.63</b>	<b>0.59</b>	<i>0.16</i>	<i>0.22</i>	<i>0.22</i>	<i>0.23</i>	<i>0.16</i>	<b>0.41</b>	<i>0.45</i>	<i>0.21</i>
Total Crude Oil Input to Refineries .....	<b>15.77</b>	<b>13.16</b>	<b>14.02</b>	<b>13.90</b>	<b>13.81</b>	<b>15.65</b>	<b>15.50</b>	<i>15.23</i>	<i>15.23</i>	<i>16.43</i>	<i>17.07</i>	<i>16.08</i>	<b>14.21</b>	<i>15.05</i>	<i>16.21</i>
<b>Other Supply</b>															
Refinery Processing Gain .....	<b>1.02</b>	<b>0.82</b>	<b>0.93</b>	<b>0.92</b>	<b>0.84</b>	<b>0.97</b>	<b>0.96</b>	<i>1.05</i>	<i>1.06</i>	<i>1.05</i>	<i>1.09</i>	<i>1.10</i>	<b>0.92</b>	<i>0.95</i>	<i>1.07</i>
Natural Gas Plant Liquids Production .....	<b>5.17</b>	<b>4.96</b>	<b>5.34</b>	<b>5.22</b>	<b>4.86</b>	<b>5.46</b>	<b>5.33</b>	<i>5.51</i>	<i>5.67</i>	<i>5.83</i>	<i>5.97</i>	<i>6.07</i>	<b>5.17</b>	<i>5.29</i>	<i>5.88</i>
Renewables and Oxygenate Production (e) .....	<b>1.11</b>	<b>0.81</b>	<b>1.03</b>	<b>1.07</b>	<b>1.03</b>	<b>1.13</b>	<b>1.08</b>	<i>1.08</i>	<i>1.07</i>	<i>1.10</i>	<i>1.12</i>	<i>1.11</i>	<b>1.01</b>	<i>1.08</i>	<i>1.10</i>
Fuel Ethanol Production .....	<b>1.02</b>	<b>0.70</b>	<b>0.92</b>	<b>0.97</b>	<b>0.90</b>	<b>0.99</b>	<b>0.97</b>	<i>0.98</i>	<i>0.97</i>	<i>1.00</i>	<i>1.01</i>	<i>1.00</i>	<b>0.91</b>	<i>0.96</i>	<i>1.00</i>
Petroleum Products Adjustment (f) .....	<b>0.22</b>	<b>0.19</b>	<b>0.20</b>	<b>0.19</b>	<b>0.19</b>	<b>0.22</b>	<b>0.21</b>	<i>0.21</i>	<i>0.20</i>	<i>0.22</i>	<i>0.22</i>	<i>0.22</i>	<b>0.20</b>	<i>0.21</i>	<i>0.22</i>
Product Net Imports (c) .....	<b>-3.86</b>	<b>-2.96</b>	<b>-3.07</b>	<b>-3.33</b>	<b>-2.94</b>	<b>-3.13</b>	<b>-3.13</b>	<i>-3.48</i>	<i>-3.58</i>	<i>-3.59</i>	<i>-4.30</i>	<i>-4.22</i>	<b>-3.30</b>	<i>-3.17</i>	<i>-3.92</i>
Hydrocarbon Gas Liquids .....	<b>-1.95</b>	<b>-1.84</b>	<b>-1.83</b>	<b>-2.06</b>	<b>-2.02</b>	<b>-2.23</b>	<b>-2.21</b>	<i>-2.24</i>	<i>-2.23</i>	<i>-2.28</i>	<i>-2.38</i>	<i>-2.34</i>	<b>-1.92</b>	<i>-2.18</i>	<i>-2.31</i>
Unfinished Oils .....	<b>0.37</b>	<b>0.23</b>	<b>0.35</b>	<b>0.18</b>	<b>0.14</b>	<b>0.25</b>	<b>0.36</b>	<i>0.29</i>	<i>0.21</i>	<i>0.26</i>	<i>0.30</i>	<i>0.20</i>	<b>0.29</b>	<i>0.26</i>	<i>0.24</i>
Other HC/Oxygenates .....	<b>-0.09</b>	<b>-0.04</b>	<b>-0.04</b>	<b>-0.04</b>	<b>-0.08</b>	<b>-0.04</b>	<b>-0.05</b>	<i>-0.05</i>	<i>-0.05</i>	<i>-0.04</i>	<i>-0.03</i>	<i>-0.03</i>	<b>-0.05</b>	<i>-0.05</i>	<i>-0.04</i>
Motor Gasoline Blend Comp. ....	<b>0.40</b>	<b>0.37</b>	<b>0.49</b>	<b>0.44</b>	<b>0.55</b>	<b>0.79</b>	<b>0.68</b>	<i>0.13</i>	<i>0.53</i>	<i>0.76</i>	<i>0.42</i>	<i>0.22</i>	<b>0.42</b>	<i>0.54</i>	<i>0.48</i>
Finished Motor Gasoline .....	<b>-0.71</b>	<b>-0.41</b>	<b>-0.58</b>	<b>-0.76</b>	<b>-0.66</b>	<b>-0.66</b>	<b>-0.54</b>	<i>-0.63</i>	<i>-0.87</i>	<i>-0.62</i>	<i>-0.65</i>	<i>-0.80</i>	<b>-0.62</b>	<i>-0.62</i>	<i>-0.74</i>
Jet Fuel .....	<b>-0.07</b>	<b>0.09</b>	<b>0.12</b>	<b>0.08</b>	<b>0.03</b>	<b>0.09</b>	<b>0.10</b>	<i>0.10</i>	<i>-0.06</i>	<i>-0.04</i>	<i>0.03</i>	<i>0.07</i>	<b>0.05</b>	<i>0.08</i>	<i>0.00</i>
Distillate Fuel Oil .....	<b>-1.14</b>	<b>-0.86</b>	<b>-1.16</b>	<b>-0.72</b>	<b>-0.49</b>	<b>-0.90</b>	<b>-0.89</b>	<i>-0.50</i>	<i>-0.59</i>	<i>-1.05</i>	<i>-1.28</i>	<i>-0.98</i>	<b>-0.97</b>	<i>-0.69</i>	<i>-0.98</i>
Residual Fuel Oil .....	<b>-0.02</b>	<b>-0.01</b>	<b>0.05</b>	<b>0.05</b>	<b>0.08</b>	<b>0.05</b>	<b>0.06</b>	<i>0.06</i>	<i>-0.02</i>	<i>0.00</i>	<i>-0.04</i>	<i>0.04</i>	<b>0.02</b>	<i>0.06</i>	<i>0.00</i>
Other Oils (g) .....	<b>-0.64</b>	<b>-0.49</b>	<b>-0.48</b>	<b>-0.48</b>	<b>-0.49</b>	<b>-0.49</b>	<b>-0.63</b>	<i>-0.62</i>	<i>-0.50</i>	<i>-0.59</i>	<i>-0.66</i>	<i>-0.61</i>	<b>-0.52</b>	<i>-0.56</i>	<i>-0.59</i>
Product Inventory Net Withdrawals .....	<b>0.06</b>	<b>-0.90</b>	<b>0.00</b>	<b>0.73</b>	<b>0.65</b>	<b>-0.26</b>	<b>0.20</b>	<i>0.41</i>	<i>0.19</i>	<i>-0.67</i>	<i>-0.35</i>	<i>0.30</i>	<b>-0.02</b>	<i>0.25</i>	<i>-0.13</i>
Total Supply .....	<b>19.50</b>	<b>16.07</b>	<b>18.45</b>	<b>18.72</b>	<b>18.43</b>	<b>20.03</b>	<b>20.15</b>	<i>20.01</i>	<i>19.85</i>	<i>20.37</i>	<i>20.83</i>	<i>20.66</i>	<b>18.19</b>	<i>19.66</i>	<i>20.43</i>
<b>Consumption (million barrels per day)</b>															
Hydrocarbon Gas Liquids .....	<b>3.37</b>	<b>2.85</b>	<b>3.01</b>	<b>3.68</b>	<b>3.40</b>	<b>3.33</b>	<b>3.12</b>	<i>3.53</i>	<i>3.80</i>	<i>3.33</i>	<i>3.34</i>	<i>3.84</i>	<b>3.23</b>	<i>3.35</i>	<i>3.58</i>
Unfinished Oils .....	<b>0.18</b>	<b>0.12</b>	<b>0.03</b>	<b>0.03</b>	<b>0.05</b>	<b>0.03</b>	<b>-0.03</b>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<b>0.09</b>	<i>0.01</i>	<i>0.00</i>
Motor Gasoline .....	<b>8.51</b>	<b>7.12</b>	<b>8.51</b>	<b>8.06</b>	<b>8.00</b>	<b>9.07</b>	<b>9.28</b>	<i>8.76</i>	<i>8.42</i>	<i>9.21</i>	<i>9.36</i>	<i>8.83</i>	<b>8.05</b>	<i>8.78</i>	<i>8.96</i>
Fuel Ethanol blended into Motor Gasoline .....	<b>0.85</b>	<b>0.73</b>	<b>0.87</b>	<b>0.85</b>	<b>0.82</b>	<b>0.93</b>	<b>0.93</b>	<i>0.89</i>	<i>0.86</i>	<i>0.94</i>	<i>0.95</i>	<i>0.92</i>	<b>0.82</b>	<i>0.89</i>	<i>0.92</i>
Jet Fuel .....	<b>1.56</b>	<b>0.69</b>	<b>0.97</b>	<b>1.09</b>	<b>1.13</b>	<b>1.34</b>	<b>1.52</b>	<i>1.52</i>	<i>1.46</i>	<i>1.57</i>	<i>1.71</i>	<i>1.68</i>	<b>1.08</b>	<i>1.38</i>	<i>1.61</i>
Distillate Fuel Oil .....	<b>4.02</b>	<b>3.49</b>	<b>3.70</b>	<b>3.94</b>	<b>3.97</b>	<b>3.93</b>	<b>3.90</b>	<i>4.14</i>	<i>4.17</i>	<i>4.05</i>	<i>4.02</i>	<i>4.17</i>	<b>3.79</b>	<i>3.99</i>	<i>4.11</i>
Residual Fuel Oil .....	<b>0.17</b>	<b>0.11</b>	<b>0.32</b>	<b>0.22</b>	<b>0.26</b>	<b>0.25</b>	<b>0.31</b>	<i>0.24</i>	<i>0.23</i>	<i>0.21</i>	<i>0.26</i>	<i>0.26</i>	<b>0.21</b>	<i>0.27</i>	<i>0.24</i>
Other Oils (g) .....	<b>1.69</b>	<b>1.68</b>	<b>1.92</b>	<b>1.71</b>	<b>1.63</b>	<b>2.08</b>	<b>2.06</b>	<i>1.82</i>	<i>1.76</i>	<i>2.00</i>	<i>2.15</i>	<i>1.87</i>	<b>1.75</b>	<i>1.90</i>	<i>1.94</i>
Total Consumption .....	<b>19.50</b>	<b>16.07</b>	<b>18.45</b>	<b>18.72</b>	<b>18.45</b>	<b>20.03</b>	<b>20.15</b>	<i>20.01</i>	<i>19.85</i>	<i>20.37</i>	<i>20.83</i>	<i>20.66</i>	<b>18.19</b>	<i>19.67</i>	<i>20.43</i>
<b>Total Petroleum and Other Liquids Net Imports</b> .....	<b>-0.97</b>	<b>0.11</b>	<b>-0.83</b>	<b>-0.84</b>	<b>-0.07</b>	<b>-0.16</b>	<b>0.47</b>	<i>0.35</i>	<i>0.22</i>	<i>1.03</i>	<i>0.51</i>	<i>-0.34</i>	<b>-0.63</b>	<i>0.15</i>	<i>0.35</i>
<b>End-of-period Inventories (million barrels)</b>															
<b>Commercial Inventory</b>															
Crude Oil (excluding SPR) .....	<b>483.3</b>	<b>532.7</b>	<b>497.7</b>	<b>485.5</b>	<b>501.9</b>	<b>448.0</b>	<b>420.9</b>	<i>430.8</i>	<i>460.3</i>	<i>464.0</i>	<i>440.1</i>	<i>442.3</i>	<b>485.5</b>	<i>430.8</i>	<i>442.3</i>
Hydrocarbon Gas Liquids .....	<b>182.9</b>	<b>235.7</b>	<b>298.7</b>	<b>228.2</b>	<b>168.6</b>	<b>195.8</b>	<b>218.1</b>	<i>170.6</i>	<i>133.0</i>	<i>187.3</i>	<i>235.1</i>	<i>197.1</i>	<b>228.2</b>	<i>170.6</i>	<i>197.1</i>
Unfinished Oils .....	<b>101.9</b>	<b>92.5</b>	<b>81.4</b>	<b>77.6</b>	<b>93.3</b>	<b>93.0</b>	<b>89.0</b>	<i>82.8</i>	<i>93.3</i>	<i>91.1</i>	<i>90.0</i>	<i>83.1</i>	<b>77.6</b>	<i>82.8</i>	<i>83.1</i>
Other HC/Oxygenates .....	<b>33.4</b>	<b>25.4</b>	<b>24.6</b>	<b>29.7</b>	<b>29.1</b>	<b>27.5</b>	<b>25.8</b>	<i>26.0</i>	<i>28.1</i>	<i>26.8</i>	<i>26.5</i>	<i>26.8</i>	<b>29.7</b>	<i>26.0</i>	<i>26.8</i>
Total Motor Gasoline .....	<b>261.8</b>	<b>254.5</b>	<b>227.6</b>	<b>243.4</b>	<b>237.6</b>	<b>237.2</b>	<b>225.1</b>	<i>234.1</i>	<i>241.9</i>	<i>246.6</i>	<i>233.3</i>	<i>249.3</i>	<b>243.4</b>	<i>234.1</i>	<i>249.3</i>
Finished Motor Gasoline .....	<b>22.6</b>	<b>23.5</b>	<b>22.5</b>	<b>25.4</b>	<b>20.3</b>	<b>18.6</b>	<b>17.6</b>	<i>24.4</i>	<i>24.1</i>	<i>23.9</i>	<i>23.1</i>	<i>26.2</i>	<b>25.4</b>	<i>24.4</i>	<i>26.2</i>
Motor Gasoline Blend Comp. ....	<b>239.2</b>	<b>231.0</b>	<b>205.0</b>	<b>218.0</b>	<b>217.4</b>	<b>218.6</b>	<b>207.5</b>	<i>209.7</i>	<i>217.8</i>	<i>222.7</i>	<i>210.2</i>	<i>223.2</i>	<b>218.0</b>	<i>209.7</i>	<i>223.2</i>
Jet Fuel .....	<b>39.9</b>	<b>41.6</b>	<b>40.1</b>	<b>38.6</b>	<b>39.0</b>	<b>44.7</b>	<b>41.3</b>	<i>38.6</i>	<i>38.4</i>	<i>39.5</i>	<i>42.1</i>	<i>39.1</i>	<b>38.6</b>	<i>38.6</i>	<i>39.1</i>
Distillate Fuel Oil .....	<b>126.8</b>	<b>176.9</b>	<b>172.5</b>	<b>161.2</b>	<b>145.5</b>	<b>140.1</b>	<b>129.3</b>	<i>133.9</i>	<i>124.2</i>	<i>129.4</i>	<i>136.6</i>	<i>137.6</i>	<b>161.2</b>	<i>133.9</i>	<i>137.6</i>
Residual Fuel Oil .....	<b>34.8</b>	<b>39.5</b>	<b>32.1</b>	<b>30.2</b>	<b>30.9</b>	<b>31.1</b>	<b>28.2</b>	<i>30.5</i>	<i>31.0</i>	<i>32.0</i>	<i>30.3</i>	<i>31.7</i>	<b>30.2</b>	<i>30.5</i>	<i>31.7</i>
Other Oils (g) .....	<b>61.9</b>	<b>59.0</b>	<b>48.3</b>	<b>49.1</b>	<b>55.8</b>	<b>54.1</b>	<b>48.1</b>	<i>50.6</i>	<i>59.8</i>	<i>57.8</i>	<i>48.6</i>	<i>50.2</i>	<b>49.1</b>	<i>50.6</i>	<i>50.2</i>
Total Commercial Inventory .....	<b>1326.7</b>	<b>1457.7</b>	<b>1423.2</b>	<b>1343.3</b>	<b>1301.7</b>	<b>1271.5</b>	<b>1225.7</b>	<i>1197.9</i>	<i>1210.0</i>	<i>1274.6</i>	<i>1282.7</i>	<i>1257.1</i>	<b>1343.3</b>	<i>1197.9</i>	<i>1257.1</i>
Crude Oil in SPR .....	<b>635.0</b>	<b>656.0</b>	<b>642.2</b>	<b>638.1</b>	<b>637.8</b>	<b>621.3</b>	<b>617.8</b>	<i>597.8</i>	<i>597.8</i>	<i>597.8</i>	<i>597.8</i>	<i>588.2</i>	<b>638.1</b>	<i>597.8</i>	<i>588.2</i>

(a) Includes lease condensate.

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

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

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

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

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

(g) For net imports and inventories "Other Oils" includes aviation gasoline blend components, finished aviation gasoline,



**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 - October 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>HGL Production</b>															
<b>Natural Gas Processing Plants</b>															
Ethane .....	1.95	1.92	2.14	2.05	1.87	2.19	2.06	2.14	2.32	2.46	2.51	2.58	2.02	2.06	2.47
Propane .....	1.74	1.61	1.68	1.70	1.62	1.74	1.73	1.80	1.81	1.79	1.83	1.87	1.68	1.72	1.82
Butanes .....	0.92	0.86	0.90	0.89	0.85	0.92	0.91	0.96	0.95	0.95	0.98	0.99	0.89	0.91	0.97
Natural Gasoline (Pentanes Plus) .....	0.57	0.57	0.62	0.58	0.53	0.61	0.63	0.61	0.59	0.62	0.65	0.63	0.58	0.59	0.62
<b>Refinery and Blender Net Production</b>															
Ethane/Ethylene .....	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.01
Propane .....	0.29	0.24	0.27	0.27	0.25	0.29	0.27	0.32	0.32	0.31	0.32	0.31	0.26	0.28	0.31
Propylene (refinery-grade) .....	0.25	0.26	0.26	0.29	0.27	0.31	0.28	0.28	0.28	0.28	0.28	0.28	0.26	0.29	0.28
Butanes/Butylenes .....	-0.08	0.18	0.13	-0.19	-0.09	0.24	0.19	-0.19	-0.08	0.26	0.19	-0.19	0.01	0.04	0.05
<b>Renewable Fuels and Oxygenate Plant Net Production</b>															
Natural Gasoline (Pentanes Plus) .....	-0.02	-0.01	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
<b>HGL Net Imports</b>															
Ethane .....	-0.30	-0.24	-0.26	-0.27	-0.35	-0.39	-0.37	-0.38	-0.43	-0.45	-0.45	-0.46	-0.27	-0.37	-0.45
Propane/Propylene .....	-1.08	-1.09	-1.06	-1.31	-1.11	-1.23	-1.22	-1.31	-1.20	-1.21	-1.28	-1.28	-1.14	-1.21	-1.24
Butanes/Butylenes .....	-0.30	-0.31	-0.34	-0.34	-0.35	-0.40	-0.44	-0.38	-0.40	-0.44	-0.44	-0.41	-0.32	-0.39	-0.42
Natural Gasoline (Pentanes Plus) .....	-0.27	-0.19	-0.16	-0.14	-0.22	-0.21	-0.19	-0.18	-0.20	-0.19	-0.20	-0.19	-0.19	-0.20	-0.20
<b>HGL Refinery and Blender Net Inputs</b>															
Butanes/Butylenes .....	0.46	0.25	0.32	0.47	0.39	0.29	0.31	0.49	0.39	0.29	0.33	0.50	0.38	0.37	0.38
Natural Gasoline (Pentanes Plus) .....	0.15	0.10	0.15	0.13	0.14	0.14	0.17	0.16	0.16	0.18	0.18	0.18	0.13	0.15	0.18
<b>HGL Consumption</b>															
Ethane/Ethylene .....	1.71	1.68	1.67	1.81	1.54	1.83	1.74	1.78	1.97	2.02	2.06	2.10	1.72	1.72	2.04
Propane .....	1.14	0.58	0.61	0.97	1.09	0.65	0.63	0.98	1.11	0.57	0.54	1.00	0.82	0.84	0.80
Propylene (refinery-grade) .....	0.27	0.27	0.27	0.30	0.29	0.32	0.29	0.29	0.30	0.30	0.30	0.30	0.28	0.30	0.30
Butanes/Butylenes .....	0.17	0.20	0.19	0.23	0.22	0.29	0.21	0.21	0.19	0.22	0.20	0.20	0.20	0.23	0.20
Natural Gasoline (Pentanes Plus) .....	0.09	0.13	0.26	0.36	0.26	0.24	0.26	0.26	0.24	0.21	0.23	0.24	0.21	0.25	0.23
<b>HGL Inventories (million barrels)</b>															
Ethane .....	53.2	50.6	62.5	74.8	65.8	67.4	61.9	61.5	53.6	53.4	53.2	56.3	60.3	64.1	54.1
Propane .....	60.8	75.8	100.3	69.9	39.3	53.2	66.3	50.3	31.8	59.5	88.0	77.8	69.9	50.3	77.8
Propylene (at refineries only) .....	1.5	1.5	1.5	1.5	1.1	1.2	1.5	1.6	1.5	1.8	2.0	1.9	1.5	1.6	1.9
Butanes/Butylenes .....	44.1	69.9	86.0	54.6	37.2	53.9	67.4	38.5	28.6	52.9	70.7	41.6	54.6	38.5	41.6
Natural Gasoline (Pentanes Plus) .....	24.4	36.0	38.7	32.6	22.8	22.3	22.2	21.0	18.5	19.7	20.6	19.8	32.6	21.0	19.8
<b>Refinery and Blender Net Inputs</b>															
Crude Oil .....	15.77	13.16	14.02	13.90	13.81	15.65	15.50	15.23	15.23	16.43	17.07	16.08	14.21	15.05	16.21
Hydrocarbon Gas Liquids .....	0.61	0.35	0.47	0.60	0.53	0.43	0.48	0.65	0.56	0.47	0.51	0.69	0.51	0.52	0.56
Other Hydrocarbons/Oxygenates .....	1.12	0.95	1.11	1.08	1.05	1.19	1.18	1.17	1.16	1.23	1.24	1.22	1.06	1.15	1.21
Unfinished Oils .....	0.06	0.22	0.45	0.19	-0.08	0.22	0.43	0.36	0.09	0.28	0.31	0.27	0.23	0.24	0.24
Motor Gasoline Blend Components .....	0.41	0.49	0.85	0.46	0.71	0.92	0.79	0.27	0.56	0.81	0.65	0.30	0.55	0.67	0.58
Aviation Gasoline Blend Components .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Refinery and Blender Net Inputs .....	17.98	15.16	16.90	16.22	16.01	18.41	18.37	17.68	17.61	19.22	19.79	18.55	16.57	17.63	18.80
<b>Refinery Processing Gain</b> .....	1.02	0.82	0.93	0.92	0.84	0.97	0.96	1.05	1.06	1.05	1.09	1.10	0.92	0.95	1.07
<b>Refinery and Blender Net Production</b>															
Hydrocarbon Gas Liquids .....	0.47	0.69	0.67	0.36	0.44	0.85	0.75	0.42	0.52	0.86	0.80	0.41	0.55	0.62	0.65
Finished Motor Gasoline .....	9.31	7.53	9.14	8.98	8.74	9.82	9.77	9.62	9.38	9.89	10.07	9.83	8.74	9.49	9.80
Jet Fuel .....	1.63	0.62	0.83	1.00	1.10	1.32	1.38	1.39	1.52	1.62	1.71	1.57	1.02	1.30	1.61
Distillate Fuel .....	4.95	4.83	4.72	4.45	4.29	4.77	4.63	4.62	4.63	5.11	5.32	5.11	4.74	4.58	5.04
Residual Fuel .....	0.24	0.17	0.19	0.15	0.19	0.20	0.22	0.20	0.26	0.22	0.28	0.23	0.19	0.21	0.25
Other Oils (a) .....	2.41	2.14	2.28	2.19	2.09	2.42	2.58	2.48	2.35	2.57	2.71	2.49	2.26	2.39	2.53
Total Refinery and Blender Net Production .....	19.00	15.98	17.84	17.14	16.86	19.38	19.33	18.73	18.67	20.27	20.88	19.65	17.49	18.58	19.87
<b>Refinery Distillation Inputs</b> .....	16.37	13.65	14.56	14.32	14.25	16.17	16.09	15.62	15.58	16.64	17.28	16.36	14.72	15.54	16.47
<b>Refinery Operable Distillation Capacity</b> .....	18.98	18.75	18.55	18.39	18.11	18.13	18.13	18.13	18.13	18.13	18.13	18.13	18.66	18.12	18.13
<b>Refinery Distillation Utilization Factor</b> .....	0.86	0.73	0.78	0.78	0.79	0.89	0.89	0.86	0.86	0.92	0.95	0.90	0.79	0.86	0.91

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

- = no data available

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

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

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

**Forecasts:** EIA Short-Term Integrated Forecasting System.

**Table 4c. U.S. Regional Motor Gasoline Prices and Inventories**

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

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>Prices (cents per gallon)</b>															
Refiner Wholesale Price .....	153	104	137	133	180	216	232	232	220	218	209	191	133	216	209
<b>Gasoline Regular Grade Retail Prices Including Taxes</b>															
PADD 1 .....	236	191	211	212	252	287	304	308	289	288	283	265	214	288	281
PADD 2 .....	226	179	207	202	247	288	304	301	274	286	274	254	204	286	272
PADD 3 .....	210	162	186	183	228	267	282	282	268	267	258	240	187	267	258
PADD 4 .....	247	200	233	221	247	311	360	325	301	307	299	278	226	312	296
PADD 5 .....	311	258	283	278	312	366	391	378	372	375	356	356	284	363	365
U.S. Average .....	241	194	218	215	256	297	316	314	296	300	289	274	218	297	290
<b>Gasoline All Grades Including Taxes</b>	<b>251</b>	<b>203</b>	<b>227</b>	<b>224</b>	<b>265</b>	<b>306</b>	<b>325</b>	<b>326</b>	<b>309</b>	<b>313</b>	<b>303</b>	<b>288</b>	<b>227</b>	<b>307</b>	<b>303</b>
<b>End-of-period Inventories (million barrels)</b>															
<b>Total Gasoline Inventories</b>															
PADD 1 .....	71.0	73.1	61.8	68.5	65.1	69.9	57.8	59.5	65.2	68.1	63.0	68.8	68.5	59.5	68.8
PADD 2 .....	60.2	52.7	46.2	50.9	50.7	50.6	47.2	49.5	53.3	52.2	50.1	50.6	50.9	49.5	50.6
PADD 3 .....	85.8	91.3	80.4	84.0	81.9	81.6	82.0	85.6	85.4	88.9	83.3	89.8	84.0	85.6	89.8
PADD 4 .....	9.2	7.7	7.6	8.7	8.6	6.2	7.8	8.1	7.9	7.9	7.5	8.2	8.7	8.1	8.2
PADD 5 .....	35.6	29.7	31.5	31.4	31.4	29.0	30.2	31.3	30.1	29.5	29.5	31.8	31.4	31.3	31.8
U.S. Total .....	261.8	254.5	227.6	243.4	237.6	237.2	225.1	234.1	241.9	246.6	233.3	249.3	243.4	234.1	249.3
<b>Finished Gasoline Inventories</b>															
U.S. Total .....	22.6	23.5	22.5	25.4	20.3	18.6	17.6	24.4	24.1	23.9	23.1	26.2	25.4	24.4	26.2
<b>Gasoline Blending Components Inventories</b>															
U.S. Total .....	239.2	231.0	205.0	218.0	217.4	218.6	207.5	209.7	217.8	222.7	210.2	223.2	218.0	209.7	223.2

- = no data available

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

Prices are not adjusted for inflation.

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

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

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

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

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

**Forecasts:** EIA Short-Term Integrated Forecasting System.

**Table 5a. U.S. Natural Gas Supply, Consumption, and Inventories**

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

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>Supply (billion cubic feet per day)</b>															
Total Marketed Production .....	<b>103.02</b>	<b>96.83</b>	<b>97.29</b>	<b>98.53</b>	<b>97.31</b>	<b>100.79</b>	<b>101.23</b>	<i>101.60</i>	<i>102.39</i>	<i>103.50</i>	<i>105.35</i>	<i>107.06</i>	<b>98.91</b>	<i>100.25</i>	<i>104.59</i>
Alaska .....	<b>0.96</b>	<b>0.88</b>	<b>0.88</b>	<b>0.98</b>	<b>1.02</b>	<b>0.95</b>	<b>0.84</b>	<i>0.88</i>	<i>0.92</i>	<i>0.81</i>	<i>0.73</i>	<i>0.87</i>	<b>0.92</b>	<i>0.92</i>	<i>0.83</i>
Federal GOM (a) .....	<b>2.80</b>	<b>2.28</b>	<b>1.75</b>	<b>1.81</b>	<b>2.27</b>	<b>2.26</b>	<b>1.85</b>	<i>1.91</i>	<i>2.09</i>	<i>2.01</i>	<i>1.91</i>	<i>1.87</i>	<b>2.16</b>	<i>2.07</i>	<i>1.97</i>
Lower 48 States (excl GOM) .....	<b>99.25</b>	<b>93.68</b>	<b>94.67</b>	<b>95.75</b>	<b>94.03</b>	<b>97.58</b>	<b>98.54</b>	<i>98.80</i>	<i>99.38</i>	<i>100.68</i>	<i>102.72</i>	<i>104.32</i>	<b>95.83</b>	<i>97.25</i>	<i>101.79</i>
Total Dry Gas Production .....	<b>95.29</b>	<b>89.57</b>	<b>89.99</b>	<b>91.14</b>	<b>90.30</b>	<b>92.89</b>	<b>93.32</b>	<i>93.65</i>	<i>94.38</i>	<i>95.41</i>	<i>97.12</i>	<i>98.69</i>	<b>91.49</b>	<i>92.55</i>	<i>96.41</i>
LNG Gross Imports .....	<b>0.24</b>	<b>0.12</b>	<b>0.09</b>	<b>0.09</b>	<b>0.15</b>	<b>0.02</b>	<b>0.13</b>	<i>0.20</i>	<i>0.32</i>	<i>0.18</i>	<i>0.18</i>	<i>0.20</i>	<b>0.13</b>	<i>0.12</i>	<i>0.22</i>
LNG Gross Exports .....	<b>7.92</b>	<b>5.52</b>	<b>3.91</b>	<b>8.78</b>	<b>9.27</b>	<b>9.81</b>	<b>9.56</b>	<i>10.19</i>	<i>11.21</i>	<i>10.81</i>	<i>10.73</i>	<i>11.86</i>	<b>6.53</b>	<i>9.71</i>	<i>11.15</i>
Pipeline Gross Imports .....	<b>7.60</b>	<b>6.08</b>	<b>6.39</b>	<b>7.27</b>	<b>8.68</b>	<b>6.81</b>	<b>6.86</b>	<i>6.85</i>	<i>7.35</i>	<i>6.35</i>	<i>6.38</i>	<i>6.72</i>	<b>6.84</b>	<i>7.29</i>	<i>6.70</i>
Pipeline Gross Exports .....	<b>8.15</b>	<b>7.17</b>	<b>8.09</b>	<b>8.21</b>	<b>8.31</b>	<b>8.67</b>	<b>8.71</b>	<i>9.18</i>	<i>9.17</i>	<i>8.58</i>	<i>9.34</i>	<i>9.35</i>	<b>7.91</b>	<i>8.72</i>	<i>9.11</i>
Supplemental Gaseous Fuels .....	<b>0.18</b>	<b>0.17</b>	<b>0.17</b>	<b>0.17</b>	<b>0.18</b>	<b>0.15</b>	<b>0.16</b>	<i>0.17</i>	<i>0.17</i>	<i>0.17</i>	<i>0.18</i>	<i>0.18</i>	<b>0.17</b>	<i>0.16</i>	<i>0.17</i>
Net Inventory Withdrawals .....	<b>12.74</b>	<b>-12.24</b>	<b>-7.68</b>	<b>5.36</b>	<b>17.19</b>	<b>-9.12</b>	<b>-7.84</b>	<i>4.64</i>	<i>15.46</i>	<i>-10.68</i>	<i>-8.37</i>	<i>4.36</i>	<b>-0.46</b>	<i>1.16</i>	<i>0.14</i>
Total Supply .....	<b>99.98</b>	<b>71.00</b>	<b>76.96</b>	<b>87.05</b>	<b>98.91</b>	<b>72.26</b>	<b>74.36</b>	<i>86.13</i>	<i>97.31</i>	<i>72.04</i>	<i>75.42</i>	<i>88.92</i>	<b>83.74</b>	<i>82.86</i>	<i>83.38</i>
Balancing Item (b) .....	<b>-0.55</b>	<b>-0.29</b>	<b>-0.20</b>	<b>-0.93</b>	<b>0.37</b>	<b>-0.33</b>	<b>0.71</b>	<i>0.74</i>	<i>-0.89</i>	<i>-0.93</i>	<i>-0.95</i>	<i>-0.39</i>	<b>-0.49</b>	<i>0.37</i>	<i>-0.79</i>
Total Primary Supply .....	<b>99.44</b>	<b>70.72</b>	<b>76.76</b>	<b>86.12</b>	<b>99.28</b>	<b>71.92</b>	<b>75.08</b>	<i>86.88</i>	<i>96.42</i>	<i>71.11</i>	<i>74.47</i>	<i>88.54</i>	<b>83.25</b>	<i>83.23</i>	<i>82.59</i>
<b>Consumption (billion cubic feet per day)</b>															
Residential .....	<b>22.95</b>	<b>8.25</b>	<b>3.84</b>	<b>16.10</b>	<b>25.67</b>	<b>7.51</b>	<b>3.39</b>	<i>17.13</i>	<i>24.62</i>	<i>7.73</i>	<i>3.80</i>	<i>17.21</i>	<b>12.77</b>	<i>13.37</i>	<i>13.29</i>
Commercial .....	<b>14.04</b>	<b>5.85</b>	<b>4.39</b>	<b>10.40</b>	<b>14.87</b>	<b>6.24</b>	<b>4.78</b>	<i>11.47</i>	<i>14.63</i>	<i>6.61</i>	<i>5.15</i>	<i>11.71</i>	<b>8.66</b>	<i>9.32</i>	<i>9.51</i>
Industrial .....	<b>24.31</b>	<b>20.32</b>	<b>20.92</b>	<b>23.53</b>	<b>23.81</b>	<b>21.49</b>	<b>21.62</b>	<i>24.34</i>	<i>24.12</i>	<i>22.09</i>	<i>21.90</i>	<i>24.76</i>	<b>22.27</b>	<i>22.81</i>	<i>23.22</i>
Electric Power (c) .....	<b>29.55</b>	<b>29.05</b>	<b>40.10</b>	<b>28.19</b>	<b>26.65</b>	<b>29.14</b>	<b>37.61</b>	<i>25.84</i>	<i>24.56</i>	<i>27.02</i>	<i>35.75</i>	<i>26.41</i>	<b>31.74</b>	<i>29.83</i>	<i>28.46</i>
Lease and Plant Fuel .....	<b>5.14</b>	<b>4.83</b>	<b>4.85</b>	<b>4.91</b>	<b>4.85</b>	<b>5.02</b>	<b>5.05</b>	<i>5.06</i>	<i>5.10</i>	<i>5.16</i>	<i>5.25</i>	<i>5.34</i>	<b>4.93</b>	<i>5.00</i>	<i>5.21</i>
Pipeline and Distribution Use .....	<b>3.31</b>	<b>2.32</b>	<b>2.53</b>	<b>2.85</b>	<b>3.28</b>	<b>2.38</b>	<b>2.48</b>	<i>2.89</i>	<i>3.22</i>	<i>2.34</i>	<i>2.46</i>	<i>2.95</i>	<b>2.75</b>	<i>2.75</i>	<i>2.74</i>
Vehicle Use .....	<b>0.13</b>	<b>0.10</b>	<b>0.13</b>	<b>0.13</b>	<b>0.14</b>	<b>0.15</b>	<b>0.15</b>	<i>0.15</i>	<i>0.16</i>	<i>0.16</i>	<i>0.16</i>	<i>0.16</i>	<b>0.13</b>	<i>0.15</i>	<i>0.16</i>
Total Consumption .....	<b>99.44</b>	<b>70.72</b>	<b>76.76</b>	<b>86.12</b>	<b>99.28</b>	<b>71.92</b>	<b>75.08</b>	<i>86.88</i>	<i>96.42</i>	<i>71.11</i>	<i>74.47</i>	<i>88.54</i>	<b>83.25</b>	<i>83.23</i>	<i>82.59</i>
<b>End-of-period Inventories (billion cubic feet)</b>															
Working Gas Inventory .....	<b>2,029</b>	<b>3,133</b>	<b>3,840</b>	<b>3,341</b>	<b>1,801</b>	<b>2,583</b>	<b>3,304</b>	<i>2,878</i>	<i>1,486</i>	<i>2,458</i>	<i>3,228</i>	<i>2,827</i>	<b>3,341</b>	<i>2,878</i>	<i>2,827</i>
East Region (d) .....	<b>385</b>	<b>655</b>	<b>890</b>	<b>763</b>	<b>313</b>	<b>515</b>	<b>806</b>	<i>660</i>	<i>187</i>	<i>460</i>	<i>686</i>	<i>506</i>	<b>763</b>	<i>660</i>	<i>506</i>
Midwest Region (d) .....	<b>471</b>	<b>747</b>	<b>1,053</b>	<b>918</b>	<b>395</b>	<b>630</b>	<b>966</b>	<i>819</i>	<i>287</i>	<i>543</i>	<i>898</i>	<i>793</i>	<b>918</b>	<i>819</i>	<i>793</i>
South Central Region (d) .....	<b>857</b>	<b>1,221</b>	<b>1,313</b>	<b>1,155</b>	<b>760</b>	<b>991</b>	<b>1,048</b>	<i>999</i>	<i>728</i>	<i>985</i>	<i>1,057</i>	<i>982</i>	<b>1,155</b>	<i>999</i>	<i>982</i>
Mountain Region (d) .....	<b>92</b>	<b>177</b>	<b>235</b>	<b>195</b>	<b>113</b>	<b>175</b>	<b>205</b>	<i>154</i>	<i>99</i>	<i>152</i>	<i>220</i>	<i>203</i>	<b>195</b>	<i>154</i>	<i>203</i>
Pacific Region (d) .....	<b>200</b>	<b>308</b>	<b>318</b>	<b>282</b>	<b>197</b>	<b>246</b>	<b>247</b>	<i>213</i>	<i>153</i>	<i>286</i>	<i>334</i>	<i>311</i>	<b>282</b>	<i>213</i>	<i>311</i>
Alaska .....	<b>23</b>	<b>25</b>	<b>31</b>	<b>28</b>	<b>23</b>	<b>27</b>	<b>32</b>	<i>32</i>	<i>32</i>	<i>32</i>	<i>32</i>	<i>32</i>	<b>28</b>	<i>32</i>	<i>32</i>

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

(b) The balancing item represents the difference between the sum of the components of natural gas supply and the sum of components of natural gas demand.

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

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

- = no data available

LNG: liquefied natural gas.

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

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

**Forecasts:** EIA Short-Term Integrated Forecasting System.

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

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

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>Wholesale/Spot</b>															
Henry Hub Spot Price .....	1.98	1.77	2.07	2.63	3.70	3.06	4.53	6.03	5.75	3.67	3.64	3.59	2.11	4.33	4.16
<b>Residential Retail</b>															
New England .....	14.05	14.74	18.47	14.90	14.66	16.24	19.24	15.38	15.37	16.13	18.29	13.98	14.73	15.39	15.28
Middle Atlantic .....	10.77	11.84	17.83	11.77	10.43	13.49	19.01	13.29	12.56	14.36	18.11	11.87	11.76	12.14	13.02
E. N. Central .....	6.99	9.47	18.18	8.02	7.41	12.69	21.18	12.02	10.95	13.07	17.82	9.15	8.38	10.07	11.04
W. N. Central .....	7.22	10.02	17.42	8.67	7.49	11.66	19.36	11.41	10.45	13.25	18.41	10.01	8.69	9.69	11.13
S. Atlantic .....	11.86	15.14	23.48	13.82	11.95	18.04	26.42	15.48	14.12	18.83	23.96	13.42	13.88	14.74	15.30
E. S. Central .....	9.67	13.22	20.81	10.61	9.35	14.78	22.27	15.58	13.22	17.71	23.08	13.94	11.13	11.88	14.91
W. S. Central .....	8.48	14.16	20.70	11.55	9.23	15.86	22.42	14.05	11.72	16.95	21.28	11.97	11.32	12.47	13.40
Mountain .....	7.53	9.35	12.50	8.09	7.90	10.64	15.41	10.35	10.23	11.98	14.99	9.39	8.40	9.47	10.59
Pacific .....	13.10	13.44	14.16	13.39	14.20	15.01	15.85	15.22	15.81	16.23	16.33	14.93	13.38	14.83	15.68
U.S. Average .....	9.44	11.74	17.50	10.53	9.75	13.87	19.70	13.27	12.53	14.81	18.55	11.48	10.76	12.10	12.95
<b>Commercial Retail</b>															
New England .....	10.06	10.49	11.04	10.20	10.39	11.13	11.83	11.95	12.74	12.49	11.41	10.80	10.27	11.13	11.95
Middle Atlantic .....	7.87	7.01	6.73	7.44	7.92	8.00	7.89	9.06	9.85	9.36	8.37	8.51	7.45	8.28	9.17
E. N. Central .....	5.73	6.56	8.77	6.19	6.11	8.60	10.46	9.03	9.33	9.79	9.79	7.24	6.23	7.70	8.74
W. N. Central .....	5.97	6.59	8.20	6.56	6.32	7.71	9.81	9.28	9.59	9.45	9.78	7.58	6.41	7.68	8.93
S. Atlantic .....	8.51	9.21	9.54	8.86	8.69	9.84	10.38	10.67	10.99	11.23	10.61	9.18	8.86	9.67	10.44
E. S. Central .....	8.36	9.18	10.23	8.67	8.33	9.90	11.34	10.89	10.81	11.43	11.12	9.54	8.79	9.67	10.52
W. S. Central .....	6.02	7.20	8.13	7.45	6.91	8.58	9.67	9.78	9.59	9.74	9.17	7.97	6.93	8.36	9.11
Mountain .....	6.07	6.68	7.38	6.38	6.50	7.76	9.14	8.54	8.70	9.09	9.53	8.06	6.40	7.59	8.65
Pacific .....	9.48	9.37	9.52	9.63	10.46	10.31	11.33	11.02	11.33	10.99	10.88	10.11	9.51	10.73	10.81
U.S. Average .....	7.18	7.61	8.47	7.51	7.54	8.85	9.86	9.70	10.03	10.11	9.74	8.45	7.49	8.68	9.51
<b>Industrial Retail</b>															
New England .....	8.18	7.43	6.17	7.73	8.59	8.08	7.67	9.64	10.73	9.62	7.75	8.34	7.56	8.66	9.33
Middle Atlantic .....	7.40	6.84	7.49	7.78	7.66	7.36	7.76	9.37	10.37	9.42	8.43	8.48	7.40	8.17	9.50
E. N. Central .....	4.85	4.52	4.15	5.12	5.43	8.14	7.46	8.07	8.65	7.34	6.34	6.05	4.77	6.93	7.37
W. N. Central .....	4.01	3.32	3.15	4.15	5.13	4.34	5.35	7.20	7.82	6.02	5.18	5.39	3.71	5.57	6.18
S. Atlantic .....	4.20	3.73	3.76	4.65	5.12	4.75	6.12	7.77	8.10	5.99	5.32	5.42	4.11	5.93	6.28
E. S. Central .....	4.03	3.34	3.37	4.15	4.72	4.28	5.39	7.44	7.76	5.72	4.92	5.10	3.76	5.45	5.95
W. S. Central .....	2.20	1.94	2.20	2.91	5.75	3.20	4.46	6.18	6.05	4.06	3.85	3.74	2.33	4.92	4.43
Mountain .....	4.36	4.54	4.57	4.85	4.98	5.28	6.56	7.27	7.72	7.20	6.89	6.39	4.58	5.95	7.07
Pacific .....	7.31	6.27	6.05	7.06	8.28	7.24	7.95	8.67	9.32	8.39	7.88	7.56	6.74	8.13	8.31
U.S. Average .....	3.56	2.87	2.90	3.81	5.73	4.09	5.11	6.94	7.26	5.15	4.64	4.80	3.32	5.52	5.50

- = no data available

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

Prices are not adjusted for inflation.

Regions refer to U.S. Census divisions.

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

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

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

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

**Forecasts:** EIA Short-Term Integrated Forecasting System.

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

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

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>Supply (million short tons)</b>															
Production .....	149.2	116.2	135.9	134.1	140.3	142.7	153.6	151.6	158.6	149.3	159.0	155.2	535.3	588.2	622.1
Appalachia .....	39.8	29.5	33.9	35.5	40.8	39.5	40.2	41.0	44.1	43.5	40.5	41.5	138.7	161.4	169.6
Interior .....	25.8	20.0	23.2	21.8	25.0	23.3	25.7	25.0	26.4	25.5	27.3	27.4	90.7	99.0	106.5
Western .....	83.6	66.7	78.8	76.8	74.5	80.0	87.7	85.6	88.1	80.3	91.2	86.4	305.9	327.8	346.0
Primary Inventory Withdrawals .....	0.5	1.3	4.0	1.9	-4.5	2.1	2.6	-2.0	-1.2	-2.1	-0.8	-5.2	7.7	-1.8	-9.2
Imports .....	1.3	1.1	1.3	1.3	1.1	1.5	1.3	1.1	0.9	0.9	1.1	1.1	5.1	5.0	4.0
Exports .....	20.0	14.8	15.3	19.1	20.7	22.1	22.6	27.2	28.5	19.8	20.4	26.2	69.1	92.6	94.8
Metallurgical Coal .....	11.7	9.0	10.2	11.3	10.3	11.7	12.6	14.5	15.5	11.6	13.0	14.3	42.1	49.1	54.3
Steam Coal .....	8.3	5.8	5.1	7.8	10.4	10.4	10.0	12.8	13.0	8.2	7.4	12.0	27.0	43.6	40.5
Total Primary Supply .....	131.0	103.9	125.9	118.3	116.2	124.2	135.0	123.5	129.8	128.4	139.0	124.9	479.0	498.9	522.1
Secondary Inventory Withdrawals .....	-16.6	-5.0	21.5	-3.3	21.3	-0.8	26.5	11.6	5.1	-8.3	15.3	-1.3	-3.5	58.6	10.9
Waste Coal (a) .....	1.9	1.5	2.0	2.3	2.0	2.0	2.0	2.0	1.8	1.8	1.8	1.8	7.7	8.0	7.4
Total Supply .....	116.3	100.3	149.3	117.3	139.5	125.4	163.5	137.1	136.8	122.0	156.1	125.5	483.2	565.6	540.4
<b>Consumption (million short tons)</b>															
Coke Plants .....	4.3	3.5	3.2	3.5	4.4	5.1	4.3	4.9	5.7	4.9	4.6	4.9	14.4	18.7	20.1
Electric Power Sector (b) .....	97.9	87.2	139.3	112.1	128.1	113.8	154.0	124.9	123.7	110.1	144.7	113.5	436.5	520.9	492.0
Retail and Other Industry .....	7.4	5.7	6.1	7.2	6.8	6.9	6.9	7.3	7.3	6.9	6.9	7.1	26.4	27.8	28.3
Residential and Commercial .....	0.3	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.8	0.9	0.8
Other Industrial .....	7.1	5.6	5.9	7.0	6.6	6.7	6.7	7.0	7.1	6.8	6.7	6.9	25.6	27.0	27.5
Total Consumption .....	109.5	96.4	148.6	122.8	139.4	125.7	165.2	137.1	136.8	122.0	156.1	125.5	477.3	567.4	540.4
Discrepancy (c) .....	6.8	3.9	0.8	-5.6	0.1	-0.3	-1.7	0.0	0.0	0.0	0.0	0.0	5.9	-1.8	0.0
<b>End-of-period Inventories (million short tons)</b>															
Primary Inventories (d) .....	30.8	29.5	25.5	23.6	28.1	26.1	23.4	25.4	26.6	28.7	29.4	34.6	23.6	25.4	34.6
Secondary Inventories .....	150.6	155.6	134.2	137.5	116.1	117.0	90.4	78.8	73.7	82.0	66.7	67.9	137.5	78.8	67.9
Electric Power Sector .....	145.2	150.4	129.1	132.7	111.8	111.2	84.6	73.2	68.2	76.2	60.8	62.2	132.7	73.2	62.2
Retail and General Industry .....	3.0	3.0	2.9	2.8	2.6	3.6	3.6	3.4	3.7	3.5	3.5	3.3	2.8	3.4	3.3
Coke Plants .....	2.1	2.0	2.0	1.7	1.5	2.0	2.1	2.1	1.7	2.1	2.2	2.2	1.7	2.1	2.2
Commercial & Institutional .....	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2
<b>Coal Market Indicators</b>															
Coal Miner Productivity															
(Tons per hour) .....	6.37	6.37	6.37	6.37	6.32	6.32	6.32	6.32	6.30	6.30	6.30	6.30	6.37	6.32	6.30
Total Raw Steel Production															
(Million short tons per day) .....	0.268	0.174	0.197	0.224	0.246	0.258	0.267	0.321	0.336	0.301	0.295	0.307	0.216	0.273	0.310
Cost of Coal to Electric Utilities															
(Dollars per million Btu) .....	1.93	1.91	1.93	1.92	1.91	1.92	2.02	2.02	2.04	2.03	2.00	1.98	1.92	1.97	2.01

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

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

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

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

- = no data available

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

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

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

**Forecasts:** EIA Short-Term Integrated Forecasting System.

**Table 7a. U.S. Electricity Industry Overview**

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

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>Electricity Supply (billion kilowatthours)</b>															
Electricity Generation .....	966	933	1,148	962	989	984	1,154	979	980	997	1,144	985	4,009	4,106	4,106
Electric Power Sector (a) .....	925	896	1,109	923	952	948	1,115	940	941	959	1,103	946	3,853	3,954	3,949
Industrial Sector (b) .....	38	34	36	36	34	33	36	36	35	34	37	36	143	139	143
Commercial Sector (b) .....	3	3	4	3	3	3	4	3	3	3	4	3	13	13	13
Net Imports .....	10	11	15	12	11	11	13	9	10	12	14	11	47	44	47
Total Supply .....	976	944	1,163	973	999	995	1,168	987	990	1,009	1,158	996	4,056	4,150	4,153
Losses and Unaccounted for (c) .....	53	67	71	63	53	65	61	57	44	68	57	55	254	235	224
<b>Electricity Consumption (billion kilowatthours unless noted)</b>															
Retail Sales .....	887	844	1,057	876	914	898	1,071	896	912	908	1,065	906	3,664	3,779	3,790
Residential Sector .....	340	334	453	334	379	328	442	339	361	325	431	342	1,462	1,488	1,459
Commercial Sector .....	314	293	360	309	305	322	367	314	309	326	367	317	1,276	1,308	1,319
Industrial Sector .....	231	216	242	231	229	247	260	242	240	255	265	245	920	977	1,005
Transportation Sector .....	2	1	2	2	2	1	2	2	2	2	2	2	7	6	6
Direct Use (d) .....	36	33	35	34	33	32	35	34	34	33	36	35	138	134	139
Total Consumption .....	923	877	1,092	910	947	930	1,107	931	946	941	1,101	941	3,802	3,915	3,929
Average residential electricity usage per customer (kWh) .....	2,496	2,451	3,326	2,451	2,745	2,379	3,206	2,456	2,586	2,327	3,084	2,452	10,723	10,785	10,450
<b>End-of-period Fuel Inventories Held by Electric Power Sector</b>															
Coal (mmst) .....	145.2	150.4	129.1	132.7	111.8	111.2	84.6	73.2	68.2	76.2	60.8	62.2	132.7	73.2	62.2
Residual Fuel (mmb) .....	8.3	8.5	8.2	8.3	8.0	7.5	7.9	8.3	8.0	7.9	7.9	8.2	8.3	8.3	8.2
Distillate Fuel (mmb) .....	16.5	16.5	17.0	16.8	15.9	15.3	15.4	15.7	15.6	15.5	15.5	15.8	16.8	15.7	15.8
<b>Prices</b>															
<b>Power Generation Fuel Costs (dollars per million Btu)</b>															
Coal .....	1.93	1.91	1.93	1.92	1.91	1.92	2.02	2.02	2.04	2.03	2.00	1.98	1.92	1.97	2.01
Natural Gas .....	2.39	2.08	2.26	2.87	7.26	3.26	4.44	6.17	6.15	3.75	3.70	3.82	2.39	5.15	4.26
Residual Fuel Oil .....	12.15	6.65	8.85	8.90	11.28	13.09	13.18	13.86	14.55	14.56	13.15	12.53	9.15	12.80	13.69
Distillate Fuel Oil .....	13.27	8.39	10.37	10.54	13.59	15.20	16.43	18.29	17.84	16.94	16.32	15.92	10.73	15.56	16.83
<b>Retail Prices (cents per kilowatthour)</b>															
Residential Sector .....	12.90	13.24	13.35	13.25	13.09	13.78	13.88	13.79	13.83	14.38	14.25	13.93	13.20	13.64	14.10
Commercial Sector .....	10.33	10.63	10.97	10.62	11.11	11.07	11.61	11.19	11.67	11.61	11.99	11.39	10.65	11.26	11.68
Industrial Sector .....	6.38	6.63	7.08	6.53	7.15	6.90	7.42	6.78	7.12	6.94	7.32	6.67	6.66	7.06	7.02
<b>Wholesale Electricity Prices (dollars per megawatthour)</b>															
ERCOT North hub .....	23.41	24.03	34.12	26.41	616.34	39.74	52.31	30.77	33.63	27.70	27.05	22.54	26.99	184.79	27.73
CAISO SP15 zone .....	28.64	19.21	61.94	42.80	44.74	36.90	72.02	60.89	60.41	47.93	50.80	46.34	38.15	53.64	51.37
ISO-NE Internal hub .....	24.61	20.25	27.20	34.03	55.26	33.67	52.57	60.55	61.28	54.70	56.86	51.60	26.52	50.51	56.11
NYISO Hudson Valley zone .....	21.82	18.13	24.38	27.05	44.74	31.85	50.42	54.05	57.35	49.22	50.23	45.63	22.85	45.26	50.61
PJM Western hub .....	22.47	20.79	28.24	26.44	35.09	33.71	51.32	50.86	52.13	38.29	41.88	36.63	24.49	42.75	42.23
Midcontinent ISO Illinois hub .....	24.43	23.00	29.35	24.94	44.97	33.82	49.36	50.85	50.78	37.68	39.74	34.42	25.43	44.75	40.65
SPP ISO South hub .....	20.06	19.54	26.27	24.34	250.31	30.86	48.63	40.89	44.52	35.78	38.69	29.32	22.55	92.67	37.08
SERC index, Into Southern .....	23.58	18.23	23.47	25.21	41.10	32.93	44.18	49.47	47.89	35.57	36.55	32.58	22.62	41.92	38.15
FRCC index, Florida Reliability .....	26.24	18.53	23.75	25.39	27.73	32.17	42.76	46.93	49.25	35.08	35.47	33.87	23.48	37.40	38.42
Northwest index, Mid-Columbia .....	22.77	14.49	33.56	31.00	34.56	51.51	91.61	55.94	56.34	41.59	46.84	47.78	25.46	58.41	48.14
Southwest index, Palo Verde .....	22.07	19.60	80.81	36.10	41.72	46.57	79.86	44.10	45.48	43.41	45.40	39.13	39.64	53.06	43.36

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

kWh = kilowatthours. Btu = British thermal units.

Prices are not adjusted for inflation.

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

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

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

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

**Historical data sources:**

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

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

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

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

**Forecasts:** EIA Short-Term Integrated Forecasting System.

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

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

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>Residential Sector</b>															
New England .....	11.7	10.9	14.6	11.0	12.9	10.8	13.7	11.1	12.3	10.3	12.8	10.8	48.2	48.6	46.3
Middle Atlantic .....	32.2	30.6	43.5	30.9	36.1	30.3	41.7	31.9	36.6	30.2	39.1	31.6	137.1	140.0	137.5
E. N. Central .....	46.4	43.7	56.5	43.4	50.2	43.1	55.5	44.8	47.6	41.7	51.6	44.9	190.0	193.6	185.8
W. N. Central .....	27.6	23.7	30.0	24.5	29.9	23.7	30.7	26.1	31.2	24.6	32.1	28.5	105.8	110.4	116.4
S. Atlantic .....	84.3	86.3	114.7	85.3	95.2	85.1	112.4	85.9	90.1	84.3	108.6	85.9	370.6	378.5	368.8
E. S. Central .....	29.0	26.0	37.2	26.6	33.8	25.6	36.0	27.4	31.9	25.9	36.0	27.7	118.8	122.8	121.5
W. S. Central .....	48.8	52.9	76.4	48.5	56.8	49.5	73.1	49.4	50.5	50.5	75.6	50.8	226.5	228.8	227.4
Mountain .....	22.5	25.7	36.2	24.0	23.7	26.9	34.5	23.8	22.9	25.2	34.0	24.1	108.4	108.8	106.2
Pacific contiguous .....	36.7	33.2	43.0	38.6	39.0	32.2	43.3	37.3	36.8	31.1	39.9	36.9	151.5	151.9	144.7
AK and HI .....	1.3	1.1	1.2	1.3	1.3	1.1	1.2	1.3	1.2	1.1	1.2	1.3	4.9	4.9	4.9
Total .....	340.3	334.1	453.4	334.1	378.9	328.4	442.1	339.0	361.2	325.0	430.8	342.4	1,462.0	1,488.4	1,459.5
<b>Commercial Sector</b>															
New England .....	12.3	10.6	13.2	11.4	11.7	11.7	13.2	11.4	11.7	11.6	12.9	11.4	47.5	48.1	47.5
Middle Atlantic .....	35.9	31.0	38.9	33.2	34.6	33.3	39.5	34.3	35.6	34.1	39.5	34.9	138.9	141.7	144.1
E. N. Central .....	43.1	38.3	47.3	41.0	41.7	42.2	48.0	41.9	42.5	42.7	47.3	42.1	169.7	173.7	174.6
W. N. Central .....	24.7	21.6	26.3	23.4	24.0	23.7	27.1	24.1	24.6	24.1	27.4	24.7	96.0	98.9	100.8
S. Atlantic .....	72.0	70.0	85.7	72.4	70.8	77.3	87.4	72.5	71.5	78.5	87.1	73.0	300.2	308.0	310.1
E. S. Central .....	20.7	19.4	25.3	20.4	20.9	21.7	25.0	20.4	20.9	22.1	25.0	20.5	85.8	88.1	88.5
W. S. Central .....	44.3	44.6	55.0	45.4	42.4	50.2	56.3	47.2	42.9	51.7	57.2	47.6	189.4	196.1	199.4
Mountain .....	22.4	22.1	27.4	22.8	21.9	24.8	28.5	23.2	22.4	24.6	28.6	23.4	94.7	98.4	98.9
Pacific contiguous .....	37.0	33.9	39.8	37.6	35.2	35.3	41.1	37.8	35.8	35.8	40.5	37.7	148.3	149.4	149.9
AK and HI .....	1.4	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	5.2	5.2	5.4
Total .....	313.7	292.7	360.3	308.9	304.6	321.6	367.4	314.0	309.2	326.5	366.9	316.6	1,275.7	1,307.6	1,319.2
<b>Industrial Sector</b>															
New England .....	3.7	3.5	3.9	3.7	3.8	4.0	4.1	3.8	3.8	4.0	4.1	3.8	14.8	15.6	15.7
Middle Atlantic .....	18.0	16.2	18.6	17.6	17.6	17.9	19.1	18.2	18.4	18.6	19.5	18.5	70.4	72.8	75.0
E. N. Central .....	44.0	37.7	44.5	42.5	44.8	46.6	47.0	44.2	47.5	48.0	48.2	45.1	168.7	182.6	188.7
W. N. Central .....	21.7	20.3	23.2	22.1	23.0	24.2	25.7	24.0	25.1	25.8	26.6	24.4	87.3	96.9	101.8
S. Atlantic .....	32.8	31.0	34.2	33.6	33.4	35.9	36.5	34.5	34.6	36.7	37.2	35.0	131.7	140.3	143.5
E. S. Central .....	23.3	21.4	23.4	22.9	23.8	25.0	25.5	23.6	24.6	25.4	25.6	23.6	91.1	97.9	99.3
W. S. Central .....	46.6	44.9	47.9	48.7	44.1	49.7	53.4	52.3	46.4	52.0	55.3	53.4	188.1	199.5	207.2
Mountain .....	20.1	20.3	22.6	19.9	19.2	21.6	23.9	20.1	19.2	21.6	24.1	20.4	82.9	84.8	85.4
Pacific contiguous .....	19.2	19.7	22.1	19.0	18.1	20.9	23.2	19.8	18.9	21.7	23.6	20.0	80.1	82.0	84.1
AK and HI .....	1.2	1.0	1.2	1.2	1.1	1.1	1.2	1.2	1.1	1.2	1.2	1.2	4.5	4.6	4.6
Total .....	230.7	216.0	241.6	231.2	228.8	246.9	259.6	241.6	239.7	255.0	265.4	245.3	919.5	976.9	1,005.3
<b>Total All Sectors (a)</b>															
New England .....	27.8	25.1	31.9	26.3	28.5	26.7	31.1	26.4	28.0	26.0	29.9	26.0	111.0	112.7	109.9
Middle Atlantic .....	86.9	78.5	101.8	82.5	89.2	82.3	101.0	85.2	91.5	83.7	98.9	85.7	349.7	357.7	359.8
E. N. Central .....	133.7	119.7	148.4	127.0	136.9	132.0	150.7	131.0	137.7	132.5	147.2	132.2	528.8	550.5	549.6
W. N. Central .....	74.0	65.7	79.5	70.0	77.0	71.6	83.5	74.2	81.0	74.4	86.1	77.6	289.2	306.3	319.1
S. Atlantic .....	189.5	187.6	235.0	191.6	199.7	198.6	236.6	193.1	196.5	199.8	233.1	194.1	803.7	827.9	823.5
E. S. Central .....	73.0	66.8	85.9	69.9	78.5	72.4	86.5	71.5	77.4	73.5	86.6	71.8	295.7	308.8	309.3
W. S. Central .....	139.8	142.4	179.4	142.7	143.3	149.5	182.9	148.9	139.9	154.3	188.1	151.9	604.2	624.6	634.2
Mountain .....	65.0	68.2	86.3	66.7	64.8	73.3	86.9	67.1	64.5	71.5	86.7	67.9	286.2	292.1	290.7
Pacific contiguous .....	93.1	87.0	105.1	95.4	92.5	88.6	107.8	95.1	91.7	88.7	104.2	94.7	380.6	384.0	379.3
AK and HI .....	3.8	3.4	3.6	3.8	3.6	3.6	3.7	3.8	3.6	3.6	3.7	3.9	14.6	14.8	14.8
Total .....	886.6	844.3	1,056.9	875.9	914.0	898.4	1,070.7	896.2	911.7	908.0	1,064.6	905.9	3,663.7	3,779.3	3,790.2

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

- = no data available

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

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

Regions refer to U.S. Census divisions.

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

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

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

**Forecasts:** EIA Short-Term Integrated Forecasting System.

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

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

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>Residential Sector</b>															
New England .....	21.76	21.32	20.95	20.80	21.38	20.82	21.95	22.57	23.82	23.52	24.88	25.34	21.20	21.69	24.40
Middle Atlantic .....	15.47	15.96	16.18	15.98	15.62	16.28	16.89	16.98	16.65	17.22	17.59	17.20	15.92	16.45	17.17
E. N. Central .....	13.14	13.75	13.33	13.75	13.38	14.40	14.01	14.23	14.05	15.08	14.65	14.58	13.48	13.99	14.58
W. N. Central .....	10.98	12.59	12.88	11.46	10.88	12.76	13.30	11.83	10.84	12.34	12.36	10.89	11.99	12.18	11.59
S. Atlantic .....	11.79	11.80	12.05	11.83	11.66	12.31	12.42	12.35	12.52	13.12	13.09	12.59	11.88	12.19	12.84
E. S. Central .....	11.24	11.56	11.28	11.41	11.18	12.22	11.86	11.84	11.75	12.57	12.05	11.89	11.36	11.74	12.05
W. S. Central .....	11.04	11.42	11.29	11.37	11.85	11.72	11.85	12.30	12.83	11.96	11.74	11.94	11.29	11.92	12.08
Mountain .....	11.42	12.08	12.19	11.64	11.53	12.09	12.26	11.84	11.85	12.45	12.53	12.00	11.88	11.97	12.24
Pacific .....	15.69	16.18	17.77	16.79	16.76	18.15	18.48	16.70	16.93	19.01	19.35	17.38	16.67	17.53	18.16
U.S. Average .....	12.90	13.24	13.35	13.25	13.09	13.78	13.88	13.79	13.83	14.38	14.25	13.93	13.20	13.64	14.10
<b>Commercial Sector</b>															
New England .....	16.24	15.67	15.98	15.67	16.28	15.75	17.02	16.87	17.63	17.08	18.37	17.97	15.90	16.49	17.78
Middle Atlantic .....	11.69	12.53	13.21	12.41	12.48	13.34	14.50	13.30	13.25	14.05	14.85	13.40	12.47	13.45	13.91
E. N. Central .....	9.95	10.37	10.19	10.29	10.40	10.69	10.70	10.88	11.02	11.26	11.06	10.94	10.19	10.67	11.07
W. N. Central .....	9.07	10.12	10.33	9.12	9.10	10.19	11.03	9.71	9.11	9.69	10.02	8.78	9.66	10.04	9.41
S. Atlantic .....	9.23	9.02	9.09	9.20	9.29	9.18	9.50	9.81	10.01	9.74	9.82	9.82	9.13	9.45	9.84
E. S. Central .....	10.75	10.83	10.60	10.67	10.96	11.23	11.31	11.30	11.52	11.64	11.60	11.39	10.70	11.20	11.54
W. S. Central .....	7.84	7.87	7.89	7.98	11.28	8.86	8.39	7.92	11.04	8.97	8.65	8.32	7.90	9.02	9.17
Mountain .....	9.00	9.82	10.09	9.31	9.11	9.76	10.29	9.52	9.32	10.00	10.44	9.57	9.58	9.71	9.87
Pacific .....	13.50	14.79	17.20	15.05	14.53	16.00	18.20	15.97	15.71	17.61	19.78	17.16	15.18	16.25	17.63
U.S. Average .....	10.33	10.63	10.97	10.62	11.11	11.07	11.61	11.19	11.67	11.61	11.99	11.39	10.65	11.26	11.68
<b>Industrial Sector</b>															
New England .....	12.29	12.22	12.41	12.12	13.49	12.78	13.32	12.74	14.09	13.26	13.76	13.07	12.26	13.08	13.55
Middle Atlantic .....	6.36	6.35	6.41	6.28	6.50	6.55	6.95	6.53	6.57	6.52	6.70	6.22	6.35	6.64	6.51
E. N. Central .....	6.51	6.78	6.75	6.62	6.92	6.92	7.19	7.00	7.12	7.02	7.14	6.88	6.66	7.01	7.04
W. N. Central .....	6.94	7.32	7.89	6.62	6.97	7.30	8.01	6.84	7.01	7.40	8.05	6.85	7.20	7.30	7.34
S. Atlantic .....	5.98	6.09	6.50	6.09	6.24	6.30	6.84	6.43	6.53	6.35	6.73	6.24	6.17	6.46	6.46
E. S. Central .....	5.45	5.51	5.70	5.52	5.75	5.87	6.16	5.80	5.85	5.89	6.08	5.64	5.54	5.90	5.87
W. S. Central .....	5.05	4.98	5.21	5.03	7.60	5.45	5.54	5.05	6.69	5.21	5.17	4.82	5.07	5.84	5.43
Mountain .....	5.73	6.15	6.91	5.94	6.23	6.62	7.24	6.06	6.31	6.67	7.18	6.08	6.21	6.58	6.59
Pacific .....	8.97	10.33	12.38	10.95	9.64	10.70	12.62	11.35	10.03	11.09	12.86	11.67	10.71	11.16	11.49
U.S. Average .....	6.38	6.63	7.08	6.53	7.15	6.90	7.42	6.78	7.12	6.94	7.32	6.67	6.66	7.06	7.02
<b>All Sectors (a)</b>															
New England .....	18.02	17.61	17.79	17.27	18.19	17.34	18.68	18.65	19.84	19.02	20.50	20.28	17.68	18.23	19.93
Middle Atlantic .....	11.98	12.58	13.23	12.42	12.56	12.94	14.04	13.23	13.26	13.52	14.32	13.25	12.58	13.22	13.61
E. N. Central .....	9.92	10.47	10.36	10.24	10.35	10.57	10.82	10.71	10.72	10.93	11.04	10.79	10.24	10.62	10.87
W. N. Central .....	9.15	10.15	10.58	9.15	9.16	10.07	10.93	9.53	9.12	9.77	10.28	8.95	9.77	9.94	9.54
S. Atlantic .....	9.80	9.82	10.16	9.82	9.91	10.00	10.47	10.33	10.54	10.54	10.85	10.40	9.91	10.19	10.60
E. S. Central .....	9.25	9.41	9.56	9.26	9.48	9.73	10.02	9.69	9.81	9.98	10.16	9.69	9.38	9.74	9.92
W. S. Central .....	8.03	8.28	8.63	8.12	10.37	8.67	8.94	8.36	10.24	8.68	8.87	8.30	8.29	9.07	8.99
Mountain .....	8.83	9.58	10.14	9.14	9.15	9.69	10.24	9.30	9.32	9.86	10.35	9.38	9.48	9.64	9.77
Pacific .....	13.41	14.30	16.41	14.92	14.50	15.53	17.10	15.28	15.02	16.49	18.03	16.07	14.82	15.66	16.45
U.S. Average .....	10.29	10.63	11.11	10.54	10.94	10.92	11.53	10.98	11.33	11.29	11.74	11.07	10.66	11.11	11.37

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

- = no data available

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

Prices are not adjusted for inflation.

Regions refer to U.S. Census divisions.

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

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

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

**Forecasts:** EIA Short-Term Integrated Forecasting System.



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

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

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>United States</b>															
Natural Gas .....	354.7	342.6	474.2	340.7	318.2	345.4	449.3	314.9	295.6	323.2	430.2	325.9	1,512.2	1,427.9	1,374.9
Coal .....	170.3	151.2	248.2	198.6	230.3	203.8	278.2	225.9	224.6	199.6	261.0	205.0	768.2	938.1	890.2
Nuclear .....	204.1	190.7	204.1	191.0	198.5	185.2	203.8	191.5	195.3	191.8	206.3	193.0	789.9	779.0	786.4
Renewable Energy Sources: .....	190.1	206.5	176.9	187.0	198.0	208.2	178.7	202.0	219.6	239.6	200.5	216.7	760.6	787.0	876.4
Conventional Hydropower .....	75.0	81.3	70.6	63.0	69.3	67.2	58.6	55.7	66.4	77.8	62.9	57.4	289.9	250.9	264.5
Wind .....	87.4	87.1	67.5	94.7	96.3	95.2	75.2	111.9	114.7	106.8	82.7	119.0	336.7	378.6	423.1
Solar (a) .....	16.7	27.3	27.6	18.5	21.4	35.2	33.9	23.7	28.0	44.7	43.8	29.6	90.1	114.2	146.1
Biomass .....	7.1	6.7	7.0	6.7	7.0	6.6	6.9	6.5	6.6	6.4	6.8	6.4	27.5	27.0	26.3
Geothermal .....	3.9	4.2	4.2	4.2	3.9	4.0	4.1	4.2	3.9	3.8	4.3	4.3	16.5	16.2	16.3
Pumped Storage Hydropower .....	-1.0	-1.2	-2.0	-1.2	-1.1	-1.0	-2.4	-1.3	-1.0	-1.1	-2.3	-1.1	-5.3	-5.7	-5.5
Petroleum (b) .....	4.0	3.9	4.5	4.0	5.2	3.5	4.3	3.8	4.6	3.7	4.3	3.6	16.5	16.9	16.2
Other Gases .....	1.0	0.4	0.8	0.9	0.7	0.8	1.0	0.9	0.9	0.7	0.9	0.9	3.1	3.4	3.5
Other Nonrenewable Fuels (c) .....	1.9	1.8	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.7	1.9	7.5	7.2	7.2
Total Generation .....	925.2	896.1	1,108.5	922.9	951.8	947.8	1,114.7	939.5	941.3	959.5	1,102.7	945.8	3,852.8	3,953.7	3,949.3
<b>New England (ISO-NE)</b>															
Natural Gas .....	10.8	10.0	16.1	10.8	12.1	11.0	16.9	13.4	13.7	12.6	16.5	11.8	47.7	53.3	54.7
Coal .....	0.1	0.0	0.0	0.1	0.5	0.0	0.5	1.1	0.4	0.3	0.2	0.6	0.2	2.1	1.4
Nuclear .....	7.3	4.9	7.3	6.1	7.1	7.1	7.4	5.6	7.0	6.2	7.2	7.2	25.6	27.1	27.7
Conventional hydropower .....	2.2	2.1	1.8	1.7	1.9	1.8	1.5	1.8	2.0	2.3	1.3	1.8	7.8	7.0	7.3
Nonhydro renewables (d) .....	2.6	2.7	2.4	2.6	2.8	2.9	2.7	2.9	3.0	3.1	2.9	3.0	10.3	11.2	12.0
Other energy sources (e) .....	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.3	0.4	1.4	1.5	1.5
Total generation .....	23.2	20.1	28.0	21.7	24.7	23.0	29.2	25.2	26.6	24.8	28.4	24.8	92.9	102.1	104.6
Net energy for load (f) .....	27.9	25.2	32.3	27.6	29.4	26.9	32.0	28.1	29.1	27.3	31.4	28.1	113.0	116.4	115.9
<b>New York (NYISO)</b>															
Natural Gas .....	12.4	11.4	20.6	12.8	12.8	14.0	20.0	14.2	14.0	14.2	20.1	14.5	57.1	60.9	62.8
Coal .....	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Nuclear .....	10.7	9.2	9.0	9.6	9.3	7.7	7.4	6.8	6.5	7.0	6.7	7.0	38.5	31.1	27.3
Conventional hydropower .....	8.0	8.0	7.8	7.6	7.3	7.2	7.1	7.2	7.0	7.0	6.9	7.1	31.4	28.9	28.0
Nonhydro renewables (d) .....	2.0	1.9	1.7	2.1	1.9	2.0	1.8	2.2	2.0	2.2	1.9	2.5	7.6	7.9	8.6
Other energy sources (e) .....	0.2	0.1	0.1	0.2	0.4	0.2	0.1	0.1	0.4	0.1	0.1	0.1	0.6	0.8	0.7
Total generation .....	33.4	30.6	39.2	32.2	31.7	31.0	36.3	30.6	30.0	30.5	35.8	31.2	135.4	129.6	127.5
Net energy for load (f) .....	35.3	32.4	42.9	34.7	36.6	34.7	42.9	36.3	37.0	35.9	42.2	36.6	145.3	150.5	151.7
<b>Mid-Atlantic (PJM)</b>															
Natural Gas .....	78.4	69.9	97.6	69.9	72.5	70.9	88.0	64.1	67.7	68.4	82.2	67.3	315.8	295.5	285.6
Coal .....	33.7	29.7	46.8	38.1	50.5	39.8	52.3	37.4	44.7	40.3	48.9	39.5	148.3	180.1	173.4
Nuclear .....	68.9	67.1	70.9	68.9	68.4	64.6	70.4	68.4	67.9	67.8	72.0	66.6	275.7	271.8	274.2
Conventional hydropower .....	3.1	2.9	2.1	1.9	2.7	2.4	2.0	2.1	2.6	2.6	1.6	2.1	9.9	9.2	9.0
Nonhydro renewables (d) .....	10.4	10.2	7.5	10.9	11.1	11.0	8.8	11.8	12.0	12.5	9.6	12.7	39.1	42.7	46.8
Other energy sources (e) .....	0.6	0.5	0.4	0.7	1.0	0.5	0.2	0.6	0.8	0.5	0.2	0.6	2.2	2.4	2.2
Total generation .....	195.1	180.2	225.3	190.5	206.2	189.3	221.8	184.5	195.7	192.1	214.6	188.7	791.1	801.7	791.2
Net energy for load (f) .....	182.5	163.5	209.3	177.0	194.4	177.8	212.0	181.5	192.4	178.2	202.7	182.5	732.4	765.8	755.8
<b>Southeast (SERC)</b>															
Natural Gas .....	61.9	59.1	74.7	58.5	57.6	57.2	71.3	55.0	50.4	54.9	66.2	55.5	254.2	241.1	227.1
Coal .....	23.8	22.1	44.4	28.0	36.3	33.7	44.2	35.2	38.4	35.5	48.8	35.7	118.3	149.4	158.5
Nuclear .....	53.0	50.5	54.1	52.5	53.8	50.9	54.9	52.2	51.7	53.4	58.5	54.8	210.1	211.8	218.4
Conventional hydropower .....	11.1	10.2	8.8	8.6	9.8	8.7	7.9	8.1	10.2	7.5	6.7	7.8	38.7	34.5	32.2
Nonhydro renewables (d) .....	3.4	5.0	5.0	3.9	4.0	5.9	5.3	4.2	4.4	6.9	6.4	4.8	17.4	19.3	22.5
Other energy sources (e) .....	-0.1	-0.3	-0.6	-0.2	0.0	-0.2	-0.6	-0.2	0.0	-0.3	-0.6	-0.2	-1.1	-1.1	-1.1
Total generation .....	153.1	146.7	186.5	151.3	161.4	156.2	183.0	154.6	155.2	158.0	185.9	158.4	637.6	655.1	657.5
Net energy for load (f) .....	157.4	152.5	186.1	153.7	163.0	161.2	179.7	152.3	157.0	159.3	183.9	156.6	649.7	656.2	656.8
<b>Florida (FRCC)</b>															
Natural Gas .....	40.0	45.7	52.8	41.0	34.5	43.7	50.1	35.7	33.6	45.1	50.6	40.7	179.5	164.0	170.0
Coal .....	2.1	3.5	5.7	4.6	4.7	5.3	5.0	5.0	2.7	3.0	4.3	4.6	15.9	20.0	14.6
Nuclear .....	7.3	7.6	7.6	7.0	7.8	7.2	7.2	7.5	7.9	7.3	8.1	7.1	29.4	29.8	30.4
Conventional hydropower .....	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.2	0.2
Nonhydro renewables (d) .....	1.8	2.4	2.3	1.9	2.4	3.2	3.0	2.7	3.2	3.4	3.3	2.8	8.4	11.2	12.7
Other energy sources (e) .....	0.9	0.8	0.9	0.7	0.8	0.7	0.8	0.6	0.8	0.8	0.8	0.7	3.3	3.0	3.1
Total generation .....	52.1	60.0	69.3	55.2	50.3	60.2	66.2	51.6	48.2	59.6	67.1	56.0	236.7	228.2	231.0
Net energy for load (f) .....	50.2	54.3	72.0	56.3	50.6	54.9	66.5	51.8	47.5	58.6	66.4	52.5	232.8	223.8	224.9

(a) Solar generation from large-scale power plants with more than 1 megawatt of capacity. Excludes generation from small-scale solar photovoltaic systems.

(b) Residual fuel oil, distillate fuel oil, petroleum coke, and other petroleum liquids.

(c) Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, nonrenewable waste, and miscellaneous technologies.

(d) Wind, large-scale solar, biomass, and geothermal

(e) Pumped storage hydroelectric, petroleum, other gases, batteries, and other nonrenewable fuels. See notes (b) and (c).

(f) Regional generation from generating units operated by electric power sector, plus energy receipts from minus energy deliveries to U.S. balancing authorities outside region.

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

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

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

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

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>Midwest (MISO)</b>															
Natural Gas .....	43.9	43.2	53.4	37.7	34.5	40.2	46.6	32.3	32.7	38.9	46.8	34.4	178.3	153.6	152.9
Coal .....	51.0	41.1	68.5	57.8	69.7	60.1	81.1	68.4	71.7	61.8	74.6	61.1	218.4	279.3	269.4
Nuclear .....	26.6	22.9	24.4	21.2	23.6	22.6	25.2	22.7	23.8	22.2	23.7	23.0	95.1	94.1	92.6
Conventional hydropower .....	3.1	3.2	2.8	2.7	2.8	2.9	2.5	2.2	2.4	2.8	2.3	2.1	11.8	10.4	9.6
Nonhydro renewables (d) .....	20.8	20.1	16.2	24.2	24.3	23.2	18.6	27.8	26.3	24.9	19.8	28.7	81.3	93.8	99.7
Other energy sources (e) .....	1.4	1.3	1.3	1.2	1.8	1.3	1.4	1.1	1.7	1.4	1.4	1.0	5.2	5.7	5.5
Total generation .....	146.9	131.8	166.6	144.8	156.7	150.3	175.4	154.5	158.5	152.1	168.7	150.4	590.0	636.9	629.7
Net energy for load (f) .....	153.0	141.5	174.4	149.8	159.0	154.2	180.5	157.4	156.7	158.4	176.2	157.6	618.7	651.0	648.9
<b>Central (Southwest Power Pool)</b>															
Natural Gas .....	17.5	16.3	24.2	13.7	12.4	14.5	19.2	11.2	11.0	14.4	21.0	12.6	71.6	57.3	58.9
Coal .....	17.0	15.7	26.7	19.8	21.8	19.8	31.3	22.1	22.7	16.8	29.0	21.2	79.2	95.1	89.7
Nuclear .....	4.4	4.4	4.2	3.8	4.1	2.8	4.3	4.4	4.3	4.4	4.1	2.5	16.8	15.6	15.2
Conventional hydropower .....	5.9	6.0	5.1	4.8	5.3	5.1	4.4	3.3	3.5	4.2	3.9	3.1	21.8	18.1	14.8
Nonhydro renewables (d) .....	20.3	21.4	16.7	22.2	22.8	23.6	19.3	26.9	28.8	26.1	21.8	29.5	80.6	92.6	106.1
Other energy sources (e) .....	0.1	0.1	0.1	0.2	0.3	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.5	0.7	0.6
Total generation .....	65.2	63.9	77.0	64.4	66.7	65.9	78.6	68.1	70.5	65.9	79.8	69.1	270.5	279.4	285.3
Net energy for load (f) .....	62.8	63.7	74.7	60.9	64.7	66.2	76.1	61.6	64.9	65.4	77.5	64.9	262.1	268.6	272.7
<b>Texas (ERCOT)</b>															
Natural Gas .....	37.2	42.1	59.3	36.0	33.0	40.0	56.8	33.1	29.0	33.3	49.0	25.6	174.6	162.9	136.8
Coal .....	13.1	15.8	20.3	17.9	16.3	18.5	23.8	19.6	12.7	18.3	23.9	18.6	67.2	78.2	73.5
Nuclear .....	10.4	9.7	11.0	10.3	10.5	9.8	11.0	9.1	10.7	9.9	10.6	10.8	41.4	40.3	42.0
Conventional hydropower .....	0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.1	0.2	0.2	0.2	0.1	1.1	0.9	0.7
Nonhydro renewables (d) .....	22.6	24.8	20.8	24.4	25.2	27.6	24.0	31.5	35.3	37.4	30.6	35.3	92.6	108.3	138.6
Other energy sources (e) .....	0.4	0.3	0.4	0.4	0.2	0.3	0.4	0.4	0.3	0.3	0.4	0.4	1.5	1.3	1.4
Total generation .....	84.1	93.1	112.1	89.1	85.6	96.5	116.1	93.7	88.3	99.5	114.6	90.7	378.4	391.9	393.0
Net energy for load (f) .....	84.1	93.1	112.1	89.1	85.6	96.5	116.1	93.7	88.3	99.5	114.6	90.7	378.4	391.9	393.0
<b>Northwest</b>															
Natural Gas .....	23.7	17.1	27.3	21.6	20.9	20.1	29.0	21.5	20.4	14.8	28.7	26.8	89.6	91.5	90.7
Coal .....	22.3	16.1	24.5	23.2	22.5	19.0	28.2	27.5	23.5	16.9	22.8	18.4	86.1	97.3	81.6
Nuclear .....	2.4	2.0	2.4	2.5	2.5	1.2	2.5	2.4	2.4	2.4	2.4	2.4	9.4	8.7	9.7
Conventional hydropower .....	35.0	38.7	32.4	29.9	34.3	32.0	26.3	26.6	33.0	40.9	30.4	27.6	136.0	119.1	131.9
Nonhydro renewables (d) .....	13.9	14.2	12.6	14.9	15.3	16.6	14.5	16.9	17.0	18.1	16.0	18.1	55.6	63.3	69.1
Other energy sources (e) .....	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.6	0.7	0.7
Total generation .....	97.5	88.3	99.4	92.2	95.6	89.2	100.6	95.1	96.4	93.2	100.5	93.4	377.4	380.5	383.5
Net energy for load (f) .....	91.3	81.7	94.5	87.6	88.5	84.0	97.7	90.9	89.4	86.3	96.4	90.5	355.1	361.1	362.6
<b>Southwest</b>															
Natural Gas .....	11.8	14.7	20.4	14.8	11.0	15.8	19.7	13.9	10.2	13.3	20.1	15.6	61.7	60.4	59.3
Coal .....	5.3	5.3	8.8	6.6	5.9	5.6	8.4	6.8	5.6	5.0	5.4	2.5	25.9	26.8	18.6
Nuclear .....	8.3	7.6	8.7	7.0	8.5	7.1	8.6	7.7	8.4	7.5	8.6	7.5	31.6	31.8	32.1
Conventional hydropower .....	2.7	4.0	3.7	2.5	2.5	3.3	3.1	2.1	2.6	3.9	3.8	2.6	12.8	11.0	12.9
Nonhydro renewables (d) .....	2.5	3.1	2.5	2.3	3.0	3.8	3.5	4.3	5.3	5.5	5.0	5.7	10.5	14.7	21.5
Other energy sources (e) .....	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.2	0.2	0.2
Total generation .....	30.5	34.8	44.2	33.1	30.8	35.7	43.5	34.9	32.3	35.3	43.0	34.0	142.7	144.9	144.6
Net energy for load (f) .....	20.6	24.5	34.3	20.6	19.5	25.5	31.8	21.0	18.9	24.5	31.9	20.9	99.9	97.8	96.2
<b>California</b>															
Natural Gas .....	16.7	12.6	27.0	23.6	16.6	17.4	29.9	19.8	12.0	12.7	28.4	20.3	79.9	83.7	73.4
Coal .....	1.4	1.2	2.1	2.0	1.8	1.4	2.8	2.2	1.8	1.3	2.7	2.3	6.7	8.2	8.0
Nuclear .....	4.8	4.9	4.5	2.1	2.9	4.2	5.0	4.7	4.6	3.8	4.4	4.0	16.3	16.8	16.7
Conventional hydropower .....	3.1	5.6	5.4	2.7	2.0	3.2	3.2	1.5	2.4	6.0	5.4	2.7	16.8	9.9	16.5
Nonhydro renewables (d) .....	14.3	18.9	18.1	14.4	15.5	20.9	18.3	14.7	15.4	21.2	19.8	15.9	65.8	69.3	72.4
Other energy sources (e) .....	0.0	0.1	0.1	0.1	0.0	-0.1	0.0	0.1	0.0	-0.1	0.0	0.2	0.2	0.0	0.1
Total generation .....	40.3	43.3	57.3	44.9	38.7	47.1	59.1	43.0	36.2	44.8	60.7	45.2	185.8	187.9	187.0
Net energy for load (f) .....	58.6	60.0	76.7	60.8	55.6	63.3	77.9	61.1	56.6	62.6	76.0	61.2	256.0	257.9	256.3

(a) Large-scale solar generation from power plants with more than 1 megawatt of capacity. Excludes generation from small-scale solar photovoltaic systems.

(b) Residual fuel oil, distillate fuel oil, petroleum coke, and other petroleum liquids.

(c) Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, nonrenewable waste, and miscellaneous technologies.

(d) Wind, large-scale solar, biomass, and geothermal

(e) Pumped storage hydroelectric, petroleum, other gases, batteries, and other nonrenewable fuels. See notes (b) and (c).

(f) Regional generation from generating units operated by electric power sector, plus energy receipts from minus energy deliveries to U.S. balancing authorities outside region.

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

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

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

**Table 8a. U.S. Renewable Energy Consumption (Quadrillion Btu)**  
 U.S. Energy Information Administration | Short-Term Energy Outlook - October 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>Electric Power Sector</b>															
Geothermal .....	<b>0.035</b>	<b>0.037</b>	<b>0.037</b>	<b>0.038</b>	<b>0.035</b>	<b>0.035</b>	<b>0.037</b>	<i>0.037</i>	<i>0.035</i>	<i>0.034</i>	<i>0.038</i>	<i>0.038</i>	<b>0.147</b>	<i>0.144</i>	<i>0.145</i>
Hydroelectric Power (a) .....	<b>0.668</b>	<b>0.724</b>	<b>0.629</b>	<b>0.561</b>	<b>0.617</b>	<b>0.599</b>	<b>0.529</b>	<i>0.507</i>	<i>0.605</i>	<i>0.708</i>	<i>0.573</i>	<i>0.522</i>	<b>2.581</b>	<i>2.253</i>	<i>2.408</i>
Solar (b) .....	<b>0.152</b>	<b>0.248</b>	<b>0.252</b>	<b>0.168</b>	<b>0.195</b>	<b>0.320</b>	<b>0.309</b>	<i>0.216</i>	<i>0.255</i>	<i>0.407</i>	<i>0.399</i>	<i>0.269</i>	<b>0.820</b>	<i>1.040</i>	<i>1.331</i>
Waste Biomass (c) .....	<b>0.063</b>	<b>0.058</b>	<b>0.059</b>	<b>0.059</b>	<b>0.059</b>	<b>0.057</b>	<b>0.058</b>	<i>0.059</i>	<i>0.058</i>	<i>0.057</i>	<i>0.058</i>	<i>0.058</i>	<b>0.238</b>	<i>0.233</i>	<i>0.231</i>
Wood Biomass .....	<b>0.049</b>	<b>0.043</b>	<b>0.048</b>	<b>0.046</b>	<b>0.050</b>	<b>0.045</b>	<b>0.049</b>	<i>0.041</i>	<i>0.045</i>	<i>0.041</i>	<i>0.047</i>	<i>0.042</i>	<b>0.185</b>	<i>0.184</i>	<i>0.175</i>
Wind .....	<b>0.796</b>	<b>0.793</b>	<b>0.615</b>	<b>0.862</b>	<b>0.877</b>	<b>0.867</b>	<b>0.684</b>	<i>1.019</i>	<i>1.044</i>	<i>0.973</i>	<i>0.753</i>	<i>1.083</i>	<b>3.065</b>	<i>3.447</i>	<i>3.852</i>
Subtotal .....	<b>1.761</b>	<b>1.904</b>	<b>1.639</b>	<b>1.733</b>	<b>1.833</b>	<b>1.923</b>	<b>1.667</b>	<i>1.879</i>	<i>2.041</i>	<i>2.221</i>	<i>1.868</i>	<i>2.013</i>	<b>7.037</b>	<i>7.301</i>	<i>8.142</i>
<b>Industrial Sector</b>															
Biofuel Losses and Co-products (d) .....	<b>0.197</b>	<b>0.135</b>	<b>0.179</b>	<b>0.189</b>	<b>0.169</b>	<b>0.188</b>	<b>0.193</b>	<i>0.189</i>	<i>0.183</i>	<i>0.191</i>	<i>0.196</i>	<i>0.193</i>	<b>0.699</b>	<i>0.740</i>	<i>0.763</i>
Geothermal .....	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<i>0.001</i>	<i>0.001</i>	<i>0.001</i>	<i>0.001</i>	<i>0.001</i>	<b>0.004</b>	<i>0.004</i>	<i>0.004</i>
Hydroelectric Power (a) .....	<b>0.003</b>	<b>0.002</b>	<b>0.002</b>	<b>0.002</b>	<b>0.002</b>	<b>0.002</b>	<b>0.002</b>	<i>0.002</i>	<i>0.002</i>	<i>0.002</i>	<i>0.002</i>	<i>0.002</i>	<b>0.009</b>	<i>0.009</i>	<i>0.009</i>
Solar (b) .....	<b>0.007</b>	<b>0.010</b>	<b>0.010</b>	<b>0.007</b>	<b>0.007</b>	<b>0.011</b>	<b>0.011</b>	<i>0.008</i>	<i>0.008</i>	<i>0.012</i>	<i>0.012</i>	<i>0.009</i>	<b>0.033</b>	<i>0.037</i>	<i>0.041</i>
Waste Biomass (c) .....	<b>0.041</b>	<b>0.039</b>	<b>0.036</b>	<b>0.041</b>	<b>0.041</b>	<b>0.039</b>	<b>0.038</b>	<i>0.040</i>	<i>0.040</i>	<i>0.039</i>	<i>0.038</i>	<i>0.040</i>	<b>0.156</b>	<i>0.157</i>	<i>0.156</i>
Wood Biomass .....	<b>0.349</b>	<b>0.340</b>	<b>0.336</b>	<b>0.352</b>	<b>0.338</b>	<b>0.344</b>	<b>0.354</b>	<i>0.357</i>	<i>0.348</i>	<i>0.346</i>	<i>0.358</i>	<i>0.360</i>	<b>1.376</b>	<i>1.393</i>	<i>1.411</i>
Subtotal .....	<b>0.594</b>	<b>0.521</b>	<b>0.558</b>	<b>0.588</b>	<b>0.555</b>	<b>0.579</b>	<b>0.593</b>	<i>0.594</i>	<i>0.578</i>	<i>0.583</i>	<i>0.599</i>	<i>0.601</i>	<b>2.262</b>	<i>2.322</i>	<i>2.361</i>
<b>Commercial Sector</b>															
Geothermal .....	<b>0.006</b>	<b>0.006</b>	<b>0.006</b>	<b>0.006</b>	<b>0.006</b>	<b>0.006</b>	<b>0.006</b>	<i>0.006</i>	<i>0.006</i>	<i>0.006</i>	<i>0.006</i>	<i>0.006</i>	<b>0.024</b>	<i>0.024</i>	<i>0.024</i>
Solar (b) .....	<b>0.025</b>	<b>0.037</b>	<b>0.037</b>	<b>0.025</b>	<b>0.029</b>	<b>0.043</b>	<b>0.043</b>	<i>0.030</i>	<i>0.035</i>	<i>0.051</i>	<i>0.052</i>	<i>0.036</i>	<b>0.123</b>	<i>0.146</i>	<i>0.174</i>
Waste Biomass (c) .....	<b>0.010</b>	<b>0.008</b>	<b>0.009</b>	<b>0.009</b>	<b>0.009</b>	<b>0.008</b>	<b>0.009</b>	<i>0.009</i>	<i>0.009</i>	<i>0.008</i>	<i>0.009</i>	<i>0.009</i>	<b>0.036</b>	<i>0.035</i>	<i>0.035</i>
Wood Biomass .....	<b>0.021</b>	<b>0.021</b>	<b>0.021</b>	<b>0.021</b>	<b>0.020</b>	<b>0.020</b>	<b>0.021</b>	<i>0.021</i>	<i>0.020</i>	<i>0.020</i>	<i>0.021</i>	<i>0.021</i>	<b>0.083</b>	<i>0.082</i>	<i>0.082</i>
Subtotal .....	<b>0.068</b>	<b>0.077</b>	<b>0.078</b>	<b>0.067</b>	<b>0.070</b>	<b>0.085</b>	<b>0.086</b>	<i>0.072</i>	<i>0.076</i>	<i>0.093</i>	<i>0.094</i>	<i>0.078</i>	<b>0.290</b>	<i>0.313</i>	<i>0.342</i>
<b>Residential Sector</b>															
Geothermal .....	<b>0.010</b>	<b>0.010</b>	<b>0.010</b>	<b>0.010</b>	<b>0.010</b>	<b>0.010</b>	<b>0.010</b>	<i>0.010</i>	<i>0.010</i>	<i>0.010</i>	<i>0.010</i>	<i>0.010</i>	<b>0.040</b>	<i>0.040</i>	<i>0.040</i>
Solar (e) .....	<b>0.058</b>	<b>0.086</b>	<b>0.086</b>	<b>0.061</b>	<b>0.066</b>	<b>0.101</b>	<b>0.103</b>	<i>0.072</i>	<i>0.080</i>	<i>0.124</i>	<i>0.127</i>	<i>0.089</i>	<b>0.291</b>	<i>0.342</i>	<i>0.421</i>
Wood Biomass .....	<b>0.114</b>	<b>0.114</b>	<b>0.115</b>	<b>0.115</b>	<b>0.112</b>	<b>0.113</b>	<b>0.115</b>	<i>0.115</i>	<i>0.112</i>	<i>0.113</i>	<i>0.115</i>	<i>0.115</i>	<b>0.458</b>	<i>0.455</i>	<i>0.455</i>
Subtotal .....	<b>0.181</b>	<b>0.210</b>	<b>0.211</b>	<b>0.186</b>	<b>0.188</b>	<b>0.224</b>	<b>0.228</b>	<i>0.197</i>	<i>0.202</i>	<i>0.248</i>	<i>0.252</i>	<i>0.214</i>	<b>0.788</b>	<i>0.837</i>	<i>0.916</i>
<b>Transportation Sector</b>															
Biomass-based Diesel (f) .....	<b>0.062</b>	<b>0.067</b>	<b>0.073</b>	<b>0.074</b>	<b>0.056</b>	<b>0.070</b>	<b>0.066</b>	<i>0.075</i>	<i>0.074</i>	<i>0.077</i>	<i>0.082</i>	<i>0.089</i>	<b>0.276</b>	<i>0.266</i>	<i>0.322</i>
Ethanol (f) .....	<b>0.258</b>	<b>0.222</b>	<b>0.266</b>	<b>0.259</b>	<b>0.244</b>	<b>0.283</b>	<b>0.290</b>	<i>0.274</i>	<i>0.256</i>	<i>0.285</i>	<i>0.291</i>	<i>0.281</i>	<b>1.006</b>	<i>1.091</i>	<i>1.113</i>
Subtotal .....	<b>0.320</b>	<b>0.289</b>	<b>0.340</b>	<b>0.333</b>	<b>0.300</b>	<b>0.353</b>	<b>0.362</b>	<i>0.349</i>	<i>0.331</i>	<i>0.362</i>	<i>0.373</i>	<i>0.370</i>	<b>1.282</b>	<i>1.364</i>	<i>1.436</i>
<b>All Sectors Total</b>															
Biomass-based Diesel (f) .....	<b>0.062</b>	<b>0.067</b>	<b>0.073</b>	<b>0.074</b>	<b>0.056</b>	<b>0.070</b>	<b>0.066</b>	<i>0.075</i>	<i>0.074</i>	<i>0.077</i>	<i>0.082</i>	<i>0.089</i>	<b>0.276</b>	<i>0.266</i>	<i>0.322</i>
Biofuel Losses and Co-products (d) .....	<b>0.197</b>	<b>0.135</b>	<b>0.179</b>	<b>0.189</b>	<b>0.169</b>	<b>0.188</b>	<b>0.193</b>	<i>0.189</i>	<i>0.183</i>	<i>0.191</i>	<i>0.196</i>	<i>0.193</i>	<b>0.699</b>	<i>0.740</i>	<i>0.763</i>
Ethanol (f) .....	<b>0.268</b>	<b>0.231</b>	<b>0.277</b>	<b>0.269</b>	<b>0.253</b>	<b>0.293</b>	<b>0.296</b>	<i>0.285</i>	<i>0.266</i>	<i>0.296</i>	<i>0.302</i>	<i>0.292</i>	<b>1.045</b>	<i>1.128</i>	<i>1.156</i>
Geothermal .....	<b>0.052</b>	<b>0.054</b>	<b>0.054</b>	<b>0.055</b>	<b>0.051</b>	<b>0.052</b>	<b>0.056</b>	<i>0.054</i>	<i>0.051</i>	<i>0.051</i>	<i>0.055</i>	<i>0.055</i>	<b>0.214</b>	<i>0.213</i>	<i>0.213</i>
Hydroelectric Power (a) .....	<b>0.671</b>	<b>0.727</b>	<b>0.632</b>	<b>0.563</b>	<b>0.620</b>	<b>0.601</b>	<b>0.532</b>	<i>0.510</i>	<i>0.608</i>	<i>0.711</i>	<i>0.575</i>	<i>0.525</i>	<b>2.592</b>	<i>2.263</i>	<i>2.419</i>
Solar (b)(e) .....	<b>0.238</b>	<b>0.374</b>	<b>0.377</b>	<b>0.257</b>	<b>0.292</b>	<b>0.467</b>	<b>0.480</b>	<i>0.326</i>	<i>0.379</i>	<i>0.595</i>	<i>0.590</i>	<i>0.404</i>	<b>1.246</b>	<i>1.565</i>	<i>1.966</i>
Waste Biomass (c) .....	<b>0.113</b>	<b>0.105</b>	<b>0.104</b>	<b>0.108</b>	<b>0.108</b>	<b>0.104</b>	<b>0.105</b>	<i>0.108</i>	<i>0.106</i>	<i>0.104</i>	<i>0.105</i>	<i>0.107</i>	<b>0.430</b>	<i>0.425</i>	<i>0.422</i>
Wood Biomass .....	<b>0.532</b>	<b>0.517</b>	<b>0.519</b>	<b>0.533</b>	<b>0.520</b>	<b>0.523</b>	<b>0.536</b>	<i>0.534</i>	<i>0.525</i>	<i>0.520</i>	<i>0.541</i>	<i>0.537</i>	<b>2.101</b>	<i>2.113</i>	<i>2.123</i>
Wind .....	<b>0.796</b>	<b>0.793</b>	<b>0.615</b>	<b>0.862</b>	<b>0.877</b>	<b>0.867</b>	<b>0.684</b>	<i>1.019</i>	<i>1.044</i>	<i>0.973</i>	<i>0.753</i>	<i>1.083</i>	<b>3.065</b>	<i>3.447</i>	<i>3.852</i>
<b>Total Consumption</b> .....	<b>2.925</b>	<b>3.001</b>	<b>2.826</b>	<b>2.907</b>	<b>2.946</b>	<b>3.164</b>	<b>2.985</b>	<i>3.092</i>	<i>3.228</i>	<i>3.506</i>	<i>3.186</i>	<i>3.277</i>	<b>11.659</b>	<i>12.186</i>	<i>13.197</i>

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

- = no data available

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

**Historical data:** Latest data available from EIA databases supporting the following reports: *Electric Power Monthly*, DOE/EIA-0226 and *Renewable Energy Annual*, DOE/EIA-0603; *Petroleum*

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

**Forecasts:** EIA Short-Term Integrated Forecasting System.

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

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>Renewable Energy Electric Generating Capacity (megawatts, end of period)</b>															
<b>Electric Power Sector (a)</b>															
Biomass .....	6,348	6,346	6,296	6,295	6,285	6,141	6,143	6,184	6,187	6,190	6,190	6,190	<b>6,295</b>	6,184	6,190
Waste .....	3,867	3,865	3,792	3,790	3,781	3,779	3,781	3,822	3,825	3,829	3,829	3,829	<b>3,790</b>	3,822	3,829
Wood .....	2,480	2,480	2,505	2,505	2,505	2,362	2,362	2,362	2,362	2,362	2,362	2,362	<b>2,505</b>	2,362	2,362
Conventional Hydroelectric .....	78,528	78,522	78,669	78,671	78,672	78,744	78,747	78,765	78,786	78,796	78,837	78,840	<b>78,671</b>	78,765	78,840
Geothermal .....	2,466	2,483	2,483	2,483	2,483	2,483	2,483	2,500	2,500	2,500	2,500	2,525	<b>2,483</b>	2,500	2,525
Large-Scale Solar (b) .....	39,067	41,160	42,961	47,586	50,256	52,322	56,302	63,559	65,890	69,760	72,448	81,813	<b>47,586</b>	63,559	81,813
Wind .....	106,055	107,549	109,076	118,045	120,930	124,472	127,763	135,115	136,058	137,613	138,323	141,631	<b>118,045</b>	135,115	141,631
<b>Other Sectors (c)</b>															
Biomass .....	6,295	6,296	6,292	6,302	6,280	6,284	6,289	6,289	6,289	6,289	6,281	6,281	<b>6,302</b>	6,289	6,281
Waste .....	770	771	767	777	775	778	778	778	778	778	778	778	<b>777</b>	778	778
Wood .....	5,525	5,525	5,525	5,525	5,505	5,505	5,510	5,510	5,510	5,510	5,503	5,503	<b>5,525</b>	5,510	5,503
Conventional Hydroelectric .....	279	279	279	279	279	279	279	279	279	279	279	279	<b>279</b>	279	279
Large-Scale Solar (b) .....	443	456	462	468	472	472	493	538	538	538	541	541	<b>468</b>	538	541
Small-Scale Solar (d) .....	24,355	25,255	26,264	27,724	28,888	30,385	31,805	33,487	35,262	37,149	39,152	41,276	<b>27,724</b>	33,487	41,276
Residential Sector .....	15,071	15,689	16,373	17,238	18,076	19,144	20,183	21,354	22,596	23,927	25,348	26,865	<b>17,238</b>	21,354	26,865
Commercial Sector .....	7,425	7,642	7,910	8,430	8,725	9,104	9,447	9,892	10,358	10,847	11,358	11,893	<b>8,430</b>	9,892	11,893
Industrial Sector .....	1,859	1,924	1,981	2,056	2,088	2,138	2,175	2,241	2,308	2,376	2,446	2,518	<b>2,056</b>	2,241	2,518
Wind .....	111	337	346	346	346	346	346	346	346	346	346	346	<b>346</b>	346	346
<b>Renewable Electricity Generation (billion kilowatthours)</b>															
<b>Electric Power Sector (a)</b>															
Biomass .....	7.1	6.7	7.0	6.7	7.0	6.6	6.9	6.5	6.6	6.4	6.8	6.4	<b>27.5</b>	27.0	26.3
Waste .....	4.1	4.0	4.0	3.9	4.0	3.9	3.9	3.9	3.9	3.9	3.9	3.9	<b>16.1</b>	15.7	15.6
Wood .....	3.0	2.7	3.0	2.7	3.1	2.7	3.0	2.5	2.7	2.5	2.9	2.5	<b>11.4</b>	11.3	10.7
Conventional Hydroelectric .....	75.0	81.3	70.6	63.0	69.3	67.2	58.6	55.7	66.4	77.8	62.9	57.4	<b>289.9</b>	250.9	264.5
Geothermal .....	3.9	4.2	4.2	4.2	3.9	4.0	4.1	4.2	3.9	3.8	4.3	4.3	<b>16.5</b>	16.2	16.3
Large-Scale Solar (b) .....	16.7	27.3	27.6	18.5	21.4	35.2	33.9	23.7	28.0	44.7	43.8	29.6	<b>90.1</b>	114.2	146.1
Wind .....	87.4	87.1	67.5	94.7	96.3	95.2	75.2	111.9	114.7	106.8	82.7	119.0	<b>336.7</b>	378.6	423.1
<b>Other Sectors (c)</b>															
Biomass .....	7.4	7.1	7.0	7.1	7.0	6.8	7.1	7.1	7.0	6.8	7.1	7.1	<b>28.6</b>	28.0	28.0
Waste .....	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.7	0.7	0.6	0.7	0.7	<b>2.7</b>	2.7	2.7
Wood .....	6.7	6.4	6.4	6.4	6.3	6.2	6.4	6.4	6.3	6.2	6.4	6.4	<b>25.8</b>	25.3	25.3
Conventional Hydroelectric .....	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	<b>1.2</b>	1.2	1.2
Large-Scale Solar (b) .....	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.2	0.2	<b>0.8</b>	0.9	0.9
Small-Scale Solar (d) .....	8.4	12.4	12.3	8.7	9.8	14.8	14.8	10.4	11.9	18.1	18.5	13.0	<b>41.7</b>	49.8	61.6
Residential Sector .....	5.0	7.5	7.5	5.4	5.9	9.1	9.1	6.4	7.4	11.5	11.8	8.3	<b>25.4</b>	30.6	38.9
Commercial Sector .....	2.7	3.8	3.8	2.6	3.1	4.5	4.5	3.2	3.7	5.4	5.5	3.8	<b>12.9</b>	15.3	18.3
Industrial Sector .....	0.7	1.0	1.0	0.7	0.8	1.1	1.2	0.8	0.9	1.3	1.3	0.9	<b>3.5</b>	3.9	4.3
Wind .....	0.1	0.1	0.2	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	<b>0.8</b>	1.0	0.8

(a) Power plants larger than or equal to one megawatt in size that are operated by electric utilities or independent power producers.

(b) Solar thermal and photovoltaic generating units at power plants larger than or equal to 1 megawatt.

(c) Businesses or individual households not primarily engaged in electric power production for sale to the public, whose generating capacity is at least one megawatt (except for small-scale solar photovoltaic data, which consists of systems smaller than 1 megawatt).

(d) Solar photovoltaic systems smaller than one megawatt.

- = no data available

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

**Historical data:** Latest data available from EIA databases supporting the Electric Power Monthly, DOE/EIA-0226.

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

**Forecasts:** EIA Short-Term Integrated Forecasting System.

**Table 9a. U.S. Macroeconomic Indicators and CO2 Emissions**  
U.S. Energy Information Administration | Short-Term Energy Outlook - October 2021

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>Macroeconomic</b>															
Real Gross Domestic Product (billion chained 2012 dollars - SAAR) .....	<b>18,952</b>	<b>17,258</b>	<b>18,561</b>	<b>18,768</b>	<b>19,056</b>	<b>19,361</b>	<b>19,517</b>	<i>19,801</i>	<i>20,034</i>	<i>20,237</i>	<i>20,399</i>	<i>20,531</i>	<b>18,385</b>	<i>19,433</i>	<i>20,300</i>
Real Personal Consumption Expend. (billion chained 2012 dollars - SAAR) .....	<b>13,014</b>	<b>11,756</b>	<b>12,821</b>	<b>12,928</b>	<b>13,283</b>	<b>13,660</b>	<b>13,684</b>	<i>13,820</i>	<i>13,911</i>	<i>14,008</i>	<i>14,094</i>	<i>14,183</i>	<b>12,630</b>	<i>13,612</i>	<i>14,049</i>
Real Private Fixed Investment (billion chained 2012 dollars - SAAR) .....	<b>3,420</b>	<b>3,123</b>	<b>3,319</b>	<b>3,457</b>	<b>3,564</b>	<b>3,594</b>	<b>3,577</b>	<i>3,616</i>	<i>3,657</i>	<i>3,690</i>	<i>3,722</i>	<i>3,751</i>	<b>3,329</b>	<i>3,588</i>	<i>3,705</i>
Business Inventory Change (billion chained 2012 dollars - SAAR) .....	<b>-21</b>	<b>-290</b>	<b>15</b>	<b>57</b>	<b>-94</b>	<b>-176</b>	<b>-68</b>	<i>-14</i>	<i>85</i>	<i>156</i>	<i>188</i>	<i>189</i>	<b>-60</b>	<i>-88</i>	<i>155</i>
Real Government Expenditures (billion chained 2012 dollars - SAAR) .....	<b>3,346</b>	<b>3,378</b>	<b>3,360</b>	<b>3,356</b>	<b>3,391</b>	<b>3,375</b>	<b>3,396</b>	<i>3,413</i>	<i>3,436</i>	<i>3,450</i>	<i>3,466</i>	<i>3,476</i>	<b>3,360</b>	<i>3,394</i>	<i>3,457</i>
Real Exports of Goods & Services (billion chained 2012 dollars - SAAR) .....	<b>2,442</b>	<b>1,943</b>	<b>2,166</b>	<b>2,279</b>	<b>2,262</b>	<b>2,299</b>	<b>2,321</b>	<i>2,368</i>	<i>2,414</i>	<i>2,462</i>	<i>2,512</i>	<i>2,564</i>	<b>2,208</b>	<i>2,312</i>	<i>2,488</i>
Real Imports of Goods & Services (billion chained 2012 dollars - SAAR) .....	<b>3,284</b>	<b>2,718</b>	<b>3,188</b>	<b>3,412</b>	<b>3,488</b>	<b>3,546</b>	<b>3,540</b>	<i>3,534</i>	<i>3,589</i>	<i>3,644</i>	<i>3,697</i>	<i>3,748</i>	<b>3,150</b>	<i>3,527</i>	<i>3,670</i>
Real Disposable Personal Income (billion chained 2012 dollars - SAAR) .....	<b>14,963</b>	<b>16,520</b>	<b>15,783</b>	<b>15,443</b>	<b>17,219</b>	<b>15,699</b>	<b>15,434</b>	<i>15,216</i>	<i>15,232</i>	<i>15,399</i>	<i>15,558</i>	<i>15,644</i>	<b>15,677</b>	<i>15,892</i>	<i>15,458</i>
Non-Farm Employment (millions) .....	<b>151.9</b>	<b>133.7</b>	<b>140.9</b>	<b>142.6</b>	<b>143.4</b>	<b>145.1</b>	<b>147.3</b>	<i>148.4</i>	<i>149.5</i>	<i>150.6</i>	<i>151.6</i>	<i>152.4</i>	<b>142.3</b>	<i>146.0</i>	<i>151.0</i>
Civilian Unemployment Rate (percent) .....	<b>3.8</b>	<b>13.1</b>	<b>8.8</b>	<b>6.8</b>	<b>6.2</b>	<b>5.9</b>	<b>5.2</b>	<i>5.0</i>	<i>4.7</i>	<i>4.3</i>	<i>4.0</i>	<i>3.8</i>	<b>8.1</b>	<i>5.6</i>	<i>4.2</i>
Housing Starts (millions - SAAR) .....	<b>1.49</b>	<b>1.09</b>	<b>1.44</b>	<b>1.58</b>	<b>1.60</b>	<b>1.59</b>	<b>1.51</b>	<i>1.47</i>	<i>1.43</i>	<i>1.40</i>	<i>1.38</i>	<i>1.37</i>	<b>1.40</b>	<i>1.54</i>	<i>1.40</i>
<b>Industrial Production Indices (Index, 2017=100)</b>															
Total Industrial Production .....	<b>100.0</b>	<b>87.1</b>	<b>95.5</b>	<b>97.4</b>	<b>98.3</b>	<b>99.8</b>	<b>101.4</b>	<i>101.9</i>	<i>103.3</i>	<i>104.6</i>	<i>105.7</i>	<i>106.5</i>	<b>95.0</b>	<i>100.4</i>	<i>105.1</i>
Manufacturing .....	<b>97.6</b>	<b>84.2</b>	<b>94.2</b>	<b>96.7</b>	<b>97.3</b>	<b>98.6</b>	<b>100.5</b>	<i>101.3</i>	<i>102.8</i>	<i>104.4</i>	<i>105.6</i>	<i>106.6</i>	<b>93.2</b>	<i>99.5</i>	<i>104.9</i>
Food .....	<b>101.8</b>	<b>93.8</b>	<b>98.0</b>	<b>100.1</b>	<b>101.2</b>	<b>100.6</b>	<b>99.7</b>	<i>100.5</i>	<i>100.8</i>	<i>101.2</i>	<i>101.6</i>	<i>102.0</i>	<b>98.4</b>	<i>100.5</i>	<i>101.4</i>
Paper .....	<b>99.5</b>	<b>91.5</b>	<b>90.7</b>	<b>94.9</b>	<b>93.9</b>	<b>95.0</b>	<b>95.1</b>	<i>95.2</i>	<i>95.8</i>	<i>96.3</i>	<i>96.7</i>	<i>97.0</i>	<b>94.2</b>	<i>94.8</i>	<i>96.5</i>
Petroleum and Coal Products .....	<b>98.0</b>	<b>77.3</b>	<b>84.0</b>	<b>86.7</b>	<b>90.5</b>	<b>96.0</b>	<b>95.9</b>	<i>97.6</i>	<i>98.7</i>	<i>99.4</i>	<i>99.9</i>	<i>100.0</i>	<b>86.5</b>	<i>95.0</i>	<i>99.5</i>
Chemicals .....	<b>95.0</b>	<b>89.9</b>	<b>92.5</b>	<b>94.7</b>	<b>91.8</b>	<b>98.8</b>	<b>100.1</b>	<i>101.2</i>	<i>102.6</i>	<i>103.7</i>	<i>104.3</i>	<i>104.6</i>	<b>93.0</b>	<i>98.0</i>	<i>103.8</i>
Nonmetallic Mineral Products .....	<b>99.7</b>	<b>88.1</b>	<b>94.6</b>	<b>98.4</b>	<b>97.4</b>	<b>95.2</b>	<b>95.9</b>	<i>96.2</i>	<i>96.3</i>	<i>96.2</i>	<i>96.3</i>	<i>96.7</i>	<b>95.2</b>	<i>96.2</i>	<i>96.4</i>
Primary Metals .....	<b>95.9</b>	<b>72.9</b>	<b>83.3</b>	<b>90.3</b>	<b>92.4</b>	<b>96.8</b>	<b>99.5</b>	<i>99.7</i>	<i>101.3</i>	<i>102.1</i>	<i>102.6</i>	<i>103.1</i>	<b>85.6</b>	<i>97.1</i>	<i>102.3</i>
Coal-weighted Manufacturing (a) .....	<b>97.1</b>	<b>86.7</b>	<b>93.0</b>	<b>96.6</b>	<b>94.2</b>	<b>97.1</b>	<b>97.8</b>	<i>98.6</i>	<i>99.6</i>	<i>100.5</i>	<i>101.2</i>	<i>101.8</i>	<b>93.3</b>	<i>96.9</i>	<i>100.8</i>
Distillate-weighted Manufacturing (a) .....	<b>97.0</b>	<b>84.4</b>	<b>92.0</b>	<b>95.7</b>	<b>94.6</b>	<b>97.2</b>	<b>97.9</b>	<i>98.5</i>	<i>99.4</i>	<i>100.0</i>	<i>100.4</i>	<i>100.8</i>	<b>92.3</b>	<i>97.0</i>	<i>100.1</i>
Electricity-weighted Manufacturing (a) .....	<b>97.1</b>	<b>83.4</b>	<b>91.6</b>	<b>95.4</b>	<b>94.5</b>	<b>97.7</b>	<b>99.1</b>	<i>99.9</i>	<i>101.2</i>	<i>102.3</i>	<i>103.0</i>	<i>103.6</i>	<b>91.9</b>	<i>97.8</i>	<i>102.5</i>
Natural Gas-weighted Manufacturing (a) .....	<b>95.5</b>	<b>84.1</b>	<b>89.7</b>	<b>93.7</b>	<b>90.5</b>	<b>96.1</b>	<b>96.8</b>	<i>97.6</i>	<i>98.9</i>	<i>99.8</i>	<i>100.4</i>	<i>100.8</i>	<b>90.8</b>	<i>95.3</i>	<i>100.0</i>
<b>Price Indexes</b>															
Consumer Price Index (all urban consumers) (index, 1982-1984=1.00) .....	<b>2.59</b>	<b>2.56</b>	<b>2.59</b>	<b>2.61</b>	<b>2.63</b>	<b>2.69</b>	<b>2.73</b>	<i>2.74</i>	<i>2.75</i>	<i>2.76</i>	<i>2.77</i>	<i>2.78</i>	<b>2.59</b>	<i>2.70</i>	<i>2.76</i>
Producer Price Index: All Commodities (index, 1982=1.00) .....	<b>1.97</b>	<b>1.88</b>	<b>1.94</b>	<b>1.99</b>	<b>2.11</b>	<b>2.23</b>	<b>2.28</b>	<i>2.26</i>	<i>2.25</i>	<i>2.24</i>	<i>2.23</i>	<i>2.23</i>	<b>1.94</b>	<i>2.22</i>	<i>2.24</i>
Producer Price Index: Petroleum (index, 1982=1.00) .....	<b>1.71</b>	<b>1.05</b>	<b>1.47</b>	<b>1.51</b>	<b>1.84</b>	<b>2.14</b>	<b>2.29</b>	<i>2.37</i>	<i>2.28</i>	<i>2.22</i>	<i>2.13</i>	<i>2.01</i>	<b>1.43</b>	<i>2.16</i>	<i>2.16</i>
GDP Implicit Price Deflator (index, 2012=100) .....	<b>113.4</b>	<b>113.0</b>	<b>114.0</b>	<b>114.6</b>	<b>115.8</b>	<b>117.5</b>	<b>119.0</b>	<i>120.0</i>	<i>120.5</i>	<i>120.9</i>	<i>121.4</i>	<i>122.0</i>	<b>113.7</b>	<i>118.1</i>	<i>121.2</i>
<b>Miscellaneous</b>															
Vehicle Miles Traveled (b) (million miles/day) .....	<b>7,764</b>	<b>6,868</b>	<b>8,262</b>	<b>8,009</b>	<b>7,682</b>	<b>8,939</b>	<b>9,122</b>	<i>8,799</i>	<i>8,203</i>	<i>9,282</i>	<i>9,356</i>	<i>8,978</i>	<b>7,728</b>	<i>8,640</i>	<i>8,958</i>
Air Travel Capacity (Available ton-miles/day, thousands) .....	<b>630</b>	<b>362</b>	<b>478</b>	<b>537</b>	<b>537</b>	<b>598</b>	<b>724</b>	<i>683</i>	<i>653</i>	<i>691</i>	<i>701</i>	<i>648</i>	<b>502</b>	<i>636</i>	<i>673</i>
Aircraft Utilization (Revenue ton-miles/day, thousands) .....	<b>328</b>	<b>151</b>	<b>208</b>	<b>238</b>	<b>245</b>	<b>341</b>	<b>375</b>	<i>385</i>	<i>405</i>	<i>451</i>	<i>449</i>	<i>408</i>	<b>231</b>	<i>337</i>	<i>428</i>
Airline Ticket Price Index (index, 1982-1984=100) .....	<b>250.8</b>	<b>203.7</b>	<b>200.6</b>	<b>215.1</b>	<b>198.4</b>	<b>243.3</b>	<b>220.3</b>	<i>206.6</i>	<i>210.8</i>	<i>236.8</i>	<i>239.0</i>	<i>250.1</i>	<b>217.5</b>	<i>217.1</i>	<i>234.2</i>
Raw Steel Production (million short tons per day) .....	<b>0.268</b>	<b>0.174</b>	<b>0.197</b>	<b>0.224</b>	<b>0.246</b>	<b>0.258</b>	<b>0.267</b>	<i>0.321</i>	<i>0.336</i>	<i>0.301</i>	<i>0.295</i>	<i>0.307</i>	<b>0.216</b>	<i>0.273</i>	<i>0.310</i>
<b>Carbon Dioxide (CO2) Emissions (million metric tons)</b>															
Petroleum .....	<b>558</b>	<b>441</b>	<b>520</b>	<b>523</b>	<b>517</b>	<b>559</b>	<b>577</b>	<i>569</i>	<i>555</i>	<i>573</i>	<i>587</i>	<i>581</i>	<b>2,042</b>	<i>2,223</i>	<i>2,296</i>
Natural Gas .....	<b>489</b>	<b>348</b>	<b>382</b>	<b>428</b>	<b>483</b>	<b>354</b>	<b>367</b>	<i>432</i>	<i>470</i>	<i>350</i>	<i>371</i>	<i>440</i>	<b>1,647</b>	<i>1,636</i>	<i>1,631</i>
Coal .....	<b>202</b>	<b>177</b>	<b>271</b>	<b>225</b>	<b>255</b>	<b>230</b>	<b>313</b>	<i>252</i>	<i>252</i>	<i>224</i>	<i>286</i>	<i>231</i>	<b>875</b>	<i>1,051</i>	<i>993</i>
Total Energy (c) .....	<b>1,251</b>	<b>969</b>	<b>1,176</b>	<b>1,179</b>	<b>1,259</b>	<b>1,146</b>	<b>1,260</b>	<i>1,257</i>	<i>1,280</i>	<i>1,149</i>	<i>1,247</i>	<i>1,255</i>	<b>4,575</b>	<i>4,921</i>	<i>4,931</i>

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

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

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

- = no data available

SAAR = Seasonally-adjusted annual rate

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

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

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

**Table 9b. U.S. Regional Macroeconomic Data**

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

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>Real Gross State Product (Billion \$2012)</b>															
New England .....	982	891	959	971	986	1,001	1,009	1,024	1,035	1,045	1,054	1,060	951	1,005	1,048
Middle Atlantic .....	2,745	2,459	2,641	2,667	2,708	2,755	2,769	2,809	2,848	2,883	2,911	2,930	2,628	2,760	2,893
E. N. Central .....	2,476	2,241	2,432	2,454	2,494	2,518	2,533	2,568	2,597	2,622	2,640	2,658	2,401	2,528	2,629
W. N. Central .....	1,175	1,072	1,156	1,172	1,190	1,206	1,213	1,229	1,241	1,251	1,259	1,265	1,144	1,210	1,254
S. Atlantic .....	3,352	3,080	3,302	3,334	3,387	3,435	3,465	3,512	3,550	3,584	3,610	3,631	3,267	3,450	3,594
E. S. Central .....	819	734	801	812	825	836	843	854	863	871	877	882	791	840	873
W. S. Central .....	2,293	2,101	2,243	2,279	2,304	2,345	2,363	2,400	2,431	2,458	2,484	2,502	2,229	2,353	2,469
Mountain .....	1,270	1,165	1,252	1,266	1,290	1,311	1,324	1,342	1,358	1,370	1,380	1,390	1,238	1,317	1,374
Pacific .....	3,729	3,399	3,645	3,676	3,731	3,811	3,853	3,915	3,964	4,004	4,034	4,063	3,612	3,828	4,016
<b>Industrial Output, Manufacturing (Index, Year 2017=100)</b>															
New England .....	96.1	82.6	91.6	94.6	95.0	91.0	92.9	93.6	94.8	96.1	97.1	97.8	91.3	93.1	96.4
Middle Atlantic .....	95.0	79.2	89.9	92.5	92.9	89.2	90.9	92.1	93.5	94.9	96.1	96.8	89.2	91.3	95.3
E. N. Central .....	95.9	79.0	91.8	94.4	95.0	97.5	99.3	100.2	102.0	103.8	105.3	106.6	90.3	98.0	104.4
W. N. Central .....	98.0	86.0	94.7	97.1	98.0	98.4	100.5	101.3	102.5	103.8	105.1	105.9	94.0	99.5	104.3
S. Atlantic .....	98.6	85.8	95.2	98.4	98.8	103.6	105.5	106.3	107.7	109.4	110.7	111.5	94.5	103.5	109.8
E. S. Central .....	96.6	79.9	93.6	96.7	97.8	103.8	105.7	106.2	107.5	109.1	110.5	111.7	91.7	103.3	109.7
W. S. Central .....	100.2	88.9	95.7	97.9	98.8	93.7	95.9	97.1	98.7	100.3	101.7	102.6	95.7	96.4	100.8
Mountain .....	102.8	92.2	101.3	104.0	105.2	113.1	115.1	115.9	117.4	119.0	120.2	121.2	100.1	112.3	119.5
Pacific .....	96.4	84.0	91.6	93.3	93.4	94.4	95.7	96.4	98.1	99.9	101.2	102.2	91.3	95.0	100.4
<b>Real Personal Income (Billion \$2012)</b>															
New England .....	892	978	929	922	1,002	933	923	913	917	928	937	943	930	943	931
Middle Atlantic .....	2,314	2,522	2,430	2,340	2,574	2,389	2,357	2,323	2,333	2,361	2,387	2,400	2,401	2,411	2,370
E. N. Central .....	2,457	2,700	2,580	2,535	2,848	2,604	2,563	2,531	2,536	2,563	2,588	2,604	2,568	2,637	2,573
W. N. Central .....	1,159	1,260	1,180	1,192	1,321	1,231	1,217	1,204	1,200	1,210	1,220	1,226	1,198	1,243	1,214
S. Atlantic .....	3,267	3,507	3,411	3,363	3,734	3,457	3,426	3,389	3,397	3,434	3,470	3,493	3,387	3,501	3,448
E. S. Central .....	911	990	938	933	1,064	974	960	947	946	955	963	968	943	986	958
W. S. Central .....	2,038	2,202	2,101	2,069	2,325	2,138	2,103	2,098	2,109	2,137	2,163	2,180	2,102	2,166	2,147
Mountain .....	1,211	1,317	1,257	1,252	1,398	1,296	1,283	1,268	1,270	1,284	1,297	1,304	1,259	1,311	1,289
Pacific .....	2,833	3,036	2,977	2,955	3,196	2,999	2,972	2,933	2,942	2,974	3,005	3,024	2,950	3,025	2,987
<b>Households (Thousands)</b>															
New England .....	5,896	5,855	5,961	5,954	5,955	5,958	5,956	5,967	5,979	5,992	6,006	6,017	5,954	5,967	6,017
Middle Atlantic .....	16,157	16,042	16,343	16,333	16,341	16,352	16,365	16,402	16,436	16,474	16,508	16,542	16,333	16,402	16,542
E. N. Central .....	18,873	18,757	19,104	19,077	19,084	19,098	19,116	19,165	19,208	19,243	19,276	19,311	19,077	19,165	19,311
W. N. Central .....	8,651	8,606	8,770	8,771	8,783	8,795	8,808	8,835	8,858	8,887	8,914	8,936	8,771	8,835	8,936
S. Atlantic .....	25,667	25,560	26,072	26,111	26,170	26,233	26,300	26,414	26,520	26,636	26,746	26,848	26,111	26,414	26,848
E. S. Central .....	7,662	7,625	7,772	7,776	7,787	7,799	7,813	7,840	7,864	7,891	7,916	7,938	7,776	7,840	7,938
W. S. Central .....	14,881	14,825	15,125	15,153	15,189	15,227	15,271	15,340	15,406	15,476	15,543	15,604	15,153	15,340	15,604
Mountain .....	9,461	9,436	9,641	9,670	9,708	9,746	9,786	9,842	9,895	9,947	9,997	10,042	9,670	9,842	10,042
Pacific .....	18,795	18,691	19,041	19,043	19,051	19,061	19,080	19,130	19,181	19,232	19,281	19,318	19,043	19,130	19,318
<b>Total Non-farm Employment (Millions)</b>															
New England .....	7.6	6.4	6.8	6.9	7.0	7.1	7.2	7.3	7.3	7.4	7.4	7.5	6.9	7.1	7.4
Middle Atlantic .....	20.1	16.7	17.9	18.2	18.3	18.5	18.7	18.9	19.2	19.4	19.6	19.7	18.2	18.6	19.4
E. N. Central .....	22.3	19.3	20.7	20.8	20.9	21.1	21.4	21.5	21.7	21.8	22.0	22.1	20.8	21.2	21.9
W. N. Central .....	10.8	9.7	10.2	10.2	10.3	10.4	10.5	10.6	10.6	10.7	10.7	10.8	10.2	10.5	10.7
S. Atlantic .....	29.3	26.2	27.4	27.8	27.9	28.1	28.6	28.8	29.0	29.2	29.4	29.5	27.7	28.4	29.3
E. S. Central .....	8.3	7.5	7.9	8.0	8.0	8.1	8.2	8.2	8.3	8.3	8.3	8.4	7.9	8.1	8.3
W. S. Central .....	17.9	16.2	16.7	17.0	17.1	17.3	17.6	17.7	17.8	17.9	18.0	18.1	17.0	17.4	17.9
Mountain .....	11.2	10.0	10.5	10.6	10.7	10.9	11.1	11.2	11.2	11.3	11.4	11.4	10.6	11.0	11.3
Pacific .....	24.0	20.9	21.6	21.9	21.9	22.4	22.9	23.1	23.3	23.5	23.7	23.8	22.1	22.6	23.6

- = no data available

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

Regions refer to U.S. Census divisions.

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

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

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

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

**Table 9c. U.S. Regional Weather Data**

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

	2020				2021				2022				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2020	2021	2022
<b>Heating Degree Days</b>															
New England .....	2,731	972	114	1,993	3,007	779	89	2,143	3,094	871	140	2,096	<b>5,811</b>	<i>6,018</i>	<i>6,201</i>
Middle Atlantic .....	2,465	838	85	1,828	2,816	669	48	1,971	2,846	693	94	1,939	<b>5,216</b>	<i>5,504</i>	<i>5,572</i>
E. N. Central .....	2,786	846	127	2,099	3,085	710	76	2,255	3,100	727	136	2,260	<b>5,858</b>	<i>6,126</i>	<i>6,223</i>
W. N. Central .....	3,040	799	167	2,314	3,229	720	83	2,462	3,217	701	167	2,478	<b>6,320</b>	<i>6,493</i>	<i>6,562</i>
South Atlantic .....	1,111	253	17	879	1,347	211	12	955	1,350	188	14	928	<b>2,260</b>	<i>2,525</i>	<i>2,480</i>
E. S. Central .....	1,479	336	20	1,224	1,790	313	23	1,294	1,743	240	22	1,301	<b>3,060</b>	<i>3,420</i>	<i>3,305</i>
W. S. Central .....	971	102	8	737	1,295	121	4	788	1,133	82	4	806	<b>1,818</b>	<i>2,208</i>	<i>2,026</i>
Mountain .....	2,219	676	128	1,779	2,302	662	92	1,850	2,231	694	144	1,851	<b>4,802</b>	<i>4,906</i>	<i>4,921</i>
Pacific .....	1,538	527	65	1,085	1,563	486	73	1,247	1,557	580	88	1,219	<b>3,217</b>	<i>3,369</i>	<i>3,443</i>
U.S. Average .....	1,880	544	71	1,422	2,107	473	49	1,535	2,085	484	78	1,522	<b>3,917</b>	<i>4,164</i>	<i>4,170</i>
<b>Heating Degree Days, Prior 10-year Average</b>															
New England .....	3,152	822	105	2,127	3,133	856	107	2,099	3,099	852	108	2,125	<b>6,207</b>	<i>6,194</i>	<i>6,185</i>
Middle Atlantic .....	2,948	644	69	1,944	2,912	678	72	1,911	2,886	685	71	1,933	<b>5,606</b>	<i>5,572</i>	<i>5,574</i>
E. N. Central .....	3,198	698	102	2,197	3,157	731	105	2,170	3,133	728	98	2,199	<b>6,195</b>	<i>6,162</i>	<i>6,157</i>
W. N. Central .....	3,288	703	132	2,380	3,248	728	133	2,368	3,220	726	124	2,400	<b>6,502</b>	<i>6,477</i>	<i>6,470</i>
South Atlantic .....	1,461	169	10	953	1,395	181	11	916	1,380	187	11	921	<b>2,593</b>	<i>2,503</i>	<i>2,499</i>
E. S. Central .....	1,849	214	15	1,277	1,771	231	16	1,249	1,763	243	15	1,253	<b>3,356</b>	<i>3,267</i>	<i>3,274</i>
W. S. Central .....	1,199	83	3	794	1,140	86	3	786	1,145	93	3	784	<b>2,078</b>	<i>2,015</i>	<i>2,024</i>
Mountain .....	2,198	721	136	1,850	2,188	704	135	1,850	2,180	685	130	1,839	<b>4,905</b>	<i>4,877</i>	<i>4,834</i>
Pacific .....	1,456	580	85	1,162	1,462	553	81	1,147	1,455	523	78	1,140	<b>3,283</b>	<i>3,242</i>	<i>3,197</i>
U.S. Average .....	2,153	473	64	1,512	2,112	483	65	1,487	2,095	479	62	1,496	<b>4,202</b>	<i>4,147</i>	<i>4,132</i>
<b>Cooling Degree Days</b>															
New England .....	0	103	543	0	0	145	464	2	0	80	393	2	<b>646</b>	<i>611</i>	<i>475</i>
Middle Atlantic .....	0	156	682	4	0	184	637	4	0	148	518	5	<b>843</b>	<i>826</i>	<i>671</i>
E. N. Central .....	2	218	605	2	2	250	638	6	0	214	515	6	<b>827</b>	<i>896</i>	<i>735</i>
W. N. Central .....	6	295	661	3	8	311	748	9	3	263	655	9	<b>966</b>	<i>1,076</i>	<i>930</i>
South Atlantic .....	193	616	1,228	298	149	617	1,200	229	135	657	1,153	249	<b>2,335</b>	<i>2,196</i>	<i>2,195</i>
E. S. Central .....	74	426	1,064	82	41	436	1,044	64	31	514	1,028	64	<b>1,645</b>	<i>1,585</i>	<i>1,637</i>
W. S. Central .....	174	840	1,504	211	90	769	1,466	203	92	850	1,490	198	<b>2,729</b>	<i>2,528</i>	<i>2,630</i>
Mountain .....	10	463	1,077	117	10	532	949	75	17	424	933	76	<b>1,668</b>	<i>1,566</i>	<i>1,450</i>
Pacific .....	25	195	716	125	24	252	711	60	27	171	595	60	<b>1,061</b>	<i>1,047</i>	<i>854</i>
U.S. Average .....	70	393	932	120	49	411	912	92	46	398	844	96	<b>1,515</b>	<i>1,464</i>	<i>1,384</i>
<b>Cooling Degree Days, Prior 10-year Average</b>															
New England .....	0	83	471	1	0	81	474	1	0	88	472	1	<b>554</b>	<i>556</i>	<i>561</i>
Middle Atlantic .....	0	170	609	6	0	163	610	6	0	162	609	7	<b>786</b>	<i>779</i>	<i>778</i>
E. N. Central .....	3	240	579	8	3	234	572	7	3	237	572	7	<b>829</b>	<i>816</i>	<i>820</i>
W. N. Central .....	7	296	696	11	7	294	686	10	7	299	681	10	<b>1,010</b>	<i>997</i>	<i>997</i>
South Atlantic .....	127	695	1,201	247	143	679	1,194	260	146	668	1,192	263	<b>2,270</b>	<i>2,276</i>	<i>2,269</i>
E. S. Central .....	36	557	1,082	72	42	532	1,065	74	44	518	1,060	78	<b>1,747</b>	<i>1,714</i>	<i>1,700</i>
W. S. Central .....	100	892	1,576	207	114	880	1,567	210	113	853	1,535	212	<b>2,775</b>	<i>2,772</i>	<i>2,714</i>
Mountain .....	24	430	934	80	24	441	949	85	23	459	944	85	<b>1,468</b>	<i>1,499</i>	<i>1,511</i>
Pacific .....	31	185	624	78	31	193	647	86	31	208	664	85	<b>919</b>	<i>958</i>	<i>989</i>
U.S. Average .....	47	419	891	99	52	413	892	104	53	412	890	105	<b>1,455</b>	<i>1,461</i>	<i>1,460</i>

- = no data available

Notes: EIA completed modeling and analysis for this report on October 7, 2021.

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

Regional degree days for each period are calculated by EIA as contemporaneous period population-weighted averages of state degree day data published by the National See *Change in Regional and U.S. Degree-Day Calculations* ([http://www.eia.gov/forecasts/steo/special/pdf/2012\\_sp\\_04.pdf](http://www.eia.gov/forecasts/steo/special/pdf/2012_sp_04.pdf)) for more information.

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

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

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

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

## Appendix to the October 2021 Short-Term Energy Outlook

This appendix is prepared in fulfillment of section 1245(d)(4)(A) of the National Defense Authorization Act (NDAA) for Fiscal Year 2012, as amended. The law requires the U.S. Energy Information Administration (EIA), the statistical and analytical agency within the U.S. Department of Energy, to submit to Congress a report on the availability and price of petroleum and petroleum products produced in countries other than Iran in the two-month period preceding the submission of the report. By law, EIA's data, analyses, and forecasts are independent of approval by any other officer or employee of the U.S. Government. The data in this appendix, therefore, should not be construed as representing those of the U.S. Department of Energy or other federal agencies.

EIA consulted with the U.S. Department of the Treasury, the U.S. Department of State, and the intelligence community in the process of developing the NDAA report, which was previously published as a stand-alone report. Detailed background and contextual information not repeated here can be found in [early editions of the NDAA report](#).

This appendix is published in the *Short-Term Energy Outlook* in even numbered months.

**Table a1. Summary of Estimated Petroleum and Other Liquids Quantities**

	Aug 2021	Sept 2021	Aug 2021 – Sept 2021 Average	Aug 2020 – Sept 2020 Average	2018 - 2020 Average
<b>Global Petroleum and Other Liquids (million barrels per day)</b>					
Global Petroleum and Other Liquids Production (a)	96.1	96.7	96.4	91.4	98.5
Global Petroleum and Other Liquids Consumption (b)	98.5	99.3	98.9	93.7	97.9
Biofuels Production (c)	3.1	3.2	3.1	3.1	2.7
Biofuels Consumption (c)	2.6	2.6	2.6	2.6	2.6
Iran Liquid Fuels Production	3.6	3.6	3.6	2.9	3.6
Iran Liquid Fuels Consumption	1.7	1.9	1.8	1.7	1.8
<b>Petroleum and Petroleum Products Produced and Consumed in Countries Other Than Iran (million barrels per day)</b>					
Production (d)	89.5	89.9	89.7	85.3	92.2
Consumption (d)	94.2	94.8	94.5	89.4	93.5
Production minus Consumption	-4.7	-4.9	-4.8	-4.1	-1.3
World Inventory Net Withdrawals Including Iran	2.4	2.6	2.5	2.4	-0.7
Estimated OECD Inventory Level (e) (million barrels)	2,811	2,786	2,798	3,188	2,943
<b>Surplus Production Capacity (million barrels per day)</b>					
OPEC Surplus Crude Oil Production Capacity (f)	6.8	6.4	6.6	7.6	3.4

Note: The term "petroleum and other liquids" encompasses crude oil, lease condensate, natural gas liquids, biofuels, coal-to-liquids, gas-to-liquids, and refinery processing gains, which are important to consider in concert due to the inter-related supply, demand, and price dynamics of petroleum, petroleum products, and related fuels.

(a) Production includes crude oil (including lease condensates), natural gas liquids, other liquids, and refinery processing gains.

(b) Consumption of petroleum by the OECD countries is synonymous with "products 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.

(c) Biofuels production and consumption are based on EIA estimates as published in the International Energy Statistics. Biofuels production in the third quarter tends to be at its highest level in the year as ethanol production in Brazil reaches its seasonal peak and is typically lowest in the first quarter as seasonal production falls in the South/South-Central region of Brazil.

(d) Global production of petroleum and petroleum products outside of Iran is derived by subtracting biofuels production and Iran liquid fuels production from global liquid fuels production. The same method is used to calculate global consumption outside of Iran.



(e) Estimated inventory level is for OECD countries only.

(f) EIA defines surplus oil production capacity as potential oil production that could be brought online within 30 days and sustained for at least 90 days, consistent with sound business practices. This does not include oil production increases that could not be sustained without degrading the future production capacity of a field.

Source: U.S. Energy Information Administration.

**Table a2. Crude Oil and Petroleum Product Price Data**

Item			Aug 2021 – Sept 2021	Aug 2020 - Sept 2020	2018 - 2020
	Aug 2021	Sept 2021	Average	Average	Average
Brent Front Month Futures Price (\$ per barrel)	70.51	74.88	72.64	43.45	59.69
WTI Front Month Futures Price (\$ per barrel)	67.71	71.54	69.58	41.01	53.76
Dubai Front Month Futures Price (\$ per barrel)	69.31	72.85	71.04	42.92	59.01
Brent 1st - 13th Month Futures Spread (\$ per barrel)	4.72	6.02	5.35	15.82	1.01
WTI 1st - 13th Month Futures Spread (\$ per barrel)	4.86	5.60	5.22	10.31	0.57
RBOB Front Month Futures Price (\$ per gallon)	2.23	2.16	2.20	1.22	1.61
Heating Oil Front Month Futures Price (\$ per gallon)	2.07	2.20	2.13	1.18	1.76
RBOB - Brent Futures Crack Spread (\$ per gallon)	0.55	0.38	0.47	0.19	0.19
Heating Oil - Brent Futures Crack Spread (\$ per gallon)	0.39	0.42	0.40	0.15	0.34

(a) Brent refers to Brent crude oil traded on the Intercontinental Exchange (ICE).

(b) WTI refers to West Texas Intermediate crude oil traded on the New York Mercantile Exchange (NYMEX), owned by Chicago Mercantile Exchange (CME) Group.

(c) RBOB refers to *reformulated blendstock for oxygenate blending traded on the NYMEX*.

Source: U.S. Energy Information Administration, based on Chicago Mercantile Exchange (CME), Intercontinental Exchange (ICE), and Dubai Mercantile Exchange (DME).