

# **Short-Term Energy Outlook**

**STEO**



## Overview

U.S. energy market indicators	2021	2022	2023
<b>Brent crude oil spot price</b> (dollars per barrel)	<b>\$70.89</b>	<b>\$101.48</b>	<b>\$92.36</b>
<b>Retail gasoline price</b> (dollars per gallon)	<b>\$3.02</b>	<b>\$3.99</b>	<b>\$3.51</b>
<b>U.S. crude oil production</b> (million barrels per day)	<b>11.25</b>	<b>11.87</b>	<b>12.34</b>
<b>Natural gas price at Henry Hub</b> (dollars per million British thermal units)	<b>\$3.91</b>	<b>\$6.48</b>	<b>\$5.43</b>
<b>U.S. liquefied natural gas gross exports</b> (billion cubic feet per day)	<b>9.8</b>	<b>10.6</b>	<b>12.3</b>
<b>Shares of U.S. electricity generation</b>			
Natural gas	37%	39%	37%
Coal	23%	20%	19%
Renewables	20%	22%	24%
Nuclear	20%	19%	20%
<b>U.S. GDP</b> (percentage change)	<b>5.9%</b>	<b>1.8%</b>	<b>0.1%</b>
<b>U.S. CO<sub>2</sub> emissions</b> (billion metric tons)	<b>4.90</b>	<b>4.98</b>	<b>4.85</b>

Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, December 2022

- Global oil inventories in our forecast fall by 0.2 million barrels per day (b/d) in the first half of 2023 (1H23) before rising by almost 0.7 million b/d in 2H23. This forecast leaves global oil inventories higher at the end of 2023 than we had forecast in the November STEO, which results in our Brent crude oil price forecast averaging \$92 per barrel (b) in 2023, \$3/b less than we had forecast last month.
- U.S. refinery utilization in our forecast remains near its five-year average through 2023. We expect the combination of a slight contraction in the U.S. economy and refinery maximization of distillate fuel production will reduce distillate prices in 1H23. We forecast U.S. diesel refining margins will fall by 19% in 2023 compared with 2022. However, the EU's ban on seaborne imports of petroleum products from Russia creates supply and price uncertainty for distillate markets in early 2023.
- We expect natural gas prices to increase from November levels as a result of both higher winter natural gas demand and rising LNG exports. Our forecast for the Henry Hub spot price averages more than \$6.00 per million British thermal units (MMBtu) in 1Q23, up from November's monthly average of about \$5.50/MMBtu. We expect natural gas prices will begin declining after January as U.S. storage levels move closer to the previous five-year average, largely as a result of rising U.S. natural gas production. However, the possibility of price volatility remains high.
- We raised our forecast for U.S. natural gas production by almost 1% in 2023 compared with last month's forecast. Although we continue to expect natural gas production in the Permian Basin

to be limited early in 2023 by the lack of pipeline capacity to bring associated natural gas production to market, we expect that these constraints will be resolved earlier than we had previously assumed. This change also contributes to slightly more crude oil production in 2023 than we had previously forecast.

- Freeport LNG [announced](#) its export terminal will resume partial operations exporting liquefied natural gas (LNG) in mid-December following an outage that began in June 2022. We expect Freeport LNG will ramp up utilization in the coming months and will reach full capacity by March 2023.
- The highest forecasted electricity prices for this winter are in ISO New England, where we expect on-peak wholesale power prices will average more than \$200 per megawatt-hour in January, up 35% from January 2022. Capacity constraints on pipelines delivering natural gas into New England make it likely that wholesale electricity prices will be set by relatively expensive imported LNG or fuel oil.
- The December STEO includes a contraction in U.S. economic activity in the fourth quarter of 2022 (4Q22) and 1Q23, which represents a slightly shorter and milder period of economic contraction than in last month's STEO. Uncertainty in macroeconomic conditions could significantly affect energy markets in the forecast period. Based on the S&P Global macroeconomic model, we assume U.S. GDP will remain flat in 2023.

#### Notable forecast changes

Current forecast: December 6, 2022; previous forecast: November 8, 2022	2022	2023
<b>Natural gas production (current)</b> (billion cubic feet per day)	<b>98.1</b>	<b>100.4</b>
Previous forecast	98.1	99.7
Percentage change	0.1%	0.7%
<b>U.S. coal production (current)</b> (million short tons)	<b>592.7</b>	<b>539.2</b>
Previous forecast	595.3	573.2
Percentage change	-0.4%	-5.9%
<b>Brent spot average (current)</b> (dollars per barrel)	<b>\$101</b>	<b>\$92</b>
Previous	\$102	\$95
Change	-0.6%	-3.1%
<b>Global oil inventory change (current)</b> (million barrels per day)	<b>0.2</b>	<b>0.2</b>
Previous	0.1	-0.3
Change	0.1	0.5
<b>U.S. Distillate fuel inventories (current)</b> (million barrels)	<b>122.5</b>	<b>123.9</b>
Previous forecast	116.8	115.6
Percentage change	4.9%	7.2%
<b>Diesel fuel prices (current)</b> (dollars per gallon)	<b>\$5.05</b>	<b>\$4.48</b>
Previous forecast	\$5.09	\$4.65
Percentage change	-0.8%	-3.8%

Data source: Energy Information Administration, *Short-Term Energy Outlook*, December 2022

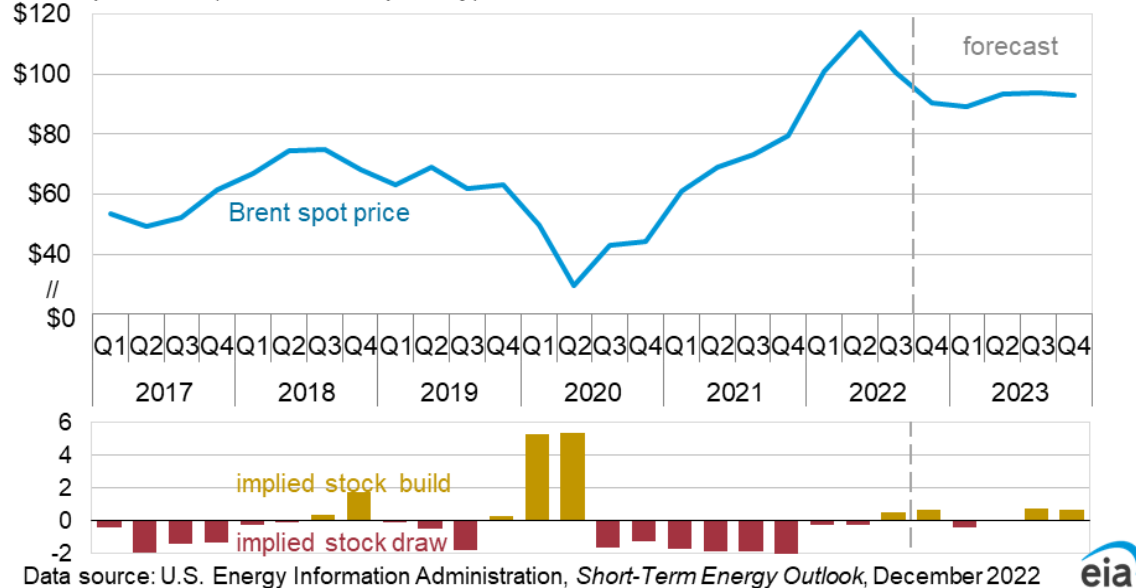
## Global oil markets

**Crude oil prices:** The spot price of Brent crude oil averaged \$91 per barrel (b) in November. Although the average November Brent price was slightly lower than in October, daily spot prices reached almost \$100/b on November 7, before ending the month at \$86/b. The price declines were largely the result of market concerns about global economic growth, as well as COVID-related lockdowns in China that have reduced China’s oil demand. Brent crude oil spot prices are on pace to average \$101/b in 2022.

Despite the recent drop in crude oil prices, we still expect that falling global inventories of oil in early 2023 will push Brent prices back above \$90/b by the beginning of the second quarter of 2023 (2Q23). Although we expect some downward oil price pressure could emerge in the second half of 2023 (2H23) based on our forecast of rising oil inventories, that pressure will likely be balanced by the ongoing possibility of supply disruptions or production growth that is slower than our forecast. We forecast the Brent crude oil spot price will average \$92/b for all of 2023.

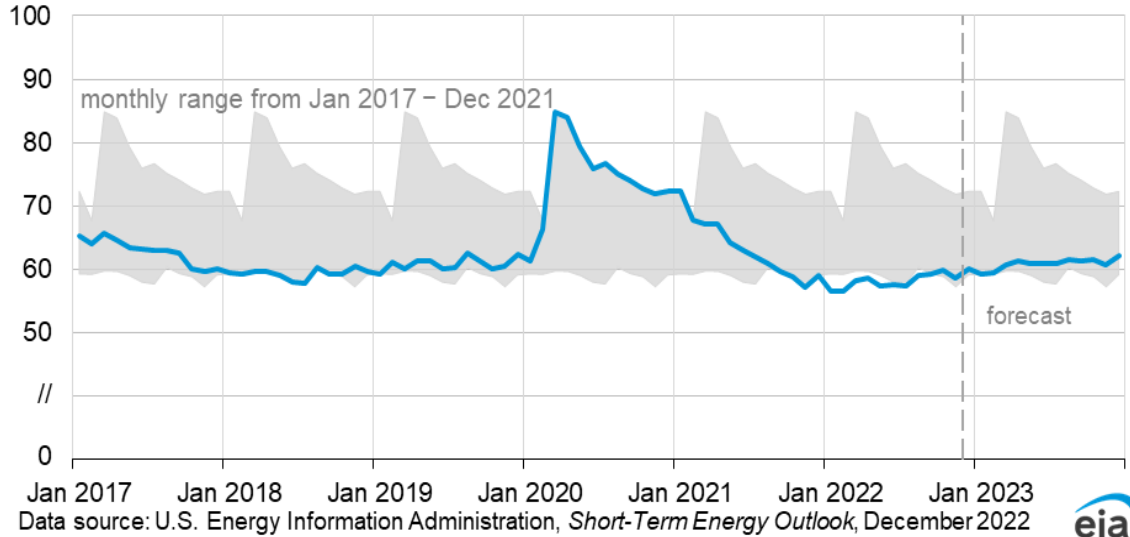
### Brent crude oil spot price and global inventory changes

dollars per barrel (million barrels per day)



**Total petroleum inventories:** Although we estimate that petroleum inventories have increased thus far in 2H22, commercial petroleum inventories in OECD countries spent most of 2022 at their lowest levels in five years on a days-of-supply basis, and we expect that they will remain near the bottom of their recent five-year (2017–2021) range throughout 2023. Given relatively low global petroleum inventories and the necessary time and magnitude of inventory builds needed to replenish them, the market has limited slack during the forecast period, and any unplanned supply disruption has the potential to increase oil prices quickly and significantly.

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



Significant uncertainty remains around the impact that sanctions on Russia will have on global oil prices. The EU ban on seaborne imports of crude oil from Russia took effect on December 5, and the ban on petroleum product imports is set to begin on February 5. The EU and UK have indicated that they will continue to allow non-member countries that participate in the [G7's price cap](#) to access EU and UK based shipping insurance to import crude oil and petroleum products from Russia. We expect that most of Russia's crude oil exports that will no longer go to Europe will find a destination elsewhere. However, we expect Russia's oil production will continue to decline in 2023, largely because a number of countries will decrease their imports of crude oil and petroleum products from Russia.

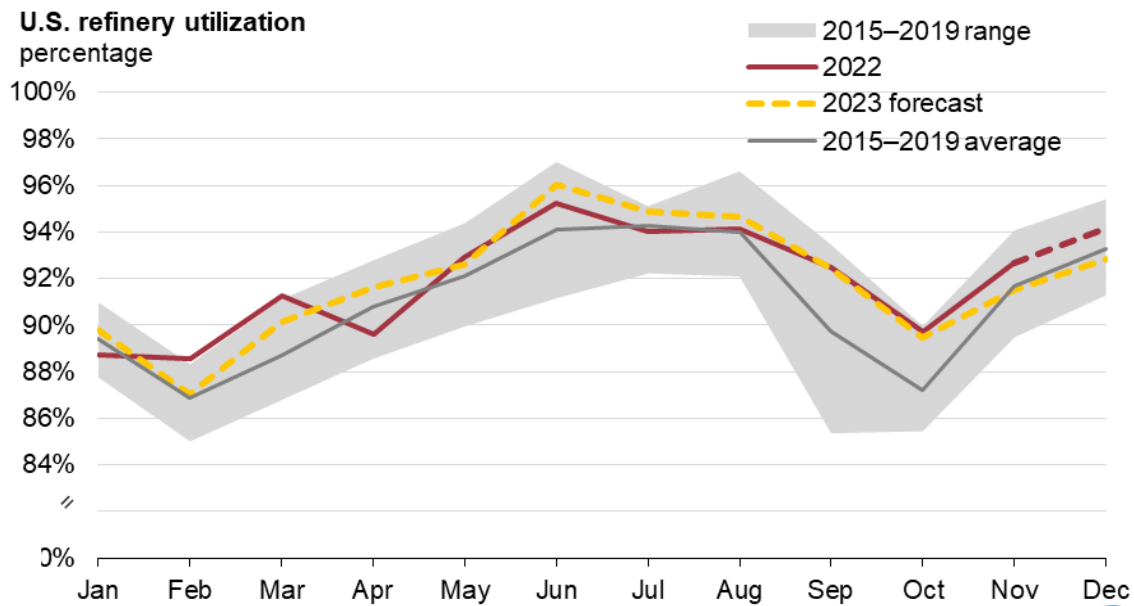
The U.S. Department of the Treasury [issued General License \(GL\) 41 at the end of November](#), allowing Chevron to resume oil production in Venezuela for export to the United States. This issuance introduces additional uncertainty related to our oil production forecast for Venezuela. Chevron's ability to increase production will depend on the state of production facilities, which have yet to be evaluated. We have raised our outlook for Venezuela's production starting in 1Q23.

## Petroleum products

**Refinery utilization:** On average, U.S. refinery utilization has been higher in 2022 than its pre-pandemic five-year (2015–2019) average, and we estimate that this year's November utilization of 93% was slightly above the pre-pandemic five-year average for the month. According to our [Weekly Petroleum Status Report \(WPSR\)](#), refineries on the East Coast (PADD 1) operated at more than 100% of capacity during the last two weeks of October and all of November. The utilization of more than 100% is partially the result of an increase in capacity that was updated in our [September PSM](#) but not reflected in WPSR, leading to the reported operable capacity amount to be lower than actual in October and November. Also, our calculation of refinery utilization can briefly exceed 100% because we calculate it as gross inputs of crude oil divided by refinery capacity in [barrels per calendar day](#), which is designed to

account for realistic operating conditions such as allowing for down time. With refinery utilization back up to pre-pandemic levels and [relatively weak demand](#), product inventories increased in November, contributing to decreasing gasoline and distillate prices.

[The United States has less refining capacity](#) than during the pre-pandemic years, which means similar levels of utilization will result in less refinery output than in previous years. We forecast utilization will remain within the pre-pandemic five-year range in 2023, and average near the 2022 utilization of 92%. We also expect new refinery capacity to be added in the first half of 2023 (1H23) with the expansion of ExxonMobil’s Beaumont refinery.



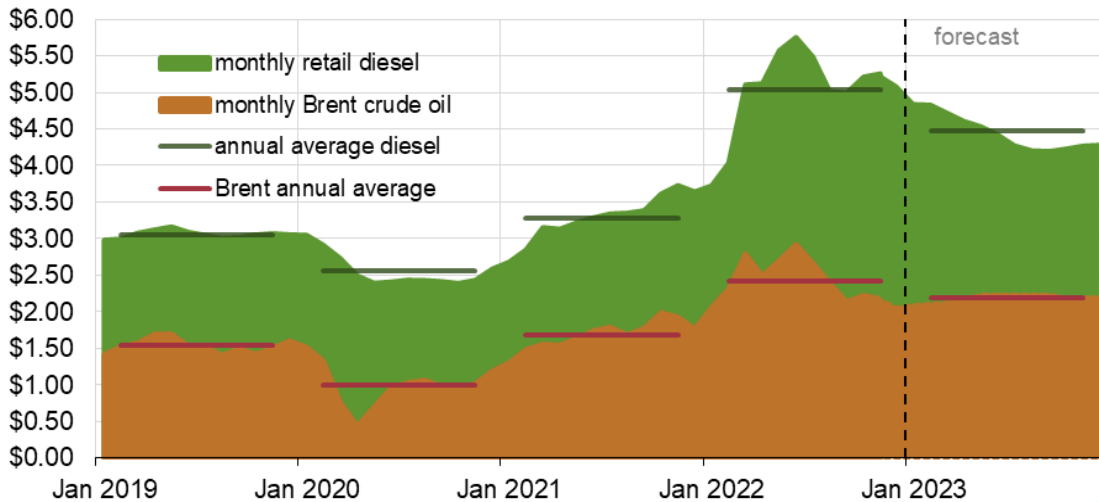
Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, December 2022

**Distillate:** The retail diesel price on December 5 was \$4.97 per gallon (gal), down 35 cents/gal from October 31. We expect that high refinery utilization will allow U.S. retail diesel prices to continue to decrease in December 2022 and to fall further in 1H23, averaging about \$4.50/gal next year.

Most of our forecast price decrease from 2022 to 2023 results from lower distillate refinery margins, which moderate beginning in early 2023 based on our expectation that distillate demand will decline in 2023 as production of distillate fuel increases. Although we expect the diesel refinery margin to decrease 19% in 2023 from 2022, we still expect it to be more than double 2021 levels.

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

dollars per gallon



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, December 2022, and Refinitiv, an LSEG business



With higher-than-average refinery margins and high crude oil prices, we expect 2023 retail diesel prices to remain relatively high, albeit not as high as in 2022, as U.S. distillate inventories remain at or near multiyear lows through the end of our forecast. Ongoing constraints on global refining capacity will continue to limit distillate supplies and inventory builds during this time. Furthermore, [the EU's ban](#) on seaborne refined product imports from Russia beginning in February 2023 will keep supplies particularly tight in the Atlantic Basin.

**Gasoline:** We forecast U.S. retail gasoline prices will average about \$3.50/gal in 2023. U.S. retail gasoline prices finished November at their lowest price since February 2022, as high refinery utilization and falling demand contributed to rising gasoline inventories, which facilitated November's price decreases. As refiners maintain high utilization in response to high distillate margins, we expect this trend to continue and for gasoline inventories to reach five-year average levels in 2023, limiting upward pressure on gasoline prices. We expect high blend rates of fuel ethanol through 2023 as the petroleum component of gasoline remains relatively expensive compared with the price of ethanol, continuing the trend that started [this summer](#).

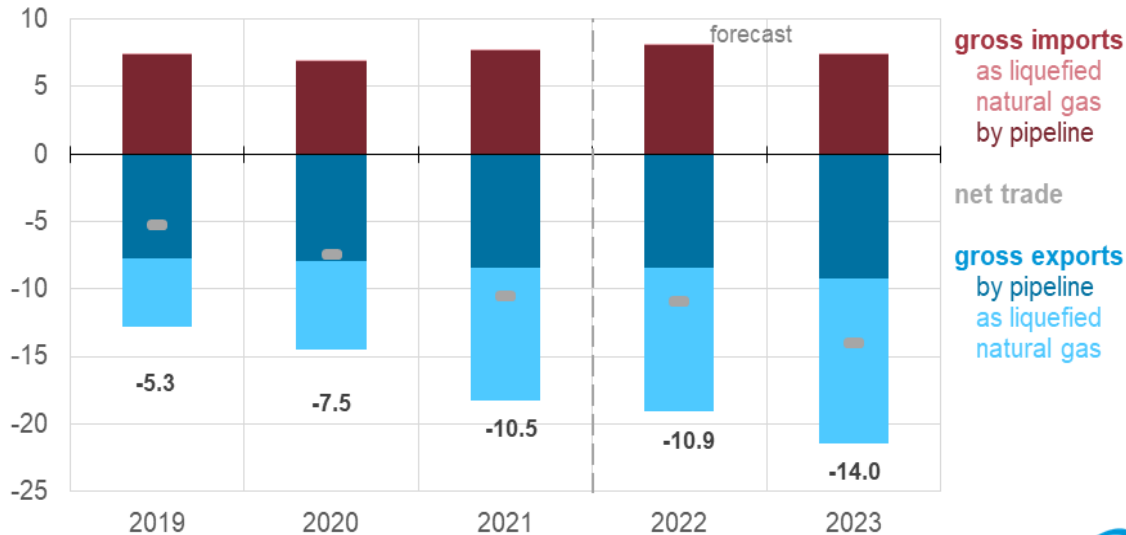
## Natural gas

**Natural gas trade:** We forecast U.S. natural gas exports to increase in 2023, driven largely by growth in LNG exports. U.S. LNG exports peaked in the first half of 2022 (1H22) as facilities operated close to maximum capacity, and a new facility, Calcasieu Pass, [came online](#) and steadily increased output in 2022. However, [a fire at Freeport LNG in June](#) resulted in the shutdown of the facility, removing about 2.0 billion cubic feet per day (Bcf/d) of U.S. LNG export capacity in 2H22. The Freeport facility [recently announced](#) plans to come back online in December and to increase output to about 2.0 Bcf/d in January 2023. When Freeport LNG resumes, we forecast U.S. LNG exports will establish a new record close to 12.5 Bcf/d in March 2023. We expect LNG exports will then reach 12.7 Bcf/d by the end of 2023.

No new U.S. LNG export facilities are scheduled to come online in 2023. We forecast U.S. LNG exports will average 12.3 Bcf/d throughout 2023 as facilities continue to operate close to maximum capacity to meet high demand for natural gas in Europe and Asia.

### U.S. annual natural gas trade

billion cubic feet per day



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, December 2022



Natural gas pipeline exports reached almost 9.0 Bcf/d in November, near its previous record. We forecast natural gas pipeline exports will reach record highs between 9.0 Bcf/d and 10.0 Bcf/d through the upcoming winter months. Natural gas pipeline exports from the United States flow to either Canada or Mexico.

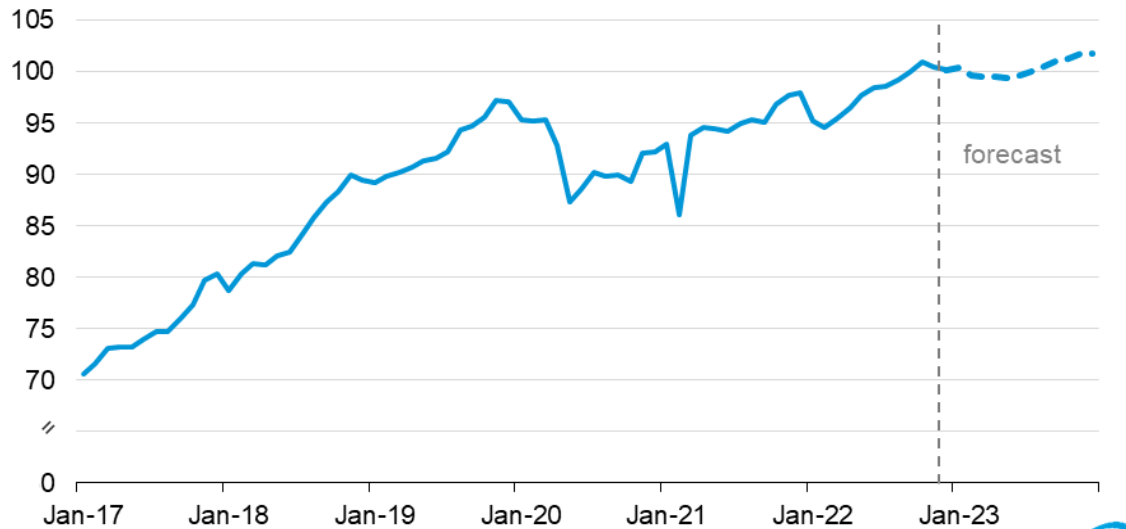
**Natural gas production:** We forecast that U.S. production of dry natural gas will average about 100.0 Bcf/d from December through March, down about 0.5 Bcf/d from November due to weather-related declines, usually caused by freeze-offs and the possibility of extreme winter weather events. Mild weather in key producing regions could prevent those declines.


Dry natural gas production has increased during 2022 in the United States, averaging more than 100 Bcf/d in October and November and exceeding pre-pandemic monthly production records from 2019. Growth in natural gas production was driven by increased drilling activity in the [Haynesville region](#) in Louisiana and East Texas and in the [Permian region](#) in West Texas and Southeast New Mexico. Recent pipeline infrastructure expansions in both these regions facilitated the increases in production.



### U.S. dry natural gas production

billion cubic feet per day



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, December 2022 

We forecast production to grow slightly in 2023, averaging between 100 Bcf/d and 101 Bcf/d for the year, about 2% more than in 2022. Production in our forecast for 1H23 is limited by pipeline constraints and declining [natural gas prices](#). In 2H23, [more pipeline infrastructure expansion projects](#) are set to come online and contribute to increases in dry natural gas production. The pace at which these projects are completed is a notable uncertainty in our forecast, and delays could result in lower production than we expect.

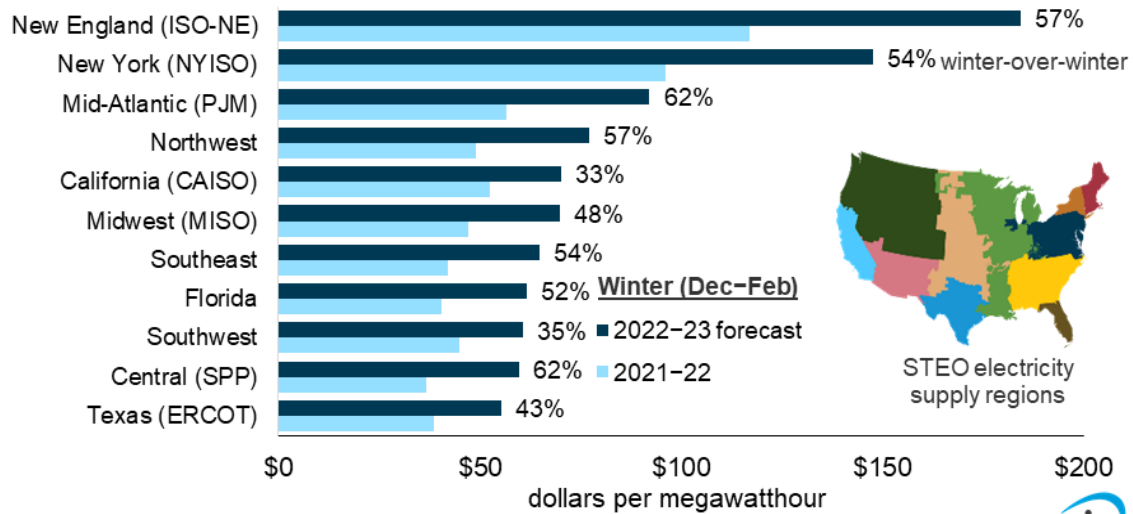
## Electricity, coal, and renewables

**Electricity prices:** We forecast wholesale prices for on-peak power to rise in all areas of the country during the winter months as the weather becomes colder. Increases in wholesale electricity prices this winter (December–February) range from 33% higher than last winter in California (CAISO) to more than 60% higher in the mid-Atlantic (PJM) and central (SPP) regions.

Forecast on-peak wholesale prices for most regions generally average between \$60 and \$80 per megawatthour (MWh) between December and February. We expect the highest wholesale prices to occur in New England, where prices could average in excess of \$180/MWh, with winter peaks of more than \$200/MWh. We also expect high prices in New York (NYISO) and in mid-Atlantic (PJM) markets. However, if significant market stressors occur, such as periods of extreme cold weather or fuel supply problems, wholesale prices could be significantly higher than forecast.

We also forecast retail electricity prices to be higher this winter. However, retail prices grow less than wholesale prices because of regulatory and contractual factors that vary widely across the United States. The U.S. residential electricity price in the core winter months from December through February averages 14.5 cents per kilowatthour, which is 6% higher than last winter. Price increases range from almost no change in the West North Central region to 18% in New England.

**Average on-peak wholesale electricity prices for STEO electricity supply regions, winter 2021–22 and winter 2022–23**

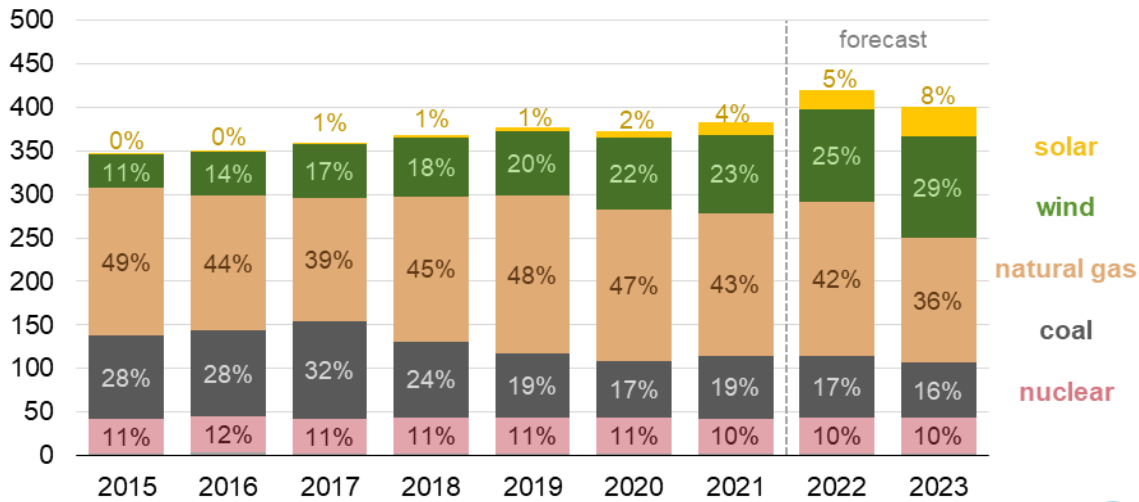


Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, December 2022

**Electricity generation:** Despite our forecast decline in natural gas prices in 2023, we expect the share of U.S. electric power generation supplied by natural gas will fall from 39% this year to 37% in 2023 as more renewable generating capacity comes online. We estimate that wind and solar combined account for 14% of U.S. generation in 2022, and we forecast that share will grow to 16% in 2023. Increasing generation from renewable energy, along with retirements reducing the available capacity of coal-fired power plants, contribute to our forecast that coal’s generation share will fall from 20% this year to 19% in 2023.

The Texas region (ERCOT) is likely to experience the largest shift in generation mix in 2023. We expect that the share of electric power generation from wind in ERCOT will grow from 25% in 2022 to 29% in 2023 and that the solar share will grow from 5% to 8%. ERCOT’s share of generation from coal in the forecast falls from 17% this year to 16% in 2023. But we expect growing generation from renewables, especially during peak hours, will cause the natural gas share to fall from 42% in 2022 to 36% in 2023.

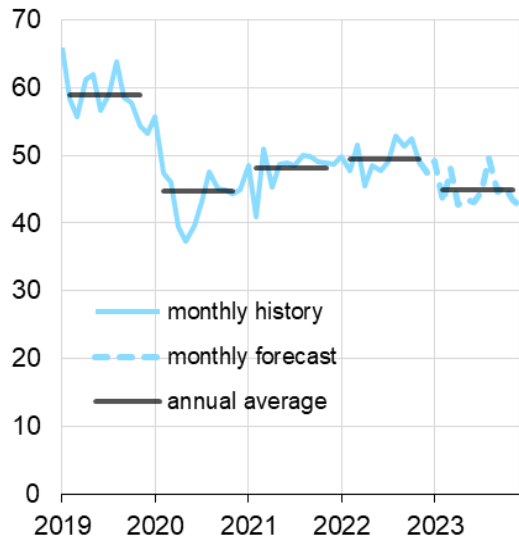
**Electric Reliability Council of Texas (ERCOT) electricity generation by energy source, 2015–2023**  
billion kilowatthours



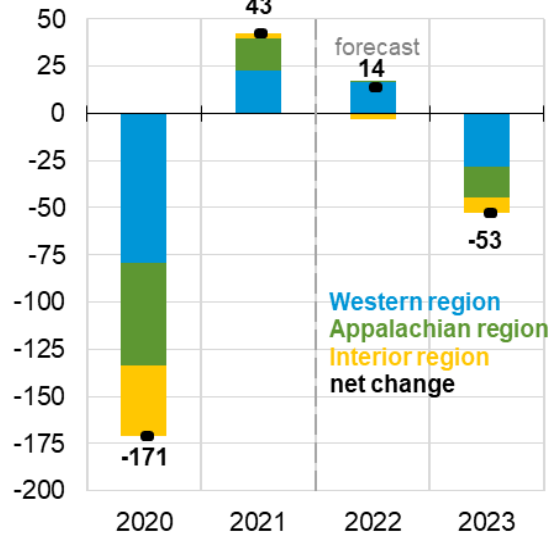
Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, December 2022

**Coal markets:** After increasing in both 2021 and 2022, we expect U.S. coal production to decline by 9% to less than 540 million short tons (MMst) in 2023. The primary reason for the decrease is our forecast of a 7% reduction in coal use by the electric power sector. That decline largely reflects almost 12 gigawatts (GW) of coal-fired capacity retirements in 2022 and another 9 GW in 2023. Those plant closures represent about 10% of the existing U.S. coal-fired generating fleet. Lower natural gas prices and growth in renewable resources also will reduce coal use by the electric power sector.

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



**Components of annual change**  
million short tons



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, December 2022

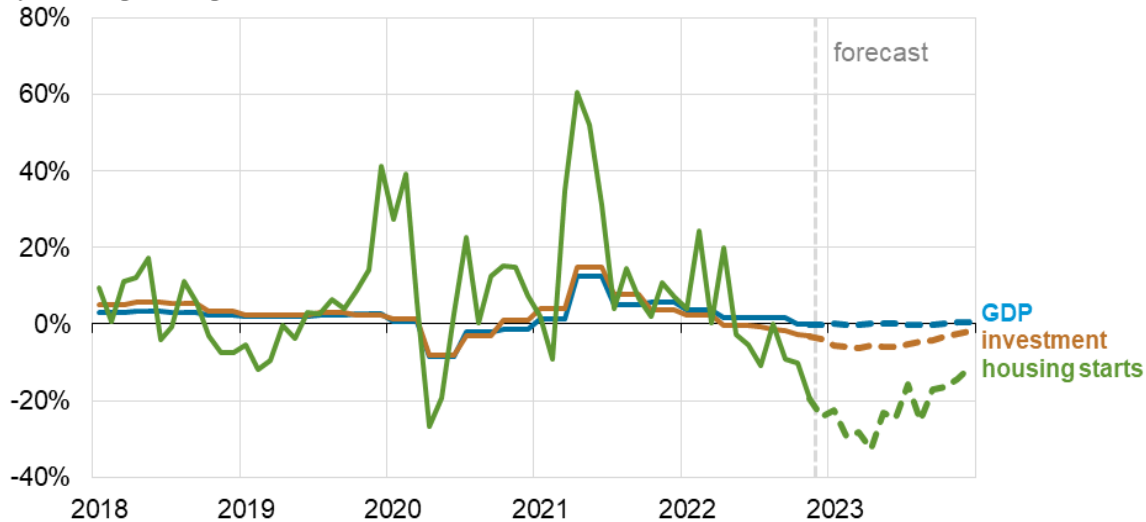
## Economy, weather, and CO<sub>2</sub>

**U.S. macroeconomics:** We base our U.S. macroeconomic forecasts on S&P Global’s macroeconomic model. We incorporate STEO energy price forecasts into the model to obtain the final macroeconomic assumptions.

S&P Global forecasts a milder and shorter contraction in U.S. economic activity compared with last month’s forecast. The upward revision in U.S. economic activity reflects the recent [GDP data release for 3Q22](#) and Consumer Price Index inflation in October. On an annual basis, we assume U.S. real GDP will remain relatively flat in 2023 after economic activity declines quarter over quarter between 4Q22 and 1Q23. The forecast is primarily driven by [real private fixed investment](#), which declines by 5% in 2023. A large component of this decline occurs in the residential sector, which has fallen due to slowing demand for housing. As a result, housing starts decline by more than 20% in 2023 in our assumptions, which will limit overall energy consumption growth in the United States in 2023.

### Year-over-year change in GDP, private investment, and housing starts

percentage change



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, December 2022



**Emissions:** We forecast energy-related CO<sub>2</sub> emissions have increased slightly in the United States during 2022, driven by more consumption of natural gas and petroleum and partly offset by less coal consumption. Our forecast of natural gas emissions increase the most as a result of rising demand for that fuel in the electric power sector. Increases in CO<sub>2</sub> emissions from petroleum use reflect increased travel following the pandemic as well as increased industrial activity. We expect fossil fuel consumption (and related emissions) to decline in 2023 by almost 3%.

We expect U.S. energy consumption to grow faster than CO<sub>2</sub> emissions in 2022, and to fall more slowly than emissions in 2023. This reflects a decrease in our projected carbon intensity of energy—the emissions output per unit of energy consumed—of around 1% in 2022 and around 2% in 2023.

**Weather:** In October and November, U.S. population-weighted heating degree days (HDDs) were 13% more than last year and 4% more than the 10-year average. Based on forecasts from the National Oceanic and Atmospheric Administration, we expect the entire winter (October–March) to be colder than last winter, with 7% more HDDs in the United States compared with last winter and 2% more than the 10-year average.

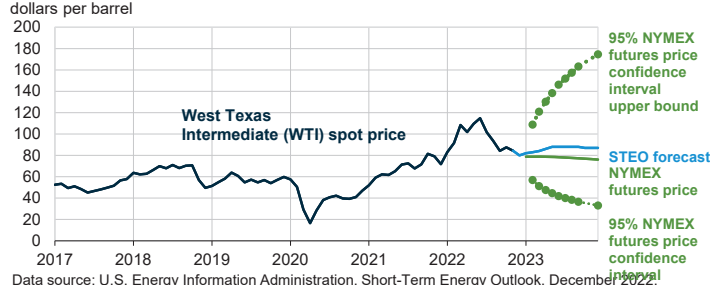
The U.S. Energy Information Administration (EIA), the statistical and analytical agency within the U.S. Department of Energy (DOE), prepared this report. By law, our data, analyses, and forecasts are independent of approval by any other officer or employee of the U.S. Government. The views in this report do not represent those of DOE or any other federal agencies.

# Short-Term Energy Outlook Chart Gallery



December 6, 2022

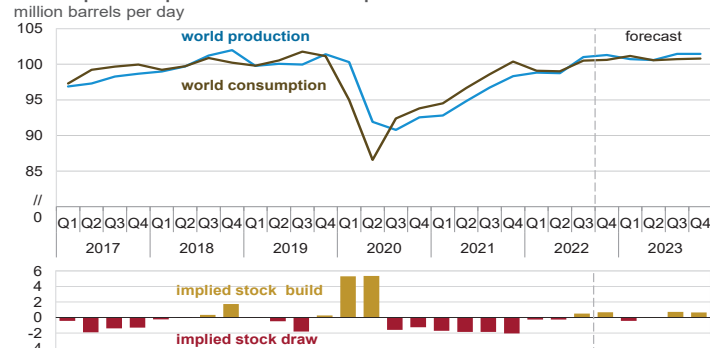
**West Texas Intermediate (WTI) crude oil price and NYMEX confidence intervals**



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022, CME Group, Bloomberg, L.P., and Refinitiv an LSEG Business  
 Note: Confidence interval derived from options market information for the five trading days ending December 1, 2022. Intervals not calculated for months with sparse trading in near-the-money options contracts.

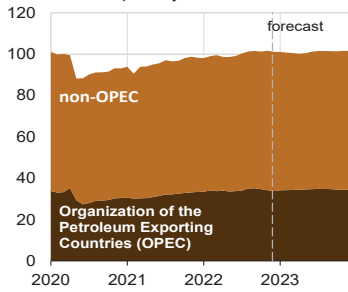


**World liquid fuels production and consumption balance**

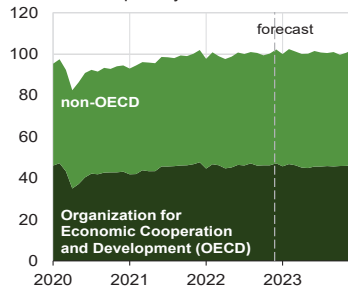


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022 eia

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

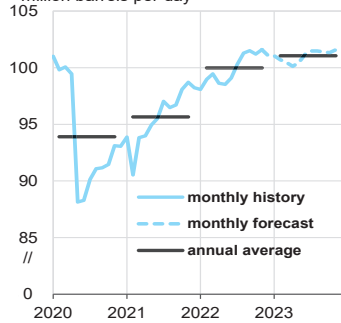


**World liquid fuels consumption**  
million barrels per day

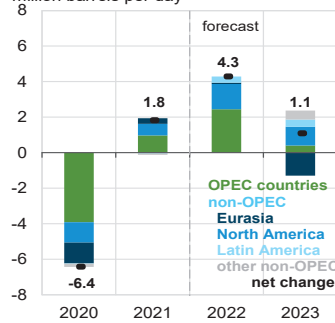


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022

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

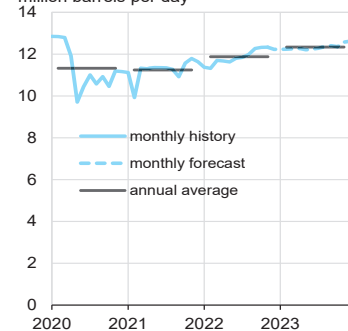


**Components of annual change**  
million barrels per day

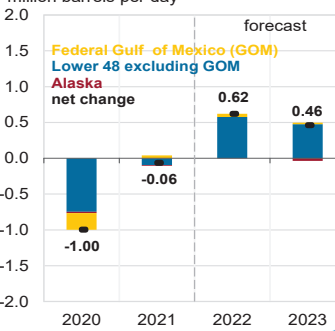


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022

**U.S. crude oil production**  
million barrels per day

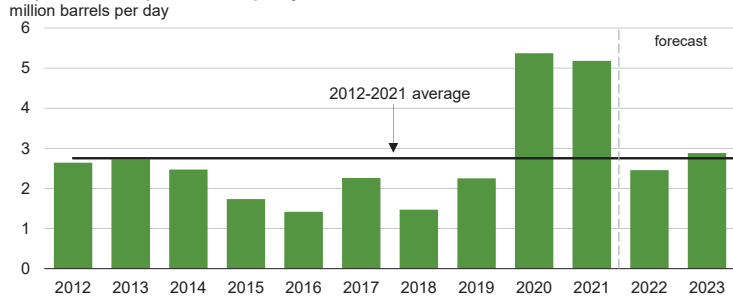


**Components of annual change**  
million barrels per day



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022

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

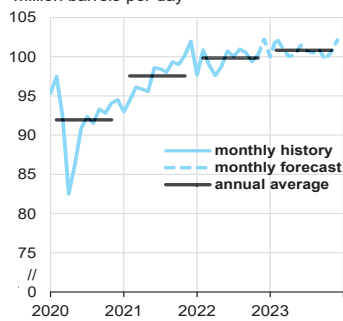


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022

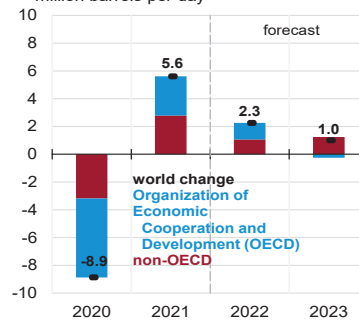
Note: Black line represents 2012-2021 average (2.8 million barrels per day).



**World liquid fuels consumption**



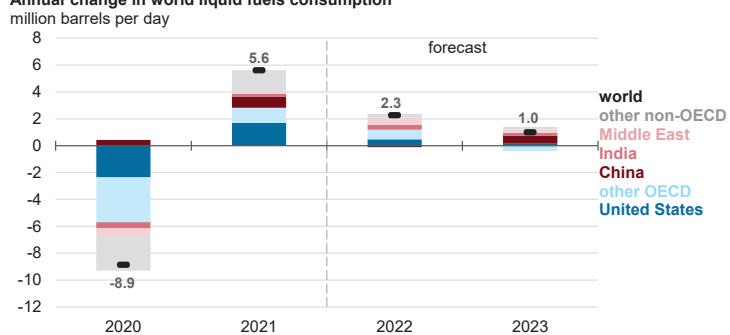
**Components of annual change**



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022



**Annual change in world liquid fuels consumption**



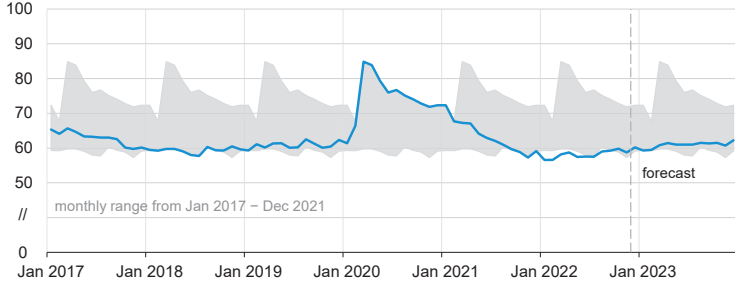
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022





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

days of supply

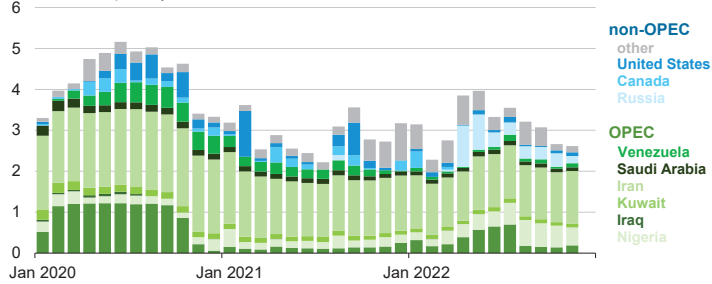


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022



**Estimated unplanned liquid fuels production outages among OPEC and non-OPEC producers**

million barrels per day

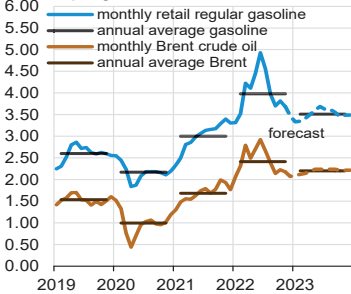


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022



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

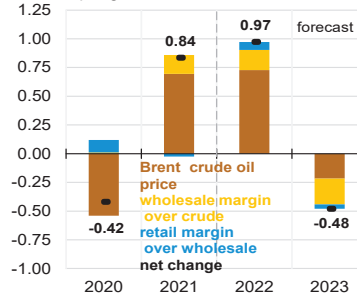
dollars per gallon



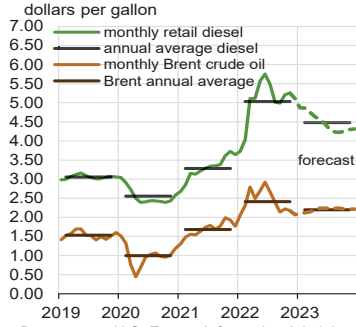
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022, and Refinitiv an LSEG Business

**Components of annual gasoline price changes**

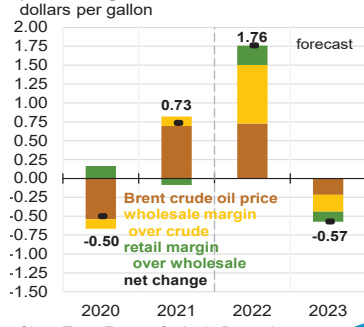
dollars per gallon



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



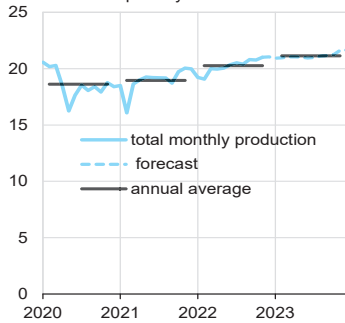
**Components of annual diesel price changes**



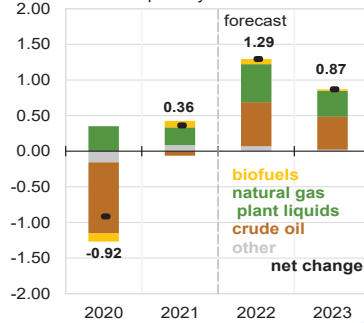
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022, and Refinitiv an LSEG Business



**U.S. crude oil and liquid fuels production**



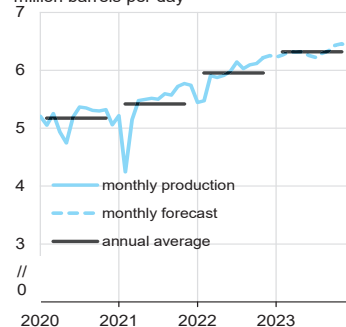
**Components of annual change**



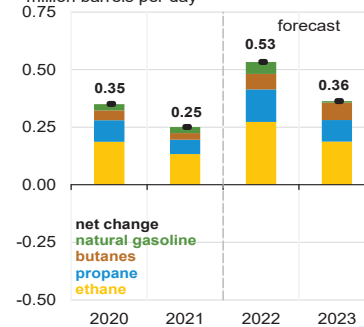
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022



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



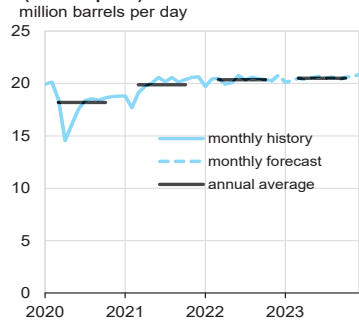
**Components of annual change**



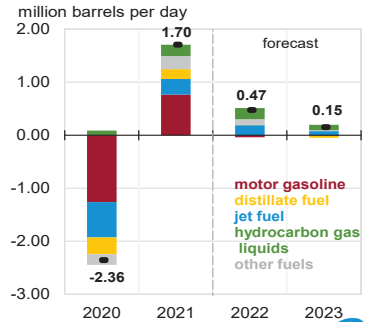
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022



**U.S. liquid fuels product supplied (consumption)**

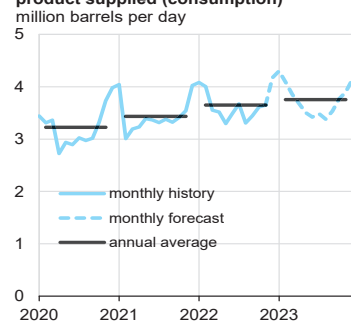


**Components of annual change**

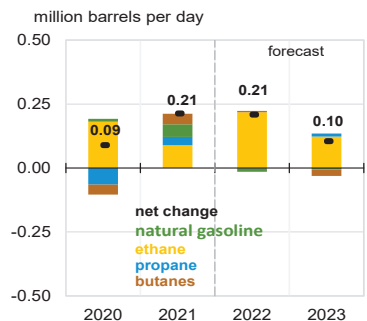


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022

**U.S. hydrocarbon gas liquids product supplied (consumption)**

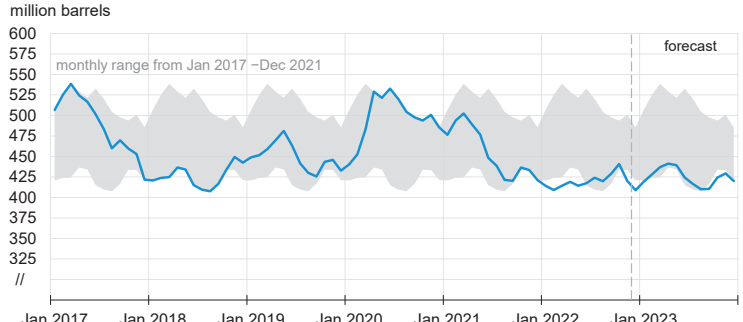


**Components of annual change**



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022

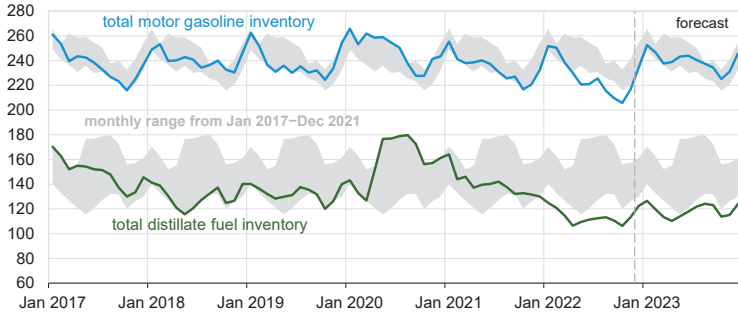
**U.S. commercial crude oil inventories**



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022

### U.S. gasoline and distillate inventories

million barrels

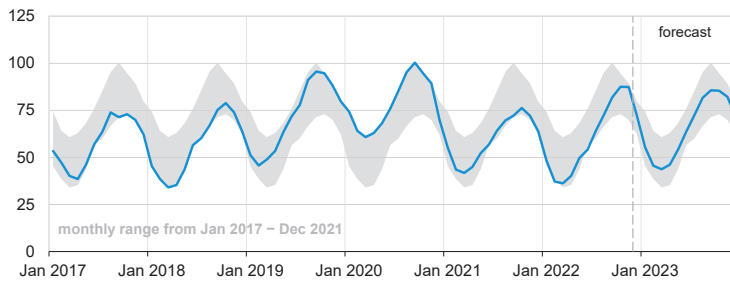


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022



### U.S. commercial propane inventories

million barrels



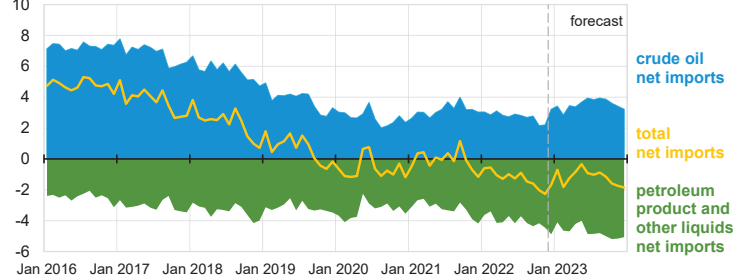
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022

Note: Excludes propylene.



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

million barrels per day

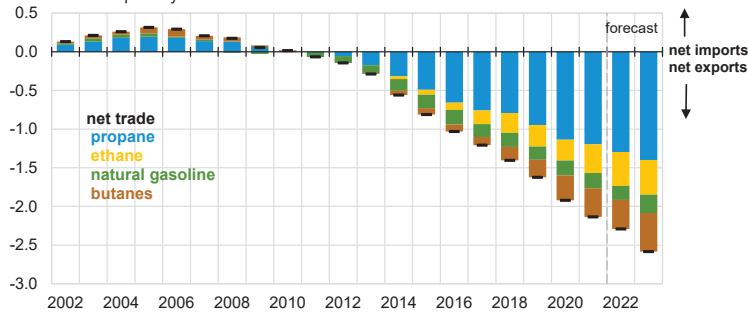


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022

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.



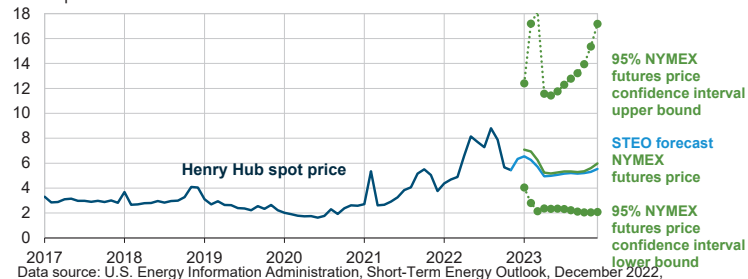
**U.S. net trade of hydrocarbon gas liquids (HGL)**  
million barrels per day



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022



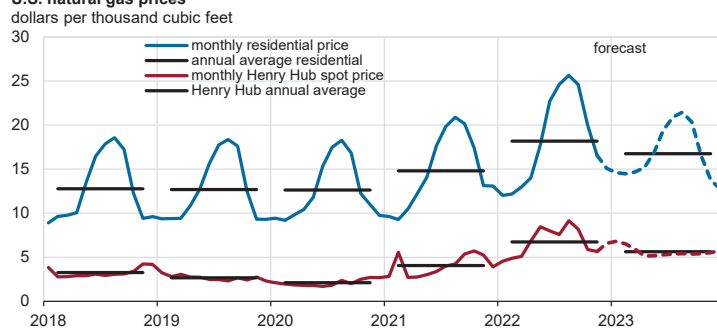
**Henry Hub natural gas price and NYMEX confidence intervals**  
dollars per million British thermal units



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022, CME Group, and Refinitiv an LSEG Business  
Note: Confidence interval derived from options market information for the five trading days ending December 1, 2022. Intervals not calculated for months with sparse trading in near-the-money options contracts.



**U.S. natural gas prices**  
dollars per thousand cubic feet

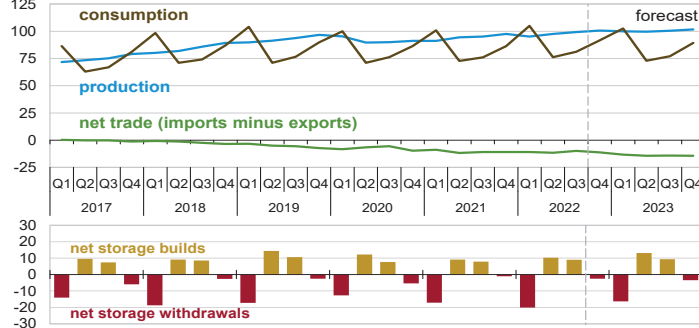


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022, and Refinitiv an LSEG Business



**U.S. natural gas production, consumption, and net imports**

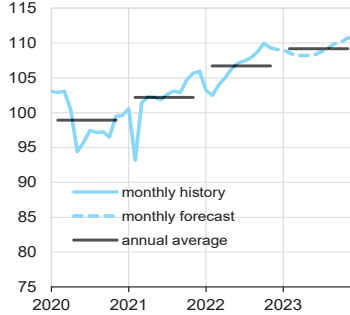
billion cubic feet per day



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022

**U.S. marketed natural gas production**

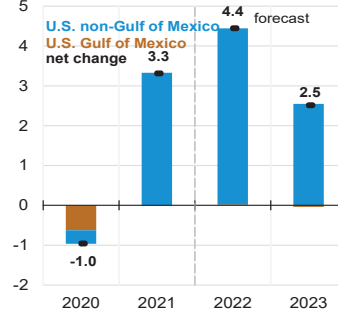
billion cubic feet per day



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022

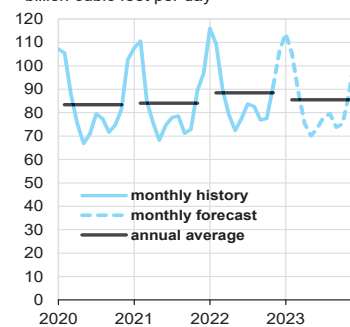
**Components of annual change**

billion cubic feet per day



**U.S. natural gas consumption**

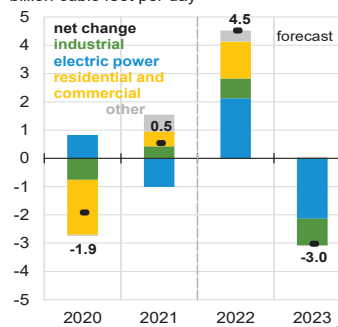
billion cubic feet per day



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022

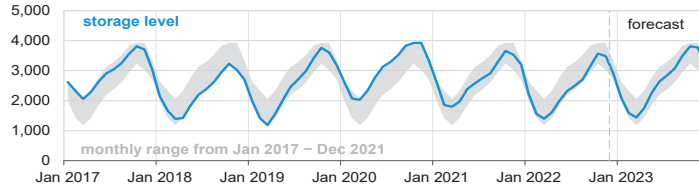
**Components of annual change**

billion cubic feet per day

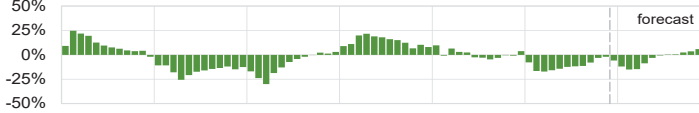


**U.S. working natural gas in storage**

billion cubic feet



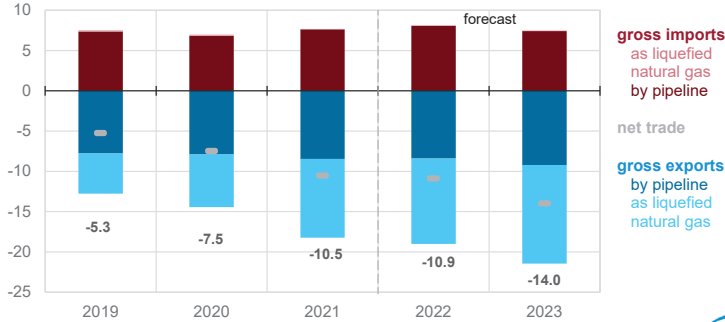
**Percentage deviation from 2017 – 2021 average**



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022 **eia**

**U.S. annual natural gas trade**

billion cubic feet per day

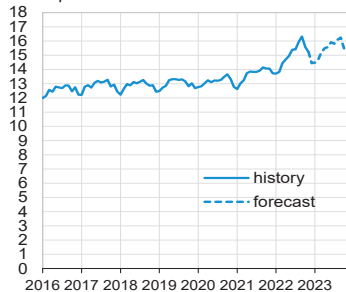


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022



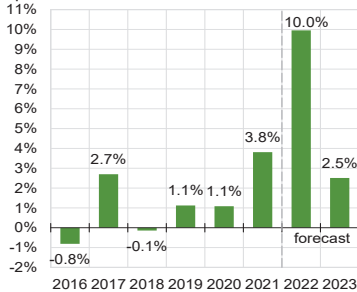
**U.S. monthly nominal residential electricity price**

cents per kilowatthour



**Annual growth in nominal residential electricity prices**

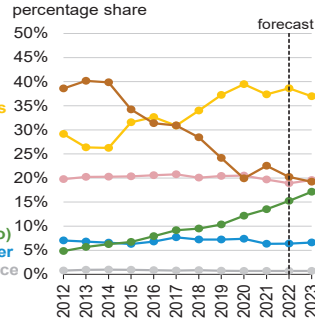
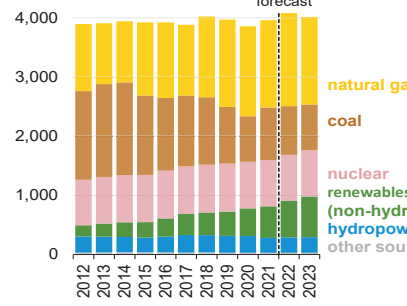
percent



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022

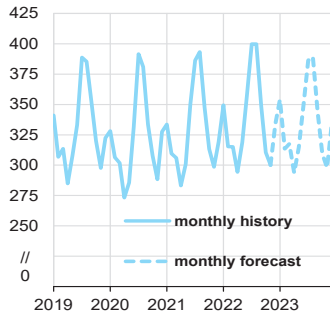


**U.S. electricity generation by source, all sectors**  
billion kilowatthours

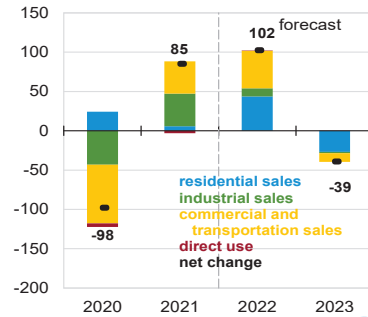


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022 **eia**

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

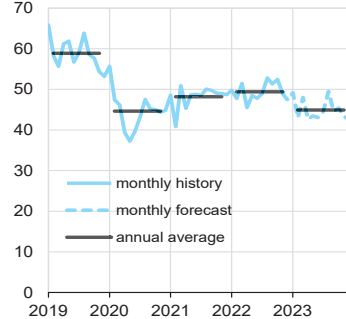


**Components of annual change**  
billion kilowatthours

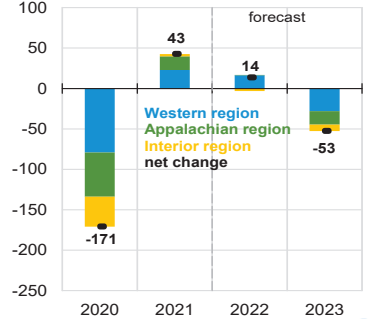


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022 **eia**

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



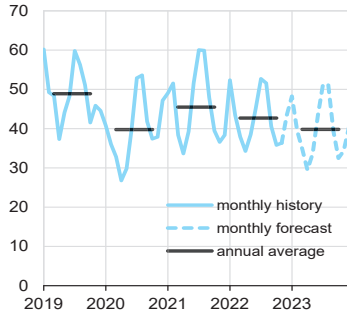
**Components of annual change**  
million short tons



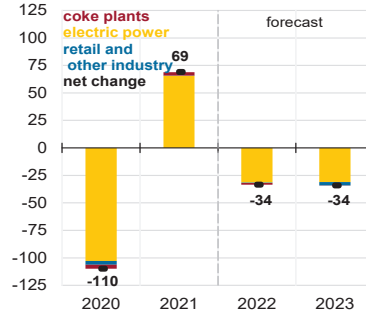
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022 **eia**



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

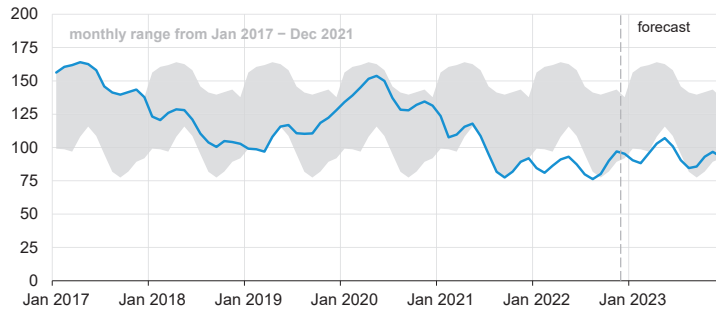


**Components of annual change**  
million short tons



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022

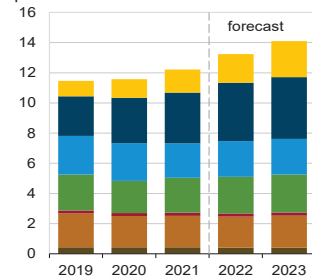
**U.S. electric power coal inventories**  
million short tons



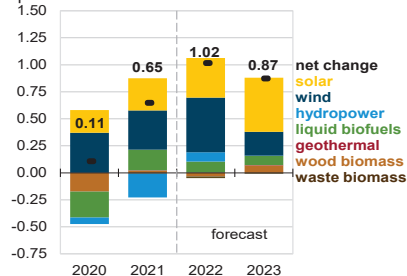
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022



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



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

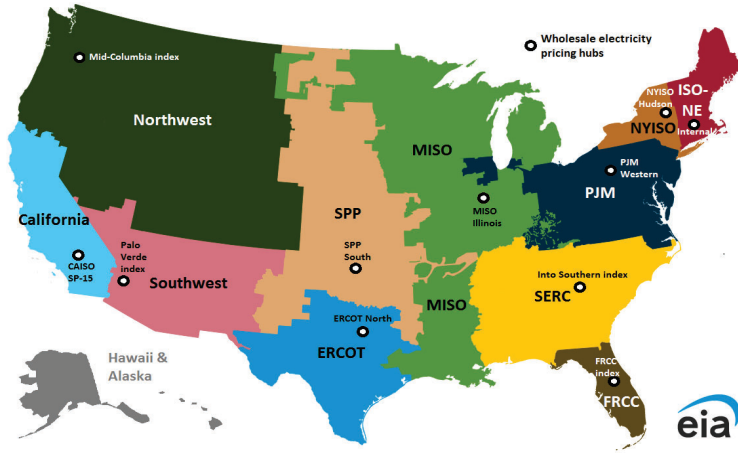


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022

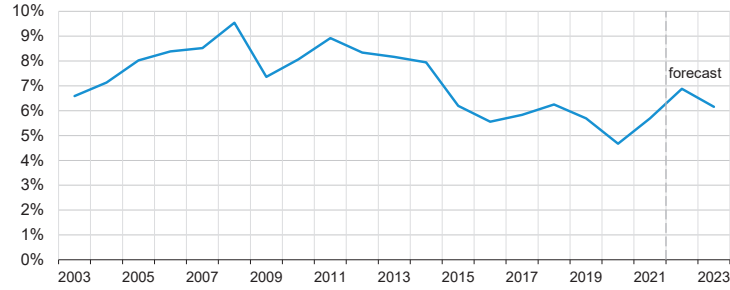
Note: Hydropower excludes pumped storage generation. Liquids include ethanol, biodiesel, renewable diesel, other biofuels, and biofuel losses and coproducts. Waste biomass includes municipal waste from biogenic sources, landfill gas, and non-wood waste.



Short-Term Energy Outlook electricity supply regions



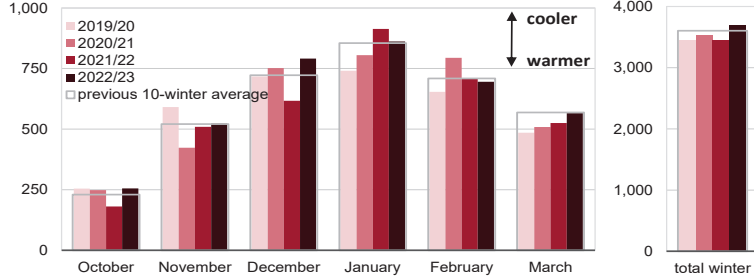
U.S. annual energy expenditures share of gross domestic product



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022



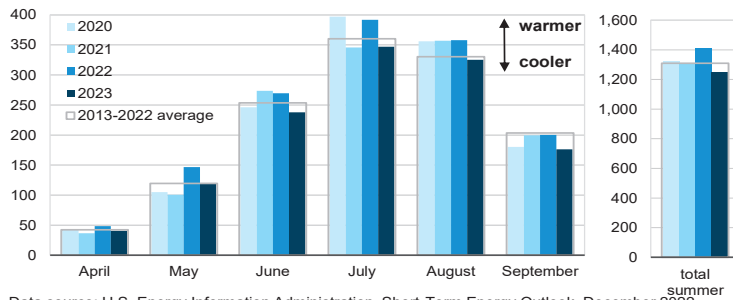
U.S. winter heating degree days population-weighted




Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022  
 Note: EIA calculations based on National Oceanic and Atmospheric Administration (NOAA) data. Projections reflect NOAA's 14-16 month outlook.

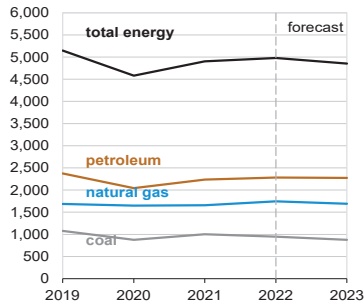


**U.S. summer cooling degree days**  
population-weighted

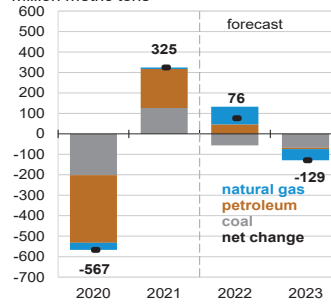



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022  
 Note: EIA calculations based on National Oceanic and Atmospheric Administration (NOAA) data. Projections reflect NOAA's 14-16 month outlook. 

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



**Components of annual change**  
million metric tons



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, December 2022 

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

U.S. Energy Information Administration | Short-Term Energy Outlook - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>Energy Production</b>															
Crude Oil Production (a) (million barrels per day) .....	<b>10.82</b>	<b>11.34</b>	<b>11.18</b>	<b>11.66</b>	<b>11.47</b>	<b>11.70</b>	<b>12.03</b>	<i>12.29</i>	<i>12.24</i>	<i>12.24</i>	<i>12.34</i>	<i>12.51</i>	<b>11.25</b>	<i>11.87</i>	<i>12.34</i>
Dry Natural Gas Production (billion cubic feet per day) .....	<b>91.14</b>	<b>94.43</b>	<b>95.14</b>	<b>97.49</b>	<b>95.10</b>	<b>97.59</b>	<b>99.21</b>	<i>100.54</i>	<i>99.87</i>	<i>99.52</i>	<i>100.49</i>	<i>101.60</i>	<b>94.57</b>	<i>98.13</i>	<i>100.38</i>
Coal Production (million short tons) .....	<b>140</b>	<b>143</b>	<b>148</b>	<b>147</b>	<b>149</b>	<b>142</b>	<b>153</b>	<i>149</i>	<i>140</i>	<i>129</i>	<i>139</i>	<i>131</i>	<b>578</b>	<i>593</i>	<i>539</i>
<b>Energy Consumption</b>															
Liquid Fuels (million barrels per day) .....	<b>18.58</b>	<b>20.13</b>	<b>20.30</b>	<b>20.54</b>	<b>20.22</b>	<b>20.27</b>	<b>20.47</b>	<i>20.48</i>	<i>20.30</i>	<i>20.53</i>	<i>20.49</i>	<i>20.71</i>	<b>19.89</b>	<i>20.36</i>	<i>20.51</i>
Natural Gas (billion cubic feet per day) .....	<b>100.80</b>	<b>72.82</b>	<b>75.94</b>	<b>86.30</b>	<b>104.89</b>	<b>76.27</b>	<b>81.14</b>	<i>91.63</i>	<i>102.46</i>	<i>72.88</i>	<i>77.14</i>	<i>89.33</i>	<b>83.90</b>	<i>88.42</i>	<i>85.40</i>
Coal (b) (million short tons) .....	<b>139</b>	<b>125</b>	<b>168</b>	<b>114</b>	<b>134</b>	<b>118</b>	<b>145</b>	<i>116</i>	<i>122</i>	<i>106</i>	<i>142</i>	<i>107</i>	<b>546</b>	<i>512</i>	<i>478</i>
Electricity (billion kilowatt hours per day) .....	<b>10.55</b>	<b>10.26</b>	<b>12.25</b>	<b>10.12</b>	<b>10.89</b>	<b>10.67</b>	<b>12.49</b>	<i>10.26</i>	<i>10.95</i>	<i>10.53</i>	<i>12.17</i>	<i>10.23</i>	<b>10.80</b>	<i>11.08</i>	<i>10.97</i>
Renewables (c) (quadrillion Btu) .....	<b>2.94</b>	<b>3.17</b>	<b>2.97</b>	<b>3.13</b>	<b>3.35</b>	<b>3.55</b>	<b>3.16</b>	<i>3.19</i>	<i>3.46</i>	<i>3.84</i>	<i>3.38</i>	<i>3.43</i>	<b>12.21</b>	<i>13.24</i>	<i>14.11</i>
Total Energy Consumption (d) (quadrillion Btu) .....	<b>25.26</b>	<b>23.28</b>	<b>24.66</b>	<b>24.70</b>	<b>26.56</b>	<b>23.88</b>	<b>25.01</b>	<i>25.24</i>	<i>26.15</i>	<i>23.74</i>	<i>24.74</i>	<i>25.16</i>	<b>97.91</b>	<i>100.69</i>	<i>99.79</i>
<b>Energy Prices</b>															
Crude Oil West Texas Intermediate Spot (dollars per barrel) .....	<b>58.09</b>	<b>66.19</b>	<b>70.61</b>	<b>77.27</b>	<b>95.18</b>	<b>108.93</b>	<b>93.07</b>	<i>83.91</i>	<i>83.03</i>	<i>87.40</i>	<i>88.00</i>	<i>87.00</i>	<b>68.21</b>	<i>95.22</i>	<i>86.36</i>
Natural Gas Henry Hub Spot (dollars per million Btu) .....	<b>3.56</b>	<b>2.94</b>	<b>4.36</b>	<b>4.77</b>	<b>4.66</b>	<b>7.48</b>	<b>7.99</b>	<i>5.82</i>	<i>6.17</i>	<i>5.00</i>	<i>5.18</i>	<i>5.35</i>	<b>3.91</b>	<i>6.48</i>	<i>5.43</i>
Coal (dollars per million Btu) .....	<b>1.91</b>	<b>1.92</b>	<b>2.03</b>	<b>2.05</b>	<b>2.18</b>	<b>2.26</b>	<b>2.50</b>	<i>2.49</i>	<i>2.50</i>	<i>2.50</i>	<i>2.50</i>	<i>2.46</i>	<b>1.98</b>	<i>2.36</i>	<i>2.49</i>
<b>Macroeconomic</b>															
Real Gross Domestic Product (billion chained 2012 dollars - SAAR) .....	<b>19,216</b>	<b>19,544</b>	<b>19,673</b>	<b>20,006</b>	<b>19,924</b>	<b>19,895</b>	<b>20,022</b>	<i>19,997</i>	<i>19,911</i>	<i>19,914</i>	<i>19,984</i>	<i>20,080</i>	<b>19,610</b>	<i>19,960</i>	<i>19,972</i>
Percent change from prior year .....	<b>1.2</b>	<b>12.5</b>	<b>5.0</b>	<b>5.7</b>	<b>3.7</b>	<b>1.8</b>	<b>1.8</b>	<i>0.0</i>	<i>-0.1</i>	<i>0.1</i>	<i>-0.2</i>	<i>0.4</i>	<b>5.9</b>	<i>1.8</i>	<i>0.1</i>
GDP Implicit Price Deflator (Index, 2012=100) .....	<b>116.2</b>	<b>118.0</b>	<b>119.8</b>	<b>121.8</b>	<b>124.2</b>	<b>126.9</b>	<b>128.2</b>	<i>129.4</i>	<i>130.4</i>	<i>131.3</i>	<i>132.2</i>	<i>133.1</i>	<b>118.9</b>	<i>127.2</i>	<i>131.8</i>
Percent change from prior year .....	<b>2.4</b>	<b>4.4</b>	<b>5.0</b>	<b>6.1</b>	<b>6.9</b>	<b>7.6</b>	<b>7.0</b>	<i>6.3</i>	<i>5.0</i>	<i>3.5</i>	<i>3.1</i>	<i>2.9</i>	<b>4.5</b>	<i>6.9</i>	<i>3.6</i>
Real Disposable Personal Income (billion chained 2012 dollars - SAAR) .....	<b>17,325</b>	<b>15,921</b>	<b>15,735</b>	<b>15,537</b>	<b>15,109</b>	<b>15,052</b>	<b>15,108</b>	<i>15,248</i>	<i>15,430</i>	<i>15,525</i>	<i>15,670</i>	<i>15,785</i>	<b>16,130</b>	<i>15,129</i>	<i>15,602</i>
Percent change from prior year .....	<b>14.5</b>	<b>-4.4</b>	<b>-1.5</b>	<b>-0.4</b>	<b>-12.8</b>	<b>-5.5</b>	<b>-4.0</b>	<i>-1.9</i>	<i>2.1</i>	<i>3.1</i>	<i>3.7</i>	<i>3.5</i>	<b>1.9</b>	<i>-6.2</i>	<i>3.1</i>
Manufacturing Production Index (Index, 2017=100) .....	<b>96.9</b>	<b>98.3</b>	<b>99.2</b>	<b>100.6</b>	<b>101.5</b>	<b>102.4</b>	<b>102.9</b>	<i>103.0</i>	<i>102.7</i>	<i>102.3</i>	<i>102.4</i>	<i>103.0</i>	<b>98.8</b>	<i>102.5</i>	<i>102.6</i>
Percent change from prior year .....	<b>-0.8</b>	<b>15.8</b>	<b>5.1</b>	<b>4.5</b>	<b>4.8</b>	<b>4.2</b>	<b>3.8</b>	<i>2.4</i>	<i>1.2</i>	<i>-0.1</i>	<i>-0.5</i>	<i>0.0</i>	<b>5.8</b>	<i>3.8</i>	<i>0.1</i>
<b>Weather</b>															
U.S. Heating Degree-Days .....	<b>2,107</b>	<b>472</b>	<b>51</b>	<b>1,307</b>	<b>2,148</b>	<b>492</b>	<b>54</b>	<i>1,569</i>	<i>2,124</i>	<i>494</i>	<i>75</i>	<i>1,553</i>	<b>3,937</b>	<i>4,263</i>	<i>4,246</i>
U.S. Cooling Degree-Days .....	<b>50</b>	<b>410</b>	<b>902</b>	<b>128</b>	<b>46</b>	<b>464</b>	<b>950</b>	<i>91</i>	<i>44</i>	<i>398</i>	<i>849</i>	<i>93</i>	<b>1,490</b>	<i>1,552</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 December 1, 2022.

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 S&P Global 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 - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>Crude Oil</b> (dollars per barrel)															
West Texas Intermediate Spot Average .....	<b>58.09</b>	<b>66.19</b>	<b>70.61</b>	<b>77.27</b>	<b>95.18</b>	<b>108.93</b>	<b>93.07</b>	<i>83.91</i>	<i>83.03</i>	<i>87.40</i>	<i>88.00</i>	<i>87.00</i>	<b>68.21</b>	<i>95.22</i>	<i>86.36</i>
Brent Spot Average .....	<b>61.12</b>	<b>68.91</b>	<b>73.45</b>	<b>79.42</b>	<b>101.17</b>	<b>113.84</b>	<b>100.53</b>	<i>90.55</i>	<i>89.03</i>	<i>93.40</i>	<i>94.00</i>	<i>93.00</i>	<b>70.89</b>	<i>101.48</i>	<i>92.36</i>
U.S. Imported Average .....	<b>55.29</b>	<b>64.75</b>	<b>68.42</b>	<b>73.66</b>	<b>89.85</b>	<b>107.23</b>	<b>93.02</b>	<i>80.65</i>	<i>80.25</i>	<i>84.64</i>	<i>85.25</i>	<i>84.25</i>	<b>65.92</b>	<i>92.93</i>	<i>83.73</i>
U.S. Refiner Average Acquisition Cost .....	<b>57.14</b>	<b>66.11</b>	<b>70.31</b>	<b>76.36</b>	<b>92.62</b>	<b>109.86</b>	<b>95.66</b>	<i>83.39</i>	<i>82.51</i>	<i>86.86</i>	<i>87.50</i>	<i>86.50</i>	<b>67.83</b>	<i>95.36</i>	<i>85.91</i>
<b>U.S. Liquid Fuels</b> (cents per gallon)															
<b>Refiner Prices for Resale</b>															
Gasoline .....	<b>180</b>	<b>216</b>	<b>232</b>	<b>243</b>	<b>278</b>	<b>376</b>	<b>311</b>	<i>269</i>	<i>244</i>	<i>277</i>	<i>276</i>	<i>262</i>	<b>219</b>	<i>309</i>	<i>265</i>
Diesel Fuel .....	<b>178</b>	<b>204</b>	<b>219</b>	<b>241</b>	<b>301</b>	<b>418</b>	<b>356</b>	<i>368</i>	<i>332</i>	<i>323</i>	<i>307</i>	<i>309</i>	<b>211</b>	<i>362</i>	<i>318</i>
Fuel Oil .....	<b>162</b>	<b>180</b>	<b>197</b>	<b>222</b>	<b>284</b>	<b>419</b>	<b>343</b>	<i>372</i>	<i>327</i>	<i>319</i>	<i>300</i>	<i>304</i>	<b>188</b>	<i>357</i>	<i>321</i>
<b>Refiner Prices to End Users</b>															
Jet Fuel .....	<b>163</b>	<b>182</b>	<b>199</b>	<b>226</b>	<b>283</b>	<b>400</b>	<b>340</b>	<i>329</i>	<i>300</i>	<i>296</i>	<i>292</i>	<i>288</i>	<b>195</b>	<i>340</i>	<i>294</i>
No. 6 Residual Fuel Oil (a) .....	<b>162</b>	<b>181</b>	<b>194</b>	<b>211</b>	<b>252</b>	<b>258</b>	<b>228</b>	<i>201</i>	<i>210</i>	<i>218</i>	<i>223</i>	<i>222</i>	<b>190</b>	<i>235</i>	<i>218</i>
<b>Retail Prices Including Taxes</b>															
Gasoline Regular Grade (b) .....	<b>256</b>	<b>297</b>	<b>316</b>	<b>333</b>	<b>371</b>	<b>450</b>	<b>408</b>	<i>366</i>	<i>336</i>	<i>360</i>	<i>360</i>	<i>347</i>	<b>302</b>	<i>399</i>	<i>351</i>
Gasoline All Grades (b) .....	<b>265</b>	<b>306</b>	<b>325</b>	<b>343</b>	<b>380</b>	<b>460</b>	<b>419</b>	<i>378</i>	<i>349</i>	<i>373</i>	<i>373</i>	<i>361</i>	<b>311</b>	<i>410</i>	<i>365</i>
On-highway Diesel Fuel .....	<b>290</b>	<b>321</b>	<b>336</b>	<b>366</b>	<b>432</b>	<b>549</b>	<b>516</b>	<i>519</i>	<i>482</i>	<i>455</i>	<i>426</i>	<i>429</i>	<b>329</b>	<i>505</i>	<i>448</i>
Heating Oil .....	<b>272</b>	<b>283</b>	<b>297</b>	<b>346</b>	<b>415</b>	<b>555</b>	<b>497</b>	<i>524</i>	<i>475</i>	<i>444</i>	<i>409</i>	<i>424</i>	<b>300</b>	<i>475</i>	<i>448</i>
<b>Natural Gas</b>															
Henry Hub Spot (dollars per thousand cubic feet) .....	<b>3.70</b>	<b>3.06</b>	<b>4.53</b>	<b>4.96</b>	<b>4.84</b>	<b>7.77</b>	<b>8.30</b>	<i>6.04</i>	<i>6.42</i>	<i>5.20</i>	<i>5.38</i>	<i>5.56</i>	<b>4.06</b>	<i>6.74</i>	<i>5.64</i>
Henry Hub Spot (dollars per million Btu) .....	<b>3.56</b>	<b>2.94</b>	<b>4.36</b>	<b>4.77</b>	<b>4.66</b>	<b>7.48</b>	<b>7.99</b>	<i>5.82</i>	<i>6.17</i>	<i>5.00</i>	<i>5.18</i>	<i>5.35</i>	<b>3.91</b>	<i>6.48</i>	<i>5.43</i>
<b>U.S. Retail Prices</b> (dollars per thousand cubic feet)															
Industrial Sector .....	<b>5.77</b>	<b>4.13</b>	<b>5.09</b>	<b>6.82</b>	<b>6.82</b>	<b>8.24</b>	<b>9.26</b>	<i>7.72</i>	<i>7.98</i>	<i>6.44</i>	<i>6.25</i>	<i>6.61</i>	<b>5.50</b>	<i>7.95</i>	<i>6.85</i>
Commercial Sector .....	<b>7.54</b>	<b>8.86</b>	<b>10.14</b>	<b>10.27</b>	<b>10.00</b>	<b>11.71</b>	<b>14.10</b>	<i>12.59</i>	<i>11.66</i>	<i>11.47</i>	<i>11.31</i>	<i>10.16</i>	<b>8.81</b>	<i>11.50</i>	<i>11.13</i>
Residential Sector .....	<b>9.71</b>	<b>13.82</b>	<b>20.27</b>	<b>13.71</b>	<b>12.32</b>	<b>16.57</b>	<b>24.94</b>	<i>16.33</i>	<i>14.58</i>	<i>16.54</i>	<i>20.87</i>	<i>13.68</i>	<b>12.21</b>	<i>15.04</i>	<i>15.06</i>
<b>U.S. Electricity</b>															
<b>Power Generation Fuel Costs</b> (dollars per million Btu)															
Coal .....	<b>1.91</b>	<b>1.92</b>	<b>2.03</b>	<b>2.05</b>	<b>2.18</b>	<b>2.26</b>	<b>2.50</b>	<i>2.49</i>	<i>2.50</i>	<i>2.50</i>	<i>2.50</i>	<i>2.46</i>	<b>1.98</b>	<i>2.36</i>	<i>2.49</i>
Natural Gas .....	<b>7.80</b>	<b>3.31</b>	<b>4.48</b>	<b>5.70</b>	<b>5.95</b>	<b>7.39</b>	<b>8.23</b>	<i>6.29</i>	<i>6.80</i>	<i>5.26</i>	<i>5.40</i>	<i>5.75</i>	<b>5.20</b>	<i>7.11</i>	<i>5.76</i>
Residual Fuel Oil (c) .....	<b>11.29</b>	<b>13.08</b>	<b>14.22</b>	<b>16.12</b>	<b>16.81</b>	<b>26.17</b>	<b>26.53</b>	<i>19.99</i>	<i>18.15</i>	<i>18.62</i>	<i>17.87</i>	<i>17.60</i>	<b>13.67</b>	<i>21.60</i>	<i>18.05</i>
Distillate Fuel Oil .....	<b>13.25</b>	<b>15.67</b>	<b>16.27</b>	<b>18.13</b>	<b>21.23</b>	<b>30.70</b>	<b>26.79</b>	<i>27.76</i>	<i>25.37</i>	<i>24.69</i>	<i>23.47</i>	<i>23.58</i>	<b>15.62</b>	<i>25.65</i>	<i>24.40</i>
<b>Prices to Ultimate Customers</b> (cents per kilowatthour)															
Industrial Sector .....	<b>7.00</b>	<b>6.86</b>	<b>7.52</b>	<b>7.29</b>	<b>7.42</b>	<b>8.41</b>	<b>9.42</b>	<i>7.86</i>	<i>7.71</i>	<i>8.24</i>	<i>9.13</i>	<i>7.76</i>	<b>7.18</b>	<i>8.30</i>	<i>8.23</i>
Commercial Sector .....	<b>10.89</b>	<b>11.04</b>	<b>11.54</b>	<b>11.32</b>	<b>11.63</b>	<b>12.34</b>	<b>13.37</b>	<i>12.14</i>	<i>12.30</i>	<i>12.74</i>	<i>13.55</i>	<i>12.03</i>	<b>11.22</b>	<i>12.42</i>	<i>12.69</i>
Residential Sector .....	<b>12.94</b>	<b>13.81</b>	<b>13.95</b>	<b>13.94</b>	<b>13.97</b>	<b>15.05</b>	<b>15.85</b>	<i>15.03</i>	<i>14.76</i>	<i>15.68</i>	<i>16.04</i>	<i>14.98</i>	<b>13.66</b>	<i>15.02</i>	<i>15.39</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 December 1, 2022.

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 - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>Production (million barrels per day) (a)</b>															
OECD .....	<b>30.25</b>	<b>30.84</b>	<b>31.13</b>	<b>32.23</b>	<b>31.62</b>	<b>31.87</b>	<b>32.50</b>	33.37	33.72	33.44	33.61	34.38	<b>31.12</b>	<i>32.34</i>	<i>33.79</i>
U.S. (50 States) .....	<b>17.79</b>	<b>19.16</b>	<b>19.03</b>	<b>19.91</b>	<b>19.44</b>	<b>20.12</b>	<b>20.57</b>	20.94	20.98	21.01	21.09	21.49	<b>18.98</b>	<i>20.27</i>	<i>21.14</i>
Canada .....	<b>5.62</b>	<b>5.37</b>	<b>5.49</b>	<b>5.68</b>	<b>5.66</b>	<b>5.51</b>	<b>5.71</b>	5.92	5.98	5.69	5.90	6.11	<b>5.54</b>	<i>5.70</i>	<i>5.92</i>
Mexico .....	<b>1.93</b>	<b>1.95</b>	<b>1.90</b>	<b>1.92</b>	<b>1.91</b>	<b>1.89</b>	<b>1.89</b>	1.86	1.90	1.87	1.83	1.79	<b>1.92</b>	<i>1.89</i>	<i>1.85</i>
Other OECD .....	<b>4.91</b>	<b>4.37</b>	<b>4.72</b>	<b>4.71</b>	<b>4.61</b>	<b>4.35</b>	<b>4.33</b>	4.65	4.86	4.88	4.80	4.99	<b>4.68</b>	<i>4.48</i>	<i>4.88</i>
Non-OECD .....	<b>62.56</b>	<b>63.98</b>	<b>65.60</b>	<b>66.11</b>	<b>67.21</b>	<b>66.87</b>	<b>68.52</b>	67.92	67.01	67.14	67.84	67.08	<b>64.57</b>	<i>67.64</i>	<i>67.27</i>
OPEC .....	<b>30.34</b>	<b>30.88</b>	<b>32.28</b>	<b>33.10</b>	<b>33.75</b>	<b>33.76</b>	<b>34.71</b>	34.21	34.26	34.59	34.78	34.42	<b>31.66</b>	<i>34.11</i>	<i>34.52</i>
Crude Oil Portion .....	<b>25.07</b>	<b>25.49</b>	<b>26.84</b>	<b>27.67</b>	<b>28.19</b>	<b>28.33</b>	<b>29.24</b>	28.69	28.67	29.13	29.28	28.89	<b>26.28</b>	<i>28.61</i>	<i>29.00</i>
Other Liquids (b) .....	<b>5.26</b>	<b>5.39</b>	<b>5.44</b>	<b>5.44</b>	<b>5.56</b>	<b>5.43</b>	<b>5.48</b>	5.52	5.59	5.46	5.50	5.54	<b>5.38</b>	<i>5.50</i>	<i>5.52</i>
Eurasia .....	<b>13.42</b>	<b>13.65</b>	<b>13.63</b>	<b>14.27</b>	<b>14.39</b>	<b>13.39</b>	<b>13.58</b>	13.87	13.09	12.14	12.40	12.48	<b>13.74</b>	<i>13.81</i>	<i>12.52</i>
China .....	<b>4.99</b>	<b>5.03</b>	<b>5.01</b>	<b>4.93</b>	<b>5.18</b>	<b>5.18</b>	<b>5.11</b>	5.15	5.21	5.24	5.23	5.27	<b>4.99</b>	<i>5.15</i>	<i>5.24</i>
Other Non-OECD .....	<b>13.80</b>	<b>14.41</b>	<b>14.69</b>	<b>13.80</b>	<b>13.90</b>	<b>14.54</b>	<b>15.11</b>	14.69	14.45	15.18	15.43	14.91	<b>14.18</b>	<i>14.56</i>	<i>15.00</i>
Total World Production .....	<b>92.81</b>	<b>94.82</b>	<b>96.74</b>	<b>98.33</b>	<b>98.83</b>	<b>98.75</b>	<b>101.02</b>	101.29	100.73	100.58	101.45	101.46	<b>95.70</b>	<i>99.98</i>	<i>101.06</i>
Non-OPEC Production .....	<b>62.48</b>	<b>63.94</b>	<b>64.46</b>	<b>65.23</b>	<b>65.08</b>	<b>64.98</b>	<b>66.30</b>	67.08	66.47	65.99	66.67	67.04	<b>64.03</b>	<i>65.87</i>	<i>66.54</i>
<b>Consumption (million barrels per day) (c)</b>															
OECD .....	<b>42.58</b>	<b>44.13</b>	<b>45.87</b>	<b>46.89</b>	<b>45.84</b>	<b>45.45</b>	<b>46.46</b>	46.54	46.24	45.21	45.72	46.14	<b>44.88</b>	<i>46.08</i>	<i>45.83</i>
U.S. (50 States) .....	<b>18.58</b>	<b>20.13</b>	<b>20.30</b>	<b>20.54</b>	<b>20.22</b>	<b>20.27</b>	<b>20.47</b>	20.48	20.30	20.53	20.49	20.71	<b>19.89</b>	<i>20.36</i>	<i>20.51</i>
U.S. Territories .....	<b>0.21</b>	<b>0.19</b>	<b>0.19</b>	<b>0.20</b>	<b>0.22</b>	<b>0.20</b>	<b>0.20</b>	0.21	0.21	0.19	0.20	0.21	<b>0.20</b>	<i>0.21</i>	<i>0.20</i>
Canada .....	<b>2.19</b>	<b>2.16</b>	<b>2.43</b>	<b>2.33</b>	<b>2.25</b>	<b>2.21</b>	<b>2.41</b>	2.33	2.27	2.22	2.32	2.30	<b>2.28</b>	<i>2.30</i>	<i>2.28</i>
Europe .....	<b>11.95</b>	<b>12.66</b>	<b>13.88</b>	<b>13.94</b>	<b>13.15</b>	<b>13.43</b>	<b>13.92</b>	13.83	13.56	13.18	13.58	13.34	<b>13.12</b>	<i>13.58</i>	<i>13.42</i>
Japan .....	<b>3.77</b>	<b>3.07</b>	<b>3.17</b>	<b>3.66</b>	<b>3.70</b>	<b>3.03</b>	<b>3.19</b>	3.51	3.69	3.05	3.07	3.37	<b>3.41</b>	<i>3.36</i>	<i>3.29</i>
Other OECD .....	<b>5.89</b>	<b>5.93</b>	<b>5.90</b>	<b>6.23</b>	<b>6.30</b>	<b>6.33</b>	<b>6.28</b>	6.18	6.20	6.04	6.07	6.21	<b>5.99</b>	<i>6.27</i>	<i>6.13</i>
Non-OECD .....	<b>51.94</b>	<b>52.54</b>	<b>52.73</b>	<b>53.48</b>	<b>53.26</b>	<b>53.56</b>	<b>54.05</b>	54.08	54.92	55.35	55.01	54.67	<b>52.68</b>	<i>53.74</i>	<i>54.99</i>
Eurasia .....	<b>4.57</b>	<b>4.63</b>	<b>4.98</b>	<b>4.84</b>	<b>4.49</b>	<b>4.36</b>	<b>4.71</b>	4.65	4.25	4.40	4.72	4.63	<b>4.76</b>	<i>4.55</i>	<i>4.50</i>
Europe .....	<b>0.74</b>	<b>0.74</b>	<b>0.74</b>	<b>0.76</b>	<b>0.76</b>	<b>0.76</b>	<b>0.76</b>	0.77	0.74	0.76	0.77	0.77	<b>0.75</b>	<i>0.76</i>	<i>0.76</i>
China .....	<b>15.27</b>	<b>15.48</b>	<b>14.99</b>	<b>15.33</b>	<b>15.13</b>	<b>15.11</b>	<b>15.10</b>	15.29	16.14	16.07	15.45	15.37	<b>15.27</b>	<i>15.16</i>	<i>15.76</i>
Other Asia .....	<b>13.43</b>	<b>12.98</b>	<b>12.84</b>	<b>13.69</b>	<b>13.82</b>	<b>13.83</b>	<b>13.51</b>	13.89	14.35	14.32	13.75	14.04	<b>13.23</b>	<i>13.76</i>	<i>14.11</i>
Other Non-OECD .....	<b>17.93</b>	<b>18.71</b>	<b>19.18</b>	<b>18.86</b>	<b>19.06</b>	<b>19.50</b>	<b>19.96</b>	19.48	19.43	19.79	20.33	19.85	<b>18.68</b>	<i>19.50</i>	<i>19.86</i>
Total World Consumption .....	<b>94.52</b>	<b>96.67</b>	<b>98.59</b>	<b>100.37</b>	<b>99.10</b>	<b>99.02</b>	<b>100.51</b>	100.62	101.16	100.57	100.73	100.81	<b>97.56</b>	<i>99.82</i>	<i>100.82</i>
<b>Total Crude Oil and Other Liquids Inventory Net Withdrawals (million barrels per day)</b>															
U.S. (50 States) .....	<b>0.36</b>	<b>0.51</b>	<b>0.37</b>	<b>0.83</b>	<b>0.81</b>	<b>0.51</b>	<b>0.45</b>	0.83	-0.03	-0.36	-0.10	0.45	<b>0.52</b>	<i>0.65</i>	<i>-0.01</i>
Other OECD .....	<b>0.88</b>	<b>0.14</b>	<b>0.91</b>	<b>0.73</b>	<b>-0.09</b>	<b>-0.29</b>	<b>-0.52</b>	-0.49	0.15	0.11	-0.20	-0.35	<b>0.66</b>	<i>-0.35</i>	<i>-0.07</i>
Other Stock Draws and Balance .....	<b>0.46</b>	<b>1.20</b>	<b>0.58</b>	<b>0.48</b>	<b>-0.44</b>	<b>0.05</b>	<b>-0.44</b>	-1.01	0.32	0.24	-0.43	-0.75	<b>0.68</b>	<i>-0.46</i>	<i>-0.16</i>
Total Stock Draw .....	<b>1.71</b>	<b>1.85</b>	<b>1.85</b>	<b>2.04</b>	<b>0.27</b>	<b>0.27</b>	<b>-0.51</b>	-0.67	0.43	-0.01	-0.72	-0.65	<b>1.86</b>	<i>-0.16</i>	<i>-0.24</i>
<b>End-of-period Commercial Crude Oil and Other Liquids Inventories (million barrels)</b>															
U.S. Commercial Inventory .....	<b>1,311</b>	<b>1,281</b>	<b>1,251</b>	<b>1,199</b>	<b>1,154</b>	<b>1,180</b>	<b>1,215</b>	1,184	1,188	1,236	1,251	1,219	<b>1,199</b>	<i>1,184</i>	<i>1,219</i>
OECD Commercial Inventory .....	<b>2,916</b>	<b>2,873</b>	<b>2,759</b>	<b>2,640</b>	<b>2,604</b>	<b>2,656</b>	<b>2,739</b>	2,753	2,744	2,782	2,814	2,816	<b>2,640</b>	<i>2,753</i>	<i>2,816</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 December 1, 2022.

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 - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>North America</b> .....	<b>25.34</b>	<b>26.47</b>	<b>26.42</b>	<b>27.51</b>	<b>27.01</b>	<b>27.52</b>	<b>28.17</b>	<b>28.72</b>	<b>28.86</b>	<b>28.56</b>	<b>28.81</b>	<b>29.39</b>	<b>26.44</b>	<b>27.86</b>	<b>28.91</b>
Canada .....	<b>5.62</b>	<b>5.37</b>	<b>5.49</b>	<b>5.68</b>	<b>5.66</b>	<b>5.51</b>	<b>5.71</b>	<b>5.92</b>	<b>5.98</b>	<b>5.69</b>	<b>5.90</b>	<b>6.11</b>	<b>5.54</b>	<b>5.70</b>	<b>5.92</b>
Mexico .....	<b>1.93</b>	<b>1.95</b>	<b>1.90</b>	<b>1.92</b>	<b>1.91</b>	<b>1.89</b>	<b>1.89</b>	<b>1.86</b>	<b>1.90</b>	<b>1.87</b>	<b>1.83</b>	<b>1.79</b>	<b>1.92</b>	<b>1.89</b>	<b>1.85</b>
United States .....	<b>17.79</b>	<b>19.16</b>	<b>19.03</b>	<b>19.91</b>	<b>19.44</b>	<b>20.12</b>	<b>20.57</b>	<b>20.94</b>	<b>20.98</b>	<b>21.01</b>	<b>21.09</b>	<b>21.49</b>	<b>18.98</b>	<b>20.27</b>	<b>21.14</b>
<b>Central and South America</b> .....	<b>5.64</b>	<b>6.29</b>	<b>6.69</b>	<b>5.79</b>	<b>5.83</b>	<b>6.41</b>	<b>7.00</b>	<b>6.60</b>	<b>6.33</b>	<b>7.08</b>	<b>7.37</b>	<b>6.88</b>	<b>6.10</b>	<b>6.47</b>	<b>6.92</b>
Argentina .....	<b>0.65</b>	<b>0.69</b>	<b>0.73</b>	<b>0.74</b>	<b>0.77</b>	<b>0.78</b>	<b>0.79</b>	<b>0.81</b>	<b>0.85</b>	<b>0.86</b>	<b>0.87</b>	<b>0.90</b>	<b>0.70</b>	<b>0.79</b>	<b>0.87</b>
Brazil .....	<b>3.22</b>	<b>3.89</b>	<b>4.21</b>	<b>3.42</b>	<b>3.33</b>	<b>3.79</b>	<b>4.28</b>	<b>3.82</b>	<b>3.49</b>	<b>4.22</b>	<b>4.52</b>	<b>3.98</b>	<b>3.69</b>	<b>3.81</b>	<b>4.05</b>
Colombia .....	<b>0.77</b>	<b>0.74</b>	<b>0.77</b>	<b>0.77</b>	<b>0.77</b>	<b>0.77</b>	<b>0.78</b>	<b>0.79</b>	<b>0.77</b>	<b>0.77</b>	<b>0.78</b>	<b>0.77</b>	<b>0.76</b>	<b>0.78</b>	<b>0.77</b>
Ecuador .....	<b>0.51</b>	<b>0.50</b>	<b>0.49</b>	<b>0.41</b>	<b>0.48</b>	<b>0.47</b>	<b>0.49</b>	<b>0.51</b>	<b>0.52</b>	<b>0.52</b>	<b>0.53</b>	<b>0.53</b>	<b>0.48</b>	<b>0.49</b>	<b>0.52</b>
Other Central and S. America .....	<b>0.48</b>	<b>0.46</b>	<b>0.49</b>	<b>0.46</b>	<b>0.49</b>	<b>0.60</b>	<b>0.67</b>	<b>0.68</b>	<b>0.71</b>	<b>0.71</b>	<b>0.68</b>	<b>0.70</b>	<b>0.47</b>	<b>0.61</b>	<b>0.70</b>
<b>Europe</b> .....	<b>4.33</b>	<b>3.83</b>	<b>4.12</b>	<b>4.11</b>	<b>4.04</b>	<b>3.76</b>	<b>3.83</b>	<b>4.11</b>	<b>4.31</b>	<b>4.34</b>	<b>4.27</b>	<b>4.46</b>	<b>4.10</b>	<b>3.94</b>	<b>4.35</b>
Norway .....	<b>2.11</b>	<b>1.90</b>	<b>2.06</b>	<b>2.05</b>	<b>1.97</b>	<b>1.74</b>	<b>1.91</b>	<b>2.04</b>	<b>2.26</b>	<b>2.28</b>	<b>2.29</b>	<b>2.37</b>	<b>2.03</b>	<b>1.92</b>	<b>2.30</b>
United Kingdom .....	<b>1.07</b>	<b>0.81</b>	<b>0.93</b>	<b>0.93</b>	<b>0.97</b>	<b>0.91</b>	<b>0.80</b>	<b>0.94</b>	<b>0.93</b>	<b>0.92</b>	<b>0.84</b>	<b>0.93</b>	<b>0.94</b>	<b>0.90</b>	<b>0.91</b>
<b>Eurasia</b> .....	<b>13.42</b>	<b>13.65</b>	<b>13.63</b>	<b>14.27</b>	<b>14.39</b>	<b>13.39</b>	<b>13.58</b>	<b>13.87</b>	<b>13.09</b>	<b>12.14</b>	<b>12.40</b>	<b>12.48</b>	<b>13.74</b>	<b>13.81</b>	<b>12.52</b>
Azerbaijan .....	<b>0.75</b>	<b>0.70</b>	<b>0.71</b>	<b>0.71</b>	<b>0.70</b>	<b>0.67</b>	<b>0.65</b>	<b>0.65</b>	<b>0.65</b>	<b>0.63</b>	<b>0.63</b>	<b>0.64</b>	<b>0.72</b>	<b>0.67</b>	<b>0.64</b>
Kazakhstan .....	<b>1.87</b>	<b>1.86</b>	<b>1.72</b>	<b>2.01</b>	<b>2.01</b>	<b>1.77</b>	<b>1.62</b>	<b>1.90</b>	<b>2.02</b>	<b>1.95</b>	<b>1.95</b>	<b>2.02</b>	<b>1.86</b>	<b>1.82</b>	<b>1.99</b>
Russia .....	<b>10.42</b>	<b>10.71</b>	<b>10.80</b>	<b>11.16</b>	<b>11.30</b>	<b>10.59</b>	<b>10.92</b>	<b>10.92</b>	<b>10.01</b>	<b>9.14</b>	<b>9.41</b>	<b>9.41</b>	<b>10.78</b>	<b>10.93</b>	<b>9.49</b>
Turkmenistan .....	<b>0.25</b>	<b>0.25</b>	<b>0.25</b>	<b>0.25</b>	<b>0.26</b>	<b>0.26</b>	<b>0.26</b>	<b>0.26</b>	<b>0.27</b>	<b>0.27</b>	<b>0.27</b>	<b>0.27</b>	<b>0.25</b>	<b>0.26</b>	<b>0.27</b>
Other Eurasia .....	<b>0.13</b>	<b>0.14</b>	<b>0.14</b>	<b>0.13</b>	<b>0.14</b>	<b>0.11</b>	<b>0.13</b>	<b>0.14</b>	<b>0.14</b>	<b>0.14</b>	<b>0.13</b>	<b>0.13</b>	<b>0.13</b>	<b>0.13</b>	<b>0.14</b>
<b>Middle East</b> .....	<b>3.09</b>	<b>3.12</b>	<b>3.16</b>	<b>3.17</b>	<b>3.23</b>	<b>3.29</b>	<b>3.29</b>	<b>3.23</b>	<b>3.23</b>	<b>3.23</b>	<b>3.22</b>	<b>3.22</b>	<b>3.13</b>	<b>3.26</b>	<b>3.22</b>
Oman .....	<b>0.96</b>	<b>0.97</b>	<b>0.98</b>	<b>1.01</b>	<b>1.05</b>	<b>1.07</b>	<b>1.10</b>	<b>1.08</b>	<b>1.06</b>	<b>1.06</b>	<b>1.06</b>	<b>1.06</b>	<b>0.98</b>	<b>1.07</b>	<b>1.06</b>
Qatar .....	<b>1.80</b>	<b>1.82</b>	<b>1.83</b>	<b>1.83</b>	<b>1.85</b>	<b>1.86</b>	<b>1.86</b>	<b>1.86</b>	<b>1.86</b>	<b>1.86</b>	<b>1.86</b>	<b>1.86</b>	<b>1.82</b>	<b>1.86</b>	<b>1.86</b>
<b>Asia and Oceania</b> .....	<b>9.18</b>	<b>9.10</b>	<b>9.03</b>	<b>8.96</b>	<b>9.16</b>	<b>9.17</b>	<b>8.99</b>	<b>9.11</b>	<b>9.21</b>	<b>9.21</b>	<b>9.17</b>	<b>9.20</b>	<b>9.07</b>	<b>9.11</b>	<b>9.20</b>
Australia .....	<b>0.46</b>	<b>0.42</b>	<b>0.47</b>	<b>0.49</b>	<b>0.44</b>	<b>0.47</b>	<b>0.39</b>	<b>0.43</b>	<b>0.43</b>	<b>0.43</b>	<b>0.42</b>	<b>0.42</b>	<b>0.46</b>	<b>0.43</b>	<b>0.42</b>
China .....	<b>4.99</b>	<b>5.03</b>	<b>5.01</b>	<b>4.93</b>	<b>5.18</b>	<b>5.18</b>	<b>5.11</b>	<b>5.15</b>	<b>5.21</b>	<b>5.24</b>	<b>5.23</b>	<b>5.27</b>	<b>4.99</b>	<b>5.15</b>	<b>5.24</b>
India .....	<b>0.90</b>	<b>0.90</b>	<b>0.89</b>	<b>0.88</b>	<b>0.88</b>	<b>0.89</b>	<b>0.89</b>	<b>0.88</b>	<b>0.90</b>	<b>0.90</b>	<b>0.89</b>	<b>0.88</b>	<b>0.89</b>	<b>0.89</b>	<b>0.89</b>
Indonesia .....	<b>0.88</b>	<b>0.85</b>	<b>0.85</b>	<b>0.85</b>	<b>0.84</b>	<b>0.83</b>	<b>0.81</b>	<b>0.82</b>	<b>0.81</b>	<b>0.81</b>	<b>0.80</b>	<b>0.79</b>	<b>0.86</b>	<b>0.82</b>	<b>0.80</b>
Malaysia .....	<b>0.66</b>	<b>0.62</b>	<b>0.57</b>	<b>0.59</b>	<b>0.61</b>	<b>0.60</b>	<b>0.58</b>	<b>0.62</b>	<b>0.63</b>	<b>0.62</b>	<b>0.61</b>	<b>0.61</b>	<b>0.61</b>	<b>0.60</b>	<b>0.62</b>
Vietnam .....	<b>0.21</b>	<b>0.21</b>	<b>0.20</b>	<b>0.21</b>	<b>0.21</b>	<b>0.20</b>	<b>0.20</b>	<b>0.19</b>	<b>0.18</b>	<b>0.18</b>	<b>0.18</b>	<b>0.18</b>	<b>0.21</b>	<b>0.20</b>	<b>0.18</b>
<b>Africa</b> .....	<b>1.48</b>	<b>1.47</b>	<b>1.41</b>	<b>1.41</b>	<b>1.41</b>	<b>1.44</b>	<b>1.44</b>	<b>1.43</b>	<b>1.44</b>	<b>1.44</b>	<b>1.42</b>	<b>1.42</b>	<b>1.44</b>	<b>1.43</b>	<b>1.43</b>
Egypt .....	<b>0.66</b>	<b>0.67</b>	<b>0.65</b>	<b>0.66</b>	<b>0.66</b>	<b>0.68</b>	<b>0.67</b>	<b>0.66</b>	<b>0.68</b>	<b>0.67</b>	<b>0.67</b>	<b>0.68</b>	<b>0.66</b>	<b>0.66</b>	<b>0.68</b>
South Sudan .....	<b>0.16</b>	<b>0.16</b>	<b>0.15</b>	<b>0.16</b>	<b>0.15</b>	<b>0.15</b>	<b>0.16</b>	<b>0.16</b>	<b>0.17</b>	<b>0.17</b>	<b>0.17</b>	<b>0.17</b>	<b>0.16</b>	<b>0.16</b>	<b>0.17</b>
<b>Total non-OPEC liquids</b> .....	<b>62.48</b>	<b>63.94</b>	<b>64.46</b>	<b>65.23</b>	<b>65.08</b>	<b>64.98</b>	<b>66.30</b>	<b>67.08</b>	<b>66.47</b>	<b>65.99</b>	<b>66.67</b>	<b>67.04</b>	<b>64.03</b>	<b>65.87</b>	<b>66.54</b>
<b>OPEC non-crude liquids</b> .....	<b>5.26</b>	<b>5.39</b>	<b>5.44</b>	<b>5.44</b>	<b>5.56</b>	<b>5.43</b>	<b>5.48</b>	<b>5.52</b>	<b>5.59</b>	<b>5.46</b>	<b>5.50</b>	<b>5.54</b>	<b>5.38</b>	<b>5.50</b>	<b>5.52</b>
<b>Non-OPEC + OPEC non-crude</b> .....	<b>67.74</b>	<b>69.33</b>	<b>69.90</b>	<b>70.67</b>	<b>70.64</b>	<b>70.42</b>	<b>71.78</b>	<b>72.60</b>	<b>72.06</b>	<b>71.45</b>	<b>72.17</b>	<b>72.57</b>	<b>69.42</b>	<b>71.37</b>	<b>72.06</b>
<b>Unplanned non-OPEC Production Outages</b> .....	<b>0.61</b>	<b>0.50</b>	<b>0.80</b>	<b>0.86</b>	<b>0.76</b>	<b>1.31</b>	<b>0.78</b>	-	-	-	-	-	<b>0.70</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 December 1, 2022.

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 - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>Crude Oil</b>															
Algeria .....	<b>0.86</b>	<b>0.88</b>	<b>0.92</b>	<b>0.95</b>	<b>0.97</b>	<b>1.00</b>	<b>1.02</b>	-	-	-	-	-	<b>0.90</b>	-	-
Angola .....	<b>1.11</b>	<b>1.08</b>	<b>1.11</b>	<b>1.13</b>	<b>1.15</b>	<b>1.19</b>	<b>1.16</b>	-	-	-	-	-	<b>1.11</b>	-	-
Congo (Brazzaville) .....	<b>0.28</b>	<b>0.27</b>	<b>0.26</b>	<b>0.26</b>	<b>0.27</b>	<b>0.29</b>	<b>0.29</b>	-	-	-	-	-	<b>0.26</b>	-	-
Equatorial Guinea .....	<b>0.11</b>	<b>0.10</b>	<b>0.10</b>	<b>0.09</b>	<b>0.09</b>	<b>0.09</b>	<b>0.09</b>	-	-	-	-	-	<b>0.10</b>	-	-
Gabon .....	<b>0.16</b>	<b>0.17</b>	<b>0.18</b>	<b>0.19</b>	<b>0.19</b>	<b>0.19</b>	<b>0.20</b>	-	-	-	-	-	<b>0.18</b>	-	-
Iran .....	<b>2.18</b>	<b>2.47</b>	<b>2.47</b>	<b>2.45</b>	<b>2.55</b>	<b>2.53</b>	<b>2.53</b>	-	-	-	-	-	<b>2.39</b>	-	-
Iraq .....	<b>3.94</b>	<b>3.98</b>	<b>4.07</b>	<b>4.25</b>	<b>4.30</b>	<b>4.42</b>	<b>4.55</b>	-	-	-	-	-	<b>4.06</b>	-	-
Kuwait .....	<b>2.33</b>	<b>2.36</b>	<b>2.45</b>	<b>2.53</b>	<b>2.61</b>	<b>2.69</b>	<b>2.80</b>	-	-	-	-	-	<b>2.42</b>	-	-
Libya .....	<b>1.18</b>	<b>1.16</b>	<b>1.18</b>	<b>1.12</b>	<b>1.06</b>	<b>0.76</b>	<b>0.95</b>	-	-	-	-	-	<b>1.16</b>	-	-
Nigeria .....	<b>1.31</b>	<b>1.32</b>	<b>1.28</b>	<b>1.31</b>	<b>1.27</b>	<b>1.11</b>	<b>0.97</b>	-	-	-	-	-	<b>1.30</b>	-	-
Saudi Arabia .....	<b>8.49</b>	<b>8.53</b>	<b>9.55</b>	<b>9.87</b>	<b>10.08</b>	<b>10.30</b>	<b>10.85</b>	-	-	-	-	-	<b>9.11</b>	-	-
United Arab Emirates .....	<b>2.61</b>	<b>2.65</b>	<b>2.76</b>	<b>2.86</b>	<b>2.94</b>	<b>3.04</b>	<b>3.17</b>	-	-	-	-	-	<b>2.72</b>	-	-
Venezuela .....	<b>0.52</b>	<b>0.53</b>	<b>0.53</b>	<b>0.68</b>	<b>0.70</b>	<b>0.72</b>	<b>0.66</b>	-	-	-	-	-	<b>0.56</b>	-	-
OPEC Total .....	<b>25.07</b>	<b>25.49</b>	<b>26.84</b>	<b>27.67</b>	<b>28.19</b>	<b>28.33</b>	<b>29.24</b>	<i>28.69</i>	<i>28.67</i>	<i>29.13</i>	<i>29.28</i>	<i>28.89</i>	<b>26.28</b>	<i>28.61</i>	<i>29.00</i>
<b>Other Liquids (a)</b> .....	<b>5.26</b>	<b>5.39</b>	<b>5.44</b>	<b>5.44</b>	<b>5.56</b>	<b>5.43</b>	<b>5.48</b>	<i>5.52</i>	<i>5.59</i>	<i>5.46</i>	<i>5.50</i>	<i>5.54</i>	<b>5.38</b>	<i>5.50</i>	<i>5.52</i>
<b>Total OPEC Production</b> .....	<b>30.34</b>	<b>30.88</b>	<b>32.28</b>	<b>33.10</b>	<b>33.75</b>	<b>33.76</b>	<b>34.71</b>	<i>34.21</i>	<i>34.26</i>	<i>34.59</i>	<i>34.78</i>	<i>34.42</i>	<b>31.66</b>	<i>34.11</i>	<i>34.52</i>
<b>Crude Oil Production Capacity</b>															
Middle East .....	<b>25.21</b>	<b>25.50</b>	<b>25.50</b>	<b>25.48</b>	<b>25.48</b>	<b>25.46</b>	<b>25.55</b>	<i>25.63</i>	<i>25.90</i>	<i>26.03</i>	<i>26.03</i>	<i>26.03</i>	<b>25.42</b>	<i>25.53</i>	<i>26.00</i>
Other .....	<b>6.12</b>	<b>6.10</b>	<b>5.96</b>	<b>5.98</b>	<b>5.83</b>	<b>5.45</b>	<b>5.35</b>	<i>5.52</i>	<i>5.70</i>	<i>5.96</i>	<i>5.94</i>	<i>5.91</i>	<b>6.04</b>	<i>5.54</i>	<i>5.88</i>
OPEC Total .....	<b>31.33</b>	<b>31.59</b>	<b>31.45</b>	<b>31.46</b>	<b>31.31</b>	<b>30.92</b>	<b>30.90</b>	<i>31.16</i>	<i>31.60</i>	<i>31.99</i>	<i>31.97</i>	<i>31.94</i>	<b>31.46</b>	<i>31.07</i>	<i>31.88</i>
<b>Surplus Crude Oil Production Capacity</b>															
Middle East .....	<b>5.66</b>	<b>5.52</b>	<b>4.21</b>	<b>3.53</b>	<b>3.00</b>	<b>2.48</b>	<b>1.66</b>	<i>2.45</i>	<i>2.90</i>	<i>2.83</i>	<i>2.66</i>	<i>3.03</i>	<b>4.72</b>	<i>2.39</i>	<i>2.85</i>
Other .....	<b>0.59</b>	<b>0.59</b>	<b>0.40</b>	<b>0.27</b>	<b>0.12</b>	<b>0.11</b>	<b>0.01</b>	<i>0.02</i>	<i>0.03</i>	<i>0.03</i>	<i>0.03</i>	<i>0.03</i>	<b>0.46</b>	<i>0.06</i>	<i>0.03</i>
OPEC Total .....	<b>6.25</b>	<b>6.10</b>	<b>4.61</b>	<b>3.80</b>	<b>3.12</b>	<b>2.59</b>	<b>1.67</b>	<i>2.46</i>	<i>2.93</i>	<i>2.86</i>	<i>2.69</i>	<i>3.06</i>	<b>5.18</b>	<i>2.46</i>	<i>2.88</i>
<b>Unplanned OPEC Production Outages</b> .....	<b>2.49</b>	<b>2.12</b>	<b>2.15</b>	<b>2.03</b>	<b>1.98</b>	<b>2.42</b>	<b>2.50</b>	-	-	-	-	-	<b>2.20</b>	-	-

(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 December 1, 2022.

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 - December 2022

	2021				2022				2023				2021	2022	2023
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
<b>North America</b> .....	22.40	23.95	24.34	24.60	24.24	24.47	24.76	24.52	24.29	24.50	24.55	24.77	<b>23.83</b>	24.50	24.53
Canada .....	2.19	2.16	2.43	2.33	2.25	2.21	2.41	2.33	2.27	2.22	2.32	2.30	<b>2.28</b>	2.30	2.28
Mexico .....	1.63	1.66	1.61	1.72	1.76	1.99	1.88	1.70	1.71	1.74	1.74	1.75	<b>1.65</b>	1.83	1.73
United States .....	18.58	20.13	20.30	20.54	20.22	20.27	20.47	20.48	20.30	20.53	20.49	20.71	<b>19.89</b>	20.36	20.51
<b>Central and South America</b> .....	6.09	6.17	6.34	6.34	6.27	6.40	6.51	6.53	6.28	6.41	6.51	6.45	<b>6.24</b>	6.43	6.41
Brazil .....	2.79	2.86	2.95	2.95	2.85	2.93	3.02	3.02	2.88	2.94	3.01	3.00	<b>2.89</b>	2.95	2.96
<b>Europe</b> .....	12.69	13.41	14.62	14.70	13.91	14.19	14.68	14.60	14.31	13.94	14.34	14.11	<b>13.86</b>	14.35	14.18
<b>Eurasia</b> .....	4.57	4.63	4.98	4.84	4.49	4.36	4.71	4.65	4.25	4.40	4.72	4.63	<b>4.76</b>	4.55	4.50
Russia .....	3.34	3.42	3.70	3.56	3.34	3.27	3.54	3.45	3.16	3.24	3.53	3.39	<b>3.51</b>	3.40	3.33
<b>Middle East</b> .....	8.13	8.80	9.26	8.76	8.99	9.30	9.74	9.08	9.26	9.45	9.99	9.39	<b>8.74</b>	9.28	9.52
<b>Asia and Oceania</b> .....	36.28	35.34	34.78	36.67	36.69	35.79	35.70	36.71	38.20	37.27	36.11	36.78	<b>35.76</b>	36.22	37.09
China .....	15.27	15.48	14.99	15.33	15.13	15.11	15.10	15.29	16.14	16.07	15.45	15.37	<b>15.27</b>	15.16	15.76
Japan .....	3.77	3.07	3.17	3.66	3.70	3.03	3.19	3.51	3.69	3.05	3.07	3.37	<b>3.41</b>	3.36	3.29
India .....	4.94	4.37	4.41	4.87	5.08	5.06	4.80	5.05	5.25	5.32	4.96	5.28	<b>4.65</b>	5.00	5.20
<b>Africa</b> .....	4.36	4.38	4.28	4.47	4.51	4.50	4.40	4.53	4.58	4.59	4.51	4.67	<b>4.37</b>	4.49	4.59
<b>Total OECD Liquid Fuels Consumption</b> .....	42.58	44.13	45.87	46.89	45.84	45.45	46.46	46.54	46.24	45.21	45.72	46.14	<b>44.88</b>	46.08	45.83
<b>Total non-OECD Liquid Fuels Consumption</b> .....	51.94	52.54	52.73	53.48	53.26	53.56	54.05	54.08	54.92	55.35	55.01	54.67	<b>52.68</b>	53.74	54.99
<b>Total World Liquid Fuels Consumption</b> .....	94.52	96.67	98.59	100.37	99.10	99.02	100.51	100.62	101.16	100.57	100.73	100.81	<b>97.56</b>	99.82	100.82
<b>Real Gross Domestic Product (a)</b>															
World Index, 2015 Q1 = 100 .....	116.5	117.8	119.2	120.8	121.5	121.9	122.8	123.1	123.4	123.9	124.8	125.9	<b>118.6</b>	122.3	124.5
Percent change from prior year .....	3.5	11.6	5.2	4.8	4.3	3.5	3.0	1.9	1.5	1.6	1.6	2.3	<b>6.2</b>	3.2	1.8
OECD Index, 2015 = 100 .....													<b>109.9</b>	112.9	112.9
Percent change from prior year .....													<b>5.6</b>	2.8	0.0
Non-OECD Index, 2015 = 100 .....													<b>123.9</b>	128.3	132.3
Percent change from prior year .....													<b>6.6</b>	3.5	3.2
<b>Nominal U.S. Dollar Index (b)</b>															
Index, 2015 Q1 = 100 .....	106.5	106.1	107.5	109.1	109.6	113.0	117.3	121.4	121.8	121.7	121.5	121.2	<b>107.3</b>	115.3	121.6
Percent change from prior year .....	-4.6	-8.2	-3.4	0.9	2.9	6.5	9.1	11.3	11.2	7.7	3.6	-0.1	<b>-3.9</b>	7.5	5.4

(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 December 1, 2022.

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 - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>Supply (million barrels per day)</b>															
<b>Crude Oil Supply</b>															
Domestic Production (a) .....	<b>10.82</b>	<b>11.34</b>	<b>11.18</b>	<b>11.66</b>	<b>11.47</b>	<b>11.70</b>	<b>12.03</b>	<i>12.29</i>	<i>12.24</i>	<i>12.24</i>	<i>12.34</i>	<i>12.51</i>	<b>11.25</b>	<i>11.87</i>	<i>12.34</i>
Alaska .....	<b>0.46</b>	<b>0.44</b>	<b>0.41</b>	<b>0.44</b>	<b>0.45</b>	<b>0.44</b>	<b>0.42</b>	<i>0.44</i>	<i>0.43</i>	<i>0.37</i>	<i>0.39</i>	<i>0.41</i>	<b>0.44</b>	<i>0.44</i>	<i>0.40</i>
Federal Gulf of Mexico (b) .....	<b>1.83</b>	<b>1.80</b>	<b>1.49</b>	<b>1.71</b>	<b>1.67</b>	<b>1.70</b>	<b>1.80</b>	<i>1.83</i>	<i>1.84</i>	<i>1.81</i>	<i>1.73</i>	<i>1.72</i>	<b>1.71</b>	<i>1.75</i>	<i>1.77</i>
Lower 48 States (excl GOM) .....	<b>8.54</b>	<b>9.10</b>	<b>9.29</b>	<b>9.50</b>	<b>9.35</b>	<b>9.56</b>	<b>9.80</b>	<i>10.02</i>	<i>9.96</i>	<i>10.06</i>	<i>10.23</i>	<i>10.39</i>	<b>9.11</b>	<i>9.69</i>	<i>10.16</i>
Crude Oil Net Imports (c) .....	<b>2.88</b>	<b>2.94</b>	<b>3.64</b>	<b>3.13</b>	<b>3.00</b>	<b>2.81</b>	<b>2.75</b>	<i>2.52</i>	<i>3.24</i>	<i>3.65</i>	<i>3.88</i>	<i>3.41</i>	<b>3.15</b>	<i>2.77</i>	<i>3.55</i>
SPR Net Withdrawals .....	<b>0.00</b>	<b>0.18</b>	<b>0.04</b>	<b>0.26</b>	<b>0.31</b>	<b>0.80</b>	<b>0.84</b>	<i>0.50</i>	<i>0.01</i>	<i>0.17</i>	<i>0.06</i>	<i>0.11</i>	<b>0.12</b>	<i>0.61</i>	<i>0.09</i>
Commercial Inventory Net Withdrawals .....	<b>-0.19</b>	<b>0.60</b>	<b>0.30</b>	<b>-0.01</b>	<b>0.08</b>	<b>-0.03</b>	<b>-0.12</b>	<i>0.22</i>	<i>-0.31</i>	<i>0.14</i>	<i>0.15</i>	<i>-0.10</i>	<b>0.18</b>	<i>0.03</i>	<i>-0.03</i>
Crude Oil Adjustment (d) .....	<b>0.30</b>	<b>0.59</b>	<b>0.44</b>	<b>0.44</b>	<b>0.71</b>	<b>0.81</b>	<b>0.77</b>	<i>0.69</i>	<i>0.59</i>	<i>0.58</i>	<i>0.51</i>	<i>0.50</i>	<b>0.44</b>	<i>0.74</i>	<i>0.54</i>
Total Crude Oil Input to Refineries .....	<b>13.81</b>	<b>15.65</b>	<b>15.61</b>	<b>15.49</b>	<b>15.56</b>	<b>16.09</b>	<b>16.26</b>	<i>16.22</i>	<i>15.77</i>	<i>16.78</i>	<i>16.94</i>	<i>16.43</i>	<b>15.15</b>	<i>16.03</i>	<i>16.48</i>
<b>Other Supply</b>															
Refinery Processing Gain .....	<b>0.85</b>	<b>0.98</b>	<b>0.96</b>	<b>1.04</b>	<b>0.95</b>	<b>1.07</b>	<b>1.05</b>	<i>0.99</i>	<i>1.05</i>	<i>1.03</i>	<i>1.03</i>	<i>1.05</i>	<b>0.96</b>	<i>1.02</i>	<i>1.04</i>
Natural Gas Plant Liquids Production .....	<b>4.89</b>	<b>5.50</b>	<b>5.56</b>	<b>5.74</b>	<b>5.61</b>	<b>5.92</b>	<b>6.09</b>	<i>6.20</i>	<i>6.27</i>	<i>6.30</i>	<i>6.28</i>	<i>6.43</i>	<b>5.42</b>	<i>5.96</i>	<i>6.32</i>
Renewables and Oxygenate Production (e) .....	<b>1.04</b>	<b>1.13</b>	<b>1.11</b>	<b>1.24</b>	<b>1.19</b>	<b>1.20</b>	<b>1.17</b>	<i>1.24</i>	<i>1.20</i>	<i>1.22</i>	<i>1.21</i>	<i>1.27</i>	<b>1.13</b>	<i>1.20</i>	<i>1.23</i>
Fuel Ethanol Production .....	<b>0.90</b>	<b>0.99</b>	<b>0.96</b>	<b>1.06</b>	<b>1.02</b>	<b>1.01</b>	<b>0.97</b>	<i>1.03</i>	<i>0.99</i>	<i>0.99</i>	<i>0.98</i>	<i>1.01</i>	<b>0.98</b>	<i>1.01</i>	<i>0.99</i>
Petroleum Products Adjustment (f) .....	<b>0.20</b>	<b>0.22</b>	<b>0.22</b>	<b>0.23</b>	<b>0.22</b>	<b>0.23</b>	<b>0.23</b>	<i>0.22</i>	<i>0.21</i>	<i>0.22</i>	<i>0.22</i>	<i>0.22</i>	<b>0.22</b>	<i>0.23</i>	<i>0.22</i>
Product Net Imports (c) .....	<b>-2.79</b>	<b>-3.07</b>	<b>-3.19</b>	<b>-3.79</b>	<b>-3.74</b>	<b>-3.99</b>	<b>-4.07</b>	<i>-4.51</i>	<i>-4.48</i>	<i>-4.35</i>	<i>-4.89</i>	<i>-5.14</i>	<b>-3.21</b>	<i>-4.08</i>	<i>-4.72</i>
Hydrocarbon Gas Liquids .....	<b>-1.95</b>	<b>-2.25</b>	<b>-2.15</b>	<b>-2.18</b>	<b>-2.14</b>	<b>-2.31</b>	<b>-2.16</b>	<i>-2.55</i>	<i>-2.58</i>	<i>-2.54</i>	<i>-2.61</i>	<i>-2.61</i>	<b>-2.14</b>	<i>-2.29</i>	<i>-2.59</i>
Unfinished Oils .....	<b>0.18</b>	<b>0.30</b>	<b>0.25</b>	<b>0.10</b>	<b>0.09</b>	<b>0.25</b>	<b>0.28</b>	<i>0.25</i>	<i>0.23</i>	<i>0.27</i>	<i>0.38</i>	<i>0.19</i>	<b>0.21</b>	<i>0.22</i>	<i>0.27</i>
Other HC/Oxygenates .....	<b>-0.08</b>	<b>-0.04</b>	<b>-0.03</b>	<b>-0.05</b>	<b>-0.09</b>	<b>-0.10</b>	<b>-0.07</b>	<i>-0.05</i>	<i>-0.07</i>	<i>-0.05</i>	<i>-0.04</i>	<i>-0.04</i>	<b>-0.05</b>	<i>-0.08</i>	<i>-0.05</i>
Motor Gasoline Blend Comp. ....	<b>0.55</b>	<b>0.79</b>	<b>0.67</b>	<b>0.43</b>	<b>0.40</b>	<b>0.60</b>	<b>0.48</b>	<i>0.36</i>	<i>0.42</i>	<i>0.67</i>	<i>0.36</i>	<i>0.40</i>	<b>0.61</b>	<i>0.46</i>	<i>0.46</i>
Finished Motor Gasoline .....	<b>-0.64</b>	<b>-0.64</b>	<b>-0.68</b>	<b>-0.88</b>	<b>-0.76</b>	<b>-0.73</b>	<b>-0.81</b>	<i>-0.87</i>	<i>-0.83</i>	<i>-0.81</i>	<i>-0.97</i>	<i>-1.11</i>	<b>-0.71</b>	<i>-0.79</i>	<i>-0.93</i>
Jet Fuel .....	<b>0.03</b>	<b>0.08</b>	<b>0.08</b>	<b>0.01</b>	<b>-0.04</b>	<b>-0.06</b>	<b>-0.11</b>	<i>-0.04</i>	<i>0.00</i>	<i>0.08</i>	<i>0.04</i>	<i>0.06</i>	<b>0.05</b>	<i>-0.06</i>	<i>0.04</i>
Distillate Fuel Oil .....	<b>-0.48</b>	<b>-0.87</b>	<b>-0.91</b>	<b>-0.86</b>	<b>-0.81</b>	<b>-1.15</b>	<b>-1.29</b>	<i>-1.06</i>	<i>-1.01</i>	<i>-1.36</i>	<i>-1.42</i>	<i>-1.34</i>	<b>-0.78</b>	<i>-1.08</i>	<i>-1.29</i>
Residual Fuel Oil .....	<b>0.07</b>	<b>0.05</b>	<b>0.08</b>	<b>0.15</b>	<b>0.14</b>	<b>0.10</b>	<b>0.10</b>	<i>0.10</i>	<i>0.10</i>	<i>0.10</i>	<i>0.08</i>	<i>0.13</i>	<b>0.09</b>	<i>0.11</i>	<i>0.10</i>
Other Oils (g) .....	<b>-0.48</b>	<b>-0.49</b>	<b>-0.50</b>	<b>-0.50</b>	<b>-0.54</b>	<b>-0.59</b>	<b>-0.49</b>	<i>-0.65</i>	<i>-0.73</i>	<i>-0.72</i>	<i>-0.71</i>	<i>-0.82</i>	<b>-0.49</b>	<i>-0.57</i>	<i>-0.74</i>
Product Inventory Net Withdrawals .....	<b>0.55</b>	<b>-0.27</b>	<b>0.03</b>	<b>0.58</b>	<b>0.42</b>	<b>-0.25</b>	<b>-0.26</b>	<i>0.12</i>	<i>0.27</i>	<i>-0.67</i>	<i>-0.30</i>	<i>0.44</i>	<b>0.22</b>	<i>0.01</i>	<i>-0.07</i>
Total Supply .....	<b>18.54</b>	<b>20.13</b>	<b>20.30</b>	<b>20.53</b>	<b>20.22</b>	<b>20.27</b>	<b>20.47</b>	<i>20.48</i>	<i>20.30</i>	<i>20.53</i>	<i>20.49</i>	<i>20.71</i>	<b>19.88</b>	<i>20.36</i>	<i>20.51</i>
<b>Consumption (million barrels per day)</b>															
Hydrocarbon Gas Liquids .....	<b>3.43</b>	<b>3.33</b>	<b>3.34</b>	<b>3.66</b>	<b>3.87</b>	<b>3.43</b>	<b>3.48</b>	<i>3.81</i>	<i>4.08</i>	<i>3.53</i>	<i>3.47</i>	<i>3.94</i>	<b>3.44</b>	<i>3.65</i>	<i>3.75</i>
Other HC/Oxygenates .....	<b>0.11</b>	<b>0.13</b>	<b>0.13</b>	<b>0.16</b>	<b>0.13</b>	<b>0.17</b>	<b>0.17</b>	<i>0.22</i>	<i>0.20</i>	<i>0.21</i>	<i>0.20</i>	<i>0.26</i>	<b>0.13</b>	<i>0.17</i>	<i>0.22</i>
Unfinished Oils .....	<b>0.08</b>	<b>0.07</b>	<b>-0.05</b>	<b>0.00</b>	<b>0.13</b>	<b>0.04</b>	<b>0.11</b>	<i>0.01</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<b>0.02</b>	<i>0.07</i>	<i>0.00</i>
Motor Gasoline .....	<b>8.04</b>	<b>9.09</b>	<b>9.14</b>	<b>8.98</b>	<b>8.47</b>	<b>9.00</b>	<b>8.88</b>	<i>8.75</i>	<i>8.44</i>	<i>8.96</i>	<i>8.90</i>	<i>8.76</i>	<b>8.82</b>	<i>8.78</i>	<i>8.77</i>
Fuel Ethanol blended into Motor Gasoline .....	<b>0.81</b>	<b>0.93</b>	<b>0.94</b>	<b>0.95</b>	<b>0.87</b>	<b>0.93</b>	<b>0.92</b>	<i>0.91</i>	<i>0.87</i>	<i>0.93</i>	<i>0.92</i>	<i>0.93</i>	<b>0.91</b>	<i>0.91</i>	<i>0.91</i>
Jet Fuel .....	<b>1.12</b>	<b>1.34</b>	<b>1.52</b>	<b>1.50</b>	<b>1.45</b>	<b>1.61</b>	<b>1.60</b>	<i>1.58</i>	<i>1.53</i>	<i>1.67</i>	<i>1.68</i>	<i>1.66</i>	<b>1.37</b>	<i>1.56</i>	<i>1.64</i>
Distillate Fuel Oil .....	<b>3.99</b>	<b>3.96</b>	<b>3.90</b>	<b>4.03</b>	<b>4.14</b>	<b>3.89</b>	<b>3.86</b>	<i>4.02</i>	<i>4.03</i>	<i>3.91</i>	<i>3.85</i>	<i>3.96</i>	<b>3.97</b>	<i>3.98</i>	<i>3.94</i>
Residual Fuel Oil .....	<b>0.26</b>	<b>0.25</b>	<b>0.35</b>	<b>0.40</b>	<b>0.38</b>	<b>0.31</b>	<b>0.39</b>	<i>0.32</i>	<i>0.37</i>	<i>0.38</i>	<i>0.38</i>	<i>0.39</i>	<b>0.31</b>	<i>0.35</i>	<i>0.38</i>
Other Oils (g) .....	<b>1.54</b>	<b>1.95</b>	<b>1.98</b>	<b>1.81</b>	<b>1.65</b>	<b>1.82</b>	<b>1.99</b>	<i>1.77</i>	<i>1.65</i>	<i>1.88</i>	<i>2.01</i>	<i>1.75</i>	<b>1.82</b>	<i>1.81</i>	<i>1.82</i>
Total Consumption .....	<b>18.58</b>	<b>20.13</b>	<b>20.30</b>	<b>20.54</b>	<b>20.22</b>	<b>20.27</b>	<b>20.47</b>	<i>20.48</i>	<i>20.30</i>	<i>20.53</i>	<i>20.49</i>	<i>20.71</i>	<b>19.89</b>	<i>20.36</i>	<i>20.51</i>
<b>Total Petroleum and Other Liquids Net Imports</b> .....	<b>0.09</b>	<b>-0.13</b>	<b>0.45</b>	<b>-0.65</b>	<b>-0.74</b>	<b>-1.18</b>	<b>-1.32</b>	<i>-1.98</i>	<i>-1.23</i>	<i>-0.70</i>	<i>-1.01</i>	<i>-1.73</i>	<b>-0.06</b>	<i>-1.31</i>	<i>-1.17</i>
<b>End-of-period Inventories (million barrels)</b>															
<b>Commercial Inventory</b>															
Crude Oil (excluding SPR) .....	<b>502.5</b>	<b>448.1</b>	<b>420.3</b>	<b>421.2</b>	<b>414.4</b>	<b>417.5</b>	<b>428.8</b>	<i>408.9</i>	<i>436.9</i>	<i>424.4</i>	<i>410.6</i>	<i>420.1</i>	<b>421.2</b>	<i>408.9</i>	<i>420.1</i>
Hydrocarbon Gas Liquids .....	<b>176.9</b>	<b>205.3</b>	<b>235.5</b>	<b>193.1</b>	<b>142.0</b>	<b>186.7</b>	<b>243.6</b>	<i>200.6</i>	<i>154.3</i>	<i>205.9</i>	<i>247.3</i>	<i>204.4</i>	<b>193.1</b>	<i>200.6</i>	<i>204.4</i>
Unfinished Oils .....	<b>92.5</b>	<b>92.3</b>	<b>89.5</b>	<b>79.7</b>	<b>87.9</b>	<b>88.8</b>	<b>82.3</b>	<i>77.0</i>	<i>90.7</i>	<i>89.1</i>	<i>88.8</i>	<i>80.5</i>	<b>79.7</b>	<i>77.0</i>	<i>80.5</i>
Other HC/Oxygenates .....	<b>29.3</b>	<b>27.7</b>	<b>25.7</b>	<b>28.7</b>	<b>34.1</b>	<b>29.4</b>	<b>27.3</b>	<i>29.0</i>	<i>31.0</i>	<i>29.8</i>	<i>29.5</i>	<i>29.8</i>	<b>28.7</b>	<i>29.0</i>	<i>29.8</i>
Total Motor Gasoline .....	<b>237.8</b>	<b>237.3</b>	<b>227.0</b>	<b>232.2</b>	<b>238.5</b>	<b>221.0</b>	<b>209.6</b>	<i>234.5</i>	<i>237.6</i>	<i>243.9</i>	<i>234.2</i>	<i>245.7</i>	<b>232.2</b>	<i>234.5</i>	<i>245.7</i>
Finished Motor Gasoline .....	<b>20.3</b>	<b>18.5</b>	<b>18.5</b>	<b>17.8</b>	<b>17.3</b>	<b>17.1</b>	<b>17.6</b>	<i>18.7</i>	<i>16.6</i>	<i>18.0</i>	<i>19.7</i>	<i>22.3</i>	<b>17.8</b>	<i>18.7</i>	<i>22.3</i>
Motor Gasoline Blend Comp. ....	<b>217.6</b>	<b>218.7</b>	<b>208.5</b>	<b>214.4</b>	<b>221.2</b>	<b>203.8</b>	<b>192.0</b>	<i>215.8</i>	<i>221.0</i>	<i>225.8</i>	<i>214.5</i>	<i>223.3</i>	<b>214.4</b>	<i>215.8</i>	<i>223.3</i>
Jet Fuel .....	<b>39.1</b>	<b>44.7</b>	<b>42.0</b>	<b>35.8</b>	<b>35.6</b>	<b>39.3</b>	<b>36.2</b>	<i>34.5</i>	<i>36.2</i>	<i>40.2</i>	<i>42.5</i>	<i>39.3</i>	<b>35.8</b>	<i>34.5</i>	<i>39.3</i>
Distillate Fuel Oil .....	<b>146.1</b>	<b>140.1</b>	<b>132.1</b>	<b>130.0</b>	<b>114.6</b>	<b>111.4</b>	<b>110.5</b>	<i>122.5</i>	<i>113.4</i>	<i>117.8</i>	<i>123.0</i>	<i>123.9</i>	<b>130.0</b>	<i>122.5</i>	<i>123.9</i>
Residual Fuel Oil .....	<b>30.9</b>	<b>31.5</b>	<b>27.8</b>	<b>25.8</b>	<b>27.9</b>	<b>29.2</b>	<b>27.3</b>	<i>27.7</i>	<i>29.3</i>	<i>28.6</i>	<i>27.0</i>	<i>26.6</i>	<b>25.8</b>	<i>27.7</i>	<i>26.6</i>
Other Oils (g) .....	<b>55.8</b>	<b>54.3</b>	<b>51.0</b>	<b>52.2</b>	<b>58.5</b>	<b>56.4</b>	<b>49.5</b>	<i>49.3</i>	<i>58.6</i>	<i>56.7</i>	<i>47.5</i>	<i>49.0</i>	<b>52.2</b>	<i>49.3</i>	<i>49.0</i>
Total Commercial Inventory .....	<b>1310.9</b>	<b>1281.4</b>	<b>1250.9</b>	<b>1198.6</b>	<b>1153.6</b>	<b>1179.7</b>	<b>1215.1</b>	<i>1184.0</i>	<i>1188.0</i>	<i>1236.4</i>	<i>1250.5</i>	<i>1219.3</i>	<b>1198.6</b>	<i>1184.0</i>	<i>1219.3</i>
Crude Oil in SPR .....	<b>637.8</b>	<b>621.3</b>	<b>617.8</b>	<b>593.7</b>	<b>566.1</b>	<b>493.3</b>	<b>416.4</b>	<i>370.7</i>	<i>369.5</i>	<i>353.9</i>	<i>348.7</i>	<i>338.2</i>	<b>593.7</b>	<i>370.7</i>	<i>338.2</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."

**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 - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>HGL Production</b>															
<b>Natural Gas Processing Plants</b>															
Ethane .....	1.88	2.20	2.19	2.32	2.33	2.43	2.41	2.52	2.62	2.66	2.55	2.60	2.15	2.42	2.61
Propane .....	1.63	1.76	1.77	1.82	1.77	1.85	1.92	1.99	1.96	1.94	1.97	2.04	1.74	1.89	1.98
Butanes .....	0.86	0.93	0.94	0.96	0.93	0.98	1.02	1.03	1.05	1.04	1.07	1.10	0.92	0.99	1.06
Natural Gasoline (Pentanes Plus) .....	0.53	0.61	0.66	0.64	0.59	0.67	0.74	0.65	0.64	0.66	0.69	0.68	0.61	0.66	0.67
<b>Refinery and Blender Net Production</b>															
Ethane/Ethylene .....	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01
Propane .....	0.25	0.29	0.28	0.29	0.27	0.29	0.29	0.30	0.29	0.28	0.29	0.28	0.28	0.29	0.28
Propylene (refinery-grade) .....	0.27	0.31	0.29	0.29	0.28	0.28	0.26	0.28	0.28	0.29	0.28	0.28	0.29	0.28	0.28
Butanes/Butylenes .....	-0.09	0.24	0.18	-0.16	-0.07	0.25	0.19	-0.19	-0.08	0.26	0.19	-0.20	0.04	0.05	0.04
<b>Renewable Fuels and Oxygenate Plant Net Production</b>															
Natural Gasoline (Pentanes Plus) .....	-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	-0.02	-0.02
<b>HGL Net Imports</b>															
Ethane .....	-0.31	-0.38	-0.37	-0.41	-0.50	-0.40	-0.43	-0.43	-0.45	-0.45	-0.45	-0.45	-0.37	-0.44	-0.45
Propane/Propylene .....	-1.08	-1.26	-1.22	-1.24	-1.18	-1.33	-1.21	-1.46	-1.38	-1.36	-1.40	-1.45	-1.20	-1.29	-1.40
Butanes/Butylenes .....	-0.34	-0.41	-0.38	-0.35	-0.28	-0.41	-0.34	-0.47	-0.50	-0.50	-0.52	-0.48	-0.37	-0.38	-0.50
Natural Gasoline (Pentanes Plus) .....	-0.22	-0.21	-0.18	-0.18	-0.17	-0.17	-0.19	-0.19	-0.24	-0.23	-0.24	-0.24	-0.20	-0.18	-0.24
<b>HGL Refinery and Blender Net Inputs</b>															
Butanes/Butylenes .....	0.40	0.29	0.31	0.53	0.44	0.31	0.35	0.49	0.43	0.29	0.32	0.52	0.38	0.40	0.39
Natural Gasoline (Pentanes Plus) .....	0.14	0.14	0.16	0.23	0.20	0.20	0.22	0.19	0.17	0.18	0.19	0.18	0.17	0.20	0.18
<b>HGL Consumption</b>															
Ethane/Ethylene .....	1.55	1.86	1.83	1.98	1.98	2.03	1.97	2.12	2.19	2.15	2.10	2.15	1.81	2.03	2.15
Propane .....	1.11	0.61	0.65	0.95	1.16	0.60	0.69	0.92	1.16	0.62	0.60	1.02	0.83	0.84	0.85
Propylene (refinery-grade) .....	0.29	0.32	0.30	0.30	0.30	0.29	0.28	0.30	0.30	0.30	0.30	0.30	0.31	0.29	0.30
Butanes/Butylenes .....	0.22	0.29	0.26	0.20	0.23	0.26	0.29	0.21	0.19	0.24	0.23	0.23	0.24	0.25	0.22
Natural Gasoline (Pentanes Plus) .....	0.26	0.24	0.30	0.22	0.21	0.24	0.26	0.27	0.24	0.22	0.24	0.25	0.26	0.24	0.24
<b>HGL Inventories (million barrels)</b>															
Ethane .....	70.4	72.3	69.8	67.4	51.1	51.7	49.9	51.5	47.7	53.4	54.7	57.6	70.0	51.0	53.4
Propane .....	41.8	56.8	72.2	63.9	36.3	54.1	81.9	72.1	43.7	63.7	85.6	71.8	63.9	72.1	71.8
Propylene (at refineries only) .....	1.1	1.2	1.3	1.4	1.0	1.2	1.1	1.3	1.3	1.6	1.8	1.7	1.4	1.3	1.7
Butanes/Butylenes .....	37.7	54.7	69.9	43.9	35.7	58.8	81.2	51.1	37.6	62.0	79.9	50.6	43.9	51.1	50.6
Natural Gasoline (Pentanes Plus) .....	23.0	22.5	22.5	20.7	19.4	22.7	27.2	26.1	23.2	24.0	24.5	23.4	20.7	26.1	23.4
<b>Refinery and Blender Net Inputs</b>															
Crude Oil .....	13.81	15.65	15.61	15.49	15.56	16.09	16.26	16.22	15.77	16.78	16.94	16.43	15.15	16.03	16.48
Hydrocarbon Gas Liquids .....	0.53	0.43	0.47	0.76	0.64	0.50	0.57	0.68	0.60	0.47	0.51	0.70	0.55	0.60	0.57
Other Hydrocarbons/Oxygenates .....	1.06	1.19	1.20	1.18	1.12	1.20	1.19	1.17	1.11	1.18	1.17	1.16	1.16	1.17	1.16
Unfinished Oils .....	-0.07	0.24	0.32	0.21	-0.12	0.21	0.24	0.30	0.08	0.28	0.38	0.28	0.18	0.16	0.26
Motor Gasoline Blend Components .....	0.70	0.92	0.82	0.28	0.33	0.84	0.66	0.27	0.48	0.72	0.59	0.53	0.68	0.53	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 .....	16.03	18.43	18.41	17.92	17.53	18.84	18.92	18.64	18.04	19.44	19.59	19.10	17.71	18.49	19.04
<b>Refinery Processing Gain</b> .....	0.85	0.98	0.96	1.04	0.95	1.07	1.05	0.99	1.05	1.03	1.03	1.05	0.96	1.02	1.04
<b>Refinery and Blender Net Production</b>															
Hydrocarbon Gas Liquids .....	0.44	0.85	0.76	0.42	0.49	0.84	0.75	0.40	0.49	0.83	0.77	0.37	0.62	0.62	0.62
Finished Motor Gasoline .....	8.75	9.83	9.83	9.70	9.22	9.74	9.73	9.78	9.34	9.85	9.95	10.07	9.53	9.62	9.80
Jet Fuel .....	1.10	1.32	1.41	1.42	1.48	1.71	1.67	1.60	1.55	1.63	1.67	1.57	1.31	1.62	1.60
Distillate Fuel .....	4.30	4.77	4.72	4.87	4.77	5.00	5.15	5.20	4.94	5.32	5.33	5.31	4.67	5.03	5.23
Residual Fuel .....	0.20	0.21	0.22	0.23	0.26	0.22	0.26	0.23	0.28	0.26	0.29	0.25	0.21	0.24	0.27
Other Oils (a) .....	2.10	2.43	2.44	2.33	2.26	2.39	2.40	2.42	2.49	2.57	2.62	2.58	2.32	2.37	2.56
Total Refinery and Blender Net Production .....	16.88	19.41	19.37	18.96	18.49	19.90	19.97	19.63	19.09	20.46	20.62	20.15	18.66	19.50	20.08
<b>Refinery Distillation Inputs</b> .....	14.25	16.17	16.23	16.02	16.07	16.61	16.82	16.61	16.05	16.95	17.18	16.67	15.67	16.53	16.71
<b>Refinery Operable Distillation Capacity</b> .....	18.13	18.13	18.13	18.05	17.94	17.94	17.98	18.02	18.02	18.15	18.27	18.27	18.11	17.97	18.18
<b>Refinery Distillation Utilization Factor</b> .....	0.79	0.89	0.89	0.89	0.90	0.93	0.94	0.92	0.89	0.93	0.94	0.91	0.87	0.92	0.92

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

- = no data available

Notes: EIA completed modeling and analysis for this report on December 1, 2022.

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 - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>Prices (cents per gallon)</b>															
Refiner Wholesale Price .....	180	216	232	243	278	376	311	269	244	277	276	262	219	309	265
<b>Gasoline Regular Grade Retail Prices Including Taxes</b>															
PADD 1 .....	252	287	304	327	364	438	393	347	326	351	351	341	294	386	342
PADD 2 .....	247	288	304	315	352	436	397	354	319	350	350	335	290	386	339
PADD 3 .....	227	267	282	298	340	414	357	304	288	321	324	312	270	354	312
PADD 4 .....	247	311	360	351	360	446	434	368	330	356	369	354	319	404	353
PADD 5 .....	312	366	391	410	452	543	511	492	434	431	427	416	372	500	427
U.S. Average .....	256	297	316	333	371	450	408	366	336	360	360	347	302	399	351
<b>Gasoline All Grades Including Taxes</b>	<b>265</b>	<b>306</b>	<b>325</b>	<b>343</b>	<b>380</b>	<b>460</b>	<b>419</b>	<b>378</b>	<b>349</b>	<b>373</b>	<b>373</b>	<b>361</b>	<b>311</b>	<b>410</b>	<b>365</b>
<b>End-of-period Inventories (million barrels)</b>															
<b>Total Gasoline Inventories</b>															
PADD 1 .....	65.1	69.9	59.0	61.8	56.9	53.6	54.4	56.8	58.6	66.1	61.2	64.5	61.8	56.8	64.5
PADD 2 .....	50.6	50.6	46.8	50.7	56.5	46.7	44.1	50.8	53.6	50.8	48.0	52.0	50.7	50.8	52.0
PADD 3 .....	82.1	81.6	83.0	81.7	87.1	83.9	80.2	88.2	87.6	89.6	87.1	89.7	81.7	88.2	89.7
PADD 4 .....	8.6	6.2	7.6	8.1	8.1	6.4	6.4	7.7	8.0	7.7	7.7	8.4	8.1	7.7	8.4
PADD 5 .....	31.5	29.0	30.6	29.7	29.9	30.3	24.5	31.1	29.8	29.8	30.2	31.0	29.7	31.1	31.0
U.S. Total .....	237.8	237.3	227.0	232.2	238.5	221.0	209.6	234.5	237.6	243.9	234.2	245.7	232.2	234.5	245.7
<b>Finished Gasoline Inventories</b>															
U.S. Total .....	20.3	18.5	18.5	17.8	17.3	17.1	17.6	18.7	16.6	18.0	19.7	22.3	17.8	18.7	22.3
<b>Gasoline Blending Components Inventories</b>															
U.S. Total .....	217.6	218.7	208.5	214.4	221.2	203.8	192.0	215.8	221.0	225.8	214.5	223.3	214.4	215.8	223.3

- = no data available

Notes: EIA completed modeling and analysis for this report on December 1, 2022.

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 - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>Supply (billion cubic feet per day)</b>															
Total Marketed Production .....	<b>98.57</b>	<b>102.12</b>	<b>102.88</b>	<b>105.43</b>	<b>103.27</b>	<b>106.18</b>	<b>108.02</b>	<i>109.44</i>	<i>108.60</i>	<i>108.26</i>	<i>109.32</i>	<i>110.53</i>	<b>102.27</b>	<i>106.75</i>	<i>109.18</i>
Alaska .....	<b>1.02</b>	<b>0.95</b>	<b>0.90</b>	<b>1.02</b>	<b>1.06</b>	<b>1.00</b>	<b>0.96</b>	<i>1.02</i>	<i>1.01</i>	<i>0.93</i>	<i>0.85</i>	<i>0.98</i>	<b>0.97</b>	<i>1.01</i>	<i>0.94</i>
Federal GOM (a) .....	<b>2.33</b>	<b>2.30</b>	<b>1.82</b>	<b>2.10</b>	<b>2.05</b>	<b>2.11</b>	<b>2.19</b>	<i>2.30</i>	<i>2.26</i>	<i>2.18</i>	<i>2.05</i>	<i>2.00</i>	<b>2.14</b>	<i>2.16</i>	<i>2.12</i>
Lower 48 States (excl GOM) .....	<b>95.22</b>	<b>98.87</b>	<b>100.16</b>	<b>102.30</b>	<b>100.16</b>	<b>103.07</b>	<b>104.87</b>	<i>106.13</i>	<i>105.33</i>	<i>105.15</i>	<i>106.43</i>	<i>107.56</i>	<b>99.16</b>	<i>103.58</i>	<i>106.13</i>
Total Dry Gas Production .....	<b>91.14</b>	<b>94.43</b>	<b>95.14</b>	<b>97.49</b>	<b>95.10</b>	<b>97.59</b>	<b>99.21</b>	<i>100.54</i>	<i>99.87</i>	<i>99.52</i>	<i>100.49</i>	<i>101.60</i>	<b>94.57</b>	<i>98.13</i>	<i>100.38</i>
LNG Gross Imports .....	<b>0.15</b>	<b>0.02</b>	<b>0.03</b>	<b>0.04</b>	<b>0.15</b>	<b>0.01</b>	<b>0.06</b>	<i>0.06</i>	<i>0.10</i>	<i>0.04</i>	<i>0.04</i>	<i>0.06</i>	<b>0.06</b>	<i>0.07</i>	<i>0.06</i>
LNG Gross Exports .....	<b>9.27</b>	<b>9.81</b>	<b>9.60</b>	<b>10.32</b>	<b>11.50</b>	<b>10.80</b>	<b>9.74</b>	<i>10.38</i>	<i>12.37</i>	<i>12.34</i>	<i>12.02</i>	<i>12.28</i>	<b>9.76</b>	<i>10.60</i>	<i>12.25</i>
Pipeline Gross Imports .....	<b>8.68</b>	<b>6.81</b>	<b>7.24</b>	<b>7.82</b>	<b>8.89</b>	<b>7.73</b>	<b>7.84</b>	<i>7.80</i>	<i>8.34</i>	<i>6.87</i>	<i>7.04</i>	<i>7.46</i>	<b>7.63</b>	<i>8.06</i>	<i>7.42</i>
Pipeline Gross Exports .....	<b>8.31</b>	<b>8.66</b>	<b>8.50</b>	<b>8.40</b>	<b>8.43</b>	<b>8.45</b>	<b>8.06</b>	<i>8.73</i>	<i>9.32</i>	<i>8.82</i>	<i>9.15</i>	<i>9.56</i>	<b>8.47</b>	<i>8.42</i>	<i>9.21</i>
Supplemental Gaseous Fuels .....	<b>0.17</b>	<b>0.18</b>	<b>0.18</b>	<b>0.19</b>	<b>0.21</b>	<b>0.17</b>	<b>0.18</b>	<i>0.19</i>	<i>0.19</i>	<i>0.19</i>	<i>0.19</i>	<i>0.19</i>	<b>0.18</b>	<i>0.19</i>	<i>0.19</i>
Net Inventory Withdrawals .....	<b>17.18</b>	<b>-9.12</b>	<b>-7.87</b>	<b>1.03</b>	<b>20.14</b>	<b>-10.25</b>	<b>-8.95</b>	<i>2.51</i>	<i>16.33</i>	<i>-13.11</i>	<i>-9.35</i>	<i>3.41</i>	<b>0.24</b>	<i>0.79</i>	<i>-0.74</i>
Total Supply .....	<b>99.74</b>	<b>73.84</b>	<b>76.62</b>	<b>87.84</b>	<b>104.56</b>	<b>76.00</b>	<b>80.54</b>	<i>92.00</i>	<i>103.15</i>	<i>72.34</i>	<i>77.24</i>	<i>90.89</i>	<b>84.46</b>	<i>88.22</i>	<i>85.85</i>
Balancing Item (b) .....	<b>1.06</b>	<b>-1.02</b>	<b>-0.68</b>	<b>-1.54</b>	<b>0.33</b>	<b>0.27</b>	<b>0.59</b>	<i>-0.38</i>	<i>-0.69</i>	<i>0.54</i>	<i>-0.09</i>	<i>-1.56</i>	<b>-0.55</b>	<i>0.20</i>	<i>-0.45</i>
Total Primary Supply .....	<b>100.80</b>	<b>72.82</b>	<b>75.94</b>	<b>86.30</b>	<b>104.89</b>	<b>76.27</b>	<b>81.14</b>	<i>91.63</i>	<i>102.46</i>	<i>72.88</i>	<i>77.14</i>	<i>89.33</i>	<b>83.90</b>	<i>88.42</i>	<i>85.40</i>
<b>Consumption (billion cubic feet per day)</b>															
Residential .....	<b>26.05</b>	<b>7.58</b>	<b>3.67</b>	<b>14.61</b>	<b>26.09</b>	<b>7.85</b>	<b>3.56</b>	<i>17.09</i>	<i>25.70</i>	<i>7.89</i>	<i>4.13</i>	<i>17.03</i>	<b>12.92</b>	<i>13.60</i>	<i>13.64</i>
Commercial .....	<b>15.03</b>	<b>6.31</b>	<b>4.73</b>	<b>10.17</b>	<b>15.61</b>	<b>6.68</b>	<b>4.74</b>	<i>11.73</i>	<i>15.12</i>	<i>6.65</i>	<i>5.27</i>	<i>11.62</i>	<b>9.04</b>	<i>9.67</i>	<i>9.64</i>
Industrial .....	<b>24.21</b>	<b>21.67</b>	<b>21.45</b>	<b>23.59</b>	<b>25.50</b>	<b>22.38</b>	<b>21.83</b>	<i>24.02</i>	<i>24.06</i>	<i>21.28</i>	<i>21.15</i>	<i>23.44</i>	<b>22.73</b>	<i>23.42</i>	<i>22.48</i>
Electric Power (c) .....	<b>26.56</b>	<b>29.25</b>	<b>37.93</b>	<b>29.22</b>	<b>28.41</b>	<b>31.00</b>	<b>42.37</b>	<i>29.67</i>	<i>28.06</i>	<i>28.71</i>	<i>38.02</i>	<i>28.14</i>	<b>30.77</b>	<i>32.89</i>	<i>30.75</i>
Lease and Plant Fuel .....	<b>5.02</b>	<b>5.20</b>	<b>5.24</b>	<b>5.37</b>	<b>5.26</b>	<b>5.41</b>	<b>5.50</b>	<i>5.57</i>	<i>5.53</i>	<i>5.51</i>	<i>5.57</i>	<i>5.63</i>	<b>5.21</b>	<i>5.44</i>	<i>5.56</i>
Pipeline and Distribution Use .....	<b>3.77</b>	<b>2.65</b>	<b>2.78</b>	<b>3.19</b>	<b>3.86</b>	<b>2.81</b>	<b>2.99</b>	<i>3.41</i>	<i>3.84</i>	<i>2.69</i>	<i>2.86</i>	<i>3.33</i>	<b>3.09</b>	<i>3.27</i>	<i>3.18</i>
Vehicle Use .....	<b>0.15</b>	<b>0.15</b>	<b>0.15</b>	<b>0.15</b>	<b>0.15</b>	<b>0.15</b>	<b>0.15</b>	<i>0.15</i>	<i>0.15</i>	<i>0.15</i>	<i>0.15</i>	<i>0.15</i>	<b>0.15</b>	<i>0.15</i>	<i>0.15</i>
Total Consumption .....	<b>100.80</b>	<b>72.82</b>	<b>75.94</b>	<b>86.30</b>	<b>104.89</b>	<b>76.27</b>	<b>81.14</b>	<i>91.63</i>	<i>102.46</i>	<i>72.88</i>	<i>77.14</i>	<i>89.33</i>	<b>83.90</b>	<i>88.42</i>	<i>85.40</i>
<b>End-of-period Inventories (billion cubic feet)</b>															
Working Gas Inventory .....	<b>1,801</b>	<b>2,585</b>	<b>3,306</b>	<b>3,210</b>	<b>1,401</b>	<b>2,325</b>	<b>3,146</b>	<i>2,915</i>	<i>1,445</i>	<i>2,638</i>	<i>3,498</i>	<i>3,185</i>	<b>3,210</b>	<i>2,915</i>	<i>3,185</i>
East Region (d) .....	<b>313</b>	<b>515</b>	<b>804</b>	<b>766</b>	<b>242</b>	<b>482</b>	<b>759</b>	<i>671</i>	<i>211</i>	<i>560</i>	<i>871</i>	<i>757</i>	<b>766</b>	<i>671</i>	<i>757</i>
Midwest Region (d) .....	<b>395</b>	<b>630</b>	<b>966</b>	<b>887</b>	<b>296</b>	<b>557</b>	<b>917</b>	<i>827</i>	<i>313</i>	<i>639</i>	<i>993</i>	<i>873</i>	<b>887</b>	<i>827</i>	<i>873</i>
South Central Region (d) .....	<b>760</b>	<b>993</b>	<b>1,053</b>	<b>1,143</b>	<b>587</b>	<b>885</b>	<b>1,007</b>	<i>1,051</i>	<i>710</i>	<i>1,054</i>	<i>1,131</i>	<i>1,094</i>	<b>1,143</b>	<i>1,051</i>	<i>1,094</i>
Mountain Region (d) .....	<b>113</b>	<b>175</b>	<b>205</b>	<b>171</b>	<b>90</b>	<b>137</b>	<b>184</b>	<i>166</i>	<i>84</i>	<i>132</i>	<i>200</i>	<i>182</i>	<b>171</b>	<i>166</i>	<i>182</i>
Pacific Region (d) .....	<b>197</b>	<b>246</b>	<b>248</b>	<b>218</b>	<b>165</b>	<b>240</b>	<b>247</b>	<i>170</i>	<i>97</i>	<i>223</i>	<i>274</i>	<i>248</i>	<b>218</b>	<i>170</i>	<i>248</i>
Alaska .....	<b>23</b>	<b>27</b>	<b>30</b>	<b>25</b>	<b>21</b>	<b>25</b>	<b>32</b>	<i>30</i>	<i>30</i>	<i>30</i>	<i>30</i>	<i>30</i>	<b>25</b>	<i>30</i>	<i>30</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 December 1, 2022.

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 - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>Wholesale/Spot</b>															
Henry Hub Spot Price .....	<b>3.70</b>	<b>3.06</b>	<b>4.53</b>	<b>4.96</b>	<b>4.84</b>	<b>7.77</b>	<b>8.30</b>	<i>6.04</i>	<i>6.42</i>	<i>5.20</i>	<i>5.38</i>	<i>5.56</i>	<b>4.06</b>	<i>6.74</i>	<i>5.64</i>
<b>Residential Retail</b>															
New England .....	<b>14.70</b>	<b>16.23</b>	<b>20.39</b>	<b>17.65</b>	<b>17.69</b>	<b>20.93</b>	<b>26.81</b>	<i>21.70</i>	<i>20.31</i>	<i>20.37</i>	<i>22.52</i>	<i>17.91</i>	<b>16.15</b>	<i>19.80</i>	<i>19.74</i>
Middle Atlantic .....	<b>10.41</b>	<b>13.46</b>	<b>19.65</b>	<b>14.28</b>	<b>12.79</b>	<b>15.55</b>	<b>23.86</b>	<i>16.44</i>	<i>14.45</i>	<i>15.79</i>	<i>20.03</i>	<i>13.63</i>	<b>12.54</b>	<i>14.83</i>	<i>14.80</i>
E. N. Central .....	<b>7.42</b>	<b>12.74</b>	<b>22.45</b>	<b>11.38</b>	<b>9.81</b>	<b>14.81</b>	<b>25.79</b>	<i>14.19</i>	<i>12.53</i>	<i>14.59</i>	<i>20.45</i>	<i>11.30</i>	<b>10.20</b>	<i>12.57</i>	<i>12.96</i>
W. N. Central .....	<b>7.52</b>	<b>11.60</b>	<b>20.46</b>	<b>12.48</b>	<b>11.40</b>	<b>15.25</b>	<b>25.07</b>	<i>14.92</i>	<i>12.63</i>	<i>14.58</i>	<i>20.38</i>	<i>11.87</i>	<b>10.22</b>	<i>13.52</i>	<i>13.17</i>
S. Atlantic .....	<b>11.69</b>	<b>17.52</b>	<b>26.47</b>	<b>16.15</b>	<b>13.91</b>	<b>22.14</b>	<b>32.52</b>	<i>19.57</i>	<i>16.72</i>	<i>20.51</i>	<i>26.31</i>	<i>15.51</i>	<b>14.83</b>	<i>17.86</i>	<i>17.64</i>
E. S. Central .....	<b>9.41</b>	<b>15.00</b>	<b>23.30</b>	<b>14.36</b>	<b>11.80</b>	<b>17.16</b>	<b>27.62</b>	<i>16.40</i>	<i>14.27</i>	<i>18.96</i>	<i>25.14</i>	<i>15.59</i>	<b>12.11</b>	<i>14.35</i>	<i>16.27</i>
W. S. Central .....	<b>9.18</b>	<b>15.73</b>	<b>23.63</b>	<b>17.68</b>	<b>12.62</b>	<b>20.91</b>	<b>30.98</b>	<i>15.91</i>	<i>12.54</i>	<i>17.67</i>	<i>23.39</i>	<i>14.25</i>	<b>13.04</b>	<i>15.85</i>	<i>14.78</i>
Mountain .....	<b>7.93</b>	<b>10.64</b>	<b>15.52</b>	<b>10.83</b>	<b>10.31</b>	<b>12.87</b>	<b>19.38</b>	<i>13.32</i>	<i>12.38</i>	<i>13.49</i>	<i>16.57</i>	<i>11.04</i>	<b>9.78</b>	<i>12.16</i>	<i>12.46</i>
Pacific .....	<b>14.14</b>	<b>14.95</b>	<b>15.84</b>	<b>16.39</b>	<b>17.07</b>	<b>17.80</b>	<b>20.54</b>	<i>18.94</i>	<i>18.45</i>	<i>18.39</i>	<i>18.69</i>	<i>17.74</i>	<b>15.18</b>	<i>18.16</i>	<i>18.25</i>
U.S. Average .....	<b>9.71</b>	<b>13.82</b>	<b>20.27</b>	<b>13.71</b>	<b>12.32</b>	<b>16.57</b>	<b>24.94</b>	<i>16.33</i>	<i>14.58</i>	<i>16.54</i>	<i>20.87</i>	<i>13.68</i>	<b>12.21</b>	<i>15.04</i>	<i>15.06</i>
<b>Commercial Retail</b>															
New England .....	<b>10.39</b>	<b>11.15</b>	<b>12.42</b>	<b>12.59</b>	<b>12.62</b>	<b>14.46</b>	<b>16.18</b>	<i>14.97</i>	<i>14.45</i>	<i>13.82</i>	<i>12.82</i>	<i>12.31</i>	<b>11.35</b>	<i>14.02</i>	<i>13.58</i>
Middle Atlantic .....	<b>7.92</b>	<b>7.99</b>	<b>8.26</b>	<b>10.13</b>	<b>10.36</b>	<b>10.79</b>	<b>12.01</b>	<i>12.92</i>	<i>12.43</i>	<i>11.36</i>	<i>10.20</i>	<i>10.24</i>	<b>8.61</b>	<i>11.41</i>	<i>11.35</i>
E. N. Central .....	<b>6.12</b>	<b>8.63</b>	<b>11.05</b>	<b>8.70</b>	<b>8.12</b>	<b>10.46</b>	<b>14.23</b>	<i>11.24</i>	<i>10.45</i>	<i>10.82</i>	<i>11.34</i>	<i>9.12</i>	<b>7.62</b>	<i>9.82</i>	<i>10.15</i>
W. N. Central .....	<b>6.35</b>	<b>7.72</b>	<b>9.99</b>	<b>10.05</b>	<b>10.22</b>	<b>11.73</b>	<b>15.07</b>	<i>11.83</i>	<i>10.80</i>	<i>10.57</i>	<i>11.32</i>	<i>9.40</i>	<b>7.90</b>	<i>11.26</i>	<i>10.37</i>
S. Atlantic .....	<b>8.76</b>	<b>9.86</b>	<b>10.44</b>	<b>11.20</b>	<b>10.52</b>	<b>12.23</b>	<b>14.05</b>	<i>12.67</i>	<i>11.99</i>	<i>12.29</i>	<i>12.26</i>	<i>11.22</i>	<b>9.81</b>	<i>11.87</i>	<i>11.84</i>
E. S. Central .....	<b>8.25</b>	<b>9.93</b>	<b>12.00</b>	<b>11.82</b>	<b>10.41</b>	<b>12.80</b>	<b>15.71</b>	<i>13.44</i>	<i>12.18</i>	<i>12.53</i>	<i>12.51</i>	<i>11.17</i>	<b>9.86</b>	<i>12.24</i>	<i>11.95</i>
W. S. Central .....	<b>6.94</b>	<b>8.62</b>	<b>10.20</b>	<b>10.91</b>	<b>10.09</b>	<b>12.86</b>	<b>15.00</b>	<i>12.67</i>	<i>10.76</i>	<i>10.71</i>	<i>10.58</i>	<i>9.70</i>	<b>8.64</b>	<i>11.98</i>	<i>10.45</i>
Mountain .....	<b>6.46</b>	<b>7.70</b>	<b>9.14</b>	<b>8.93</b>	<b>8.78</b>	<b>9.98</b>	<b>12.60</b>	<i>11.37</i>	<i>10.76</i>	<i>10.76</i>	<i>11.14</i>	<i>9.69</i>	<b>7.68</b>	<i>10.13</i>	<i>10.46</i>
Pacific .....	<b>10.52</b>	<b>10.37</b>	<b>11.38</b>	<b>12.19</b>	<b>13.08</b>	<b>13.67</b>	<b>15.58</b>	<i>14.67</i>	<i>13.42</i>	<i>12.28</i>	<i>11.86</i>	<i>11.06</i>	<b>11.16</b>	<i>14.03</i>	<i>12.21</i>
U.S. Average .....	<b>7.54</b>	<b>8.86</b>	<b>10.14</b>	<b>10.27</b>	<b>10.00</b>	<b>11.71</b>	<b>14.10</b>	<i>12.59</i>	<i>11.66</i>	<i>11.47</i>	<i>11.31</i>	<i>10.16</i>	<b>8.81</b>	<i>11.50</i>	<i>11.13</i>
<b>Industrial Retail</b>															
New England .....	<b>8.60</b>	<b>8.09</b>	<b>7.86</b>	<b>10.10</b>	<b>11.11</b>	<b>12.09</b>	<b>12.03</b>	<i>12.12</i>	<i>11.89</i>	<i>10.71</i>	<i>9.32</i>	<i>10.35</i>	<b>8.74</b>	<i>11.77</i>	<i>10.80</i>
Middle Atlantic .....	<b>8.20</b>	<b>7.79</b>	<b>8.32</b>	<b>11.11</b>	<b>10.80</b>	<b>10.10</b>	<b>11.92</b>	<i>11.70</i>	<i>11.52</i>	<i>10.48</i>	<i>9.67</i>	<i>9.81</i>	<b>8.80</b>	<i>11.08</i>	<i>10.72</i>
E. N. Central .....	<b>5.62</b>	<b>8.64</b>	<b>8.45</b>	<b>8.18</b>	<b>7.66</b>	<b>8.72</b>	<b>10.75</b>	<i>9.78</i>	<i>9.39</i>	<i>8.41</i>	<i>7.99</i>	<i>8.02</i>	<b>7.14</b>	<i>8.80</i>	<i>8.66</i>
W. N. Central .....	<b>4.89</b>	<b>4.61</b>	<b>5.48</b>	<b>6.97</b>	<b>7.96</b>	<b>8.58</b>	<b>9.58</b>	<i>9.04</i>	<i>8.64</i>	<i>7.14</i>	<i>6.69</i>	<i>7.18</i>	<b>5.55</b>	<i>8.75</i>	<i>7.47</i>
S. Atlantic .....	<b>4.88</b>	<b>4.58</b>	<b>5.66</b>	<b>7.36</b>	<b>7.44</b>	<b>8.84</b>	<b>11.17</b>	<i>8.80</i>	<i>8.65</i>	<i>7.24</i>	<i>7.05</i>	<i>7.43</i>	<b>5.63</b>	<i>8.98</i>	<i>7.64</i>
E. S. Central .....	<b>4.50</b>	<b>4.07</b>	<b>5.11</b>	<b>6.87</b>	<b>6.53</b>	<b>8.70</b>	<b>10.55</b>	<i>8.39</i>	<i>8.29</i>	<i>6.94</i>	<i>6.60</i>	<i>7.02</i>	<b>5.14</b>	<i>8.42</i>	<i>7.27</i>
W. S. Central .....	<b>5.90</b>	<b>3.28</b>	<b>4.49</b>	<b>6.11</b>	<b>5.58</b>	<b>7.69</b>	<b>8.45</b>	<i>6.42</i>	<i>6.68</i>	<i>5.45</i>	<i>5.53</i>	<i>5.66</i>	<b>4.92</b>	<i>7.02</i>	<i>5.82</i>
Mountain .....	<b>5.24</b>	<b>5.55</b>	<b>6.96</b>	<b>7.67</b>	<b>7.11</b>	<b>8.39</b>	<b>10.45</b>	<i>9.99</i>	<i>9.60</i>	<i>8.80</i>	<i>8.51</i>	<i>8.10</i>	<b>6.31</b>	<i>8.85</i>	<i>8.79</i>
Pacific .....	<b>8.08</b>	<b>7.05</b>	<b>7.60</b>	<b>8.69</b>	<b>8.82</b>	<b>9.02</b>	<b>9.60</b>	<i>9.88</i>	<i>9.80</i>	<i>9.02</i>	<i>8.62</i>	<i>8.63</i>	<b>7.95</b>	<i>9.31</i>	<i>9.07</i>
U.S. Average .....	<b>5.77</b>	<b>4.13</b>	<b>5.09</b>	<b>6.82</b>	<b>6.82</b>	<b>8.24</b>	<b>9.26</b>	<i>7.72</i>	<i>7.98</i>	<i>6.44</i>	<i>6.25</i>	<i>6.61</i>	<b>5.50</b>	<i>7.95</i>	<i>6.85</i>

- = no data available

Notes: EIA completed modeling and analysis for this report on December 1, 2022.

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 - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>Supply (million short tons)</b>															
Production .....	140.3	142.7	148.3	146.7	149.0	141.7	153.2	148.8	140.2	129.2	138.6	131.3	578.1	592.7	539.2
Appalachia .....	40.8	39.5	36.6	38.9	40.2	38.7	38.7	38.7	38.6	36.6	32.5	31.9	155.8	156.3	139.7
Interior .....	25.0	23.3	22.7	22.5	23.8	21.9	22.7	21.9	22.2	20.1	20.8	19.3	93.5	90.3	82.5
Western .....	74.5	80.0	89.0	85.3	85.0	81.1	91.7	87.3	79.3	72.4	85.3	80.0	328.8	345.2	317.0
Primary Inventory Withdrawals .....	1.0	0.3	3.3	0.0	-1.9	0.0	3.4	-0.2	-1.8	0.1	3.5	0.0	4.6	1.3	1.8
Imports .....	1.1	1.5	1.1	1.7	1.3	1.6	2.0	1.4	1.4	1.7	2.1	1.7	5.4	6.3	7.0
Exports .....	20.7	22.0	20.6	21.8	20.2	23.0	20.7	20.4	19.7	20.8	19.1	20.3	85.1	84.3	80.0
Metallurgical Coal .....	10.3	11.7	11.3	11.7	10.5	13.1	11.6	10.9	10.1	10.8	9.8	10.2	45.0	46.0	40.9
Steam Coal .....	10.4	10.3	9.3	10.1	9.7	9.9	9.2	9.5	9.6	10.0	9.4	10.1	40.1	38.3	39.1
Total Primary Supply .....	121.7	122.5	132.1	126.6	128.2	120.4	137.8	129.6	120.1	110.1	125.1	112.7	503.0	516.0	467.9
Secondary Inventory Withdrawals .....	22.3	0.6	31.3	-14.2	5.9	-1.1	5.7	-15.0	0.5	-5.5	15.0	-7.3	39.8	-4.4	2.7
Waste Coal (a) .....	2.2	1.7	2.0	2.0	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	7.9	7.5	7.2
Total Supply .....	146.1	124.8	165.4	114.4	135.9	121.2	145.4	116.5	122.3	106.4	141.9	107.2	550.7	519.1	477.8
<b>Consumption (million short tons)</b>															
Coke Plants .....	4.4	4.5	4.4	4.4	4.2	3.9	3.9	4.0	3.9	3.9	3.9	4.1	17.6	15.9	15.8
Electric Power Sector (b) .....	127.6	113.7	157.0	103.0	122.6	107.2	134.7	105.2	112.1	97.1	132.6	97.1	501.4	469.8	438.8
Retail and Other Industry .....	6.9	6.3	6.5	7.0	6.9	6.7	6.3	6.5	6.4	5.4	5.3	6.0	26.7	26.4	23.2
Residential and Commercial .....	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.3	0.3	0.2	0.2	0.3	0.8	0.8	1.0
Other Industrial .....	6.6	6.2	6.3	6.8	6.7	6.6	6.1	6.2	6.1	5.2	5.2	5.8	25.9	25.6	22.2
Total Consumption .....	138.9	124.5	167.9	114.4	133.7	117.9	144.9	115.7	122.3	106.4	141.9	107.2	545.6	512.1	477.8
Discrepancy (c) .....	7.2	0.3	-2.5	0.0	2.2	3.3	0.6	0.9	0.0	0.0	0.0	0.0	5.1	7.0	0.0
<b>End-of-period Inventories (million short tons)</b>															
Primary Inventories (d) .....	22.6	22.4	19.0	19.0	21.0	20.9	17.5	17.7	19.5	19.4	15.9	15.9	19.0	17.7	15.9
Secondary Inventories .....	113.9	113.4	82.1	96.3	90.5	91.5	85.8	100.8	100.3	105.8	90.8	98.1	96.3	100.8	98.1
Electric Power Sector .....	109.6	108.7	77.5	91.9	86.3	87.4	80.2	95.3	95.6	100.9	85.7	93.1	91.9	95.3	93.1
Retail and General Industry .....	2.5	2.6	2.6	2.6	2.4	2.4	3.6	3.5	3.0	3.0	3.2	3.2	2.6	3.5	3.2
Coke Plants .....	1.5	1.9	1.8	1.7	1.6	1.6	1.9	1.8	1.6	1.7	1.7	1.6	1.7	1.8	1.6
Commercial & Institutional .....	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.2	0.1
<b>Coal Market Indicators</b>															
Coal Miner Productivity															
(Tons per hour) .....	6.08	6.08	6.08	6.08	6.05	6.05	6.05	6.05	5.98	5.98	5.98	5.98	6.08	6.05	5.98
Total Raw Steel Production															
(Million short tons per day) .....	0.246	0.258	0.267	0.260	0.253	0.253	0.247	0.243	0.249	0.240	0.237	0.247	0.258	0.249	0.243
Cost of Coal to Electric Utilities															
(Dollars per million Btu) .....	1.91	1.92	2.03	2.05	2.18	2.26	2.50	2.49	2.50	2.50	2.50	2.46	1.98	2.36	2.49

(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 December 1, 2022.

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 - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>Electricity Supply (billion kilowatthours)</b>															
Electricity Generation .....	<b>985</b>	<b>987</b>	<b>1,166</b>	<b>970</b>	<b>1,030</b>	<b>1,026</b>	<b>1,187</b>	<i>984</i>	<i>1,012</i>	<i>1,011</i>	<i>1,158</i>	<i>982</i>	<b>4,108</b>	<i>4,227</i>	<i>4,163</i>
Electric Power Sector (a) .....	<b>948</b>	<b>951</b>	<b>1,126</b>	<b>931</b>	<b>991</b>	<b>989</b>	<b>1,148</b>	<i>946</i>	<i>974</i>	<i>973</i>	<i>1,118</i>	<i>943</i>	<b>3,956</b>	<i>4,074</i>	<i>4,009</i>
Industrial Sector (b) .....	<b>34</b>	<b>34</b>	<b>37</b>	<b>36</b>	<b>36</b>	<b>34</b>	<b>36</b>	<i>35</i>	<i>34</i>	<i>34</i>	<i>36</i>	<i>35</i>	<b>140</b>	<i>140</i>	<i>140</i>
Commercial Sector (b) .....	<b>3</b>	<b>3</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<i>3</i>	<i>3</i>	<i>3</i>	<i>4</i>	<i>3</i>	<b>13</b>	<i>13</i>	<i>14</i>
Net Imports .....	<b>11</b>	<b>11</b>	<b>11</b>	<b>6</b>	<b>9</b>	<b>12</b>	<b>16</b>	<i>11</i>	<i>12</i>	<i>13</i>	<i>14</i>	<i>11</i>	<b>39</b>	<i>48</i>	<i>50</i>
Total Supply .....	<b>995</b>	<b>999</b>	<b>1,177</b>	<b>977</b>	<b>1,039</b>	<b>1,038</b>	<b>1,203</b>	<i>996</i>	<i>1,024</i>	<i>1,023</i>	<i>1,173</i>	<i>993</i>	<b>4,148</b>	<i>4,275</i>	<i>4,212</i>
Losses and Unaccounted for (c) .....	<b>46</b>	<b>65</b>	<b>50</b>	<b>45</b>	<b>59</b>	<b>67</b>	<b>54</b>	<i>51</i>	<i>39</i>	<i>65</i>	<i>53</i>	<i>52</i>	<b>206</b>	<i>232</i>	<i>208</i>
<b>Electricity Consumption (billion kilowatthours unless noted)</b>															
Sales to Ultimate Customers .....	<b>917</b>	<b>901</b>	<b>1,091</b>	<b>897</b>	<b>945</b>	<b>938</b>	<b>1,114</b>	<i>910</i>	<i>952</i>	<i>925</i>	<i>1,084</i>	<i>907</i>	<b>3,806</b>	<i>3,908</i>	<i>3,868</i>
Residential Sector .....	<b>378</b>	<b>327</b>	<b>443</b>	<b>322</b>	<b>380</b>	<b>347</b>	<b>457</b>	<i>330</i>	<i>381</i>	<i>337</i>	<i>438</i>	<i>331</i>	<b>1,470</b>	<i>1,514</i>	<i>1,487</i>
Commercial Sector .....	<b>306</b>	<b>322</b>	<b>378</b>	<b>322</b>	<b>322</b>	<b>335</b>	<b>389</b>	<i>330</i>	<i>325</i>	<i>333</i>	<i>381</i>	<i>326</i>	<b>1,328</b>	<i>1,376</i>	<i>1,365</i>
Industrial Sector .....	<b>232</b>	<b>250</b>	<b>268</b>	<b>251</b>	<b>242</b>	<b>255</b>	<b>266</b>	<i>248</i>	<i>244</i>	<i>254</i>	<i>263</i>	<i>249</i>	<b>1,001</b>	<i>1,011</i>	<i>1,009</i>
Transportation Sector .....	<b>2</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<i>2</i>	<i>2</i>	<i>2</i>	<i>2</i>	<i>2</i>	<b>6</b>	<i>6</i>	<i>6</i>
Direct Use (d) .....	<b>33</b>	<b>33</b>	<b>36</b>	<b>34</b>	<b>34</b>	<b>33</b>	<b>35</b>	<i>34</i>	<i>33</i>	<i>33</i>	<i>36</i>	<i>34</i>	<b>136</b>	<i>136</i>	<i>136</i>
Total Consumption .....	<b>949</b>	<b>934</b>	<b>1,127</b>	<b>931</b>	<b>980</b>	<b>971</b>	<b>1,149</b>	<i>944</i>	<i>985</i>	<i>959</i>	<i>1,120</i>	<i>941</i>	<b>3,941</b>	<i>4,044</i>	<i>4,004</i>
Average residential electricity usage per customer (kWh) .....	<b>2,730</b>	<b>2,366</b>	<b>3,206</b>	<b>2,330</b>	<b>2,711</b>	<b>2,475</b>	<b>3,265</b>	<i>2,360</i>	<i>2,700</i>	<i>2,388</i>	<i>3,103</i>	<i>2,342</i>	<b>10,632</b>	<i>10,812</i>	<i>10,532</i>
<b>End-of-period Fuel Inventories Held by Electric Power Sector</b>															
Coal (mmst) .....	<b>109.6</b>	<b>108.7</b>	<b>77.5</b>	<b>91.9</b>	<b>86.3</b>	<b>87.4</b>	<b>80.2</b>	<i>95.3</i>	<i>95.6</i>	<i>100.9</i>	<i>85.7</i>	<i>93.1</i>	<b>91.9</b>	<i>95.3</i>	<i>93.1</i>
Residual Fuel (mmb) .....	<b>7.8</b>	<b>7.3</b>	<b>6.8</b>	<b>7.0</b>	<b>5.6</b>	<b>5.9</b>	<b>5.7</b>	<i>6.1</i>	<i>4.1</i>	<i>4.2</i>	<i>2.5</i>	<i>3.1</i>	<b>7.0</b>	<i>6.1</i>	<i>3.1</i>
Distillate Fuel (mmb) .....	<b>16.7</b>	<b>16.6</b>	<b>16.6</b>	<b>18.2</b>	<b>17.6</b>	<b>17.7</b>	<b>16.7</b>	<i>16.8</i>	<i>16.5</i>	<i>16.3</i>	<i>16.3</i>	<i>16.5</i>	<b>18.2</b>	<i>16.8</i>	<i>16.5</i>
<b>Prices</b>															
<b>Power Generation Fuel Costs (dollars per million Btu)</b>															
Coal .....	<b>1.91</b>	<b>1.92</b>	<b>2.03</b>	<b>2.05</b>	<b>2.18</b>	<b>2.26</b>	<b>2.50</b>	<i>2.49</i>	<i>2.50</i>	<i>2.50</i>	<i>2.50</i>	<i>2.46</i>	<b>1.98</b>	<i>2.36</i>	<i>2.49</i>
Natural Gas .....	<b>7.80</b>	<b>3.31</b>	<b>4.48</b>	<b>5.70</b>	<b>5.95</b>	<b>7.39</b>	<b>8.23</b>	<i>6.29</i>	<i>6.80</i>	<i>5.26</i>	<i>5.40</i>	<i>5.75</i>	<b>5.20</b>	<i>7.11</i>	<i>5.76</i>
Residual Fuel Oil .....	<b>11.29</b>	<b>13.08</b>	<b>14.22</b>	<b>16.12</b>	<b>16.81</b>	<b>26.17</b>	<b>26.53</b>	<i>19.99</i>	<i>18.15</i>	<i>18.62</i>	<i>17.87</i>	<i>17.60</i>	<b>13.67</b>	<i>21.60</i>	<i>18.05</i>
Distillate Fuel Oil .....	<b>13.25</b>	<b>15.67</b>	<b>16.27</b>	<b>18.13</b>	<b>21.23</b>	<b>30.70</b>	<b>26.79</b>	<i>27.76</i>	<i>25.37</i>	<i>24.69</i>	<i>23.47</i>	<i>23.58</i>	<b>15.62</b>	<i>25.65</i>	<i>24.40</i>
<b>Prices to Ultimate Customers (cents per kilowatthour)</b>															
Residential Sector .....	<b>12.94</b>	<b>13.81</b>	<b>13.95</b>	<b>13.94</b>	<b>13.97</b>	<b>15.05</b>	<b>15.85</b>	<i>15.03</i>	<i>14.76</i>	<i>15.68</i>	<i>16.04</i>	<i>14.98</i>	<b>13.66</b>	<i>15.02</i>	<i>15.39</i>
Commercial Sector .....	<b>10.89</b>	<b>11.04</b>	<b>11.54</b>	<b>11.32</b>	<b>11.63</b>	<b>12.34</b>	<b>13.37</b>	<i>12.14</i>	<i>12.30</i>	<i>12.74</i>	<i>13.55</i>	<i>12.03</i>	<b>11.22</b>	<i>12.42</i>	<i>12.69</i>
Industrial Sector .....	<b>7.00</b>	<b>6.86</b>	<b>7.52</b>	<b>7.29</b>	<b>7.42</b>	<b>8.41</b>	<b>9.42</b>	<i>7.86</i>	<i>7.71</i>	<i>8.24</i>	<i>9.13</i>	<i>7.76</i>	<b>7.18</b>	<i>8.30</i>	<i>8.23</i>
<b>Wholesale Electricity Prices (dollars per megawatthour)</b>															
ERCOT North hub .....	<b>616.34</b>	<b>39.74</b>	<b>52.31</b>	<b>49.79</b>	<b>42.73</b>	<b>83.19</b>	<b>130.71</b>	<i>52.19</i>	<i>50.67</i>	<i>37.39</i>	<i>49.72</i>	<i>36.72</i>	<b>189.54</b>	<i>77.20</i>	<i>43.63</i>
CAISO SP15 zone .....	<b>44.74</b>	<b>36.90</b>	<b>72.02</b>	<b>60.47</b>	<b>45.20</b>	<b>60.34</b>	<b>110.03</b>	<i>79.03</i>	<i>56.59</i>	<i>45.70</i>	<i>54.22</i>	<i>46.77</i>	<b>53.53</b>	<i>73.65</i>	<i>50.82</i>
ISO-NE Internal hub .....	<b>55.26</b>	<b>33.67</b>	<b>52.57</b>	<b>65.75</b>	<b>116.48</b>	<b>73.28</b>	<b>99.14</b>	<i>90.10</i>	<i>173.79</i>	<i>63.36</i>	<i>57.66</i>	<i>97.22</i>	<b>51.81</b>	<i>94.75</i>	<i>98.01</i>
NYISO Hudson Valley zone .....	<b>44.74</b>	<b>31.85</b>	<b>50.42</b>	<b>57.54</b>	<b>100.10</b>	<b>79.72</b>	<b>104.71</b>	<i>89.75</i>	<i>133.34</i>	<i>61.33</i>	<i>59.31</i>	<i>77.96</i>	<b>46.14</b>	<i>93.57</i>	<i>82.98</i>
PJM Western hub .....	<b>35.09</b>	<b>33.71</b>	<b>51.32</b>	<b>62.57</b>	<b>58.33</b>	<b>93.00</b>	<b>110.99</b>	<i>76.81</i>	<i>87.61</i>	<i>68.02</i>	<i>73.30</i>	<i>66.23</i>	<b>45.67</b>	<i>84.78</i>	<i>73.79</i>
Midcontinent ISO Illinois hub .....	<b>44.97</b>	<b>33.82</b>	<b>49.36</b>	<b>57.71</b>	<b>47.88</b>	<b>89.21</b>	<b>101.80</b>	<i>62.11</i>	<i>65.76</i>	<i>55.24</i>	<i>57.59</i>	<i>51.91</i>	<b>46.47</b>	<i>75.25</i>	<i>57.63</i>
SPP ISO South hub .....	<b>250.31</b>	<b>30.86</b>	<b>48.63</b>	<b>45.72</b>	<b>37.25</b>	<b>72.85</b>	<b>109.97</b>	<i>60.35</i>	<i>55.87</i>	<i>49.11</i>	<i>56.83</i>	<i>46.75</i>	<b>93.88</b>	<i>70.10</i>	<i>52.14</i>
SERC index, Into Southern .....	<b>41.10</b>	<b>32.93</b>	<b>44.18</b>	<b>51.34</b>	<b>42.45</b>	<b>84.96</b>	<b>94.82</b>	<i>61.64</i>	<i>61.30</i>	<i>52.46</i>	<i>54.73</i>	<i>49.12</i>	<b>42.39</b>	<i>70.97</i>	<i>54.40</i>
FRCC index, Florida Reliability .....	<b>27.73</b>	<b>32.17</b>	<b>42.76</b>	<b>49.02</b>	<b>41.11</b>	<b>78.70</b>	<b>92.71</b>	<i>60.15</i>	<i>59.35</i>	<i>52.53</i>	<i>53.02</i>	<i>47.58</i>	<b>37.92</b>	<i>68.17</i>	<i>53.12</i>
Northwest index, Mid-Columbia .....	<b>34.56</b>	<b>51.51</b>	<b>91.61</b>	<b>60.46</b>	<b>39.85</b>	<b>59.39</b>	<b>137.82</b>	<i>89.07</i>	<i>62.45</i>	<i>49.27</i>	<i>59.01</i>	<i>51.41</i>	<b>59.53</b>	<i>81.53</i>	<i>55.53</i>
Southwest index, Palo Verde .....	<b>41.72</b>	<b>46.57</b>	<b>79.86</b>	<b>53.60</b>	<b>39.02</b>	<b>60.50</b>	<b>128.25</b>	<i>68.31</i>	<i>54.23</i>	<i>50.30</i>	<i>62.23</i>	<i>47.32</i>	<b>55.44</b>	<i>74.02</i>	<i>53.52</i>

Notes: EIA completed modeling and analysis for this report on December 1, 2022.

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 Sales to Ultimate Customers (billion kilowatthours)**

U.S. Energy Information Administration | Short-Term Energy Outlook - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>Residential Sector</b>															
New England .....	12.9	10.8	13.9	11.0	13.1	10.5	13.9	10.8	12.8	10.4	12.5	10.9	48.6	48.3	46.5
Middle Atlantic .....	35.8	30.2	41.7	30.4	36.1	30.0	42.5	30.2	36.0	30.1	39.2	30.5	138.2	138.8	135.8
E. N. Central .....	50.0	43.0	56.1	43.1	50.8	43.8	54.8	43.9	50.3	42.8	54.6	44.6	192.2	193.3	192.4
W. N. Central .....	29.7	23.5	30.8	23.8	30.6	24.7	31.3	24.2	30.5	23.8	30.5	23.6	107.8	110.8	108.3
S. Atlantic .....	95.2	85.0	111.4	83.1	96.0	91.5	116.2	84.0	97.9	89.6	114.3	85.7	374.7	387.7	387.6
E. S. Central .....	33.2	25.1	35.4	25.7	32.6	27.7	37.0	27.0	33.7	27.1	36.5	27.1	119.4	124.3	124.4
W. S. Central .....	56.7	49.6	75.0	46.9	56.9	58.8	81.3	50.1	55.5	55.2	76.3	49.7	228.1	247.0	236.7
Mountain .....	23.7	26.8	35.1	22.3	24.1	26.2	36.1	23.5	24.3	25.4	34.2	23.2	107.9	109.9	107.1
Pacific contiguous .....	39.1	32.1	42.7	34.7	38.4	32.4	43.1	35.5	39.0	31.7	38.9	34.2	148.6	149.4	143.7
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	4.8	4.8
Total .....	377.6	327.2	443.4	322.3	379.8	346.7	457.3	330.5	381.2	337.2	438.2	330.8	1,470.5	1,514.3	1,487.4
<b>Commercial Sector</b>															
New England .....	11.8	11.9	13.7	11.7	12.1	11.8	13.9	11.8	12.0	11.7	13.1	11.6	49.1	49.6	48.5
Middle Atlantic .....	34.9	33.5	40.0	34.6	36.0	34.3	40.5	34.6	36.2	34.1	38.7	34.0	143.0	145.4	143.0
E. N. Central .....	41.7	42.2	49.0	42.1	43.3	42.9	48.8	42.6	43.2	42.1	47.9	41.7	175.0	177.5	174.9
W. N. Central .....	24.1	23.7	27.6	24.0	25.1	24.6	28.1	24.7	25.2	24.2	27.5	24.1	99.4	102.4	101.1
S. Atlantic .....	70.8	77.3	89.6	75.4	75.1	82.5	93.5	77.1	77.3	83.5	94.3	78.5	313.1	328.2	333.6
E. S. Central .....	20.7	21.5	26.0	20.9	21.0	22.4	26.8	20.8	21.0	21.8	26.1	20.4	89.1	91.0	89.3
W. S. Central .....	42.8	50.9	58.8	49.3	47.0	52.1	61.2	52.7	47.6	51.6	59.6	51.7	201.8	213.0	210.6
Mountain .....	22.0	24.8	28.7	23.2	23.2	25.4	29.6	23.5	23.2	25.0	28.7	23.1	98.7	101.8	100.1
Pacific contiguous .....	35.6	35.4	43.2	39.7	37.7	37.9	45.4	40.7	38.1	37.6	43.7	39.2	153.9	161.7	158.6
AK and HI .....	1.3	1.3	1.4	1.4	1.3	1.3	1.4	1.4	1.3	1.3	1.4	1.4	5.3	5.4	5.4
Total .....	305.7	322.5	378.0	322.3	321.8	335.2	389.0	329.9	325.3	333.0	380.9	325.8	1,328.4	1,376.0	1,365.0
<b>Industrial Sector</b>															
New England .....	3.7	4.0	4.1	3.8	3.9	3.9	4.1	3.8	3.8	3.8	4.0	3.7	15.7	15.6	15.4
Middle Atlantic .....	17.7	18.0	19.5	18.2	17.5	18.2	19.4	18.0	17.6	18.3	19.3	18.0	73.5	73.1	73.2
E. N. Central .....	44.3	46.2	48.4	45.8	45.9	47.0	48.8	45.5	45.9	46.5	47.9	45.2	184.7	187.2	185.5
W. N. Central .....	23.2	24.4	26.3	24.9	24.0	24.8	26.9	24.9	24.2	24.3	26.1	24.7	98.7	100.6	99.3
S. Atlantic .....	33.6	36.1	38.4	36.3	36.3	37.5	38.7	36.1	36.9	37.3	38.0	36.1	144.3	148.6	148.3
E. S. Central .....	23.6	24.8	25.9	24.9	24.7	25.8	25.6	23.5	24.1	25.2	24.9	23.2	99.2	99.7	97.4
W. S. Central .....	46.1	52.0	57.3	54.0	49.8	53.3	53.8	54.1	51.3	54.7	55.1	55.9	209.5	211.0	217.0
Mountain .....	19.1	21.5	23.1	20.3	19.9	21.7	24.0	20.2	19.9	21.8	24.1	20.5	83.9	85.8	86.2
Pacific contiguous .....	19.1	21.9	24.1	21.2	19.0	21.0	23.4	20.9	18.8	20.6	22.7	20.4	86.3	84.4	82.4
AK and HI .....	1.1	1.2	1.2	1.2	1.1	1.2	1.3	1.2	1.1	1.2	1.2	1.2	4.7	4.8	4.8
Total .....	231.5	250.1	268.4	250.6	242.2	254.5	265.9	248.3	243.6	253.6	263.4	248.8	1,000.6	1,010.9	1,009.4
<b>Total All Sectors (a)</b>															
New England .....	28.6	26.7	31.8	26.6	29.2	26.3	32.0	26.5	28.7	26.1	29.7	26.4	113.8	114.0	110.9
Middle Atlantic .....	89.3	82.5	102.1	83.9	90.4	83.3	103.2	83.6	90.8	83.3	98.0	83.1	357.8	360.5	355.1
E. N. Central .....	136.2	131.4	153.7	131.1	140.2	133.8	152.4	132.2	139.6	131.5	150.5	131.7	552.4	558.6	553.3
W. N. Central .....	77.0	71.6	84.6	72.7	79.7	74.1	86.2	73.8	79.9	72.3	84.1	72.4	306.0	313.8	308.7
S. Atlantic .....	199.8	198.7	239.7	195.0	207.7	211.8	248.6	197.4	212.4	210.6	246.9	200.6	833.3	865.5	870.5
E. S. Central .....	77.5	71.4	87.3	71.5	78.4	76.0	89.4	71.3	78.7	74.1	87.5	70.7	307.7	315.0	311.1
W. S. Central .....	145.7	152.5	191.2	150.3	153.7	164.2	196.4	156.9	154.5	161.5	191.1	157.3	639.6	671.2	664.5
Mountain .....	64.8	73.1	87.0	65.9	67.2	73.4	89.7	67.3	67.4	72.3	87.1	66.8	290.7	297.7	293.6
Pacific contiguous .....	94.0	89.6	110.3	95.7	95.3	91.5	112.1	97.4	96.0	90.0	105.5	94.0	389.6	396.3	385.5
AK and HI .....	3.7	3.6	3.8	3.9	3.7	3.6	3.8	3.9	3.7	3.6	3.8	3.9	14.9	15.0	14.9
Total .....	916.5	901.3	1,091.4	896.6	945.5	938.0	1,113.9	910.3	951.8	925.3	1,084.1	906.9	3,805.9	3,907.6	3,868.0

(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 December 1, 2022.

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 Electricity Prices to Ultimate Customers (Cents per Kilowatthour)**

U.S. Energy Information Administration | Short-Term Energy Outlook - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>Residential Sector</b>															
New England .....	21.36	21.32	21.45	21.96	23.96	24.31	24.80	26.38	28.13	28.10	28.06	28.99	21.51	24.82	28.30
Middle Atlantic .....	15.65	16.50	16.93	16.85	17.13	18.29	18.97	18.10	18.01	18.53	18.81	17.85	16.48	18.15	18.32
E. N. Central .....	13.35	14.46	14.12	14.46	14.21	15.50	16.21	15.68	14.95	16.04	16.53	15.63	14.07	15.40	15.80
W. N. Central .....	10.86	12.75	13.28	11.88	11.28	13.26	14.36	12.12	11.46	13.57	14.46	11.99	12.19	12.78	12.88
S. Atlantic .....	11.52	12.21	12.34	12.36	12.68	13.61	14.27	13.40	13.27	14.10	14.48	13.17	12.11	13.53	13.80
E. S. Central .....	11.10	12.15	11.90	11.93	11.97	13.08	13.79	12.60	12.47	13.21	13.55	12.52	11.74	12.90	12.96
W. S. Central .....	11.24	11.83	11.82	12.29	11.82	12.93	13.81	13.75	12.75	13.47	13.96	13.51	11.78	13.13	13.47
Mountain .....	11.48	12.05	12.29	12.23	12.14	12.85	13.23	12.88	12.61	13.32	13.54	12.99	12.04	12.83	13.16
Pacific .....	16.66	18.15	19.46	17.60	18.12	20.54	22.06	18.32	18.95	21.58	22.51	18.41	18.01	19.83	20.36
U.S. Average .....	12.94	13.81	13.95	13.94	13.97	15.05	15.85	15.03	14.76	15.68	16.04	14.98	13.66	15.02	15.39
<b>Commercial Sector</b>															
New England .....	16.18	15.82	16.61	16.70	18.47	17.46	18.32	18.61	20.30	18.92	19.56	19.37	16.34	18.22	19.54
Middle Atlantic .....	12.45	13.18	14.23	13.46	14.04	14.92	16.60	14.76	14.75	15.10	16.50	14.34	13.36	15.13	15.21
E. N. Central .....	10.38	10.69	10.67	10.91	11.06	11.85	12.15	11.68	11.67	12.19	12.18	11.46	10.66	11.70	11.89
W. N. Central .....	9.10	10.19	10.83	9.62	9.65	10.71	11.70	9.26	9.24	10.02	11.39	9.02	9.97	10.37	9.96
S. Atlantic .....	9.22	9.11	9.45	9.87	10.30	10.87	11.52	10.69	10.87	11.21	11.60	10.37	9.41	10.88	11.05
E. S. Central .....	10.86	11.12	11.15	11.14	11.69	12.20	13.02	12.48	12.59	12.75	13.29	12.49	11.07	12.39	12.81
W. S. Central .....	10.01	8.89	8.48	8.59	8.68	9.63	10.47	8.67	8.85	9.59	10.57	8.84	8.94	9.43	9.51
Mountain .....	9.12	9.76	10.22	9.60	9.56	10.31	10.96	10.24	9.99	10.63	11.19	10.30	9.71	10.31	10.56
Pacific .....	14.42	15.99	18.07	16.08	16.10	17.77	20.29	17.69	17.93	19.50	21.41	17.97	16.23	18.07	19.27
U.S. Average .....	10.89	11.04	11.54	11.32	11.63	12.34	13.37	12.14	12.30	12.74	13.55	12.03	11.22	12.42	12.69
<b>Industrial Sector</b>															
New England .....	12.79	12.22	12.87	13.32	15.12	15.16	15.93	15.08	16.19	15.83	16.35	15.31	12.80	15.33	15.93
Middle Atlantic .....	6.52	6.56	7.06	7.30	7.87	8.29	9.82	7.89	8.00	7.89	9.21	7.62	6.87	8.50	8.20
E. N. Central .....	6.92	6.92	7.36	7.66	7.73	8.56	9.01	8.15	8.04	8.41	8.79	8.12	7.22	8.37	8.35
W. N. Central .....	6.97	7.30	7.99	7.06	7.16	7.99	8.70	7.25	7.40	8.02	8.69	7.34	7.35	7.80	7.88
S. Atlantic .....	6.12	6.18	6.92	6.74	6.85	8.09	9.11	6.89	7.07	7.79	8.67	6.75	6.51	7.76	7.58
E. S. Central .....	5.68	5.80	6.20	6.18	6.35	7.36	8.41	6.88	6.65	7.18	8.12	6.77	5.97	7.27	7.19
W. S. Central .....	7.05	5.53	5.94	6.07	6.19	7.28	8.08	6.72	6.40	6.85	7.43	6.38	6.12	7.08	6.77
Mountain .....	6.20	6.59	7.34	6.48	6.57	7.27	8.41	7.12	6.88	7.36	8.36	7.11	6.68	7.39	7.47
Pacific .....	9.45	10.43	12.26	10.77	10.37	11.97	14.16	11.64	10.87	12.29	14.32	11.86	10.81	12.13	12.42
U.S. Average .....	7.00	6.86	7.52	7.29	7.42	8.41	9.42	7.86	7.71	8.24	9.13	7.76	7.18	8.30	8.23
<b>All Sectors (a)</b>															
New England .....	18.04	17.48	18.21	18.35	20.46	19.83	20.80	21.23	23.20	22.10	22.67	22.72	18.03	20.59	22.68
Middle Atlantic .....	12.54	12.94	13.95	13.34	14.06	14.66	16.28	14.48	14.72	14.75	15.97	14.17	13.22	14.93	14.94
E. N. Central .....	10.34	10.59	10.88	10.94	11.10	11.89	12.60	11.79	11.65	12.10	12.68	11.73	10.69	11.86	12.06
W. N. Central .....	9.14	10.05	10.84	9.48	9.53	10.65	11.73	9.52	9.53	10.52	11.66	9.41	9.90	10.39	10.31
S. Atlantic .....	9.79	9.90	10.39	10.35	10.79	11.56	12.43	11.15	11.32	11.83	12.48	10.91	10.12	11.53	11.68
E. S. Central .....	9.39	9.63	9.98	9.70	10.12	10.88	12.02	10.68	10.72	11.03	11.92	10.63	9.69	10.97	11.11
W. S. Central .....	9.55	8.70	9.02	8.83	9.03	10.05	11.20	9.62	9.44	9.99	11.02	9.44	9.02	10.05	10.03
Mountain .....	9.12	9.67	10.29	9.53	9.60	10.32	11.19	10.22	10.01	10.59	11.33	10.26	9.70	10.40	10.60
Pacific .....	14.34	15.39	17.32	15.44	15.76	17.41	19.68	16.61	16.95	18.57	20.27	16.79	15.70	17.46	18.20
U.S. Average .....	10.75	10.88	11.53	11.14	11.49	12.28	13.45	12.02	12.11	12.58	13.48	11.93	11.10	12.36	12.56

(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 December 1, 2022.

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 - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>United States</b>															
Natural Gas .....	320.3	347.1	453.7	355.7	337.0	365.5	509.4	361.0	334.4	340.8	460.2	345.9	1,476.8	1,572.9	1,481.3
Coal .....	229.2	203.7	280.8	178.5	217.5	189.1	234.6	183.4	199.5	170.4	231.3	168.8	892.3	824.6	770.0
Nuclear .....	198.4	186.6	202.8	190.4	195.6	184.4	201.5	189.7	193.9	187.7	206.4	196.2	778.2	771.1	784.2
Renewable Energy Sources: .....	193.2	208.0	182.9	201.0	233.2	244.9	197.4	206.9	239.8	270.0	215.8	227.0	785.0	882.3	952.6
Conventional Hydropower .....	65.6	65.8	59.2	59.8	74.4	69.2	62.3	54.4	67.2	76.2	63.0	58.8	250.4	260.3	265.2
Wind .....	95.9	96.5	77.7	107.7	119.0	121.0	80.6	114.2	126.8	128.0	85.2	119.6	377.9	434.8	459.6
Solar (a) .....	21.0	35.3	35.1	23.0	29.1	44.3	43.2	27.9	35.3	55.8	56.6	38.2	114.5	144.5	185.9
Biomass .....	6.9	6.5	6.9	6.4	6.6	6.5	7.1	6.2	6.5	6.2	6.7	6.2	26.7	26.4	25.5
Geothermal .....	3.8	3.8	3.9	4.0	4.1	4.0	4.2	4.2	4.1	3.9	4.3	4.1	15.5	16.4	16.4
Pumped Storage Hydropower .....	-1.1	-1.0	-1.8	-1.2	-1.2	-1.3	-2.0	-1.3	-1.2	-1.4	-2.1	-1.4	-5.1	-5.9	-6.2
Petroleum (b) .....	5.1	3.8	4.9	4.6	6.4	4.1	4.5	4.1	5.3	3.8	4.4	4.2	18.3	19.1	17.6
Other Gases .....	0.7	0.9	0.9	0.8	0.8	0.9	1.0	0.8	0.8	0.8	0.9	0.8	3.3	3.5	3.3
Other Nonrenewable Fuels (c) .....	1.8	1.7	1.7	1.7	1.6	1.6	1.6	1.8	1.5	1.6	1.5	1.7	7.0	6.5	6.2
Total Generation .....	947.8	950.8	1,126.1	931.5	990.8	989.3	1,147.8	946.2	974.0	973.5	1,118.4	943.2	3,956.2	4,074.2	4,009.1
<b>New England (ISO-NE)</b>															
Natural Gas .....	12.1	11.8	16.7	12.9	12.1	12.6	17.4	14.1	12.0	12.5	16.1	12.3	53.4	56.2	53.0
Coal .....	0.5	0.0	0.0	0.0	0.3	0.0	0.0	0.1	0.3	0.1	0.0	0.1	0.6	0.4	0.6
Nuclear .....	7.1	7.1	7.3	5.6	7.1	5.6	7.3	7.4	7.1	5.6	7.3	6.2	27.1	27.4	26.2
Conventional hydropower .....	1.6	1.6	1.3	1.7	1.7	1.5	1.0	1.7	2.0	2.2	1.2	1.7	6.2	5.9	7.1
Nonhydro renewables (d) .....	2.8	2.8	2.5	2.6	3.2	3.2	3.0	2.6	3.1	3.2	3.0	2.7	10.7	11.9	12.0
Other energy sources (e) .....	0.4	0.3	0.3	0.4	1.4	0.4	0.4	0.4	1.0	0.3	0.3	0.4	1.4	2.5	1.9
Total generation .....	24.5	23.6	28.1	23.2	25.7	23.1	29.2	26.3	25.5	23.9	27.9	23.4	99.4	104.3	100.8
Net energy for load (f) .....	29.3	27.0	32.4	27.6	30.2	26.0	33.0	27.3	29.8	27.7	31.9	28.7	116.4	116.4	118.2
<b>New York (NYISO)</b>															
Natural Gas .....	13.1	14.1	19.4	15.0	14.1	15.5	21.2	12.8	13.9	16.9	18.3	13.5	61.5	63.6	62.5
Coal .....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nuclear .....	9.3	7.7	7.3	7.0	6.4	7.0	6.4	6.7	6.6	6.4	7.0	7.0	31.2	26.6	27.0
Conventional hydropower .....	7.1	7.0	7.1	7.5	7.3	6.9	6.6	6.9	6.8	6.8	6.8	7.1	28.7	27.7	27.5
Nonhydro renewables (d) .....	1.7	1.7	1.5	1.8	2.1	2.0	1.7	1.9	2.4	2.6	2.1	2.8	6.8	7.7	9.9
Other energy sources (e) .....	0.4	0.2	0.4	0.1	1.1	0.1	0.1	0.1	0.5	0.1	0.2	0.1	1.0	1.4	0.9
Total generation .....	31.6	30.6	35.7	31.4	31.0	31.5	36.0	28.5	30.2	32.9	34.4	30.4	129.2	127.0	127.9
Net energy for load (f) .....	36.4	34.8	42.7	35.0	37.6	34.0	43.3	34.7	36.8	35.5	41.5	35.1	149.0	149.6	148.9
<b>Mid-Atlantic (PJM)</b>															
Natural Gas .....	72.3	71.4	90.0	78.9	76.8	74.3	103.8	78.4	78.5	74.4	95.1	85.7	312.6	333.3	333.7
Coal .....	49.8	39.8	55.3	29.8	48.6	35.3	42.2	30.2	44.9	30.9	42.5	29.4	174.7	156.3	147.7
Nuclear .....	68.3	64.6	70.5	68.3	69.0	65.1	69.7	66.4	67.8	67.1	72.0	68.7	271.7	270.2	275.7
Conventional hydropower .....	2.7	2.4	2.4	2.3	2.7	2.4	1.4	2.1	2.6	2.6	1.7	2.1	9.8	8.6	9.0
Nonhydro renewables (d) .....	11.3	10.8	9.0	11.8	13.3	13.0	9.7	12.8	14.3	13.9	11.5	14.6	43.0	48.8	54.2
Other energy sources (e) .....	0.8	0.7	0.5	0.8	0.7	0.4	0.2	0.6	0.6	0.4	0.2	0.6	2.7	1.9	1.8
Total generation .....	205.2	189.8	227.6	191.9	211.1	190.3	227.1	190.5	208.7	189.1	223.1	201.1	814.4	819.0	822.0
Net energy for load (f) .....	193.6	178.2	215.0	183.4	201.0	180.3	213.2	182.1	200.2	182.0	207.4	182.9	770.2	776.5	772.5
<b>Southeast (SERC)</b>															
Natural Gas .....	57.0	57.0	72.4	64.1	63.5	67.1	86.7	62.6	67.0	62.5	81.9	55.8	250.5	279.9	267.2
Coal .....	36.3	33.7	44.3	23.3	32.3	32.8	32.0	27.1	28.4	26.5	37.0	24.7	137.7	124.2	116.7
Nuclear .....	53.8	52.2	54.1	52.0	51.4	51.1	55.4	51.1	52.5	53.8	57.3	57.4	212.2	209.1	221.0
Conventional hydropower .....	10.1	9.1	8.7	9.2	10.3	8.3	6.1	8.6	11.3	9.0	8.0	9.1	37.0	33.3	37.4
Nonhydro renewables (d) .....	3.8	5.7	5.4	4.2	5.0	7.0	6.5	4.8	5.7	8.0	7.4	5.5	19.1	23.4	26.7
Other energy sources (e) .....	0.0	-0.2	-0.5	-0.2	-0.2	-0.3	-0.6	-0.2	-0.2	-0.4	-0.7	-0.3	-1.0	-1.4	-1.6
Total generation .....	161.0	157.5	184.4	152.6	162.3	166.0	186.2	154.1	164.6	159.5	190.9	152.2	655.5	668.5	667.3
Net energy for load (f) .....	158.7	153.2	180.8	152.2	164.8	167.3	180.3	153.8	163.7	162.2	188.5	158.3	644.9	666.3	672.7
<b>Florida (FRCC)</b>															
Natural Gas .....	34.9	44.4	52.9	41.5	38.4	47.7	56.8	40.3	34.9	43.7	54.8	44.6	173.7	183.2	178.0
Coal .....	4.7	5.3	5.6	2.8	3.5	4.3	3.7	3.2	2.7	4.0	3.7	2.9	18.3	14.6	13.2
Nuclear .....	7.8	7.2	7.2	5.8	7.3	7.9	7.5	8.0	7.0	6.9	7.5	7.7	28.1	30.7	29.2
Conventional hydropower .....	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.3	0.2	0.2
Nonhydro renewables (d) .....	2.3	3.1	2.8	2.5	2.9	3.7	3.5	3.1	3.8	5.3	4.5	3.9	10.8	13.3	17.5
Other energy sources (e) .....	0.7	0.7	0.6	0.5	0.7	0.6	0.7	0.6	0.7	0.6	0.7	0.7	2.6	2.6	2.7
Total generation .....	50.6	60.7	69.3	53.2	52.9	64.2	72.2	55.3	49.2	60.6	71.3	59.8	233.8	244.6	240.8
Net energy for load (f) .....	51.5	63.2	71.1	54.8	53.3	65.8	76.6	55.5	50.3	60.4	68.1	53.1	240.7	251.1	231.9

(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 December 1, 2022.

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 - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>Midwest (MISO)</b>															
Natural Gas .....	35.4	40.8	48.0	43.2	41.6	47.4	59.7	43.9	40.7	48.7	52.3	39.8	167.5	192.7	181.6
Coal .....	69.7	60.1	83.2	54.6	64.5	54.1	68.6	53.4	60.1	53.9	69.9	50.6	267.7	240.5	234.5
Nuclear .....	23.6	22.6	25.2	24.4	23.8	19.6	24.3	23.9	22.4	21.1	24.4	20.9	95.7	91.6	88.7
Conventional hydropower .....	2.5	2.9	2.5	2.3	2.9	2.7	2.4	2.2	2.5	2.9	2.4	2.2	10.1	10.2	9.9
Nonhydro renewables (d) .....	23.3	22.7	18.5	27.3	32.0	28.7	20.3	27.9	34.7	30.6	22.1	29.6	91.8	109.0	117.0
Other energy sources (e) .....	1.9	1.5	1.8	1.8	1.4	1.7	1.3	1.3	1.5	1.4	1.4	1.5	6.9	5.8	5.8
Total generation .....	156.4	150.6	179.2	153.5	166.1	154.2	176.8	152.6	161.9	158.7	172.5	144.5	639.7	649.8	637.6
Net energy for load (f) .....	158.3	154.5	180.5	153.9	165.1	158.9	179.5	156.6	162.9	160.8	179.4	157.6	647.2	660.2	660.6
<b>Central (Southwest Power Pool)</b>															
Natural Gas .....	12.2	13.2	17.4	10.0	10.6	13.4	22.4	13.6	11.9	12.4	17.9	9.9	52.8	59.9	52.1
Coal .....	19.6	18.5	28.9	17.5	22.1	20.5	30.1	18.9	20.0	16.2	24.9	16.3	84.5	91.6	77.3
Nuclear .....	4.1	2.8	4.2	4.3	4.3	4.3	3.9	2.2	4.3	4.3	4.4	4.4	15.5	14.7	17.3
Conventional hydropower .....	3.6	4.3	3.5	3.1	4.3	3.9	3.2	2.7	3.4	4.2	3.7	3.1	14.5	14.1	14.3
Nonhydro renewables (d) .....	23.2	24.1	21.3	27.1	28.6	29.6	21.3	30.1	29.8	31.5	22.6	31.1	95.8	109.6	114.9
Other energy sources (e) .....	0.4	0.3	0.3	0.3	0.3	0.4	0.2	0.3	0.3	0.3	0.1	0.3	1.3	1.1	1.1
Total generation .....	63.3	63.2	75.5	62.4	70.2	72.0	81.1	67.8	69.7	68.9	73.5	65.0	264.3	291.0	277.1
Net energy for load (f) .....	64.5	64.8	77.2	61.1	67.3	69.0	82.6	65.3	66.1	65.1	76.7	60.7	267.6	284.2	268.7
<b>Texas (ERCOT)</b>															
Natural Gas .....	32.7	39.4	57.8	34.2	33.6	42.9	64.7	36.4	27.2	31.3	52.1	32.5	164.1	177.6	143.0
Coal .....	15.8	17.9	22.0	16.5	17.7	16.8	20.2	15.1	15.1	15.4	18.3	14.8	72.2	69.8	63.7
Nuclear .....	10.5	9.8	11.0	8.9	11.0	9.9	10.7	10.0	10.7	8.9	11.0	10.1	40.2	41.6	40.7
Conventional hydropower .....	0.1	0.2	0.1	0.1	0.2	0.1	0.0	0.1	0.2	0.2	0.1	0.1	0.5	0.4	0.6
Nonhydro renewables (d) .....	25.1	27.5	23.3	28.8	30.9	39.1	28.0	30.9	36.2	45.4	34.0	34.9	104.8	128.9	150.5
Other energy sources (e) .....	0.3	0.3	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.4	1.4	1.6	1.5
Total generation .....	84.5	95.1	114.7	89.0	93.7	109.2	124.0	92.9	89.7	101.6	115.9	92.9	383.2	419.9	400.1
Net energy for load (f) .....	84.5	95.1	114.7	89.0	93.7	109.2	124.0	92.9	89.7	101.6	115.9	92.9	383.2	419.9	400.1
<b>Northwest</b>															
Natural Gas .....	22.1	21.0	29.5	21.7	20.2	15.9	27.3	25.7	24.2	11.9	27.4	20.7	94.3	89.1	84.2
Coal .....	24.6	20.4	29.1	24.1	21.6	18.1	26.9	26.7	20.7	16.7	25.3	21.9	98.2	93.3	84.6
Nuclear .....	2.5	1.2	2.5	2.3	2.5	2.3	2.5	2.5	2.4	1.2	2.4	2.4	8.5	9.8	8.4
Conventional hydropower .....	32.9	31.5	26.3	28.8	38.9	35.7	33.9	25.3	32.5	38.8	30.1	28.2	119.5	133.7	129.6
Nonhydro renewables (d) .....	15.7	17.1	15.7	17.3	19.2	20.4	15.9	19.0	20.3	22.0	17.7	20.0	65.8	74.6	80.0
Other energy sources (e) .....	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.7	0.6	0.5
Total generation .....	97.9	91.4	103.4	94.5	102.6	92.6	106.7	99.3	100.0	90.7	103.2	93.3	387.2	401.2	387.3
Net energy for load (f) .....	89.0	86.9	98.1	90.1	89.9	87.6	99.0	90.4	91.7	86.7	96.6	88.6	364.2	366.8	363.6
<b>Southwest</b>															
Natural Gas .....	10.7	15.3	19.3	11.4	9.6	12.9	18.6	12.1	10.7	13.4	18.9	10.6	56.7	53.1	53.6
Coal .....	6.0	6.2	9.0	8.0	6.1	6.3	8.1	6.3	5.5	4.7	6.5	5.8	29.2	26.8	22.5
Nuclear .....	8.5	7.1	8.6	7.5	8.2	7.5	8.7	7.5	8.4	7.5	8.6	7.5	31.6	31.9	32.0
Conventional hydropower .....	2.0	2.3	2.0	1.5	1.9	2.1	1.8	1.3	1.8	2.0	1.9	1.4	7.9	7.1	6.9
Nonhydro renewables (d) .....	3.2	3.9	3.2	3.9	4.6	5.7	3.9	4.8	4.6	6.3	4.2	6.2	14.3	19.0	21.3
Other energy sources (e) .....	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.2	0.2	0.2
Total generation .....	30.4	35.0	42.2	32.2	30.4	34.4	41.1	32.2	31.0	33.9	40.1	31.4	139.8	138.1	136.4
Net energy for load (f) .....	20.4	26.7	33.3	22.6	21.7	27.2	34.9	22.0	21.1	25.9	33.3	21.9	103.0	105.8	102.2
<b>California</b>															
Natural Gas .....	17.0	18.1	29.4	22.0	15.8	15.5	29.9	20.1	12.6	12.4	24.8	19.7	86.5	81.4	69.6
Coal .....	1.8	1.4	3.0	1.4	0.5	0.7	2.4	2.0	1.4	1.6	2.6	1.9	7.6	5.5	7.5
Nuclear .....	2.9	4.2	5.0	4.3	4.6	4.2	5.0	3.8	4.6	4.7	4.6	4.1	16.5	17.6	18.0
Conventional hydropower .....	2.5	4.1	4.9	2.9	3.6	5.3	5.3	3.0	3.8	7.1	6.7	3.5	14.4	17.2	21.1
Nonhydro renewables (d) .....	14.8	22.1	20.0	13.3	16.7	22.8	20.7	14.1	17.5	24.5	23.1	16.3	70.3	74.2	81.3
Other energy sources (e) .....	-0.1	-0.1	0.0	-0.1	0.0	-0.2	0.1	-0.1	-0.1	-0.2	0.1	-0.2	-0.2	-0.2	-0.4
Total generation .....	38.9	49.9	62.3	43.9	41.2	48.2	63.4	42.8	39.9	50.1	61.9	45.4	195.0	195.7	197.2
Net energy for load (f) .....	55.3	63.3	77.6	59.7	57.3	61.9	79.6	61.9	58.0	62.2	75.2	59.6	255.9	260.7	255.1

(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 December 1, 2022.

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 - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>Electric Power Sector</b>															
Geothermal .....	0.033	0.033	0.035	0.036	0.036	0.035	0.037	0.037	0.036	0.034	0.038	0.037	0.137	0.145	0.145
Hydroelectric Power (a) .....	0.603	0.577	0.533	0.560	0.671	0.621	0.582	0.484	0.598	0.678	0.561	0.524	2.272	2.358	2.361
Solar (b) .....	0.187	0.314	0.313	0.205	0.259	0.394	0.384	0.248	0.314	0.497	0.504	0.341	1.020	1.286	1.655
Waste Biomass (c) .....	0.059	0.057	0.057	0.056	0.055	0.053	0.053	0.054	0.054	0.053	0.054	0.053	0.229	0.215	0.214
Wood Biomass .....	0.051	0.045	0.054	0.047	0.051	0.046	0.056	0.042	0.046	0.041	0.051	0.042	0.197	0.196	0.180
Wind .....	0.854	0.860	0.692	0.959	1.060	1.077	0.718	1.017	1.129	1.139	0.758	1.065	3.365	3.872	4.092
Subtotal .....	1.788	1.887	1.684	1.863	2.133	2.227	1.829	1.883	2.178	2.444	1.965	2.061	7.221	8.072	8.648
<b>Industrial Sector</b>															
Biofuel Losses and Co-products (d) .....	0.179	0.199	0.196	0.216	0.203	0.203	0.199	0.208	0.197	0.200	0.199	0.206	0.789	0.813	0.801
Geothermal .....	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.004	0.004	0.004
Hydroelectric Power (a) .....	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.008	0.008	0.008
Solar (b) .....	0.007	0.011	0.011	0.007	0.008	0.011	0.012	0.008	0.009	0.012	0.012	0.009	0.035	0.039	0.042
Waste Biomass (c) .....	0.042	0.040	0.037	0.042	0.042	0.040	0.038	0.041	0.040	0.039	0.038	0.041	0.160	0.161	0.158
Wood Biomass .....	0.333	0.339	0.343	0.328	0.315	0.321	0.334	0.326	0.339	0.340	0.357	0.343	1.342	1.296	1.380
Subtotal (e) .....	0.568	0.596	0.595	0.602	0.576	0.583	0.591	0.592	0.592	0.599	0.614	0.607	2.361	2.342	2.413
<b>Commercial Sector</b>															
Geothermal .....	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.024	0.025	0.024
Solar (b) .....	0.028	0.042	0.042	0.028	0.033	0.048	0.048	0.034	0.039	0.057	0.057	0.040	0.140	0.163	0.193
Waste Biomass (c) .....	0.009	0.008	0.009	0.009	0.010	0.009	0.010	0.009	0.009	0.009	0.009	0.009	0.035	0.038	0.037
Wood Biomass .....	0.020	0.020	0.021	0.021	0.020	0.021	0.021	0.021	0.020	0.021	0.021	0.021	0.083	0.083	0.083
Subtotal (e) .....	0.070	0.084	0.086	0.072	0.077	0.092	0.093	0.078	0.082	0.101	0.102	0.084	0.313	0.340	0.368
<b>Residential Sector</b>															
Geothermal .....	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.040	0.040	0.040
Solar (f) .....	0.065	0.099	0.097	0.067	0.079	0.118	0.119	0.085	0.096	0.149	0.151	0.106	0.329	0.402	0.502
Wood Biomass .....	0.114	0.116	0.117	0.117	0.119	0.121	0.120	0.117	0.119	0.121	0.120	0.117	0.464	0.477	0.477
Subtotal .....	0.189	0.225	0.224	0.194	0.208	0.249	0.250	0.212	0.225	0.279	0.282	0.233	0.832	0.919	1.019
<b>Transportation Sector</b>															
Biodiesel, Renewable Diesel, and Other (g) ...	0.083	0.099	0.094	0.110	0.094	0.117	0.116	0.138	0.126	0.134	0.133	0.159	0.386	0.465	0.552
Ethanol (g) .....	0.242	0.281	0.285	0.289	0.259	0.281	0.279	0.278	0.260	0.281	0.281	0.284	1.098	1.097	1.106
Subtotal .....	0.326	0.379	0.379	0.400	0.353	0.397	0.395	0.421	0.386	0.415	0.414	0.443	1.484	1.566	1.657
<b>All Sectors Total</b>															
Biodiesel, Renewable Diesel, and Other (g) ...	0.083	0.099	0.094	0.110	0.094	0.117	0.116	0.138	0.126	0.134	0.133	0.159	0.386	0.465	0.552
Biofuel Losses and Co-products (d) .....	0.179	0.199	0.196	0.216	0.203	0.203	0.199	0.208	0.197	0.200	0.199	0.206	0.789	0.813	0.801
Ethanol (f) .....	0.253	0.293	0.298	0.302	0.271	0.293	0.292	0.291	0.272	0.294	0.293	0.296	1.147	1.146	1.156
Geothermal .....	0.050	0.052	0.052	0.052	0.051	0.051	0.052	0.054	0.053	0.051	0.055	0.054	0.206	0.209	0.213
Hydroelectric Power (a) .....	0.605	0.580	0.535	0.562	0.674	0.624	0.584	0.487	0.601	0.681	0.563	0.526	2.283	2.369	2.372
Solar (b)(f) .....	0.288	0.466	0.463	0.307	0.380	0.572	0.564	0.375	0.457	0.715	0.725	0.495	1.524	1.891	2.392
Waste Biomass (c) .....	0.110	0.107	0.106	0.109	0.107	0.102	0.102	0.105	0.103	0.101	0.101	0.103	0.431	0.416	0.408
Wood Biomass .....	0.519	0.520	0.535	0.512	0.506	0.509	0.531	0.506	0.525	0.523	0.549	0.523	2.085	2.052	2.120
Wind .....	0.854	0.860	0.692	0.959	1.060	1.077	0.718	1.017	1.129	1.139	0.758	1.065	3.365	3.872	4.092
<b>Total Consumption</b> .....	<b>2.940</b>	<b>3.171</b>	<b>2.968</b>	<b>3.130</b>	<b>3.347</b>	<b>3.548</b>	<b>3.158</b>	<b>3.186</b>	<b>3.463</b>	<b>3.838</b>	<b>3.377</b>	<b>3.428</b>	<b>12.210</b>	<b>13.239</b>	<b>14.106</b>

(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) distrib

(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) Subtotals for the industrial and commercial sectors might not equal the sum of the components. The subtotal for the industrial sector includes ethanol consumption that is not shown separately. The subtotal for the commercial sector includes ethanol and hydroelectric consumption that are not shown separately.

(f) Solar consumption in the residential sector includes energy from small-scale (<1 MW) solar photovoltaic systems. Also includes solar heating consumption in all sectors.

(g) Fuel ethanol and biodiesel, renewable diesel, and other biofuels consumption in the transportation sector includes production, stock change, and imports less exports. Some biomass-based diesel may be consumed in the residential sector in heating oil.

- = no data available

Notes: EIA completed modeling and analysis for this report on December 1, 2022.

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

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

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 - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>Renewable Energy Electric Generating Capacity (megawatts, end of period)</b>															
<b>Electric Power Sector (a)</b>															
Biomass .....	6,130	6,110	6,081	6,087	6,083	6,084	6,020	5,994	5,991	6,027	6,027	6,009	6,087	5,994	6,009
Waste .....	3,680	3,660	3,646	3,652	3,649	3,649	3,585	3,560	3,557	3,592	3,592	3,590	3,652	3,560	3,590
Wood .....	2,450	2,450	2,435	2,435	2,435	2,435	2,435	2,435	2,435	2,435	2,435	2,419	2,435	2,435	2,419
Conventional Hydroelectric .....	79,538	79,608	79,611	79,611	79,653	79,653	79,586	79,502	79,701	79,715	79,742	79,749	79,611	79,502	79,749
Geothermal .....	2,523	2,523	2,523	2,523	2,523	2,540	2,578	2,578	2,603	2,603	2,603	2,603	2,523	2,578	2,603
Large-Scale Solar (b) .....	50,533	52,435	55,700	61,009	63,189	65,458	67,201	75,992	79,694	83,611	89,983	106,994	61,009	75,992	106,994
Wind .....	120,974	124,729	126,684	132,629	134,862	137,384	138,100	143,904	144,798	145,176	145,376	148,740	132,629	143,904	148,740
<b>Other Sectors (c)</b>															
Biomass .....	6,319	6,321	6,325	6,306	6,306	6,300	6,312	6,339	6,339	6,339	6,339	6,330	6,306	6,339	6,330
Waste .....	826	828	827	817	817	817	817	817	817	817	817	817	817	817	817
Wood .....	5,493	5,493	5,498	5,489	5,489	5,483	5,495	5,522	5,522	5,522	5,522	5,513	5,489	5,522	5,513
Conventional Hydroelectric .....	301	301	299	299	299	302	302	302	302	302	300	300	299	302	300
Large-Scale Solar (b) .....	477	479	519	541	559	569	571	575	580	589	634	634	541	575	634
Small-Scale Solar (d) .....	28,846	30,325	31,515	32,972	34,700	36,348	38,092	40,216	42,444	44,795	47,276	49,896	32,972	40,216	49,896
Residential Sector .....	18,023	19,102	20,039	21,022	22,293	23,588	24,993	26,570	28,231	29,992	31,859	33,838	21,022	26,570	33,838
Commercial Sector .....	8,734	9,086	9,300	9,728	10,175	10,502	10,807	11,294	11,800	12,327	12,878	13,455	9,728	11,294	13,455
Industrial Sector .....	2,089	2,137	2,176	2,223	2,232	2,257	2,291	2,352	2,413	2,475	2,539	2,603	2,223	2,352	2,603
Wind .....	122	122	122	125	125	125	125	125	125	125	125	125	125	125	125
<b>Renewable Electricity Generation (billion kilowatthours)</b>															
<b>Electric Power Sector (a)</b>															
Biomass .....	6.9	6.5	6.9	6.4	6.6	6.5	7.1	6.2	6.5	6.2	6.7	6.2	26.7	26.4	25.5
Waste .....	3.8	3.7	3.7	3.6	3.5	3.6	3.6	3.6	3.6	3.5	3.6	3.5	14.8	14.2	14.2
Wood .....	3.1	2.7	3.3	2.8	3.1	2.9	3.6	2.6	2.9	2.6	3.2	2.6	11.9	12.2	11.3
Conventional Hydroelectric .....	65.6	65.8	59.2	59.8	74.4	69.2	62.3	54.4	67.2	76.2	63.0	58.8	250.4	260.3	265.2
Geothermal .....	3.8	3.8	3.9	4.0	4.1	4.0	4.2	4.2	4.1	3.9	4.3	4.1	15.5	16.4	16.4
Large-Scale Solar (b) .....	21.0	35.3	35.1	23.0	29.1	44.3	43.2	27.9	35.3	55.8	56.6	38.2	114.5	144.5	185.9
Wind .....	95.9	96.5	77.7	107.7	119.0	121.0	80.6	114.2	126.8	128.0	85.2	119.6	377.9	434.8	459.6
<b>Other Sectors (c)</b>															
Biomass .....	6.9	6.8	7.0	6.8	6.7	6.8	6.8	6.8	6.7	6.8	6.8	6.8	27.5	27.2	27.2
Waste .....	0.7	0.7	0.7	0.8	0.7	0.7	0.7	0.8	0.7	0.7	0.7	0.8	3.0	2.9	2.9
Wood .....	6.1	6.1	6.3	6.1	6.0	6.1	6.2	6.1	6.0	6.1	6.2	6.1	24.6	24.3	24.3
Conventional Hydroelectric .....	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	1.2	1.2	1.2
Large-Scale Solar (b) .....	0.1	0.2	0.2	0.1	0.2	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.7	1.0	1.1
Small-Scale Solar (d) .....	9.8	14.7	14.5	10.0	12.0	17.7	17.8	12.5	14.4	21.9	22.4	15.6	49.0	60.1	74.3
Residential Sector .....	5.9	9.1	8.9	6.1	7.6	11.3	11.4	8.1	9.3	14.5	14.8	10.4	30.1	38.4	49.0
Commercial Sector .....	3.1	4.5	4.5	3.0	3.6	5.2	5.2	3.6	4.2	6.1	6.2	4.3	15.1	17.6	20.8
Industrial Sector .....	0.8	1.1	1.1	0.8	0.8	1.2	1.2	0.8	0.9	1.3	1.3	0.9	3.8	4.1	4.5
Wind .....	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.3

(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 December 1, 2022.

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 - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>Macroeconomic</b>															
Real Gross Domestic Product															
(billion chained 2012 dollars - SAAR)	19,216	19,544	19,673	20,006	19,924	19,895	20,022	19,997	19,911	19,914	19,984	20,080	19,610	19,960	19,972
Real Personal Consumption Expend.															
(billion chained 2012 dollars - SAAR)	13,387	13,774	13,874	13,982	14,028	14,099	14,134	14,207	14,195	14,227	14,260	14,295	13,754	14,117	14,244
Real Private Fixed Investment															
(billion chained 2012 dollars - SAAR)	3,540	3,591	3,581	3,586	3,629	3,582	3,537	3,473	3,413	3,374	3,372	3,385	3,575	3,555	3,386
Business Inventory Change															
(billion chained 2012 dollars - SAAR)	-102	-159	-55	240	257	145	100	40	11	-10	26	65	-19	136	23
Real Government Expenditures															
(billion chained 2012 dollars - SAAR)	3,449	3,422	3,421	3,413	3,393	3,379	3,400	3,409	3,436	3,445	3,455	3,467	3,426	3,395	3,451
Real Exports of Goods & Services															
(billion chained 2012 dollars - SAAR)	2,318	2,345	2,339	2,466	2,437	2,517	2,603	2,601	2,582	2,584	2,600	2,627	2,367	2,540	2,598
Real Imports of Goods & Services															
(billion chained 2012 dollars - SAAR)	3,482	3,549	3,606	3,763	3,926	3,947	3,877	3,871	3,874	3,855	3,870	3,890	3,600	3,905	3,872
Real Disposable Personal Income															
(billion chained 2012 dollars - SAAR)	17,325	15,921	15,735	15,537	15,109	15,052	15,108	15,248	15,430	15,525	15,670	15,785	16,130	15,129	15,602
Non-Farm Employment															
(millions)	143.7	145.2	146.9	148.6	150.4	151.6	152.7	153.4	153.3	152.4	151.6	151.1	146.1	152.0	152.1
Civilian Unemployment Rate															
(percent)	6.2	5.9	5.1	4.2	3.8	3.6	3.6	3.8	4.0	4.6	5.2	5.5	5.4	3.7	4.8
Housing Starts															
(millions - SAAR)	1.58	1.59	1.57	1.68	1.72	1.65	1.47	1.37	1.26	1.20	1.18	1.18	1.61	1.55	1.20
<b>Industrial Production Indices (Index, 2017=100)</b>															
Total Industrial Production	98.1	99.7	100.5	101.7	102.9	104.2	104.9	105.1	104.9	104.6	104.7	105.4	100.0	104.3	104.9
Manufacturing	96.9	98.3	99.2	100.6	101.5	102.4	102.9	103.0	102.7	102.3	102.4	103.0	98.8	102.5	102.6
Food	104.5	103.3	102.0	103.5	105.5	105.1	104.7	104.3	104.1	103.9	103.9	104.1	103.3	104.9	104.0
Paper	95.0	96.0	96.0	95.2	96.4	97.3	96.5	95.2	95.0	94.7	94.2	94.0	95.5	96.4	94.5
Petroleum and Coal Products	86.0	92.3	93.5	96.0	94.2	94.0	95.3	95.7	95.6	95.2	94.8	94.6	92.0	94.8	95.1
Chemicals	94.3	101.1	101.2	102.6	102.4	103.2	104.2	103.8	104.6	104.6	104.0	104.4	99.8	103.4	104.4
Nonmetallic Mineral Products	97.8	96.0	97.3	99.1	102.9	103.4	104.6	104.0	102.4	101.3	100.7	100.7	97.5	103.7	101.2
Primary Metals	93.0	96.6	98.3	98.7	95.6	97.4	96.4	94.5	96.3	96.1	95.3	96.2	96.6	96.0	96.0
Coal-weighted Manufacturing (a)	91.1	94.9	95.5	96.6	96.2	96.8	96.9	95.9	96.3	95.8	95.0	95.3	94.5	96.4	95.6
Distillate-weighted Manufacturing (a)	100.9	102.2	102.7	104.2	105.7	106.1	106.3	105.3	104.5	103.6	103.0	103.3	102.5	105.8	103.6
Electricity-weighted Manufacturing (a)	93.1	96.4	96.5	97.6	98.0	98.7	98.7	97.8	98.1	97.8	97.2	97.6	95.9	98.3	97.7
Natural Gas-weighted Manufacturing (a)	88.8	94.6	94.1	95.2	95.2	95.5	95.4	94.4	94.9	94.6	93.7	94.0	93.1	95.1	94.3
<b>Price Indexes</b>															
Consumer Price Index (all urban consumers)															
(index, 1982-1984=1.00)	2.64	2.69	2.73	2.78	2.85	2.92	2.96	2.99	3.02	3.04	3.06	3.09	2.71	2.93	3.05
Producer Price Index: All Commodities															
(index, 1982=1.00)	2.10	2.24	2.33	2.42	2.53	2.73	2.70	2.61	2.55	2.50	2.48	2.49	2.27	2.64	2.50
Producer Price Index: Petroleum															
(index, 1982=1.00)	2.00	2.36	2.55	2.72	3.16	4.21	3.74	2.98	2.74	2.89	2.87	2.80	2.41	3.52	2.83
GDP Implicit Price Deflator															
(index, 2012=100)	116.2	118.0	119.8	121.8	124.2	126.9	128.2	129.4	130.4	131.3	132.2	133.1	118.9	127.2	131.8
<b>Miscellaneous</b>															
Vehicle Miles Traveled (b)															
(million miles/day)	7,928	9,125	9,368	8,934	8,373	9,164	9,318	8,905	8,483	9,286	9,421	9,074	8,843	8,942	9,068
Air Travel Capacity															
(Available ton-miles/day, thousands)	537	597	658	667	656	686	689	704	714	744	750	743	615	684	738
Aircraft Utilization															
(Revenue ton-miles/day, thousands)	245	340	372	376	356	419	414	380	365	407	410	386	334	392	392
Airline Ticket Price Index															
(index, 1982-1984=100)	198.4	243.3	218.5	210.0	225.6	328.7	293.1	294.1	246.9	296.5	278.5	263.6	217.5	285.4	271.4
Raw Steel Production															
(million short tons per day)	0.246	0.258	0.267	0.260	0.253	0.253	0.247	0.243	0.249	0.240	0.237	0.247	0.258	0.249	0.243
<b>Carbon Dioxide (CO2) Emissions (million metric tons)</b>															
Petroleum	521	562	571	580	562	564	578	576	556	569	573	577	2,234	2,280	2,274
Natural Gas	493	357	377	430	512	375	399	457	501	359	384	445	1,657	1,743	1,689
Coal	256	229	307	210	245	216	270	214	223	196	261	199	1,002	946	878
Total Energy (c)	1,272	1,150	1,259	1,223	1,322	1,158	1,251	1,250	1,282	1,126	1,220	1,224	4,904	4,981	4,852

(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 December 1, 2022.

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 S&P Global model of the U.S. Economy.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>Real Gross State Product (Billion \$2012)</b>															
New England .....	985	1,009	1,018	1,033	1,032	1,024	1,030	1,028	1,024	1,024	1,028	1,032	1,011	1,028	1,027
Middle Atlantic .....	2,729	2,774	2,802	2,859	2,858	2,858	2,876	2,870	2,854	2,851	2,859	2,873	2,791	2,866	2,859
E. N. Central .....	2,498	2,542	2,547	2,588	2,596	2,583	2,593	2,586	2,576	2,575	2,582	2,591	2,544	2,590	2,581
W. N. Central .....	1,198	1,216	1,207	1,215	1,220	1,215	1,221	1,220	1,216	1,218	1,223	1,229	1,209	1,219	1,221
S. Atlantic .....	3,425	3,488	3,519	3,585	3,578	3,578	3,597	3,599	3,584	3,586	3,599	3,617	3,504	3,588	3,597
E. S. Central .....	852	862	865	879	884	883	887	886	882	881	883	886	865	885	883
W. S. Central .....	2,327	2,348	2,352	2,381	2,377	2,383	2,409	2,411	2,406	2,409	2,420	2,435	2,352	2,395	2,418
Mountain .....	1,298	1,317	1,330	1,361	1,359	1,354	1,364	1,361	1,355	1,356	1,362	1,369	1,327	1,360	1,360
Pacific .....	3,713	3,786	3,825	3,888	3,805	3,802	3,828	3,820	3,800	3,799	3,813	3,831	3,803	3,814	3,811
<b>Industrial Output, Manufacturing (Index, Year 2017=100)</b>															
New England .....	95.2	96.7	97.4	98.4	99.3	100.1	100.2	100.1	99.9	99.6	99.8	100.4	96.9	99.9	99.9
Middle Atlantic .....	93.0	94.2	94.7	95.8	96.6	97.4	97.4	97.6	97.4	96.8	96.8	97.4	94.4	97.3	97.1
E. N. Central .....	95.4	95.9	96.6	98.3	98.9	99.4	99.5	99.6	99.6	99.1	99.0	99.3	96.5	99.4	99.2
W. N. Central .....	98.3	99.3	100.0	100.7	102.0	102.6	103.0	103.0	102.7	102.4	102.6	103.4	99.6	102.7	102.8
S. Atlantic .....	99.3	100.4	101.3	102.6	103.4	104.6	105.3	105.3	104.9	104.3	104.1	104.8	100.9	104.7	104.5
E. S. Central .....	97.7	98.6	99.2	100.5	100.9	101.3	101.5	101.6	101.2	100.6	100.4	100.8	99.0	101.3	100.7
W. S. Central .....	98.5	100.0	100.6	102.1	103.5	105.0	106.0	106.2	106.0	105.8	106.0	106.8	100.3	105.2	106.2
Mountain .....	106.5	108.5	109.4	111.1	112.7	113.9	115.1	115.2	114.7	114.3	114.3	115.0	108.9	114.2	114.6
Pacific .....	94.1	95.7	96.0	97.0	97.8	98.7	99.0	99.2	99.0	98.7	99.0	99.9	95.7	98.7	99.1
<b>Real Personal Income (Billion \$2012)</b>															
New England .....	1,017	966	954	944	935	926	930	935	937	939	943	945	971	931	941
Middle Atlantic .....	2,634	2,472	2,448	2,408	2,385	2,378	2,384	2,392	2,405	2,408	2,415	2,419	2,491	2,385	2,412
E. N. Central .....	2,763	2,544	2,506	2,481	2,464	2,451	2,446	2,454	2,467	2,470	2,476	2,480	2,573	2,454	2,473
W. N. Central .....	1,276	1,195	1,173	1,158	1,156	1,154	1,156	1,161	1,170	1,173	1,178	1,181	1,201	1,157	1,176
S. Atlantic .....	3,772	3,500	3,472	3,473	3,436	3,426	3,443	3,458	3,482	3,490	3,504	3,515	3,554	3,441	3,498
E. S. Central .....	1,044	949	941	938	931	926	923	924	930	931	933	934	968	926	932
W. S. Central .....	2,242	2,083	2,067	2,072	2,056	2,062	2,072	2,081	2,096	2,102	2,112	2,119	2,116	2,067	2,107
Mountain .....	1,408	1,308	1,300	1,304	1,291	1,287	1,295	1,302	1,308	1,312	1,317	1,322	1,330	1,294	1,315
Pacific .....	3,296	3,110	3,096	3,047	2,985	2,969	2,982	3,042	3,008	3,015	3,025	3,031	3,137	2,994	3,020
<b>Households (Thousands)</b>															
New England .....	6,024	6,042	6,057	6,071	6,085	6,089	6,091	6,094	6,103	6,112	6,119	6,126	6,071	6,094	6,126
Middle Atlantic .....	16,327	16,354	16,389	16,418	16,449	16,457	16,459	16,468	16,494	16,519	16,540	16,557	16,418	16,468	16,557
E. N. Central .....	18,974	19,031	19,094	19,146	19,197	19,205	19,207	19,215	19,242	19,271	19,295	19,315	19,146	19,215	19,315
W. N. Central .....	8,668	8,702	8,735	8,766	8,796	8,813	8,826	8,837	8,856	8,876	8,893	8,909	8,766	8,837	8,909
S. Atlantic .....	26,140	26,277	26,400	26,538	26,673	26,761	26,836	26,905	26,999	27,090	27,172	27,251	26,538	26,905	27,251
E. S. Central .....	7,771	7,806	7,838	7,871	7,903	7,922	7,937	7,949	7,968	7,987	8,004	8,019	7,871	7,949	8,019
W. S. Central .....	15,249	15,331	15,412	15,498	15,582	15,639	15,687	15,730	15,788	15,845	15,898	15,946	15,498	15,730	15,946
Mountain .....	9,559	9,623	9,687	9,747	9,805	9,845	9,881	9,912	9,954	9,997	10,035	10,073	9,747	9,912	10,073
Pacific .....	18,898	18,934	18,977	19,024	19,078	19,097	19,108	19,115	19,144	19,173	19,197	19,218	19,024	19,115	19,218
<b>Total Non-farm Employment (Millions)</b>															
New England .....	7.1	7.1	7.2	7.3	7.4	7.4	7.5	7.5	7.5	7.5	7.4	7.4	7.2	7.4	7.4
Middle Atlantic .....	18.5	18.7	18.9	19.2	19.4	19.6	19.7	19.8	19.8	19.7	19.6	19.5	18.8	19.6	19.6
E. N. Central .....	21.1	21.2	21.5	21.6	21.8	21.9	22.0	22.1	22.1	22.0	21.8	21.8	21.4	22.0	21.9
W. N. Central .....	10.4	10.4	10.5	10.5	10.6	10.7	10.7	10.8	10.8	10.8	10.7	10.7	10.5	10.7	10.7
S. Atlantic .....	28.2	28.5	28.9	29.2	29.5	29.8	30.1	30.2	30.2	30.0	29.9	29.8	28.7	29.9	30.0
E. S. Central .....	8.1	8.1	8.2	8.3	8.4	8.4	8.5	8.5	8.5	8.4	8.4	8.4	8.2	8.4	8.4
W. S. Central .....	17.2	17.4	17.6	17.8	18.1	18.3	18.5	18.6	18.5	18.5	18.4	18.3	17.5	18.3	18.4
Mountain .....	10.8	11.0	11.2	11.3	11.4	11.5	11.6	11.6	11.6	11.5	11.5	11.4	11.1	11.5	11.5
Pacific .....	22.2	22.7	23.1	23.3	23.6	23.9	24.1	24.2	24.1	24.0	23.9	23.8	22.8	23.9	23.9

- = no data available

Notes: EIA completed modeling and analysis for this report on December 1, 2022.

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 - December 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
<b>Heating Degree Days</b>															
New England .....	<b>3,013</b>	<b>780</b>	<b>84</b>	<b>1,922</b>	<b>3,140</b>	<b>788</b>	<b>115</b>	<b>2,065</b>	<i>3,120</i>	<i>862</i>	<i>137</i>	<i>2,217</i>	<b>5,799</b>	<i>6,108</i>	<i>6,337</i>
Middle Atlantic .....	<b>2,820</b>	<b>668</b>	<b>57</b>	<b>1,726</b>	<b>2,943</b>	<b>671</b>	<b>73</b>	<b>1,978</b>	<i>2,923</i>	<i>697</i>	<i>86</i>	<i>2,026</i>	<b>5,272</b>	<i>5,665</i>	<i>5,731</i>
E. N. Central .....	<b>3,087</b>	<b>708</b>	<b>69</b>	<b>1,889</b>	<b>3,270</b>	<b>755</b>	<b>99</b>	<b>2,279</b>	<i>3,170</i>	<i>739</i>	<i>121</i>	<i>2,267</i>	<b>5,753</b>	<i>6,403</i>	<i>6,297</i>
W. N. Central .....	<b>3,227</b>	<b>718</b>	<b>87</b>	<b>2,024</b>	<b>3,483</b>	<b>792</b>	<b>111</b>	<b>2,500</b>	<i>3,276</i>	<i>709</i>	<i>154</i>	<i>2,455</i>	<b>6,057</b>	<i>6,886</i>	<i>6,595</i>
South Atlantic .....	<b>1,347</b>	<b>212</b>	<b>10</b>	<b>799</b>	<b>1,342</b>	<b>189</b>	<b>13</b>	<b>977</b>	<i>1,372</i>	<i>195</i>	<i>13</i>	<i>975</i>	<b>2,368</b>	<i>2,520</i>	<i>2,555</i>
E. S. Central .....	<b>1,794</b>	<b>316</b>	<b>19</b>	<b>1,038</b>	<b>1,822</b>	<b>248</b>	<b>23</b>	<b>1,389</b>	<i>1,808</i>	<i>252</i>	<i>20</i>	<i>1,326</i>	<b>3,167</b>	<i>3,482</i>	<i>3,406</i>
W. S. Central .....	<b>1,295</b>	<b>122</b>	<b>1</b>	<b>497</b>	<b>1,344</b>	<b>57</b>	<b>2</b>	<b>911</b>	<i>1,161</i>	<i>79</i>	<i>5</i>	<i>821</i>	<b>1,915</b>	<i>2,314</i>	<i>2,065</i>
Mountain .....	<b>2,307</b>	<b>662</b>	<b>110</b>	<b>1,635</b>	<b>2,301</b>	<b>738</b>	<b>85</b>	<b>2,005</b>	<i>2,259</i>	<i>711</i>	<i>153</i>	<i>1,879</i>	<b>4,714</b>	<i>5,129</i>	<i>5,002</i>
Pacific .....	<b>1,561</b>	<b>485</b>	<b>78</b>	<b>1,203</b>	<b>1,392</b>	<b>605</b>	<b>48</b>	<b>1,222</b>	<i>1,578</i>	<i>616</i>	<i>93</i>	<i>1,234</i>	<b>3,328</b>	<i>3,267</i>	<i>3,521</i>
U.S. Average .....	<b>2,107</b>	<b>472</b>	<b>51</b>	<b>1,307</b>	<b>2,148</b>	<b>492</b>	<b>54</b>	<b>1,569</b>	<i>2,124</i>	<i>494</i>	<i>75</i>	<i>1,553</i>	<b>3,937</b>	<i>4,263</i>	<i>4,246</i>
<b>Heating Degree Days, Prior 10-year Average</b>															
New England .....	<b>3,133</b>	<b>855</b>	<b>107</b>	<b>2,100</b>	<b>3,100</b>	<b>853</b>	<b>107</b>	<b>2,104</b>	<i>3,151</i>	<i>859</i>	<i>106</i>	<i>2,102</i>	<b>6,195</b>	<i>6,164</i>	<i>6,218</i>
Middle Atlantic .....	<b>2,912</b>	<b>677</b>	<b>71</b>	<b>1,911</b>	<b>2,887</b>	<b>684</b>	<b>71</b>	<b>1,908</b>	<i>2,945</i>	<i>692</i>	<i>70</i>	<i>1,913</i>	<b>5,572</b>	<i>5,551</i>	<i>5,620</i>
E. N. Central .....	<b>3,157</b>	<b>731</b>	<b>104</b>	<b>2,170</b>	<b>3,133</b>	<b>727</b>	<b>97</b>	<b>2,162</b>	<i>3,215</i>	<i>742</i>	<i>93</i>	<i>2,174</i>	<b>6,161</b>	<i>6,119</i>	<i>6,224</i>
W. N. Central .....	<b>3,248</b>	<b>728</b>	<b>133</b>	<b>2,368</b>	<b>3,219</b>	<b>726</b>	<b>125</b>	<b>2,357</b>	<i>3,317</i>	<i>754</i>	<i>121</i>	<i>2,371</i>	<b>6,477</b>	<i>6,426</i>	<i>6,563</i>
South Atlantic .....	<b>1,395</b>	<b>181</b>	<b>11</b>	<b>916</b>	<b>1,380</b>	<b>187</b>	<b>11</b>	<b>905</b>	<i>1,401</i>	<i>190</i>	<i>10</i>	<i>904</i>	<b>2,503</b>	<i>2,483</i>	<i>2,505</i>
E. S. Central .....	<b>1,771</b>	<b>231</b>	<b>16</b>	<b>1,249</b>	<b>1,763</b>	<b>243</b>	<b>15</b>	<b>1,228</b>	<i>1,810</i>	<i>251</i>	<i>14</i>	<i>1,235</i>	<b>3,267</b>	<i>3,249</i>	<i>3,310</i>
W. S. Central .....	<b>1,140</b>	<b>86</b>	<b>3</b>	<b>786</b>	<b>1,145</b>	<b>93</b>	<b>3</b>	<b>754</b>	<i>1,189</i>	<i>96</i>	<i>3</i>	<i>774</i>	<b>2,015</b>	<i>1,995</i>	<i>2,061</i>
Mountain .....	<b>2,188</b>	<b>704</b>	<b>135</b>	<b>1,850</b>	<b>2,181</b>	<b>685</b>	<b>132</b>	<b>1,817</b>	<i>2,201</i>	<i>701</i>	<i>129</i>	<i>1,840</i>	<b>4,877</b>	<i>4,816</i>	<i>4,870</i>
Pacific .....	<b>1,461</b>	<b>553</b>	<b>81</b>	<b>1,147</b>	<b>1,455</b>	<b>523</b>	<b>79</b>	<b>1,136</b>	<i>1,439</i>	<i>523</i>	<i>75</i>	<i>1,141</i>	<b>3,242</b>	<i>3,192</i>	<i>3,178</i>
U.S. Average .....	<b>2,112</b>	<b>483</b>	<b>65</b>	<b>1,487</b>	<b>2,096</b>	<b>479</b>	<b>62</b>	<b>1,473</b>	<i>2,133</i>	<i>486</i>	<i>60</i>	<i>1,479</i>	<b>4,147</b>	<i>4,110</i>	<i>4,159</i>
<b>Cooling Degree Days</b>															
New England .....	<b>0</b>	<b>141</b>	<b>457</b>	<b>7</b>	<b>0</b>	<b>79</b>	<b>559</b>	<b>1</b>	<i>0</i>	<i>85</i>	<i>413</i>	<i>1</i>	<b>604</b>	<i>640</i>	<i>500</i>
Middle Atlantic .....	<b>0</b>	<b>182</b>	<b>626</b>	<b>23</b>	<b>0</b>	<b>152</b>	<b>682</b>	<b>2</b>	<i>0</i>	<i>152</i>	<i>538</i>	<i>4</i>	<b>831</b>	<i>836</i>	<i>694</i>
E. N. Central .....	<b>2</b>	<b>250</b>	<b>628</b>	<b>30</b>	<b>1</b>	<b>255</b>	<b>555</b>	<b>2</b>	<i>0</i>	<i>211</i>	<i>539</i>	<i>7</i>	<b>910</b>	<i>813</i>	<i>757</i>
W. N. Central .....	<b>8</b>	<b>312</b>	<b>748</b>	<b>23</b>	<b>3</b>	<b>305</b>	<b>734</b>	<b>8</b>	<i>3</i>	<i>261</i>	<i>673</i>	<i>10</i>	<b>1,092</b>	<i>1,050</i>	<i>947</i>
South Atlantic .....	<b>155</b>	<b>616</b>	<b>1,171</b>	<b>285</b>	<b>155</b>	<b>709</b>	<b>1,197</b>	<b>225</b>	<i>127</i>	<i>642</i>	<i>1,154</i>	<i>232</i>	<b>2,227</b>	<i>2,286</i>	<i>2,155</i>
E. S. Central .....	<b>40</b>	<b>432</b>	<b>1,014</b>	<b>125</b>	<b>28</b>	<b>599</b>	<b>1,064</b>	<b>41</b>	<i>29</i>	<i>505</i>	<i>1,045</i>	<i>65</i>	<b>1,611</b>	<i>1,733</i>	<i>1,643</i>
W. S. Central .....	<b>89</b>	<b>770</b>	<b>1,471</b>	<b>314</b>	<b>55</b>	<b>1,092</b>	<b>1,664</b>	<b>191</b>	<i>91</i>	<i>887</i>	<i>1,490</i>	<i>193</i>	<b>2,643</b>	<i>3,002</i>	<i>2,660</i>
Mountain .....	<b>10</b>	<b>529</b>	<b>964</b>	<b>68</b>	<b>17</b>	<b>470</b>	<b>1,018</b>	<b>64</b>	<i>17</i>	<i>414</i>	<i>907</i>	<i>73</i>	<b>1,571</b>	<i>1,570</i>	<i>1,411</i>
Pacific .....	<b>24</b>	<b>251</b>	<b>707</b>	<b>59</b>	<b>31</b>	<b>220</b>	<b>763</b>	<b>82</b>	<i>25</i>	<i>163</i>	<i>568</i>	<i>62</i>	<b>1,041</b>	<i>1,096</i>	<i>817</i>
U.S. Average .....	<b>50</b>	<b>410</b>	<b>902</b>	<b>128</b>	<b>46</b>	<b>464</b>	<b>950</b>	<b>91</b>	<i>44</i>	<i>398</i>	<i>849</i>	<i>93</i>	<b>1,490</b>	<i>1,552</i>	<i>1,384</i>
<b>Cooling Degree Days, Prior 10-year Average</b>															
New England .....	<b>0</b>	<b>80</b>	<b>474</b>	<b>1</b>	<b>0</b>	<b>87</b>	<b>471</b>	<b>2</b>	<i>0</i>	<i>87</i>	<i>479</i>	<i>2</i>	<b>555</b>	<i>560</i>	<i>568</i>
Middle Atlantic .....	<b>0</b>	<b>163</b>	<b>610</b>	<b>6</b>	<b>0</b>	<b>162</b>	<b>608</b>	<b>8</b>	<i>0</i>	<i>159</i>	<i>613</i>	<i>8</i>	<b>779</b>	<i>779</i>	<i>781</i>
E. N. Central .....	<b>3</b>	<b>234</b>	<b>572</b>	<b>7</b>	<b>3</b>	<b>238</b>	<b>571</b>	<b>9</b>	<i>1</i>	<i>234</i>	<i>561</i>	<i>10</i>	<b>816</b>	<i>821</i>	<i>805</i>
W. N. Central .....	<b>7</b>	<b>294</b>	<b>686</b>	<b>10</b>	<b>7</b>	<b>299</b>	<b>681</b>	<b>11</b>	<i>4</i>	<i>292</i>	<i>674</i>	<i>12</i>	<b>997</b>	<i>999</i>	<i>982</i>
South Atlantic .....	<b>143</b>	<b>679</b>	<b>1,194</b>	<b>260</b>	<b>147</b>	<b>668</b>	<b>1,188</b>	<b>269</b>	<i>144</i>	<i>675</i>	<i>1,192</i>	<i>273</i>	<b>2,276</b>	<i>2,272</i>	<i>2,284</i>
E. S. Central .....	<b>42</b>	<b>532</b>	<b>1,065</b>	<b>74</b>	<b>44</b>	<b>518</b>	<b>1,057</b>	<b>84</b>	<i>36</i>	<i>521</i>	<i>1,059</i>	<i>84</i>	<b>1,713</b>	<i>1,702</i>	<i>1,699</i>
W. S. Central .....	<b>114</b>	<b>881</b>	<b>1,568</b>	<b>210</b>	<b>113</b>	<b>853</b>	<b>1,536</b>	<b>224</b>	<i>101</i>	<i>861</i>	<i>1,548</i>	<i>225</i>	<b>2,772</b>	<i>2,726</i>	<i>2,734</i>
Mountain .....	<b>24</b>	<b>441</b>	<b>949</b>	<b>85</b>	<b>23</b>	<b>459</b>	<b>945</b>	<b>84</b>	<i>23</i>	<i>456</i>	<i>951</i>	<i>82</i>	<b>1,499</b>	<i>1,511</i>	<i>1,512</i>
Pacific .....	<b>31</b>	<b>193</b>	<b>648</b>	<b>86</b>	<b>31</b>	<b>208</b>	<b>665</b>	<b>86</b>	<i>32</i>	<i>214</i>	<i>676</i>	<i>86</i>	<b>959</b>	<i>989</i>	<i>1,007</i>
U.S. Average .....	<b>52</b>	<b>413</b>	<b>892</b>	<b>104</b>	<b>53</b>	<b>412</b>	<b>889</b>	<b>109</b>	<i>50</i>	<i>415</i>	<i>894</i>	<i>110</i>	<b>1,461</b>	<i>1,463</i>	<i>1,469</i>

- = no data available

Notes: EIA completed modeling and analysis for this report on December 1, 2022.

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 December 2022 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**

	Oct 2022	Nov 2022	Oct 2022 – Nov 2022 Average	Oct 2021 – Nov 2021 Average	2019 – 2021 Average
<b>Global Petroleum and Other Liquids (million barrels per day)</b>					
Global Petroleum and Other Liquids Production (a)	101.2	101.6	101.4	98.4	96.6
Global Petroleum and Other Liquids Consumption (b)	99.4	100.2	99.8	99.6	96.8
Biofuels Production (c)	2.8	2.5	2.7	2.6	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	3.5	3.2
Iran Liquid Fuels Consumption	1.9	2.1	2.0	2.0	2.0
<b>Petroleum and Petroleum Products Produced and Consumed in Countries Other Than Iran (million barrels per day)</b>					
Production (d)	94.8	95.4	95.1	92.3	90.7
Consumption (d)	94.9	95.6	95.2	95.0	92.2
Production minus Consumption	-0.1	-0.2	-0.1	-2.7	-1.5
World Inventory Net Withdrawals Including Iran	-1.8	-1.4	-1.6	1.2	0.1
Estimated OECD Inventory Level (e) (million barrels)	2,764	2,771	2,768	2,742	2,946
<b>Surplus Production Capacity (million barrels per day)</b>					
OPEC Surplus Crude Oil Production Capacity (f)	2.0	2.4	2.2	3.9	4.3

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.

Data source: U.S. Energy Information Administration.

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

Item	Oct 2022	Nov 2022	Oct 2022 – Nov	Oct 2021 – Nov	2019 – 2021
			2022 Average	2021 Average	Average
Brent Front Month Futures Price (\$ per barrel)	93.59	90.85	92.22	82.30	59.44
WTI Front Month Futures Price (\$ per barrel)	87.03	84.39	85.71	79.94	54.82
Dubai Front Month Futures Price (\$ per barrel)	91.07	85.63	88.35	80.79	58.86
Brent 1st - 13th Month Futures Spread (\$ per barrel)	12.24	8.39	10.32	7.84	1.80
WTI 1st - 13th Month Futures Spread (\$ per barrel)	10.88	7.27	9.08	8.86	1.37
RBOB Front Month Futures Price (\$ per gallon)	2.71	2.52	2.62	2.35	1.67
Heating Oil Front Month Futures Price (\$ per gallon)	3.95	3.56	3.75	2.45	1.75
RBOB - Brent Futures Crack Spread (\$ per gallon)	0.48	0.36	0.42	0.39	0.25
Heating Oil - Brent Futures Crack Spread (\$ per gallon)	1.72	1.39	1.56	0.49	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.

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