

Short-Term Energy Outlook

STEO

November 2023



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Short-Term Energy Outlook

Overview

U.S. energy market indicators	2022	2023	2024
Brent crude oil spot price (dollars per barrel)	\$101	\$84	\$93
Retail gasoline price (dollars per gallon)	\$3.97	\$3.55	\$3.61
U.S. crude oil production (million barrels per day)	11.91	12.90	13.15
Natural gas price at Henry Hub (dollars per million British thermal units)	\$6.42	\$2.67	\$3.25
U.S. liquefied natural gas gross exports (billion cubic feet per day)	10.6	11.8	12.3
Shares of U.S. electricity generation			
Natural gas	39%	42%	41%
Coal	20%	16%	15%
Renewables	21%	22%	24%
Nuclear	19%	19%	19%
U.S. GDP (percentage change)	1.9%	2.4%	1.5%
U.S. CO₂ emissions (billion metric tons)	4.94	4.79	4.75

Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, November 2023

- Global oil supply.** We forecast global liquid fuels production will increase by 1.0 million barrels per day (b/d) in 2024. Ongoing OPEC+ production cuts will offset production growth from non-OPEC countries and help maintain a relatively balanced global oil market next year. Although the conflict between Israel and Hamas has not affected physical oil supply at this point, uncertainties surrounding the conflict and other global oil supply conditions could put upward pressure on crude oil prices in the coming months. We forecast the Brent crude oil price will increase from an average of \$90 per barrel (b) in the fourth quarter of 2023 to an average of \$93/b in 2024.
- U.S. gasoline consumption.** U.S. gasoline consumption declines by 1% in 2024 in our forecast, which would result in the lowest per capita gasoline consumption in two decades. An increase in remote work in the United States, improvements in the fuel efficiency of the U.S. vehicle fleet, high gasoline prices, and persistently high inflation have reduced per capita gasoline demand.
- Natural gas inventories.** We estimate that U.S. natural gas inventories totaled 3,835 billion cubic (Bcf) feet at the end of October, 6% more than the five-year (2018–2022) average. We forecast U.S. natural gas inventories will end the winter heating season (November–March) 21% above the five-year average with almost 2,000 Bcf in storage. Inventories are full because of high natural gas production and warmer-than-average winter weather, which reduces demand for space heating in the commercial and residential sectors. We forecast the Henry Hub spot price to average near \$3.20 per million British thermal units (MMBtu) in November, down from a price of almost \$5.50/MMBtu a year earlier.

- Coal markets.** U.S. coal exports have returned to pre-pandemic levels, driven by record-high global coal demand stemming primarily from Europe and Asia. We forecast that exports will rise to 97 million short tons (MMst) in 2023, because of increases in both steam and metallurgical coal exports. We expect steam coal exports to rise by 6 MMst compared with 2022 to 45 MMst in 2023 and metallurgical coal exports to increase by 6 MMst to reach 52 MMst over the same period. Despite this increase in coal exports, we expect U.S. production to fall by more than 100 MMst in 2024 due to reduced demand from the electric power sector. The decline in electricity generation from coal will be offset by an increase in electricity generation from renewable resources.
- OPEC production capacity.** Despite rising OPEC spare production capacity in 2023 and in 2024, we lowered our estimate of Iraq's spare capacity by about 0.4 million b/d compared with last month's STEO. We removed Iraq's total production capacity assets in northern Iraq that relied on the northern Iraq-to-Türkiye pipeline for access to global markets. The pipeline has been out of commission since March 2023.

Notable forecast changes

Current forecast: November 7, 2023; previous forecast: October 11, 2023

	2023	2024
OPEC surplus crude oil production capacity (million barrels per day)	3.7	4.3
Previous forecast	4.1	4.9
Percentage change	-10.0%	-12.0%
U.S. coal power demand (million short tons)	384	356
Previous forecast	373	342
Percentage change	3.1%	4.0%
U.S. coal production (million short tons)	585	480
Previous forecast	581	465
Percentage change	0.7%	3.2%

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

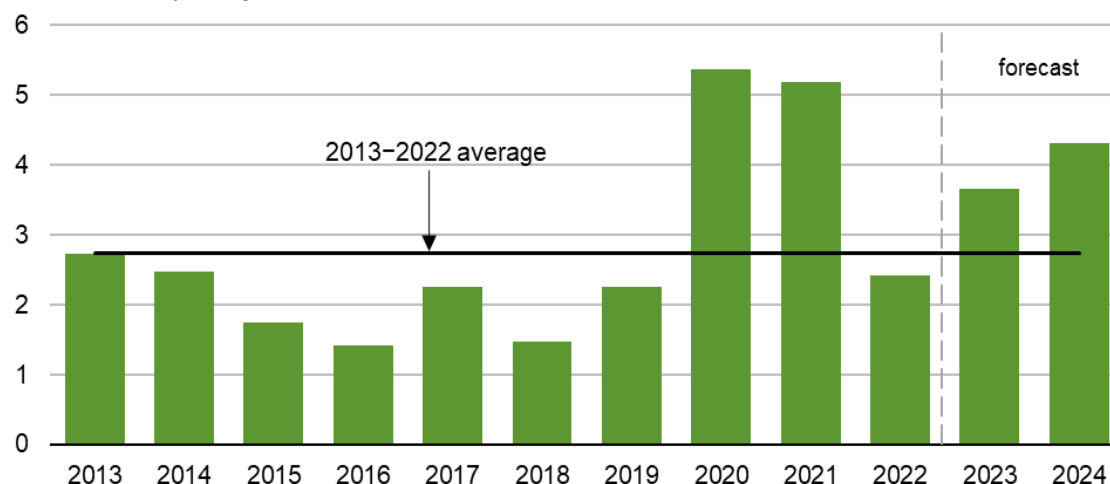
Global Oil Markets

Global oil supply

We forecast global liquid fuels production will increase by 1.0 million barrels per day (b/d) in 2024, down from growth of 1.6 million b/d this year. Although we forecast global oil production to grow next year, we expect ongoing cuts from OPEC+ will keep global production growth lower than global consumption growth and contribute to inventory draws and upward oil price pressure in the early part of 2024.

Growth in global crude oil supply has been limited in 2023 because of voluntary production cuts from Saudi Arabia and ongoing production cuts from other [OPEC+ countries](#), which raised OPEC's [spare crude oil production capacity](#) from 2.4 million b/d in 2022 to a forecast of 4.3 million b/d in 2024. Saudi Arabia and the United Arab Emirates hold most of this capacity. Despite rising OPEC spare capacity in 2023 and in 2024, we lowered our estimate of Iraq's spare capacity compared with last month's STEO. We removed production capacity assets in northern Iraq that relied on the northern Iraq-to-Türkiye pipeline for access to global markets. The [pipeline has been offline since March 2023](#) because of a dispute between Türkiye and Iraq over an international court ruling.

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



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, November 2023

Note: Black line represents 2013–2022 average (2.7 million barrels per day).



Although [Russia's total liquids production fell significantly](#) after its full-scale invasion of Ukraine in early 2022, its production has stabilized in mid-2023 around 10.6 million b/d. We assume Russia's oil production will remain relatively flat over the remainder of our forecast period at an average of 10.7 million b/d.

Although it has not directly affected physical oil markets so far, heightened uncertainty around [the recent attacks on Israel](#) and the potential for tensions spreading to a wider area in the Middle East poses risks to oil supply including available surplus production capacity. At this time, we have not materially

changed our oil production forecast for countries in the region, but the geopolitical situation could change rapidly.

The United States lifted [sanctions on Venezuela's crude oil exports](#) on October 18 for six months, contingent on electoral reforms. While the political situation remains in flux, we expect sanctions relief will only lead to limited increases in oil production. With sanctions relief, we forecast that Venezuela will increase crude oil production by less than 0.2 million b/d to an average of 0.9 million b/d by the end of 2024. Further increases in Venezuela's crude oil production will take longer and require significant investment after years of deferred maintenance and lack of access to capital.

Iran's crude oil production rose in recent years as it has increased exports to China using heavily discounted prices. Our assumption is that Iran will raise production by an additional 0.2 million in 2024. Sanctions on Iran's crude oil, insufficient upstream investment, and limited oil consumption growth in China cap Iran's oil production beyond this limited growth.

Global oil prices and inventory levels

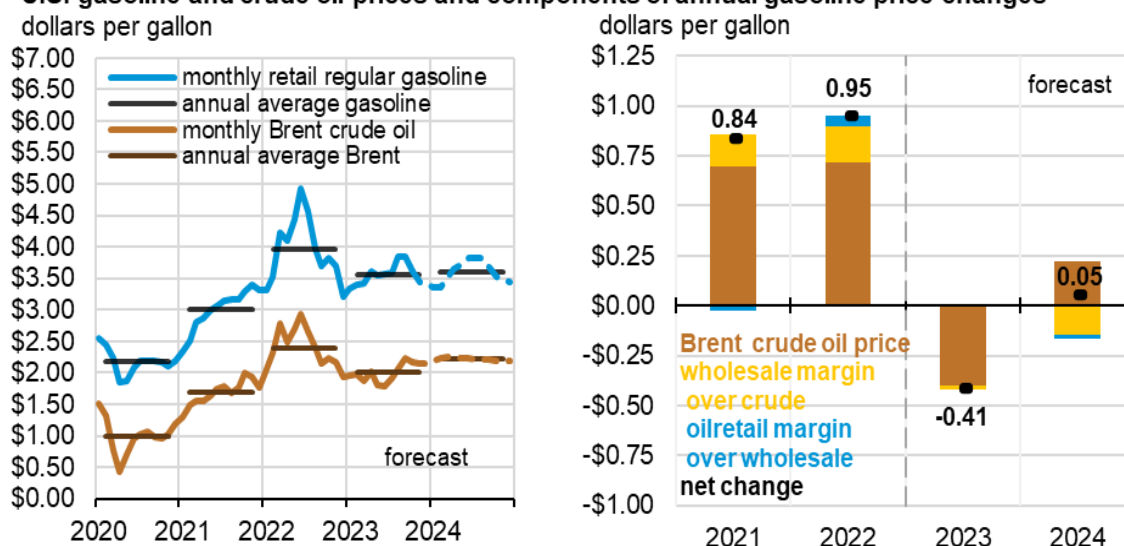
The Brent crude oil spot price averaged \$91 per barrel (b) in October, a decrease of \$3/b compared with September, accompanied by a significant increase in oil price volatility. We forecast the Brent crude oil price will increase from an average of \$90/b in the fourth quarter of 2023 to an average of \$94/b during the first half of 2024. Modest upward oil price pressures in the coming months reflect a slight decline in global oil inventories in the first half of 2024 as risks of supply disruptions remain high. Current OPEC+ production targets are set to expire at the end of 2024, and we assume that continuing voluntary cuts and other factors will keep actual OPEC+ crude oil production well below targets as the group tries to limit increases in global oil inventories. However, should OPEC+ produce closer to target levels than we currently assume, it could reduce prices in 2024.

Petroleum Products

Gasoline prices and margins

U.S. regular gasoline retail prices declined throughout October, falling from \$3.80 per gallon (gal) on October 2 to \$3.47/gal on October 30 because of a [sharp decline in wholesale gasoline margins](#) that began in late September. We forecast retail gasoline prices to remain near \$3.40/gal for the remainder of 2023, resulting in an average 2023 price of \$3.55/gal. We forecast a similar average near \$3.60/gal for 2024.

U.S. gasoline and crude oil prices and components of annual gasoline price changes



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, November 2023, and Refinitiv, an LSEG business



Our forecast that retail gasoline prices will rise in 2024 primarily reflects a higher Brent crude oil price. We expect crude oil prices to contribute an additional 22 cents/gal to the retail gasoline price in 2024 compared with 2023. However, we expect much of this increase to be offset by decreases in the wholesale gasoline margin over crude oil. We expect the wholesale gasoline margin with crude oil to average 52 cents/gal in 2024, a decrease of 14 cents/gal from the forecast 2023 average of 67 cents/gal, resulting primarily from [reduced demand for motor gasoline](#).

U.S. per capita gasoline consumption

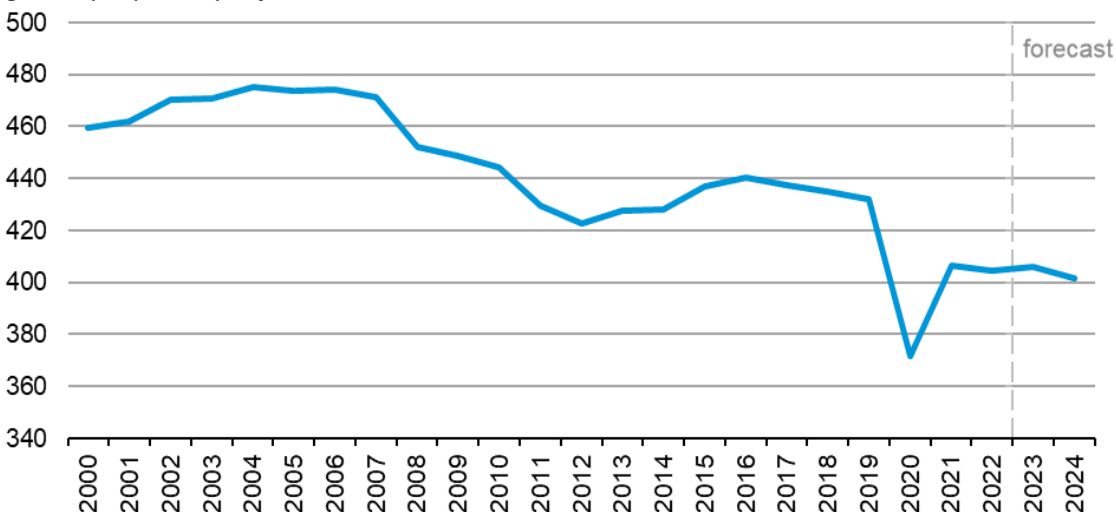
Although the U.S. population has grown in recent years, the nation's gasoline consumption has increased more slowly in comparison, meaning U.S. gasoline consumption has been decreasing on a per capita basis. There are two components to gasoline consumption—travel demand, measured by vehicle miles traveled (VMT), and vehicle fuel efficiency. Some of the major factors that may be contributing to the decline in per capita gasoline consumption include:

- The unclear effects of increased remote work on gasoline consumption since 2020. Although a higher percentage of the workforce engages in some remote work than before the pandemic, some studies suggest these workers drive more for nonwork purposes.
- Relatively high gasoline prices and persistently high inflation may be affecting consumer budgets and reducing discretionary driving.
- An aging population is reducing per person driving. Since 2001, the share of population over the age of 65 has increased, and this age cohort is less likely to be working. Partially offsetting this trend, however, is increasing employment as a share of the working age population, which has reached the highest levels since 2001.

- The replacement of older and less efficient internal combustion engine vehicles for newer internal combustion engine vehicles with higher fuel efficiency. Purchases of newer vehicles is partially offset by people keeping their vehicles longer, contributing to an increase in the average age of the vehicle fleet.
- Increased adoption of electric and hybrid vehicles, which reduces gasoline consumption.

Gradual improvements in fuel efficiency and the growing share of electric vehicles are reducing U.S. motor gasoline demand per capita. Our gasoline consumption forecast contains a variable for fuel economy that captures the combined effects that newer, more efficient internal combustion engine vehicles and electric vehicles have on gasoline consumption. [Researchers at Argonne National Laboratory estimated](#) electric vehicle adoption contributed to about 0.5% less U.S. gasoline consumption in 2021 than what would have otherwise occurred. The effects of electric vehicle adoption on gasoline consumption have likely increased since 2021; however, lags in data on vehicle scrappage rates and evolving telework trends, among other factors, complicate the analysis of attributing the degree to which electric vehicles have caused more recent declines in gasoline consumption per capita.

U.S. per capita gasoline consumption
gallons per person per year



Data source: U.S. Energy information Administration, *Short-Term Energy Outlook*, November 2023 and Oxford Economics



We forecast the average person in the United States will consume 402 gallons of gasoline in 2024, down from a peak of 475 gallons per person in 2004. Because of lower per capita gasoline consumption, we forecast overall U.S. gasoline consumption to decline in 2024 to 8.83 million barrels per day (b/d), from 8.88 million b/d in 2023 and down from the 2019 pre-pandemic average of 9.31 million b/d.

Natural Gas

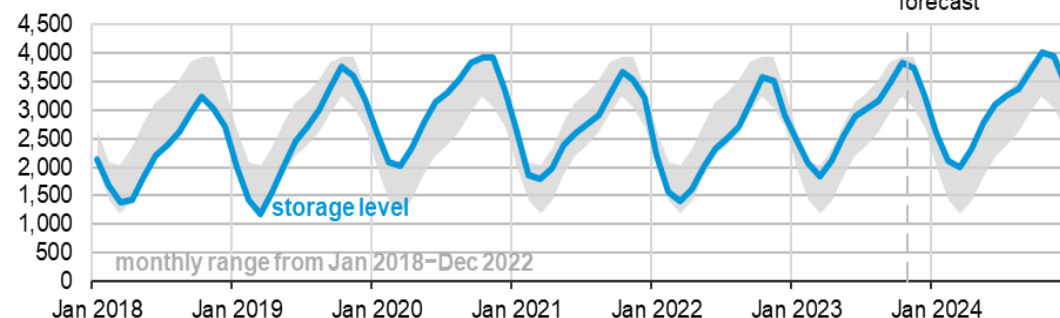
Natural gas storage

At the end of October, which marks the end of the U.S. natural gas storage injection season (March–October), we expect that U.S. working natural gas in underground storage reached 3,835 billion cubic feet (Bcf), 6% more than the five-year (2018–2022) average.

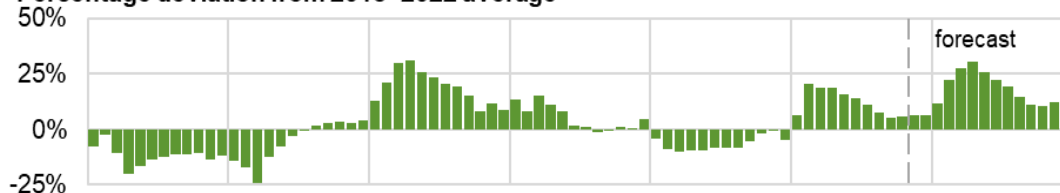
Driven by strong natural gas production and expected warmer-than-average winter weather, we forecast U.S. natural gas inventories will end the winter heating season in March with 21% more natural gas than the five-year average, with just under 2,000 Bcf in storage. We expect U.S. dry natural gas production to average almost 105 billion cubic feet per day (Bcf/d) during the second half of 2023, up nearly 2 Bcf/d from the first half of the year. We forecast U.S. dry natural gas production will continue to average around 105 Bcf/d during the winter heating season. Our expectation of warmer-than-average winter weather, with 4% fewer heating [degree days](#) (HDDs) this winter compared with the prior 10-year (2013–2022) average, reduces consumption for space heating in the commercial and residential sectors by 2% compared with the five-year average. Although we expect this winter on average to be warmer than normal, we expect January and February to be colder than last year's warmer-than-average [January](#) and [February](#).

U.S. working natural gas in storage

billion cubic feet



Percentage deviation from 2018–2022 average



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, November 2023



Natural gas storage inventories in the East, Midwest, and South Central are all more than 87% full entering the winter according to our forecast. In the Mountain region, which has much less storage capacity than the other regions, we estimate storage is 98% full, the highest level on record at the end of October. Pacific region storage stocks were well below the five-year average all of last winter,

supporting [record-high natural gas prices in the region](#) in December 2022, but Pacific inventories have increased steadily this summer and are almost 80% full entering this winter heating season.

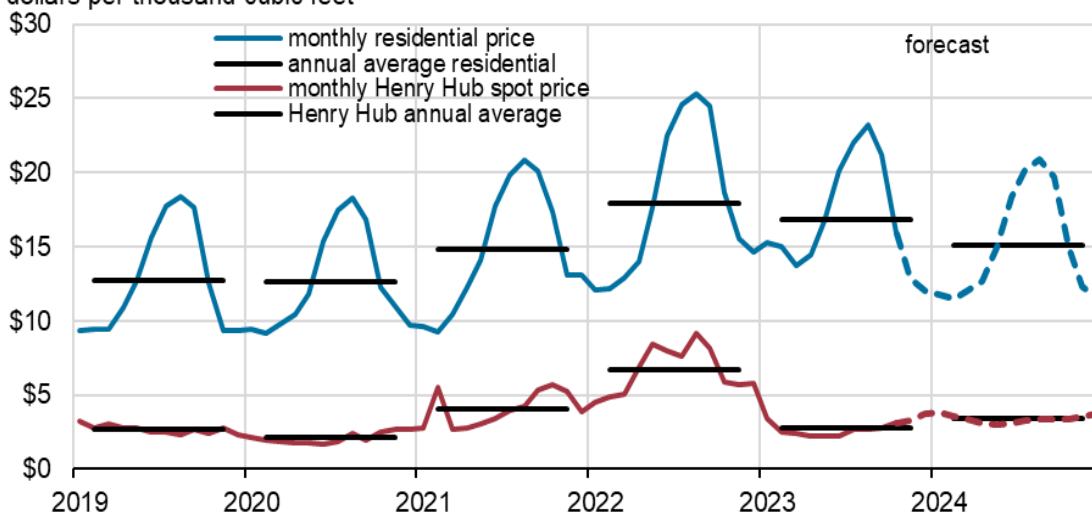
Natural gas prices

The U.S. benchmark Henry Hub spot price in our forecast averages around \$3.40 per million British thermal units (MMBtu) over the course of the winter, peaking in January at over \$3.60/MMBtu. Natural gas prices typically rise during the winter as demand for space heating increases and consumption of natural gas peaks for the year. We forecast prices this winter to be lower than last winter because of increased production and relatively full natural gas storage inventories entering the winter heating season. At the start of the winter last year, prices were over \$5.00/MMBtu, and storage inventories were 3% below the five-year average.

Lower wholesale natural gas prices contribute to lower prices for residential consumers this winter compared with last year. [Changes in residential natural gas prices lag changes in wholesale natural gas prices](#) because of the nature of some utility regulation. Fixed costs incurred by utility companies are spread over time, usually resulting in lower residential prices in the winter than in the summer on a per-unit basis when all charges are combined. We forecast the residential price of natural gas will average just over \$12 per thousand cubic feet this winter, down almost 20% from last year, [reducing winter heating expenditures for consumers that heat their homes with natural gas](#).

U.S. natural gas prices

dollars per thousand cubic feet



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, November 2023, and Refinitiv, an LSEG business



Electricity, Coal, and Renewables

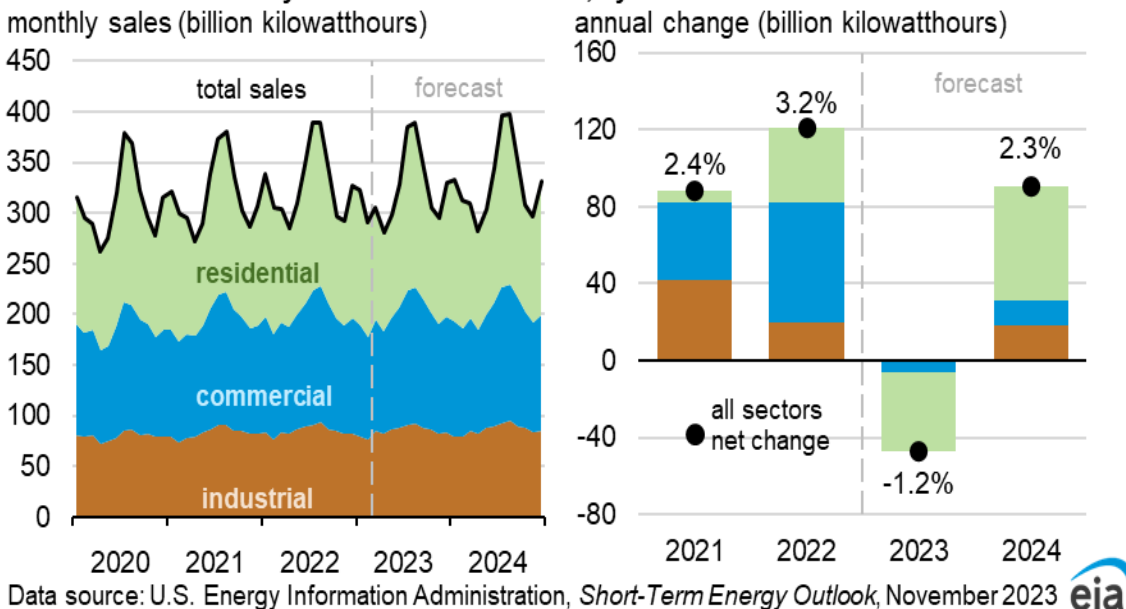
Electricity consumption

Forecast sales of electricity to U.S. customers increase by more than 2% in 2024 after falling by an estimated 1% in 2023. We expect electricity consumption will grow slightly in most sectors next year, but mainly in the residential sector. Residential electricity use is sensitive to weather conditions. We

expect winter temperatures in 2024, as measured by heating degree days (HDDs), will be 2% colder than in 2023. We expect summer temperatures, measured by cooling degree days in our forecast, to be 6% hotter than in 2023. Both a colder winter and a warmer summer increase electricity use by households.

In addition to weather conditions, macroeconomic conditions affect electricity demand in the commercial and industrial sectors. Nationwide, we expect retail sales of electricity to these two sectors to grow slightly in 2024 after a slight decline in 2023. More than 40% of forecast growth in 2024 occurs in the West South Central Census Division where forecast GDP grows by 1.9% next year compared with overall U.S. GDP growth of 1.5%.

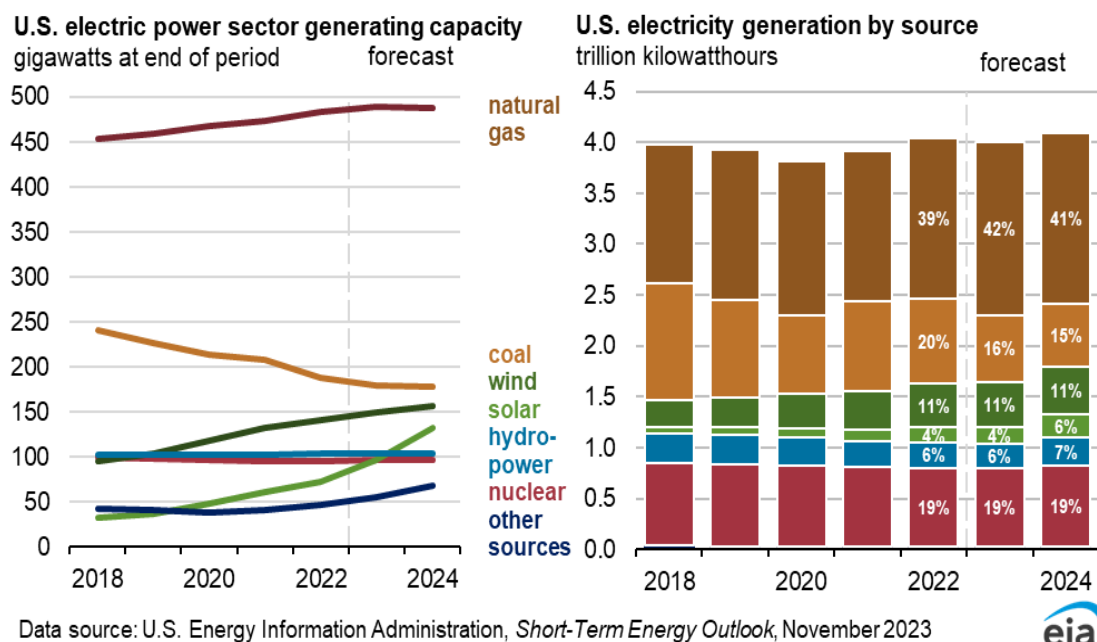
U.S. sales of electricity to ultimate customers, by sector



Electricity generation

Generation from renewable energy sources is the main contributor to growth in U.S. electricity generation over the STEO forecast horizon. The share of total U.S. generation from renewables rises from 21% in 2022 to a forecast share of 22% in 2023 and to 24% in 2024. Much of this increase is the result of an expected 60 gigawatts of new solar generating capacity entering service during 2023 and 2024. We believe that the solar capacity increase, in addition to our forecast of increased hydropower generation and modest gains in new wind capacity, will reduce generation from fossil fuel-fired power plants. We forecast the U.S. natural gas generation share will fall from its record high of 42% in 2023 to 41% in 2024, while coal's generation share continues to fall from 16% to 15%.

About one-third of the forecast growth in solar capacity occurs in the Texas electricity market. Natural gas is the largest source of power in that market, and we expect the share of generation from natural gas in Texas will fall from 46% in 2023 to 41% in 2024, replaced by a significant increase in generation from solar. New solar and wind capacity also is being added in the Midwest electricity region, which we expect will lead to reduced generation from coal-fired power plants.

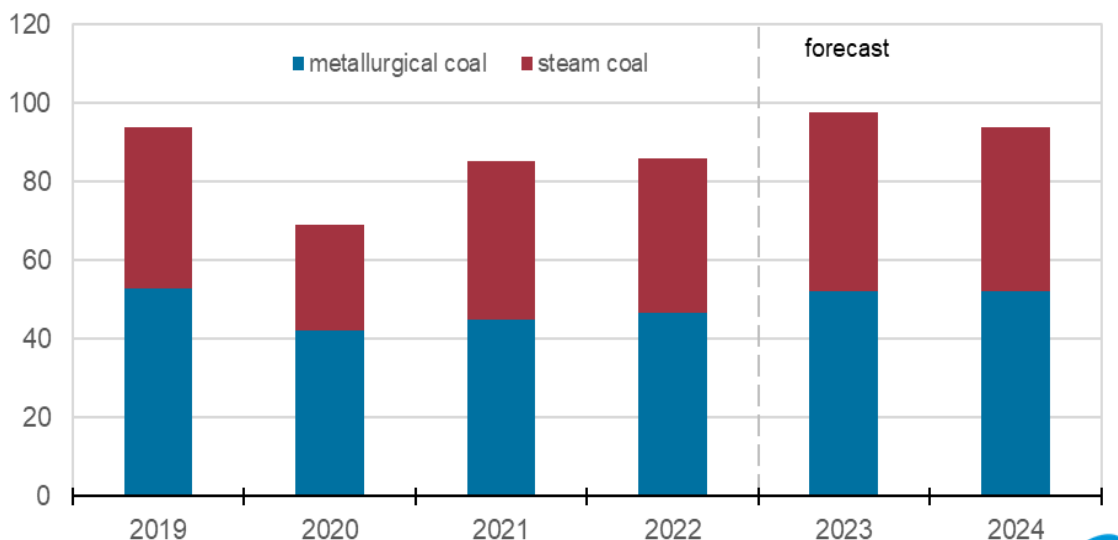


Coal markets

Coal production in our forecast totals 585 million short tons (MMst) in 2023 and falls by more than 100 MMst in 2024. The large decrease next year is due to falling demand from the U.S. electric power sector. Reduced coal production is also a consequence of relatively full coal inventories held by electric generating plants, in late 2023 there is 50% more coal held by plants than in mid-2022. Even though coal prices have fallen due to demand reductions, coal-fired power generation is still not cost competitive based on our expectations that natural gas prices for electric generation will average about \$3.50/MMBtu in 2024.

Declines in U.S. coal production from less domestic demand are partially offset by a return of demand from export markets to pre-pandemic levels. We forecast that exports will rise by 13% to reach 97 MMst in 2023, before again falling to 94 MMst in 2024. Exports fell to 69 MMst in 2020 though they returned to 86 MMst in 2022. The increase in coal exports to pre-pandemic levels is made up of both steam and metallurgical coal exports to customers in Europe and Asia. Exports to Europe have been bolstered by a ban on the import of coal from Russia due to the conflict in Ukraine.

Annual U.S. coal exports by type
million short tons



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, November 2023



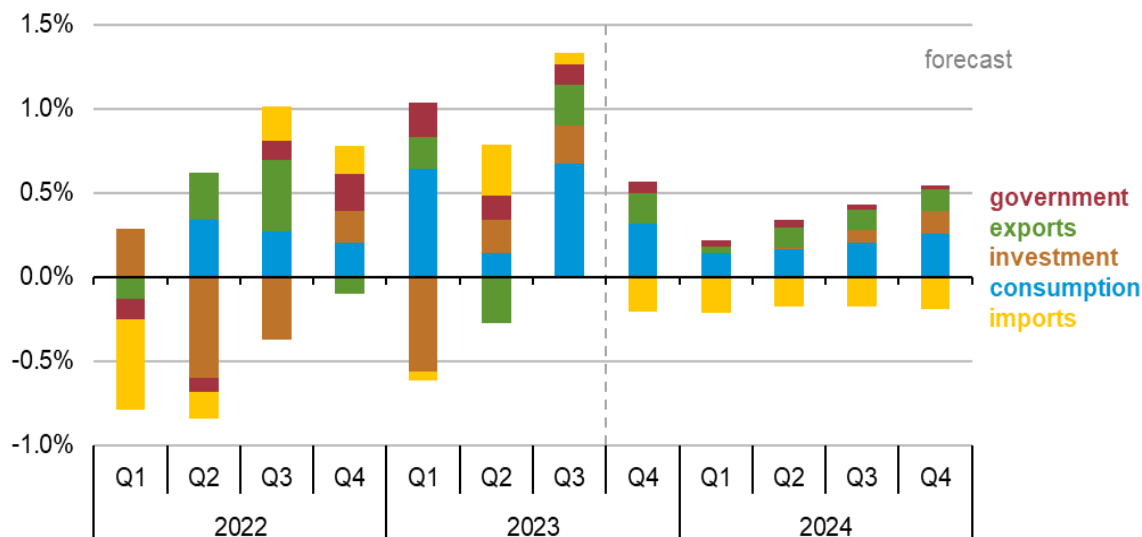
Economy, Weather, and CO₂

U.S. macroeconomics

Our forecast assumes real U.S. GDP will grow 2.4% in 2023 and 1.5% in 2024, similar to our assumptions in last month's STEO. Growth in GDP next year is mostly the result of rising consumer expenditures with a significant contribution from exports as well. Our forecast now assumes that GDP will grow at an annualized rate of 4.8% in the third quarter of 2023 (3Q23), close to the Bureau of Economic Analysis's (BEA) 3Q23 advanced estimate of 4.9%. We assume GDP growth will slow in the last quarter, with an annualized growth rate of 1.7% in 4Q23.

Contributions to GDP growth

weighted annualized percentage change



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, November 2023



Our U.S. macroeconomic forecasts are based on S&P Global's macroeconomic model. We incorporate STEO energy price forecasts into the model to obtain the final macroeconomic assumptions.

Non-farm payroll employment increased by 336,000 jobs in September, but monthly additions are trending down toward pre-pandemic levels. Additions to non-farm payroll averaged 260,000 jobs per month in 2023 through September, down from a monthly average of nearly 400,000 jobs in 2022. Our forecast assumes employment growth will slow further in 2023 and 2024, as the unemployment rate rises to 4.1% by the end of 2024. S&P Global forecasts that slowing GDP growth and a rising unemployment rate are necessary for year-over-year inflation to fall to the Federal Reserve's target of 2%.

Emissions

U.S. energy-related carbon dioxide (CO₂) emissions increase in our forecast during the last few months of 2023 relative to October and remain relatively high during the first few months of 2024 as we enter the winter. Most of these seasonal emissions increases come from increased consumption of coal, predominantly for electric power, and natural gas for both electricity generation and space heating. Seasonal emissions typically peak in January in the United States.

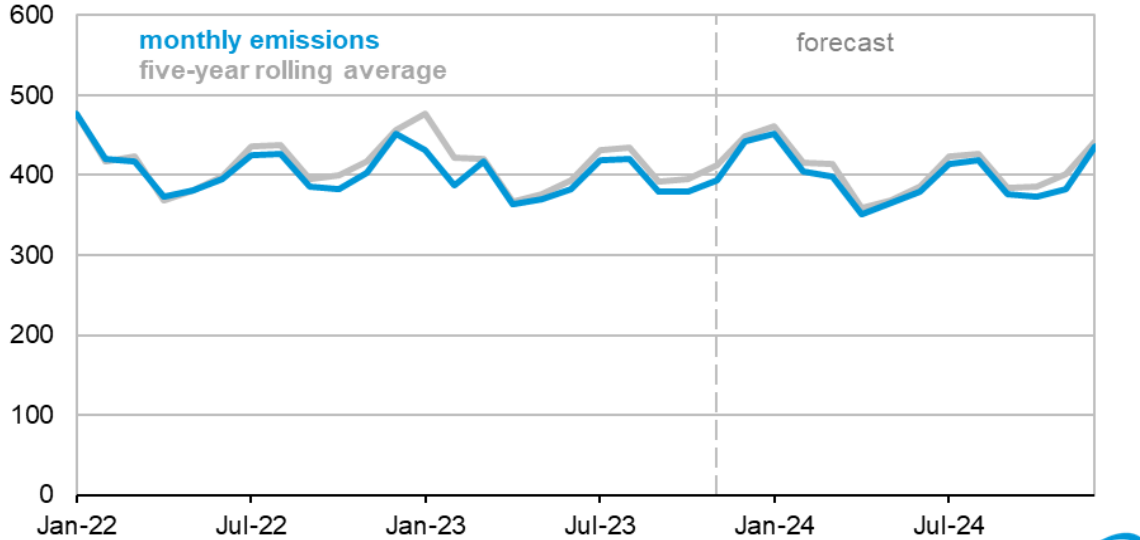
We expect slightly less emissions this winter than in recent winters. We forecast 3% less U.S. CO₂ emissions between November 2023 and March 2024 than the average over that period during the past five winters. Less-than-average winter emissions are the result of several factors, including higher-than-average temperatures, improvements in energy efficiency, and decreases in the carbon intensity of electricity and space heating.

We expect U.S. CO₂ emissions to decrease by 3% for all of 2023. The largest reduction in CO₂ emissions is from decreased use of coal, down 18% from 2022. Emissions from petroleum remain unchanged as

falling gasoline consumption is offset by rising consumption of jet fuel and diesel, and emissions from natural gas increase slightly. In our forecast, total energy-related U.S. CO₂ emissions fall by 1% in 2024.

U.S. energy-related carbon dioxide emissions

million metric tons



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, November 2023



Weather

In our forecast, we assume a warmer November than last year, with a total of 488 HDDs, 5% fewer than in November 2022. We expect a colder 1Q24 with 4% more HDDs than in 1Q23. Overall, we expect an average of around 3,220 HDDs in the United States this winter, about the same as last winter and 4% fewer than the previous 10-winter average.

Short-Term Energy Outlook Chart Gallery



November 7, 2023

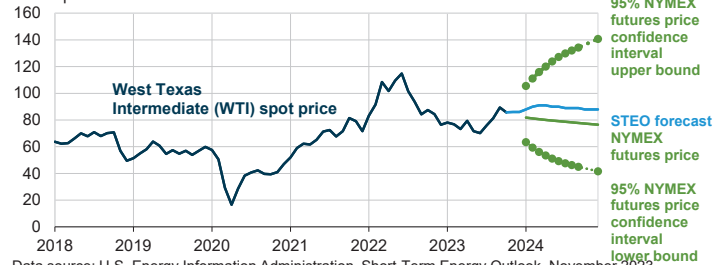


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West Texas Intermediate (WTI) crude oil price and NYMEX confidence intervals

dollars per barrel



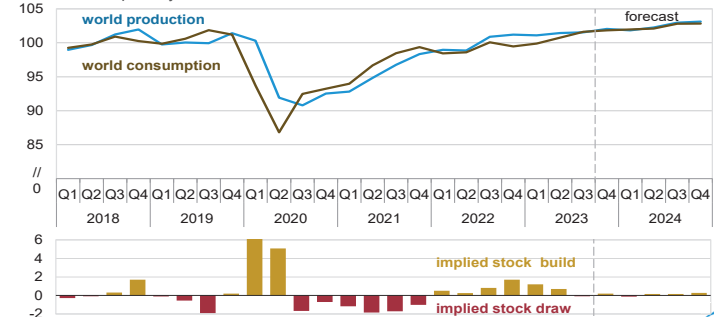
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023, CME Group, Bloomberg, L.P., and Refinitiv an LSEG Business

Note: Confidence interval derived from options market information for the five trading days ending November 2, 2023. Intervals not calculated for months with sparse trading in near-the-money options contracts.



World liquid fuels production and consumption balance

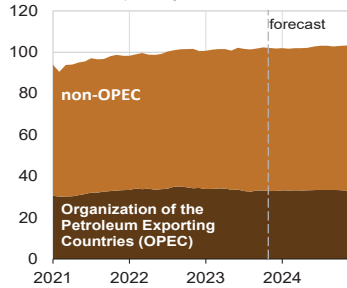
million barrels per day



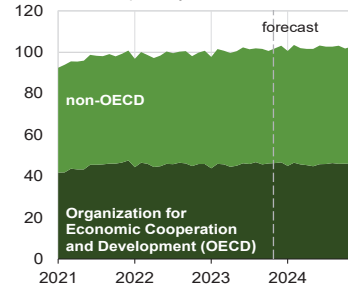
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023



World liquid fuels production
million barrels per day

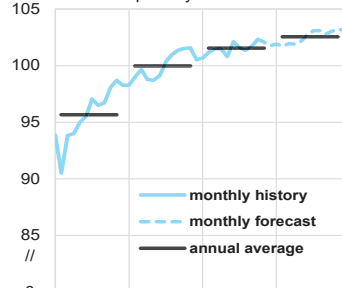


World liquid fuels consumption
million barrels per day

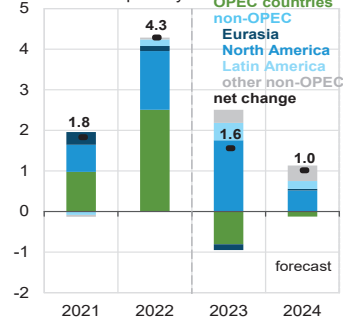


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023

World crude oil and liquid fuels production
million barrels per day

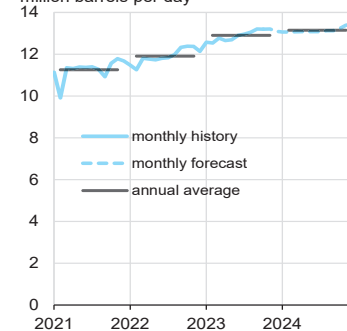


Components of annual change
million barrels per day

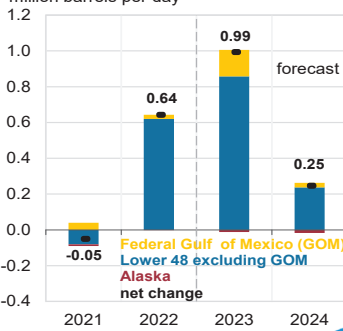


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023

U.S. crude oil production
million barrels per day

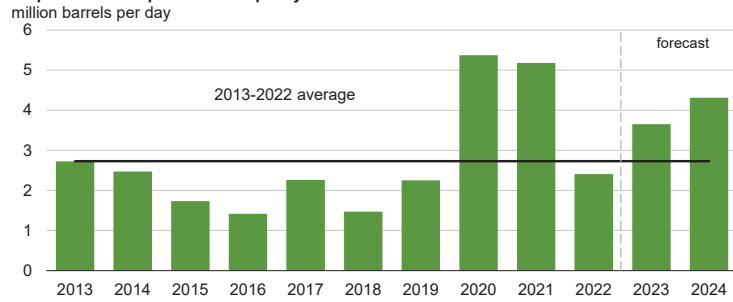


Components of annual change
million barrels per day



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023

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

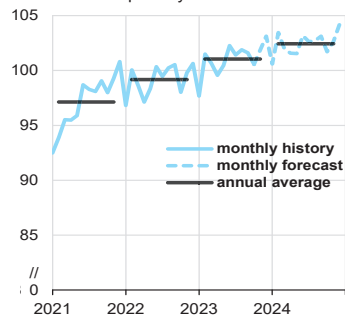


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023

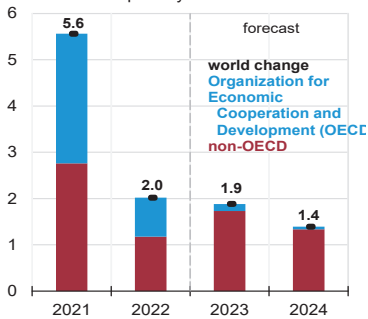
Note: Black line represents 2013-2022 average (2.7 million barrels per day).



World liquid fuels consumption



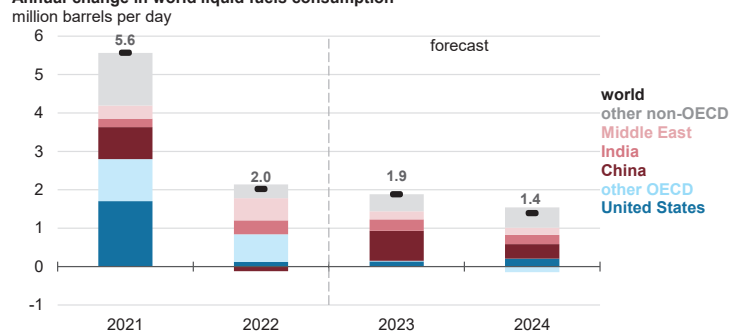
Components of annual change



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023



Annual change in world liquid fuels consumption

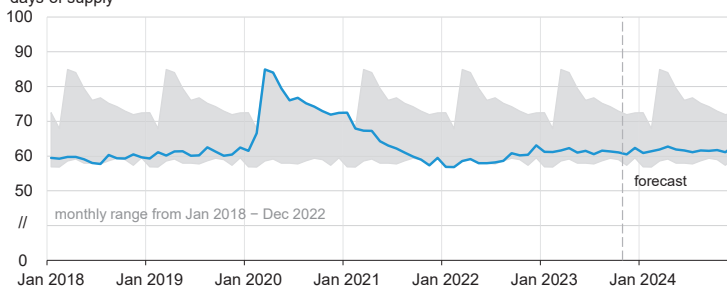


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023



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

days of supply

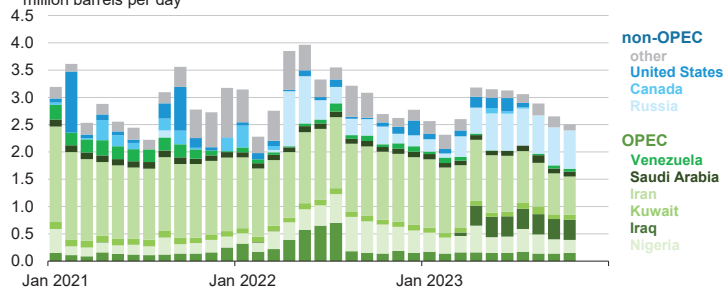


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023



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

million barrels per day

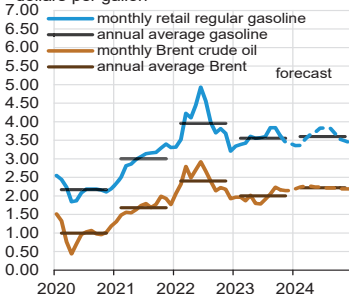


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023



U.S. gasoline and crude oil prices

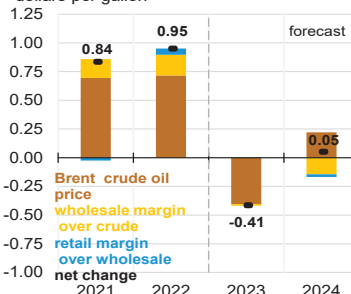
dollars per gallon



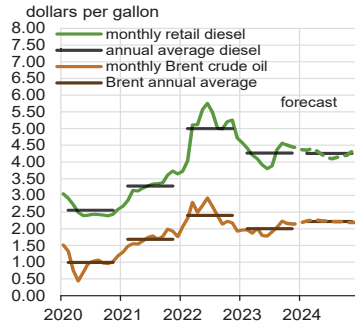
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023, and Refinitiv an LSEG Business

Components of annual gasoline price changes

dollars per gallon

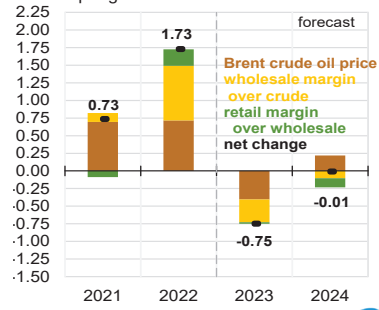


U.S. diesel and crude oil prices

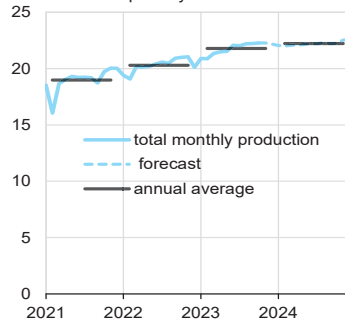


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023, and Refinitiv an LSEG Business

Components of annual diesel price changes

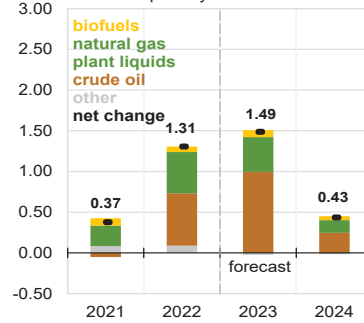


U.S. crude oil and liquid fuels production

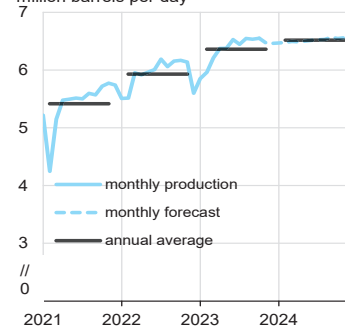


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023

Components of annual change

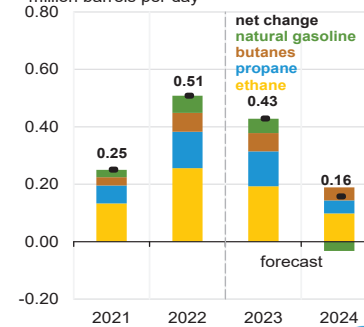


U.S. natural gas plant liquids production

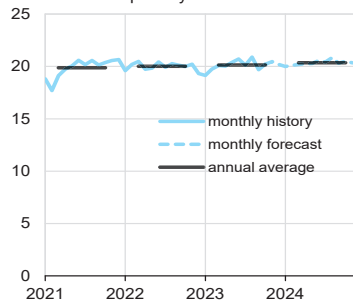


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023

Components of annual change

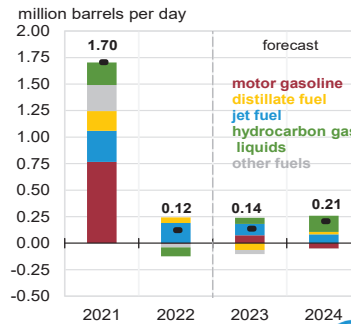


U.S. liquid fuels product supplied (consumption)
million barrels per day

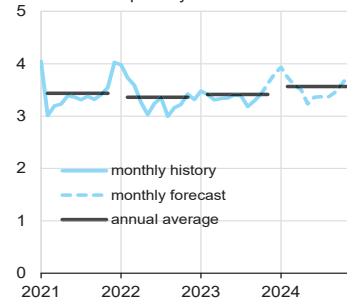


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023 

Components of annual change

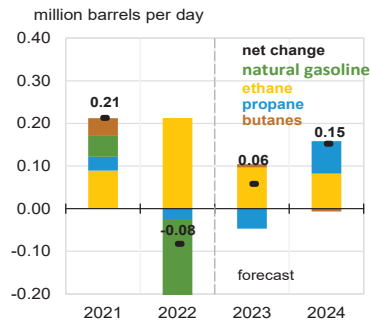


U.S. hydrocarbon gas liquids product supplied (consumption)
million barrels per day

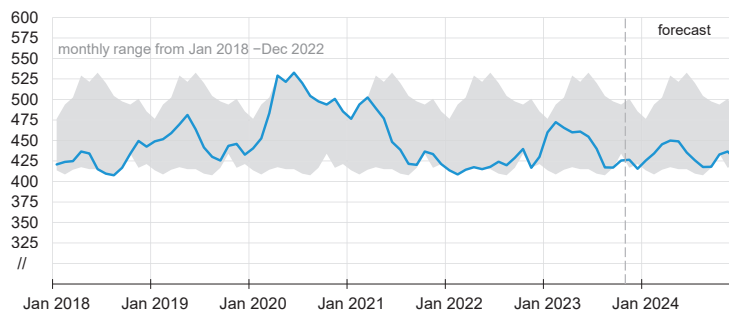


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023 

Components of annual change



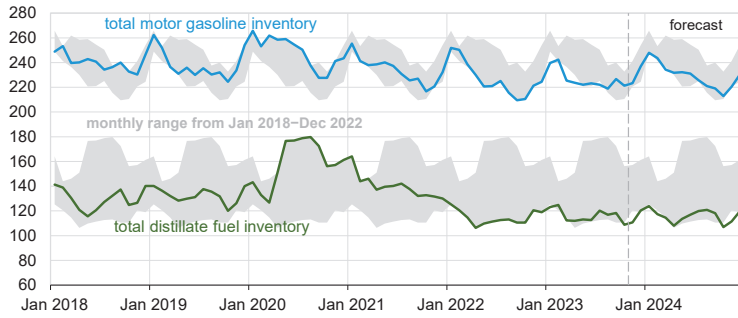
U.S. commercial crude oil inventories
million barrels



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023 

U.S. gasoline and distillate inventories

million barrels

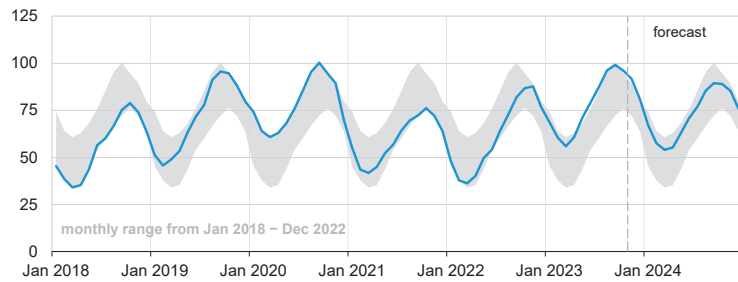


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023



U.S. commercial propane inventories

million barrels



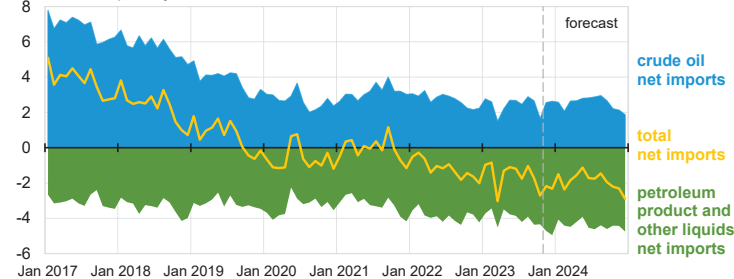
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023

Note: Excludes propylene.



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

million barrels per day



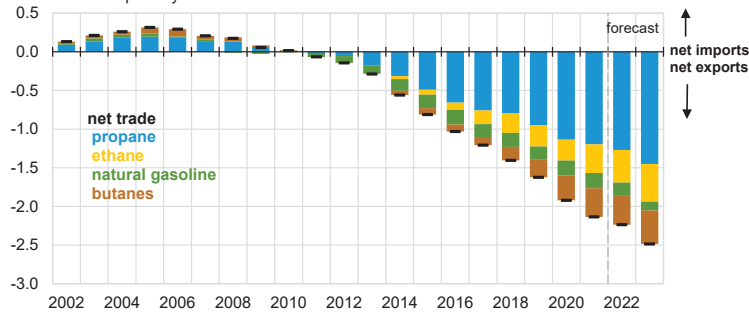
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023

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, November 2023



Henry Hub natural gas price and NYMEX confidence intervals

dollars per million British thermal units



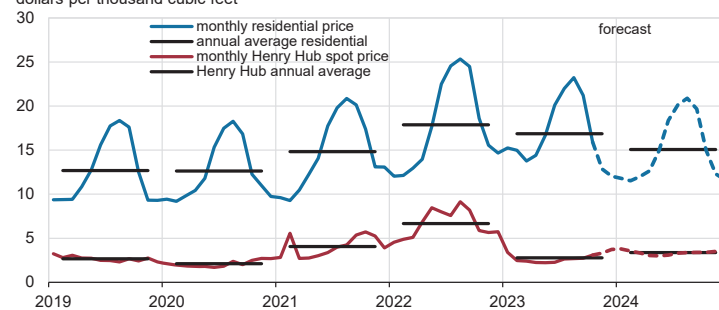
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023, CME Group, and Refinitiv an LSEG Business

Note: Confidence interval derived from options market information for the five trading days ending November 2, 2023. Intervals not calculated for months with sparse trading in near-the-money options contracts.



U.S. natural gas prices

dollars per thousand cubic feet

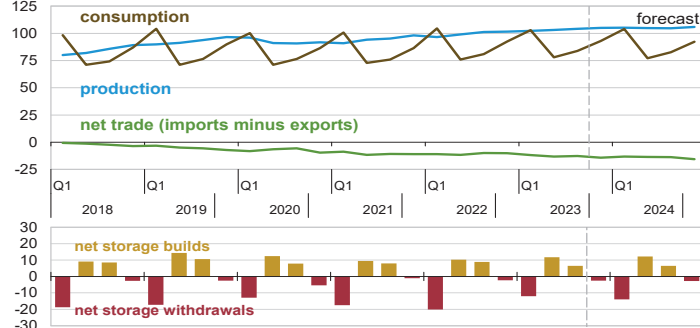


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023, and Refinitiv an LSEG Business



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

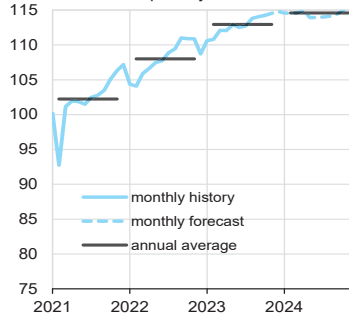
billion cubic feet per day



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023

U.S. marketed natural gas production

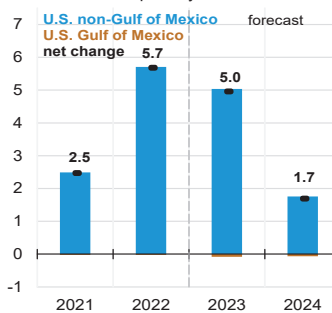
billion cubic feet per day



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023

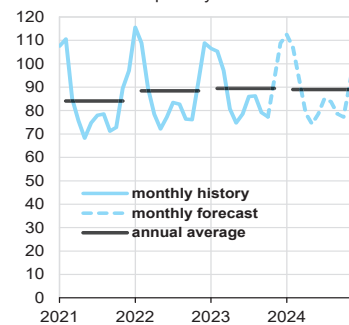
Components of annual change

billion cubic feet per day



U.S. natural gas consumption

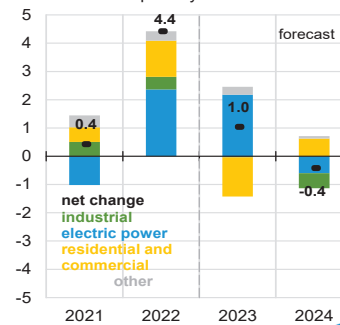
billion cubic feet per day



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023

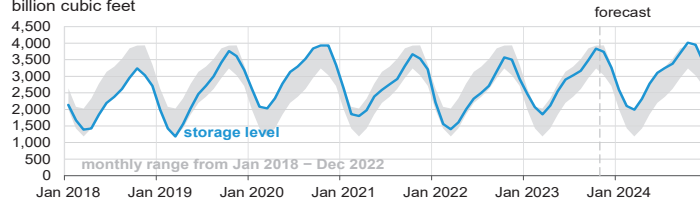
Components of annual change

billion cubic feet per day



U.S. working natural gas in storage

billion cubic feet



Percentage deviation from 2018 – 2022 average

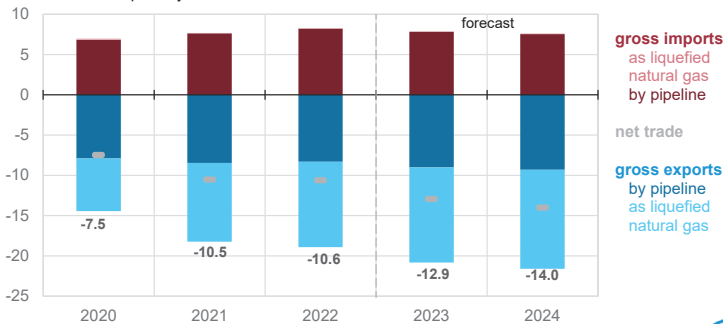


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023



U.S. annual natural gas trade

billion cubic feet per day

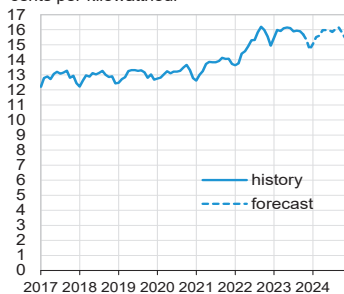


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023



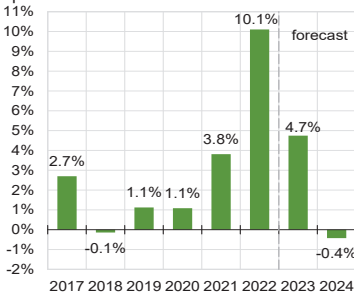
U.S. monthly nominal residential electricity price

cents per kilowatthour



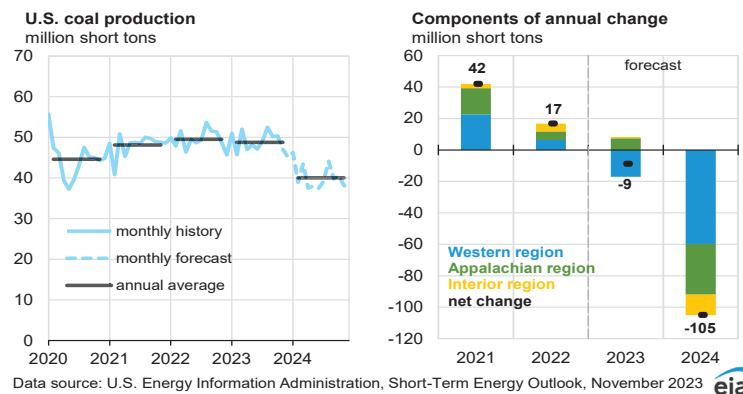
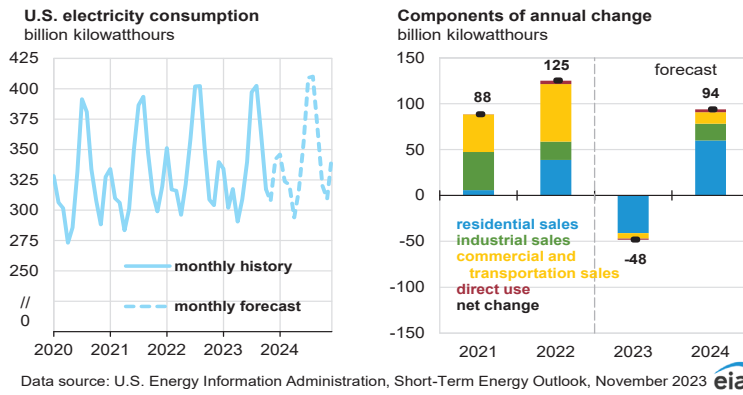
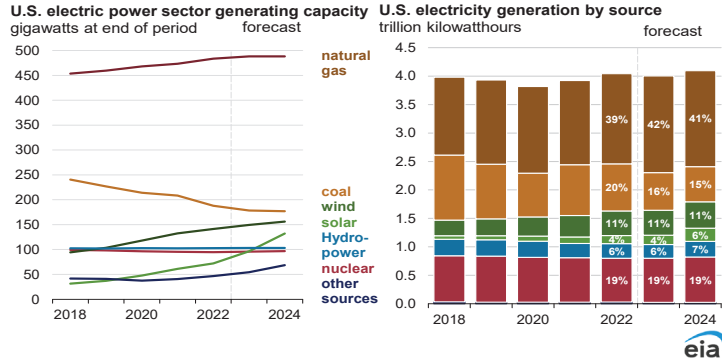
Annual growth in nominal residential electricity prices

percent

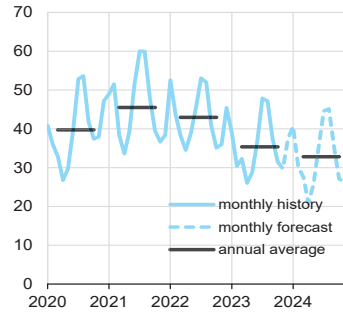


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023

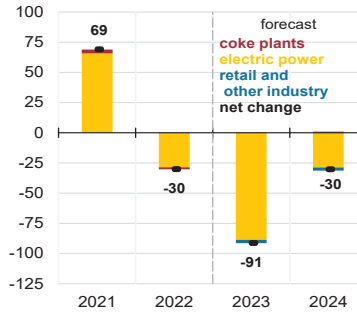




U.S. coal consumption
million short tons

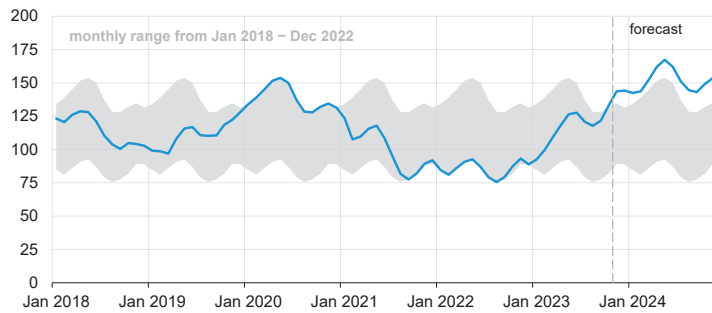


Components of annual change
million short tons



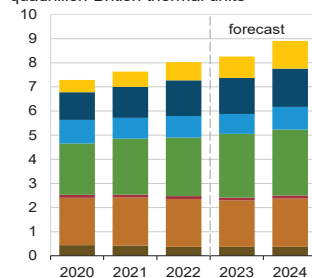
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023

U.S. electric power coal inventories
million short tons

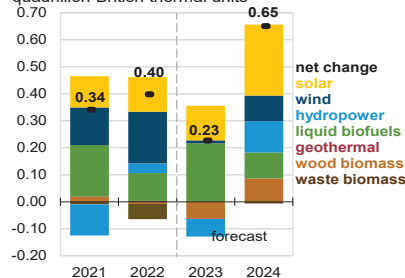


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023

U.S. renewable energy supply
quadrillion British thermal units



Components of annual change
quadrillion British thermal units

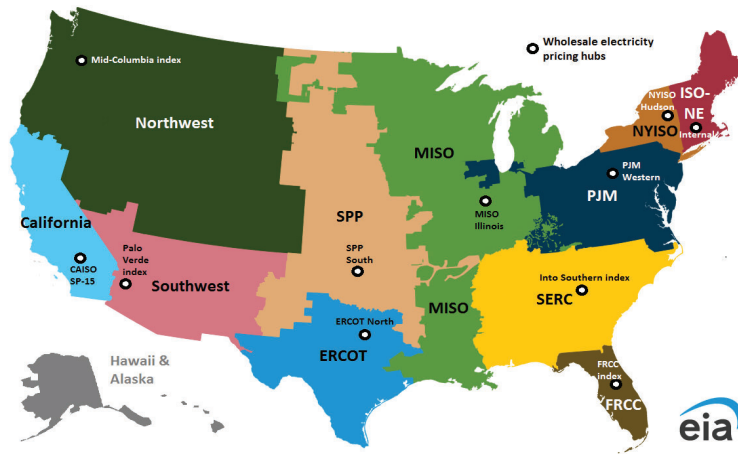


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023

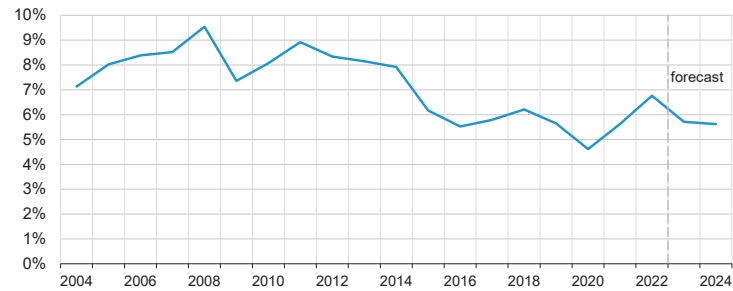
Note: Hydropower excludes pumped storage generation. Liquids include ethanol, biodiesel, renewable diesel, other biofuels, and biofuel losses and coproducts. Waste biomass includes municipal waste from biogenic sources, landfill gas, and non-wood waste.



Short-Term Energy Outlook electricity supply regions



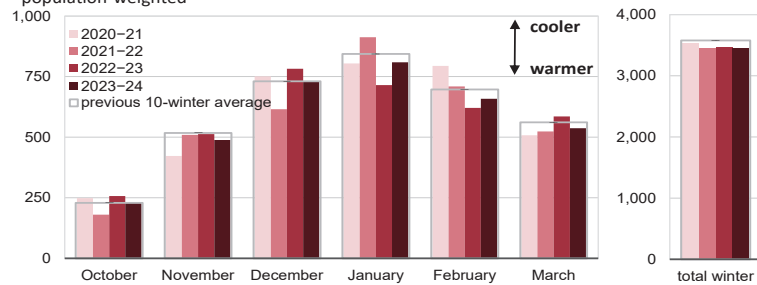
U.S. annual energy expenditures
share of gross domestic product



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023



U.S. winter heating degree days
population-weighted

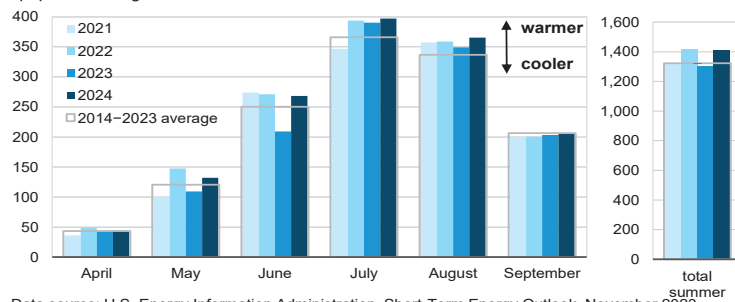


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November

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



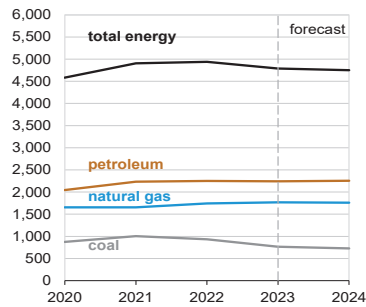
U.S. summer cooling degree days population-weighted



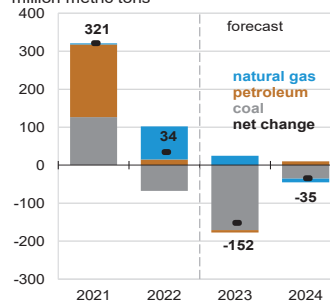
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, November 2023
 Note: EIA calculations based on National Oceanic and Atmospheric Administration (NOAA) data.
 Projections reflect NOAA's 14-16 month outlook.



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, November 2023



Table 1. U.S. Energy Markets Summary

U.S. Energy Information Administration | Short-Term Energy Outlook - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
Energy Production															
Crude Oil Production (a) (million barrels per day)	11.52	11.77	12.05	12.30	12.63	12.75	13.07	13.17	<i>13.06</i>	<i>13.08</i>	<i>13.11</i>	<i>13.35</i>	11.91	<i>12.90</i>	<i>13.15</i>
Dry Natural Gas Production (billion cubic feet per day)	96.6	98.9	101.2	101.6	102.3	103.2	104.1	105.1	<i>105.1</i>	<i>104.8</i>	<i>104.7</i>	<i>105.9</i>	99.6	<i>103.7</i>	<i>105.1</i>
Coal Production (million short tons)	149	145	154	146	149	142	152	143	<i>129</i>	<i>113</i>	<i>123</i>	<i>116</i>	594	<i>585</i>	<i>480</i>
Energy Consumption															
Liquid Fuels (million barrels per day)	20.09	20.00	20.11	19.85	19.66	20.38	20.24	20.29	<i>20.10</i>	<i>20.38</i>	<i>20.53</i>	<i>20.39</i>	20.01	<i>20.15</i>	<i>20.35</i>
Natural Gas (billion cubic feet per day)	104.5	75.9	80.9	92.4	102.9	78.0	83.9	93.1	<i>104.0</i>	<i>77.2</i>	<i>82.6</i>	<i>92.2</i>	88.4	<i>89.4</i>	<i>89.0</i>
Coal (b) (million short tons)	134	119	146	116	102	91	132	99	<i>98</i>	<i>82</i>	<i>125</i>	<i>89</i>	516	<i>424</i>	<i>394</i>
Electricity (billion kilowatt hours per day)	10.94	10.73	12.57	10.35	10.60	10.32	12.63	10.51	<i>10.88</i>	<i>10.62</i>	<i>12.88</i>	<i>10.59</i>	11.15	<i>11.02</i>	<i>11.24</i>
Renewables (c) (quadrillion Btu)	2.00	2.11	1.95	1.96	2.03	2.09	2.03	2.10	<i>2.20</i>	<i>2.29</i>	<i>2.22</i>	<i>2.20</i>	8.03	<i>8.26</i>	<i>8.91</i>
Total Energy Consumption (d) (quadrillion Btu)	24.95	22.36	23.82	24.06	24.04	21.94	23.65	23.79	<i>24.68</i>	<i>22.01</i>	<i>23.69</i>	<i>23.59</i>	95.19	<i>93.41</i>	<i>93.96</i>
Energy Prices															
Crude Oil West Texas Intermediate Spot (dollars per barrel)	95.18	108.93	93.07	82.69	75.96	73.49	82.25	85.93	<i>89.64</i>	<i>90.34</i>	<i>89.00</i>	<i>88.00</i>	94.91	<i>79.41</i>	<i>89.24</i>
Natural Gas Henry Hub Spot (dollars per million Btu)	4.66	7.48	7.99	5.55	2.65	2.16	2.59	3.26	<i>3.42</i>	<i>2.94</i>	<i>3.24</i>	<i>3.42</i>	6.42	<i>2.67</i>	<i>3.25</i>
Coal (dollars per million Btu)	2.18	2.25	2.49	2.54	2.57	2.49	2.49	2.44	<i>2.44</i>	<i>2.42</i>	<i>2.42</i>	<i>2.38</i>	2.37	<i>2.50</i>	<i>2.41</i>
Macroeconomic															
Real Gross Domestic Product (billion chained 2017 dollars - SAAR)	21,739	21,708	21,851	21,990	22,112	22,225	22,493	22,586	<i>22,597</i>	<i>22,640</i>	<i>22,699</i>	<i>22,779</i>	21,822	<i>22,354</i>	<i>22,679</i>
Percent change from prior year	3.6	1.9	1.7	0.7	1.7	2.4	2.9	2.7	<i>2.2</i>	<i>1.9</i>	<i>0.9</i>	<i>0.9</i>	1.9	<i>2.4</i>	<i>1.5</i>
GDP Implicit Price Deflator (Index, 2017=100)	115.2	117.7	119.0	120.1	121.3	121.8	122.4	123.2	<i>124.2</i>	<i>125.0</i>	<i>125.8</i>	<i>126.6</i>	118.0	<i>122.2</i>	<i>125.4</i>
Percent change from prior year	6.9	7.7	7.2	6.4	5.3	3.5	2.9	2.6	<i>2.4</i>	<i>2.7</i>	<i>2.7</i>	<i>2.8</i>	7.1	<i>3.5</i>	<i>2.6</i>
Real Disposable Personal Income (billion chained 2017 dollars - SAAR)	16,067	16,010	16,152	16,239	16,663	16,808	16,780	16,859	<i>17,009</i>	<i>17,137</i>	<i>17,260</i>	<i>17,366</i>	16,117	<i>16,777</i>	<i>17,193</i>
Percent change from prior year	-12.6	-5.6	-3.5	-1.5	3.7	5.0	3.9	3.8	<i>2.1</i>	<i>2.0</i>	<i>2.9</i>	<i>3.0</i>	-6.0	<i>4.1</i>	<i>2.5</i>
Manufacturing Production Index (Index, 2017=100)	100.1	100.8	100.9	100.0	99.9	100.1	100.1	99.4	<i>98.8</i>	<i>98.5</i>	<i>98.6</i>	<i>99.1</i>	100.5	<i>99.9</i>	<i>98.7</i>
Percent change from prior year	4.5	3.6	2.8	0.7	-0.2	-0.7	-0.8	-0.6	<i>-1.1</i>	<i>-1.7</i>	<i>-1.5</i>	<i>-0.4</i>	2.9	<i>-0.6</i>	<i>-1.2</i>
Weather															
U.S. Heating Degree-Days	2,146	490	54	1,552	1,921	486	61	1,445	<i>2,004</i>	<i>472</i>	<i>75</i>	<i>1,454</i>	4,243	<i>3,913</i>	<i>4,005</i>
U.S. Cooling Degree-Days	47	467	953	90	68	362	943	101	<i>50</i>	<i>444</i>	<i>968</i>	<i>105</i>	1,557	<i>1,476</i>	<i>1,568</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.

- = no data available

Notes: EIA completed modeling and analysis for this report on November 2, 2023.

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 and Energy Information Administration.

Table 2. Energy Prices

U.S. Energy Information Administration | Short-Term Energy Outlook - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
Crude Oil (dollars per barrel)															
West Texas Intermediate Spot Average	95.18	108.93	93.07	82.69	75.96	73.49	82.25	85.93	89.64	90.34	89.00	88.00	94.91	79.41	89.24
Brent Spot Average	101.17	113.84	100.53	88.44	81.04	78.02	86.64	90.27	93.64	94.34	93.00	92.00	100.94	83.99	93.24
U.S. Imported Average	90.06	108.10	92.18	78.14	69.58	71.08	79.80	83.20	86.90	87.57	86.25	85.25	92.83	75.99	86.56
U.S. Refiner Average Acquisition Cost	92.68	110.12	95.19	83.11	74.44	73.99	81.94	85.44	89.16	89.82	88.50	87.50	95.33	79.04	88.75
U.S. Liquid Fuels (cents per gallon)															
Refiner Prices for Resale															
Gasoline	278	376	311	267	262	265	296	244	254	289	292	261	309	267	274
Diesel Fuel	301	418	357	364	295	245	309	302	308	294	292	303	360	288	299
Fuel Oil	284	419	344	359	278	233	284	294	298	280	276	292	352	267	292
Refiner Prices to End Users															
Jet Fuel	283	400	340	332	305	233	291	294	304	292	287	298	340	281	295
No. 6 Residual Fuel Oil (a)	251	259	228	201	196	189	202	218	227	228	226	224	234	202	226
Retail Prices Including Taxes															
Gasoline Regular Grade (b)	371	450	408	357	338	358	376	349	342	373	378	348	397	355	361
Gasoline All Grades (b)	380	460	419	369	349	369	387	362	354	385	390	361	408	367	373
On-highway Diesel Fuel	431	549	516	508	439	394	428	446	438	423	414	427	501	427	425
Heating Oil	415	553	497	493	406	353	384	417	414	390	375	414	466	399	407
Propane															
Mont Belvieu Spot	130	125	108	80	82	68	68	72	78	81	80	80	111	73	80
Natural Gas															
Henry Hub Spot (dollars per thousand cubic feet)	4.84	7.77	8.30	5.76	2.76	2.25	2.69	3.38	3.56	3.05	3.36	3.56	6.67	2.77	3.38
Henry Hub Spot (dollars per million Btu)	4.66	7.48	7.99	5.55	2.65	2.16	2.59	3.26	3.42	2.94	3.24	3.42	6.42	2.67	3.25
U.S. Retail Prices (dollars per thousand cubic feet)															
Industrial Sector	6.64	7.97	8.93	7.33	6.06	3.76	3.89	4.72	5.34	4.25	4.27	4.88	7.66	4.67	4.72
Commercial Sector	9.99	11.65	14.05	12.11	11.81	10.48	10.90	9.16	9.05	9.51	10.11	8.84	11.32	10.67	9.18
Residential Sector	12.30	16.51	24.78	15.56	14.72	16.19	22.10	12.92	11.76	14.45	20.20	12.38	14.77	14.88	12.97
U.S. Electricity															
Power Generation Fuel Costs (dollars per million Btu)															
Coal	2.18	2.25	2.49	2.54	2.57	2.49	2.49	2.44	2.44	2.42	2.42	2.38	2.37	2.50	2.41
Natural Gas	5.93	7.39	8.23	6.86	4.98	2.60	2.89	3.54	3.95	3.07	3.29	3.71	7.23	3.42	3.48
Residual Fuel Oil (c)	16.59	25.86	26.65	21.22	19.23	17.88	17.66	17.29	17.41	18.20	17.26	17.19	21.58	18.06	17.46
Distillate Fuel Oil	21.32	30.71	26.71	24.73	22.84	19.91	22.52	23.13	23.51	22.57	22.17	23.12	25.00	22.24	22.97
Prices to Ultimate Customers (cents per kilowatthour)															
Industrial Sector	7.28	8.28	9.25	8.36	8.06	7.74	8.54	8.04	8.19	7.81	8.51	8.14	8.32	8.10	8.17
Commercial Sector	11.52	12.21	13.24	12.50	12.64	12.45	13.11	11.91	12.02	12.22	13.33	12.24	12.41	12.55	12.50
Residential Sector	13.91	14.96	15.74	15.44	15.77	16.12	15.91	15.18	15.36	15.98	16.01	15.31	15.04	15.75	15.69

(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 November 2, 2023.

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.

WTI and Brent crude oil spot prices, the Mt. Belvieu propane spot price, and the Henry Hub natural gas spot price are from

Refinitiv, an LSEG company, via EIA (https://www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm).

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 - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
Production (million barrels per day) (a)															
OECD	31.75	32.00	32.59	33.03	33.48	33.76	34.49	35.03	34.88	34.51	34.69	35.34	32.35	34.19	34.86
U.S. (50 States)	19.57	20.24	20.65	20.72	21.05	21.69	22.15	22.24	22.04	22.15	22.24	22.45	20.30	21.79	22.22
Canada	5.66	5.51	5.72	5.91	5.79	5.44	5.80	6.00	5.99	5.65	5.84	6.05	5.70	5.76	5.88
Mexico	1.91	1.89	1.90	1.90	2.07	2.16	2.11	2.11	2.11	2.08	2.06	2.03	1.90	2.11	2.07
Other OECD	4.61	4.35	4.32	4.49	4.56	4.47	4.43	4.69	4.73	4.64	4.55	4.80	4.44	4.54	4.68
Non-OECD	67.21	66.86	68.30	68.17	67.63	67.70	67.06	67.01	66.97	67.74	68.29	67.78	67.64	67.35	67.70
OPEC	33.75	33.76	34.71	34.43	33.95	33.69	32.85	32.97	33.15	33.21	33.39	33.19	34.17	33.36	33.24
Crude Oil Portion	28.19	28.33	29.23	28.92	28.46	28.38	27.50	27.58	27.67	27.85	28.01	27.77	28.67	27.98	27.83
Other Liquids (b)	5.56	5.43	5.48	5.52	5.49	5.31	5.35	5.39	5.49	5.35	5.38	5.42	5.50	5.38	5.41
Eurasia	14.39	13.39	13.59	14.01	14.11	13.67	13.45	13.63	13.67	13.73	13.76	13.84	13.84	13.71	13.75
China	5.18	5.18	5.05	5.09	5.32	5.32	5.19	5.32	5.27	5.30	5.29	5.33	5.12	5.29	5.30
Other Non-OECD	13.90	14.53	14.94	14.65	14.26	15.02	15.58	15.10	14.88	15.51	15.85	15.42	14.51	14.99	15.41
Total World Production	98.96	98.86	100.88	101.20	101.11	101.45	101.55	102.05	101.85	102.25	102.98	103.12	99.99	101.54	102.55
Non-OPEC Production	65.22	65.10	66.18	66.76	67.16	67.77	68.70	69.08	68.70	69.04	69.59	69.93	65.82	68.18	69.32
Consumption (million barrels per day) (c)															
OECD	45.63	45.11	46.22	45.63	45.20	45.33	46.20	46.45	45.74	45.35	46.13	46.20	45.65	45.80	45.86
U.S. (50 States)	20.09	20.00	20.11	19.85	19.66	20.38	20.24	20.29	20.10	20.38	20.53	20.39	20.01	20.15	20.35
U.S. Territories	0.11	0.12	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Canada	2.24	2.21	2.38	2.30	2.24	2.23	2.32	2.30	2.26	2.21	2.31	2.29	2.28	2.27	2.27
Europe	13.19	13.43	14.04	13.35	13.06	13.32	13.98	13.74	13.17	13.32	13.73	13.49	13.50	13.53	13.43
Japan	3.70	3.03	3.19	3.56	3.72	3.03	3.15	3.48	3.62	3.00	3.10	3.43	3.37	3.34	3.29
Other OECD	6.30	6.33	6.37	6.45	6.39	6.26	6.38	6.52	6.46	6.31	6.34	6.47	6.36	6.39	6.40
Non-OECD	52.83	53.49	53.86	53.85	54.70	55.43	55.44	55.39	56.24	56.74	56.68	56.65	53.51	55.24	56.58
Eurasia	4.28	4.43	4.73	4.65	4.32	4.47	4.78	4.69	4.39	4.54	4.86	4.76	4.53	4.57	4.64
Europe	0.74	0.76	0.76	0.77	0.74	0.76	0.76	0.77	0.75	0.77	0.77	0.77	0.76	0.76	0.77
China	15.12	15.10	15.09	15.28	15.89	16.08	15.77	15.98	16.27	16.47	16.14	16.36	15.15	15.93	16.31
Other Asia	13.74	13.75	13.41	13.84	14.30	14.37	13.79	14.09	14.90	14.88	14.27	14.58	13.69	14.14	14.66
Other Non-OECD	18.95	19.45	19.86	19.32	19.45	19.74	20.34	19.86	19.93	20.10	20.65	20.17	19.39	19.85	20.21
Total World Consumption	98.46	98.60	100.08	99.48	99.90	100.76	101.64	101.85	101.98	102.09	102.82	102.85	99.16	101.04	102.44
Total Crude Oil and Other Liquids Inventory Net Withdrawals (million barrels per day)															
U.S. (50 States)	0.80	0.51	0.45	0.41	-0.08	-0.11	-0.14	0.47	-0.06	-0.31	0.01	0.37	0.54	0.04	0.00
Other OECD	-0.09	-0.29	-0.48	-0.26	0.32	-0.53	0.07	-0.22	0.06	0.05	-0.05	-0.20	-0.28	-0.09	-0.04
Other Stock Draws and Balance	-1.21	-0.49	-0.79	-1.85	-1.45	-0.06	0.16	-0.45	0.13	0.10	-0.12	-0.44	-1.09	-0.45	-0.08
Total Stock Draw	-0.51	-0.26	-0.81	-1.71	-1.21	-0.70	0.09	-0.20	0.13	-0.16	-0.16	-0.27	-0.83	-0.50	-0.12
End-of-period Commercial Crude Oil and Other Liquids Inventories (million barrels)															
U.S. Commercial Inventory	1,154	1,180	1,216	1,223	1,231	1,264	1,273	1,230	1,235	1,264	1,262	1,229	1,223	1,230	1,229
OECD Commercial Inventory	2,604	2,657	2,736	2,767	2,746	2,828	2,830	2,807	2,807	2,831	2,834	2,819	2,767	2,807	2,819

(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, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Türkiye, United Kingdom, and United States.

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

Notes: EIA completed modeling and analysis for this report on November 2, 2023.

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* (<https://www.eia.gov/international/data/world>).

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 - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
North America	27.14	27.65	28.27	28.54	28.91	29.29	30.06	<i>30.34</i>	<i>30.14</i>	<i>29.88</i>	<i>30.14</i>	<i>30.54</i>	27.90	<i>29.66</i>	<i>30.18</i>
Canada	5.66	5.51	5.72	5.91	5.79	5.44	5.80	<i>6.00</i>	<i>5.99</i>	<i>5.65</i>	<i>5.84</i>	<i>6.05</i>	5.70	<i>5.76</i>	<i>5.88</i>
Mexico	1.91	1.89	1.90	1.90	2.07	2.16	2.11	<i>2.11</i>	<i>2.11</i>	<i>2.08</i>	<i>2.06</i>	<i>2.03</i>	1.90	<i>2.11</i>	<i>2.07</i>
United States	19.57	20.24	20.65	20.72	21.05	21.69	22.15	<i>22.24</i>	<i>22.04</i>	<i>22.15</i>	<i>22.24</i>	<i>22.45</i>	20.30	<i>21.79</i>	<i>22.22</i>
Central and South America	5.83	6.41	6.87	6.58	6.31	7.00	7.54	<i>7.06</i>	<i>6.87</i>	<i>7.50</i>	<i>7.84</i>	<i>7.40</i>	6.43	<i>6.98</i>	<i>7.40</i>
Argentina	0.77	0.78	0.79	0.82	0.81	0.81	0.82	<i>0.87</i>	<i>0.85</i>	<i>0.87</i>	<i>0.89</i>	<i>0.92</i>	0.79	<i>0.83</i>	<i>0.88</i>
Brazil	3.33	3.79	4.15	3.78	3.55	4.19	4.69	<i>4.14</i>	<i>3.84</i>	<i>4.42</i>	<i>4.74</i>	<i>4.29</i>	3.76	<i>4.15</i>	<i>4.32</i>
Colombia	0.77	0.77	0.78	0.79	0.79	0.81	0.81	<i>0.80</i>	<i>0.80</i>	<i>0.79</i>	<i>0.78</i>	<i>0.78</i>	0.78	<i>0.80</i>	<i>0.79</i>
Ecuador	0.48	0.47	0.49	0.49	0.46	0.48	0.49	<i>0.49</i>	<i>0.49</i>	<i>0.49</i>	<i>0.50</i>	<i>0.50</i>	0.48	<i>0.48</i>	<i>0.50</i>
Guyana	0.12	0.24	0.32	0.35	0.35	0.37	0.40	<i>0.44</i>	<i>0.56</i>	<i>0.61</i>	<i>0.61</i>	<i>0.61</i>	0.26	<i>0.39</i>	<i>0.60</i>
Europe	4.04	3.76	3.81	3.93	4.01	3.92	3.89	<i>4.14</i>	<i>4.17</i>	<i>4.08</i>	<i>4.00</i>	<i>4.26</i>	3.89	<i>3.99</i>	<i>4.13</i>
Norway	1.97	1.74	1.91	1.99	2.03	2.03	1.96	<i>2.09</i>	<i>2.11</i>	<i>2.04</i>	<i>2.05</i>	<i>2.22</i>	1.90	<i>2.03</i>	<i>2.10</i>
United Kingdom	0.97	0.91	0.80	0.84	0.87	0.79	0.81	<i>0.93</i>	<i>0.92</i>	<i>0.91</i>	<i>0.82</i>	<i>0.90</i>	0.88	<i>0.85</i>	<i>0.89</i>
Eurasia	14.39	13.39	13.59	14.01	14.11	13.67	13.45	<i>13.63</i>	<i>13.67</i>	<i>13.73</i>	<i>13.76</i>	<i>13.84</i>	13.84	<i>13.71</i>	<i>13.75</i>
Azerbaijan	0.70	0.67	0.65	0.67	0.65	0.62	0.62	<i>0.62</i>	<i>0.62</i>	<i>0.62</i>	<i>0.62</i>	<i>0.63</i>	0.67	<i>0.62</i>	<i>0.62</i>
Kazakhstan	2.01	1.77	1.62	1.92	2.02	1.97	1.85	<i>1.99</i>	<i>1.93</i>	<i>1.99</i>	<i>2.02</i>	<i>2.08</i>	1.83	<i>1.96</i>	<i>2.01</i>
Russia	11.30	10.59	10.95	11.06	11.06	10.68	10.58	<i>10.62</i>	<i>10.72</i>	<i>10.72</i>	<i>10.72</i>	<i>10.73</i>	10.97	<i>10.73</i>	<i>10.72</i>
Turkmenistan	0.26	0.26	0.26	0.26	0.27	0.27	0.27	<i>0.27</i>	<i>0.27</i>	<i>0.27</i>	<i>0.27</i>	<i>0.27</i>	0.26	<i>0.27</i>	<i>0.27</i>
Middle East	3.23	3.29	3.34	3.28	3.22	3.22	3.19	<i>3.17</i>	<i>3.20</i>	<i>3.21</i>	<i>3.20</i>	<i>3.20</i>	3.28	<i>3.20</i>	<i>3.20</i>
Oman	1.05	1.07	1.10	1.08	1.07	1.06	1.05	<i>1.03</i>	<i>1.03</i>	<i>1.03</i>	<i>1.03</i>	<i>1.03</i>	1.07	<i>1.05</i>	<i>1.03</i>
Qatar	1.85	1.86	1.86	1.86	1.86	1.86	1.86	<i>1.86</i>	<i>1.86</i>	<i>1.86</i>	<i>1.86</i>	<i>1.86</i>	1.86	<i>1.86</i>	<i>1.86</i>
Asia and Oceania	9.17	9.16	8.87	9.00	9.21	9.26	9.13	<i>9.28</i>	<i>9.24</i>	<i>9.25</i>	<i>9.23</i>	<i>9.26</i>	9.05	<i>9.22</i>	<i>9.25</i>
Australia	0.44	0.47	0.39	0.43	0.41	0.42	0.41	<i>0.42</i>	<i>0.41</i>	<i>0.41</i>	<i>0.40</i>	<i>0.39</i>	0.43	<i>0.42</i>	<i>0.40</i>
China	5.18	5.18	5.05	5.09	5.32	5.32	5.19	<i>5.32</i>	<i>5.27</i>	<i>5.30</i>	<i>5.29</i>	<i>5.33</i>	5.12	<i>5.29</i>	<i>5.30</i>
India	0.88	0.89	0.87	0.85	0.85	0.90	0.91	<i>0.89</i>	<i>0.91</i>	<i>0.91</i>	<i>0.91</i>	<i>0.90</i>	0.87	<i>0.89</i>	<i>0.91</i>
Indonesia	0.84	0.83	0.81	0.83	0.82	0.85	0.82	<i>0.82</i>	<i>0.82</i>	<i>0.81</i>	<i>0.80</i>	<i>0.80</i>	0.83	<i>0.83</i>	<i>0.81</i>
Malaysia	0.62	0.60	0.58	0.62	0.61	0.58	0.58	<i>0.59</i>	<i>0.59</i>	<i>0.58</i>	<i>0.58</i>	<i>0.57</i>	0.60	<i>0.59</i>	<i>0.58</i>
Africa	1.40	1.43	1.44	1.44	1.38	1.41	1.44	<i>1.44</i>	<i>1.39</i>	<i>1.40</i>	<i>1.41</i>	<i>1.42</i>	1.43	<i>1.42</i>	<i>1.41</i>
Egypt	0.66	0.68	0.67	0.67	0.66	0.67	0.66	<i>0.65</i>	<i>0.61</i>	<i>0.61</i>	<i>0.61</i>	<i>0.61</i>	0.67	<i>0.66</i>	<i>0.61</i>
South Sudan	0.15	0.15	0.16	0.15	0.13	0.13	0.16	<i>0.16</i>	<i>0.16</i>	<i>0.16</i>	<i>0.15</i>	<i>0.15</i>	0.16	<i>0.15</i>	<i>0.15</i>
Total non-OPEC liquids	65.22	65.10	66.18	66.76	67.16	67.77	68.70	<i>69.08</i>	<i>68.70</i>	<i>69.04</i>	<i>69.59</i>	<i>69.93</i>	65.82	<i>68.18</i>	<i>69.32</i>
OPEC non-crude liquids	5.56	5.43	5.48	5.52	5.49	5.31	5.35	<i>5.39</i>	<i>5.49</i>	<i>5.35</i>	<i>5.38</i>	<i>5.42</i>	5.50	<i>5.38</i>	<i>5.41</i>
Non-OPEC + OPEC non-crude	70.77	70.54	71.66	72.28	72.65	73.08	74.05	<i>74.46</i>	<i>74.18</i>	<i>74.40</i>	<i>74.97</i>	<i>75.35</i>	71.32	<i>73.57</i>	<i>74.73</i>
Unplanned non-OPEC Production Outages	0.76	1.31	0.78	0.56	0.56	1.02	0.92	-	-	-	-	-	0.85	-	-

- = no data available

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

Notes: EIA completed modeling and analysis for this report on November 2, 2023.

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* (<https://www.eia.gov/international/data/world>).

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 - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
Crude Oil															
Algeria	0.97	1.00	1.02	1.02	1.01	0.98	0.95	-	-	-	-	-	1.00	-	-
Angola	1.15	1.19	1.16	1.10	1.08	1.14	1.14	-	-	-	-	-	1.15	-	-
Congo (Brazzaville)	0.27	0.29	0.28	0.26	0.27	0.25	0.26	-	-	-	-	-	0.27	-	-
Equatorial Guinea	0.09	0.09	0.09	0.07	0.06	0.06	0.06	-	-	-	-	-	0.09	-	-
Gabon	0.19	0.19	0.20	0.21	0.20	0.21	0.20	-	-	-	-	-	0.20	-	-
Iran	2.55	2.53	2.53	2.56	2.60	2.74	2.97	-	-	-	-	-	2.54	-	-
Iraq	4.30	4.42	4.55	4.51	4.41	4.19	4.32	-	-	-	-	-	4.45	-	-
Kuwait	2.61	2.69	2.80	2.72	2.68	2.59	2.56	-	-	-	-	-	2.71	-	-
Libya	1.06	0.76	0.95	1.14	1.14	1.15	1.15	-	-	-	-	-	0.98	-	-
Nigeria	1.27	1.11	0.97	1.07	1.24	1.19	1.21	-	-	-	-	-	1.10	-	-
Saudi Arabia	10.08	10.30	10.85	10.50	10.02	10.18	9.02	-	-	-	-	-	10.43	-	-
United Arab Emirates	2.94	3.04	3.17	3.09	3.06	2.94	2.91	-	-	-	-	-	3.06	-	-
Venezuela	0.70	0.72	0.66	0.69	0.70	0.75	0.76	-	-	-	-	-	0.69	-	-
OPEC Total	28.19	28.33	29.23	28.92	28.46	28.38	27.50	27.58	27.67	27.85	28.01	27.77	28.67	27.98	27.83
Other Liquids (a)	5.56	5.43	5.48	5.52	5.49	5.31	5.35	5.39	5.49	5.35	5.38	5.42	5.50	5.38	5.41
Total OPEC Production	33.75	33.76	34.71	34.43	33.95	33.69	32.85	32.97	33.15	33.21	33.39	33.19	34.17	33.36	33.24
OPEC+ Crude Oil Production	39.43	38.99	40.06	39.78	39.29	38.60	37.36	37.60	37.69	37.86	38.00	37.75	39.57	38.20	37.83
Crude Oil Production Capacity															
Middle East	25.48	25.46	25.55	25.66	25.88	25.67	25.90	25.96	26.29	26.31	26.39	26.70	25.54	25.85	26.42
Other	5.83	5.45	5.35	5.55	5.71	5.78	5.81	5.82	5.73	5.72	5.71	5.70	5.54	5.78	5.72
OPEC Total	31.31	30.91	30.89	31.21	31.59	31.45	31.70	31.78	32.02	32.03	32.10	32.40	31.08	31.63	32.14
Surplus Crude Oil Production Capacity															
Middle East	3.00	2.47	1.65	2.28	3.10	3.02	4.12	4.13	4.30	4.11	4.03	4.57	2.35	3.60	4.25
Other	0.12	0.11	0.01	0.01	0.02	0.05	0.08	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06
OPEC Total	3.12	2.58	1.67	2.29	3.13	3.07	4.20	4.20	4.36	4.17	4.09	4.63	2.41	3.65	4.31
Unplanned OPEC Production Outages	1.98	2.42	2.50	2.14	1.94	2.13	1.95	-	-	-	-	-	2.26	-	-

(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 United Arab Emirates (Middle East); Algeria, Angola, Congo (Brazzaville), Equatorial Guinea, Gabon, Libya, Nigeria, and Venezuela (Other).

OPEC+ = OPEC (excluding Iran, Libya, and Venezuela) plus Azerbaijan, Bahrain, Brunei, Kazakhstan, Malaysia, Mexico, Oman, Russia, South Sudan, and Sudan.

Notes: EIA completed modeling and analysis for this report on November 2, 2023.

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* (<https://www.eia.gov/international/data/world>).

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 - November 2023

	2022				2023				2024						
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
North America	24.10	24.20	24.46	24.11	23.78	24.50	24.50	<i>24.54</i>	<i>24.25</i>	<i>24.50</i>	<i>24.74</i>	<i>24.60</i>	24.22	<i>24.33</i>	<i>24.52</i>
Canada	2.24	2.21	2.38	2.30	2.24	2.23	2.32	<i>2.30</i>	<i>2.26</i>	<i>2.21</i>	<i>2.31</i>	<i>2.29</i>	2.28	<i>2.27</i>	<i>2.27</i>
Mexico	1.76	1.99	1.96	1.95	1.87	1.88	1.93	<i>1.94</i>	<i>1.87</i>	<i>1.90</i>	<i>1.89</i>	<i>1.91</i>	1.92	<i>1.91</i>	<i>1.89</i>
United States	20.09	20.00	20.11	19.85	19.66	20.38	20.24	<i>20.29</i>	<i>20.10</i>	<i>20.38</i>	<i>20.53</i>	<i>20.39</i>	20.01	<i>20.15</i>	<i>20.35</i>
Central and South America	6.27	6.43	6.57	6.54	6.42	6.57	6.66	<i>6.59</i>	<i>6.46</i>	<i>6.61</i>	<i>6.71</i>	<i>6.64</i>	6.45	<i>6.56</i>	<i>6.61</i>
Brazil	2.85	2.93	3.02	3.02	2.98	3.04	3.11	<i>3.10</i>	<i>2.97</i>	<i>3.03</i>	<i>3.11</i>	<i>3.09</i>	2.96	<i>3.06</i>	<i>3.05</i>
Europe	13.93	14.19	14.80	14.11	13.81	14.08	14.74	<i>14.51</i>	<i>13.92</i>	<i>14.09</i>	<i>14.50</i>	<i>14.27</i>	14.26	<i>14.29</i>	<i>14.20</i>
Eurasia	4.28	4.43	4.73	4.65	4.32	4.47	4.78	<i>4.69</i>	<i>4.39</i>	<i>4.54</i>	<i>4.86</i>	<i>4.76</i>	4.53	<i>4.57</i>	<i>4.64</i>
Russia	3.27	3.36	3.64	3.50	3.31	3.39	3.68	<i>3.54</i>	<i>3.33</i>	<i>3.42</i>	<i>3.71</i>	<i>3.57</i>	3.44	<i>3.48</i>	<i>3.51</i>
Middle East	8.92	9.28	9.67	9.02	9.20	9.32	9.91	<i>9.32</i>	<i>9.50</i>	<i>9.51</i>	<i>10.05</i>	<i>9.45</i>	9.23	<i>9.44</i>	<i>9.63</i>
Asia and Oceania	36.50	35.62	35.49	36.58	37.82	37.26	36.57	<i>37.55</i>	<i>38.79</i>	<i>38.17</i>	<i>37.35</i>	<i>38.36</i>	36.05	<i>37.30</i>	<i>38.17</i>
China	15.12	15.10	15.09	15.28	15.89	16.08	15.77	<i>15.98</i>	<i>16.27</i>	<i>16.47</i>	<i>16.14</i>	<i>16.36</i>	15.15	<i>15.93</i>	<i>16.31</i>
Japan	3.70	3.03	3.19	3.56	3.72	3.03	3.15	<i>3.48</i>	<i>3.62</i>	<i>3.00</i>	<i>3.10</i>	<i>3.43</i>	3.37	<i>3.34</i>	<i>3.29</i>
India	5.08	5.07	4.84	5.18	5.30	5.47	5.12	<i>5.44</i>	<i>5.62</i>	<i>5.69</i>	<i>5.32</i>	<i>5.65</i>	5.04	<i>5.33</i>	<i>5.57</i>
Africa	4.45	4.45	4.34	4.48	4.55	4.56	4.48	<i>4.64</i>	<i>4.67</i>	<i>4.68</i>	<i>4.60</i>	<i>4.76</i>	4.43	<i>4.56</i>	<i>4.68</i>
Total OECD Liquid Fuels Consumption	45.63	45.11	46.22	45.63	45.20	45.33	46.20	<i>46.45</i>	<i>45.74</i>	<i>45.35</i>	<i>46.13</i>	<i>46.20</i>	45.65	<i>45.80</i>	<i>45.86</i>
Total non-OECD Liquid Fuels Consumption	52.83	53.49	53.86	53.85	54.70	55.43	55.44	<i>55.39</i>	<i>56.24</i>	<i>56.74</i>	<i>56.68</i>	<i>56.65</i>	53.51	<i>55.24</i>	<i>56.58</i>
Total World Liquid Fuels Consumption	98.46	98.60	100.08	99.48	99.90	100.76	101.64	<i>101.85</i>	<i>101.98</i>	<i>102.09</i>	<i>102.82</i>	<i>102.85</i>	99.16	<i>101.04</i>	<i>102.44</i>
Real Gross Domestic Product (a)															
World Index, 2015 Q1 = 100	122.2	122.3	124.0	124.9	125.5	126.6	127.5	<i>128.2</i>	<i>128.6</i>	<i>129.5</i>	<i>130.6</i>	<i>131.8</i>	123.4	<i>126.9</i>	<i>130.1</i>
Percent change from prior year	4.4	3.4	3.3	2.2	2.7	3.5	2.8	<i>2.7</i>	<i>2.4</i>	<i>2.3</i>	<i>2.5</i>	<i>2.8</i>	3.3	<i>2.9</i>	<i>2.5</i>
OECD Index, 2015 = 100													113.8	<i>115.4</i>	<i>116.1</i>
Percent change from prior year													2.9	<i>1.4</i>	<i>0.6</i>
Non-OECD Index, 2015 = 100													128.9	<i>134.2</i>	<i>139.6</i>
Percent change from prior year													3.6	<i>4.1</i>	<i>4.0</i>
Nominal U.S. Dollar Index (b)															
Index, 2015 Q1 = 100	109.5	112.8	117.1	118.4	114.1	113.5	114.2	<i>116.7</i>	<i>118.0</i>	<i>118.2</i>	<i>117.5</i>	<i>116.6</i>	114.5	<i>114.6</i>	<i>117.6</i>
Percent change from prior year	2.8	6.4	9.0	8.6	4.2	0.6	-2.5	<i>-1.4</i>	<i>3.4</i>	<i>4.1</i>	<i>2.9</i>	<i>-0.1</i>	6.7	<i>0.1</i>	<i>2.6</i>

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

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

- = no data available

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

Notes: EIA completed modeling and analysis for this report on November 2, 2023.

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Historical data: Energy Information Administration *International Energy Statistics* (<https://www.eia.gov/international/data/world>) and Oxford Economics.

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 - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
Supply (million barrels per day)															
Crude Oil Supply															
Domestic Production (a)	11.52	11.77	12.05	12.30	12.63	12.75	13.07	13.17	13.06	13.08	13.11	13.35	11.91	12.90	13.15
Alaska	0.45	0.44	0.42	0.44	0.44	0.43	0.40	0.43	0.43	0.41	0.39	0.41	0.44	0.43	0.41
Federal Gulf of Mexico (b)	1.66	1.70	1.77	1.79	1.87	1.77	1.93	1.94	1.92	1.91	1.86	1.92	1.73	1.88	1.90
Lower 48 States (excl GOM)	9.42	9.63	9.85	10.06	10.31	10.55	10.74	10.80	10.71	10.76	10.85	11.02	9.74	10.60	10.84
Transfers to Crude Oil Supply	0.41	0.37	0.42	0.48	0.39	0.51	0.65	0.46	0.36	0.36	0.37	0.34	0.42	0.50	0.36
Crude Oil Net Imports (c)	3.06	2.81	2.75	2.20	2.27	2.51	2.66	2.27	2.43	2.75	2.83	2.06	2.71	2.43	2.52
SPR Net Withdrawals	0.31	0.80	0.84	0.48	0.01	0.26	-0.04	0.00	0.00	0.00	0.00	0.00	0.61	0.06	0.00
Commercial Inventory Net Withdrawals	0.08	-0.04	-0.12	-0.01	-0.39	0.12	0.41	0.02	-0.33	0.11	0.19	-0.10	-0.02	0.04	-0.03
Crude Oil Adjustment (d)	0.20	0.45	0.38	0.41	0.34	0.00	-0.27	0.24	0.37	0.37	0.36	0.39	0.36	0.08	0.37
Total Crude Oil Input to Refineries	15.58	16.15	16.31	15.86	15.25	16.15	16.48	15.90	15.53	16.31	16.49	15.70	15.98	15.94	16.01
Other Supply															
Refinery Processing Gain	0.97	1.08	1.06	1.01	0.97	1.01	1.05	1.03	0.98	1.01	1.02	1.00	1.03	1.02	1.00
Natural Gas Plant Liquids Production	5.66	5.96	6.13	5.97	6.01	6.42	6.51	6.50	6.48	6.50	6.54	6.55	5.93	6.36	6.52
Renewables and Oxygenate Production (e)	1.20	1.20	1.18	1.23	1.24	1.29	1.29	1.32	1.32	1.34	1.35	1.33	1.20	1.29	1.33
Fuel Ethanol Production	1.02	1.01	0.97	1.01	1.00	1.00	1.00	1.02	1.00	0.99	1.00	0.98	1.00	1.01	0.99
Petroleum Products Adjustment (f)	0.22	0.23	0.22	0.22	0.20	0.22	0.22	0.22	0.21	0.22	0.22	0.22	0.22	0.22	0.22
Petroleum Products Transfers to Crude Oil Supply	-0.41	-0.37	-0.42	-0.48	-0.39	-0.51	-0.65	-0.46	-0.36	-0.36	-0.37	-0.34	-0.42	-0.50	-0.36
Product Net Imports (c)	-3.54	-4.02	-4.12	-3.90	-3.91	-3.71	-4.16	-4.67	-4.32	-4.22	-4.54	-4.54	-3.90	-4.12	-4.41
Hydrocarbon Gas Liquids	-2.07	-2.36	-2.25	-2.26	-2.47	-2.39	-2.43	-2.66	-2.69	-2.63	-2.60	-2.59	-2.24	-2.48	-2.63
Unfinished Oils	0.17	0.29	0.29	0.30	0.28	0.27	0.23	0.30	0.24	0.30	0.33	0.21	0.26	0.27	0.27
Other HC/Oxygenates	-0.07	-0.10	-0.06	-0.02	-0.05	-0.07	-0.05	-0.06	-0.06	-0.05	-0.04	-0.04	-0.06	-0.06	-0.05
Motor Gasoline Blend Comp.	0.38	0.60	0.48	0.40	0.45	0.67	0.58	0.41	0.43	0.65	0.50	0.40	0.46	0.53	0.50
Finished Motor Gasoline	-0.69	-0.75	-0.79	-0.84	-0.75	-0.58	-0.73	-0.95	-0.76	-0.67	-0.74	-0.78	-0.77	-0.75	-0.74
Jet Fuel	-0.03	-0.06	-0.10	-0.03	-0.05	0.01	-0.06	0.01	-0.02	0.00	0.01	0.00	-0.06	-0.02	0.00
Distillate Fuel Oil	-0.74	-1.08	-1.24	-1.00	-0.76	-0.97	-1.01	-1.01	-0.80	-1.08	-1.19	-0.98	-1.02	-0.94	-1.01
Residual Fuel Oil	0.09	0.08	0.10	0.09	0.01	-0.04	-0.03	0.01	0.00	0.00	-0.06	0.02	0.09	-0.01	-0.01
Other Oils (g)	-0.58	-0.64	-0.53	-0.54	-0.58	-0.61	-0.66	-0.73	-0.66	-0.74	-0.74	-0.78	-0.57	-0.64	-0.73
Product Inventory Net Withdrawals	0.42	-0.25	-0.26	-0.06	0.30	-0.49	-0.51	0.45	0.27	-0.42	-0.18	0.46	-0.04	-0.06	0.03
Total Supply	20.09	20.00	20.11	19.85	19.67	20.38	20.24	20.29	20.10	20.38	20.53	20.39	20.01	20.15	20.35
Consumption (million barrels per day)															
Hydrocarbon Gas Liquids	3.77	3.18	3.17	3.32	3.40	3.36	3.29	3.61	3.76	3.36	3.39	3.76	3.36	3.42	3.57
Other HC/Oxygenates	0.14	0.17	0.17	0.19	0.22	0.28	0.26	0.24	0.26	0.28	0.28	0.30	0.17	0.25	0.28
Unfinished Oils	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
Motor Gasoline	8.57	9.00	8.93	8.74	8.67	9.13	8.95	8.79	8.58	9.01	9.04	8.71	8.81	8.88	8.83
Fuel Ethanol blended into Motor Gasoline	0.88	0.93	0.92	0.93	0.90	0.94	0.93	0.93	0.89	0.93	0.94	0.91	0.91	0.93	0.92
Jet Fuel	1.45	1.61	1.60	1.58	1.55	1.67	1.73	1.71	1.65	1.77	1.83	1.75	1.56	1.67	1.75
Distillate Fuel Oil	4.22	3.97	3.91	4.00	4.01	3.93	3.91	4.00	4.08	3.97	3.89	4.01	4.03	3.96	3.98
Residual Fuel Oil	0.33	0.30	0.38	0.30	0.29	0.22	0.27	0.27	0.22	0.21	0.20	0.23	0.33	0.26	0.22
Other Oils (g)	1.61	1.78	1.94	1.70	1.53	1.79	1.84	1.67	1.55	1.77	1.90	1.63	1.76	1.71	1.71
Total Consumption	20.09	20.00	20.11	19.85	19.66	20.38	20.24	20.29	20.10	20.38	20.53	20.39	20.01	20.15	20.35
Total Petroleum and Other Liquids Net Imports	-0.48	-1.21	-1.37	-1.69	-1.64	-1.20	-1.50	-2.40	-1.90	-1.47	-1.71	-2.47	-1.19	-1.69	-1.89
End-of-period Inventories (million barrels)															
Commercial Inventory															
Crude Oil (excluding SPR)	414.2	417.8	429.0	430.1	465.4	454.7	417.0	415.5	445.3	435.2	417.9	426.9	430.1	415.5	426.9
Hydrocarbon Gas Liquids	142.1	186.7	243.7	211.1	174.3	225.4	274.8	229.5	189.8	236.6	275.6	230.1	211.1	229.5	230.1
Unfinished Oils	88.1	88.9	82.3	86.4	88.6	87.0	84.2	80.1	90.7	87.9	86.8	78.9	86.4	80.1	78.9
Other HC/Oxygenates	34.4	29.7	27.3	31.6	34.3	30.1	29.7	29.7	31.7	30.5	30.2	30.5	31.6	29.7	30.5
Total Motor Gasoline	238.5	221.0	209.5	224.4	225.3	223.2	226.6	237.0	234.3	231.1	219.0	230.3	224.4	237.0	230.3
Finished Motor Gasoline	17.3	17.1	17.6	17.2	14.7	17.6	17.4	18.3	15.8	16.6	18.2	19.3	17.2	18.3	19.3
Motor Gasoline Blend Comp.	221.2	203.9	191.9	207.2	210.6	205.6	209.2	218.7	218.6	214.5	200.8	211.0	207.2	218.7	211.0
Jet Fuel	35.6	39.4	36.5	35.0	37.7	42.7	42.7	38.1	38.9	37.7	38.3	35.2	35.0	38.1	35.2
Distillate Fuel Oil	114.7	111.3	110.5	118.9	112.3	112.6	118.3	120.4	114.5	116.9	118.1	119.7	118.9	120.4	119.7
Residual Fuel Oil	28.1	29.3	27.4	30.7	29.6	30.4	27.6	27.2	28.4	28.2	26.5	25.9	30.7	27.2	25.9
Other Oils (g)	58.6	56.3	49.3	54.3	63.3	58.3	52.5	52.5	61.6	59.3	49.9	51.3	54.3	52.5	51.3
Total Commercial Inventory	1154.2	1180.4	1215.6	1222.6	1230.8	1264.4	1273.3	1230.0	1235.3	1263.5	1262.4	1228.7	1222.6	1230.0	1228.7
Crude Oil in SPR	566.1	493.3	416.4	372.0	371.2	347.2	351.3	351.5	351.5	351.5	351.5	351.5	372.0	351.5	351.5

(a) Includes lease condensate.

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

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

(d) Crude oil adjustment equals the sum of disposition items (e.g. refinery inputs) minus the sum of supply items (e.g. production).

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

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

(g) "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

SPR: Strategic Petroleum Reserve

HC: Hydrocarbons

Notes: EIA completed modeling and analysis for this report on November 2, 2023.

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

Historical data: Latest data available from Energy Information Administration databases supporting the following reports: *Petroleum Supply Monthly*, DOE/EIA-0109;

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

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

Forecasts: EIA Short-Term Integrated Forecasting System.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
HGL Production															
Natural Gas Processing Plants															
Ethane	2.35	2.45	2.42	2.39	2.49	2.65	2.59	2.67	2.68	2.69	2.70	2.72	2.41	2.60	2.70
Propane	1.79	1.86	1.94	1.90	1.89	2.00	2.04	2.05	2.04	2.03	2.03	2.05	1.87	1.99	2.04
Butanes	0.93	0.99	1.03	1.00	0.99	1.06	1.08	1.08	1.10	1.09	1.10	1.10	0.99	1.05	1.10
Natural Gasoline (Pentanes Plus)	0.59	0.67	0.74	0.67	0.64	0.73	0.80	0.70	0.66	0.69	0.71	0.68	0.67	0.72	0.69
Refinery and Blender Net Production															
Ethane/Ethylene	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01
Propane	0.27	0.29	0.29	0.27	0.27	0.29	0.29	0.27	0.26	0.27	0.28	0.26	0.28	0.28	0.27
Propylene (refinery-grade)	0.28	0.28	0.26	0.23	0.24	0.26	0.26	0.28	0.28	0.28	0.28	0.28	0.26	0.26	0.28
Butanes/Butylenes	-0.07	0.26	0.19	-0.15	-0.05	0.28	0.20	-0.19	-0.08	0.27	0.20	-0.19	0.06	0.06	0.05
Renewable Fuels and Oxygenate Plant Net Production															
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
HGL Net Imports															
Ethane	-0.40	-0.40	-0.42	-0.45	-0.50	-0.49	-0.48	-0.47	-0.49	-0.50	-0.49	-0.52	-0.42	-0.49	-0.50
Propane/Propylene	-1.20	-1.34	-1.27	-1.27	-1.40	-1.40	-1.46	-1.55	-1.53	-1.46	-1.45	-1.41	-1.27	-1.45	-1.46
Butanes/Butylenes	-0.29	-0.45	-0.37	-0.38	-0.42	-0.41	-0.42	-0.48	-0.47	-0.51	-0.50	-0.48	-0.37	-0.43	-0.49
Natural Gasoline (Pentanes Plus)	-0.17	-0.17	-0.19	-0.15	-0.15	-0.09	-0.06	-0.16	-0.21	-0.17	-0.17	-0.18	-0.17	-0.11	-0.18
HGL Refinery and Blender Net Inputs															
Butanes/Butylenes	0.43	0.29	0.33	0.54	0.48	0.29	0.33	0.50	0.42	0.29	0.33	0.52	0.40	0.40	0.39
Natural Gasoline (Pentanes Plus)	0.17	0.17	0.19	0.17	0.18	0.20	0.20	0.18	0.17	0.17	0.19	0.18	0.17	0.19	0.18
HGL Consumption															
Ethane/Ethylene	2.10	2.06	1.99	1.94	1.99	2.19	2.11	2.17	2.19	2.19	2.20	2.22	2.02	2.12	2.20
Propane	1.16	0.59	0.64	0.95	0.98	0.62	0.63	0.94	1.06	0.64	0.64	1.04	0.83	0.79	0.84
Propylene (refinery-grade)	0.30	0.29	0.28	0.24	0.25	0.27	0.27	0.29	0.30	0.30	0.29	0.29	0.28	0.27	0.29
Butanes/Butylenes	0.21	0.23	0.26	0.20	0.18	0.28	0.28	0.21	0.21	0.24	0.26	0.21	0.23	0.24	0.23
Natural Gasoline (Pentanes Plus)	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
HGL Inventories (million barrels)															
Ethane	51.2	51.7	49.9	54.3	53.0	54.2	50.3	53.8	54.1	54.9	56.9	56.9	51.8	52.8	55.7
Propane	36.3	54.1	82.0	76.7	55.8	79.2	99.1	81.0	54.0	71.0	89.5	75.6	76.7	81.0	75.6
Propylene (at refineries only)	1.1	1.2	1.1	1.3	1.1	1.1	1.1	1.2	1.2	1.6	1.8	1.6	1.3	1.2	1.6
Butanes/Butylenes	35.7	58.8	81.3	54.5	40.2	70.1	92.0	63.5	54.5	82.0	100.0	71.1	54.5	63.5	71.1
Natural Gasoline (Pentanes Plus)	19.4	22.7	27.2	25.1	22.9	23.4	30.9	29.3	26.1	26.7	26.9	25.4	25.1	29.3	25.4
Refinery and Blender Net Inputs															
Crude Oil	15.58	16.15	16.31	15.86	15.25	16.15	16.48	15.90	15.53	16.31	16.49	15.70	15.98	15.94	16.01
Hydrocarbon Gas Liquids	0.59	0.45	0.52	0.70	0.66	0.49	0.53	0.68	0.59	0.46	0.51	0.70	0.57	0.59	0.57
Other Hydrocarbons/Oxygenates	1.13	1.20	1.19	1.17	1.13	1.20	1.22	1.21	1.16	1.21	1.23	1.17	1.17	1.19	1.19
Unfinished Oils	-0.06	0.21	0.24	0.15	0.19	0.21	0.07	0.27	0.09	0.31	0.32	0.29	0.14	0.19	0.25
Motor Gasoline Blend Components	0.30	0.81	0.64	0.29	0.34	0.85	0.68	0.32	0.56	0.80	0.75	0.37	0.51	0.55	0.62
Aviation Gasoline Blend Components	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Refinery and Blender Net Inputs	17.53	18.83	18.91	18.17	17.58	18.90	18.97	18.37	17.93	19.09	19.30	18.24	18.36	18.46	18.64
Refinery Processing Gain	0.97	1.08	1.06	1.01	0.97	1.01	1.05	1.03	0.98	1.01	1.02	1.00	1.03	1.02	1.00
Refinery and Blender Net Production															
Hydrocarbon Gas Liquids	0.49	0.84	0.75	0.36	0.47	0.83	0.75	0.36	0.46	0.83	0.76	0.36	0.61	0.60	0.60
Finished Motor Gasoline	9.21	9.74	9.74	9.58	9.28	9.83	9.80	9.71	9.40	9.75	9.85	9.53	9.57	9.65	9.63
Jet Fuel	1.48	1.71	1.67	1.60	1.62	1.72	1.79	1.65	1.68	1.75	1.83	1.72	1.62	1.70	1.74
Distillate Fuel	4.79	5.01	5.15	5.09	4.69	4.91	4.98	5.03	4.81	5.08	5.09	5.01	5.01	4.91	5.00
Residual Fuel	0.27	0.23	0.26	0.25	0.27	0.27	0.27	0.26	0.24	0.21	0.25	0.21	0.25	0.27	0.23
Other Oils (a)	2.26	2.40	2.40	2.30	2.21	2.35	2.43	2.40	2.31	2.48	2.54	2.43	2.34	2.35	2.44
Total Refinery and Blender Net Production	18.50	19.92	19.97	19.18	18.54	19.91	20.02	19.41	18.91	20.10	20.32	19.24	19.40	19.47	19.64
Refinery Distillation Inputs	16.12	16.66	16.82	16.34	15.78	16.75	16.95	16.28	15.93	16.69	16.91	16.10	16.48	16.44	16.41
Refinery Operable Distillation Capacity	17.93	17.93	17.98	18.01	18.12	18.27	18.28	18.31	18.31	18.31	18.32	18.33	17.96	18.25	18.32
Refinery Distillation Utilization Factor	0.90	0.93	0.94	0.91	0.87	0.92	0.93	0.89	0.87	0.91	0.92	0.88	0.92	0.90	0.90

(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 November 2, 2023.

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 - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
Prices (cents per gallon)															
Refiner Wholesale Price	278	376	311	267	262	265	296	244	254	289	292	261	309	267	274
Gasoline Regular Grade Retail Prices Including Taxes															
PADD 1	364	438	393	341	330	344	361	332	329	358	363	340	384	342	348
PADD 2	352	436	397	345	324	348	360	328	330	363	365	333	383	340	348
PADD 3	341	413	358	300	302	315	334	299	300	333	338	308	353	313	320
PADD 4	360	446	434	358	357	359	392	356	334	370	384	355	401	367	362
PADD 5	452	543	511	478	418	452	480	471	430	459	465	427	497	456	445
U.S. Average	371	450	408	357	338	358	376	349	342	373	378	348	397	355	361
Gasoline All Grades Including Taxes	380	460	419	369	349	369	387	362	354	385	390	361	408	367	373
End-of-period Inventories (million barrels)															
Total Gasoline Inventories															
PADD 1	57.0	53.6	54.3	56.4	52.7	57.1	58.9	62.6	60.2	63.6	57.7	59.5	56.4	62.6	59.5
PADD 2	56.5	46.7	44.1	46.6	49.5	45.2	45.9	48.5	47.9	44.5	44.5	51.8	46.6	48.5	51.8
PADD 3	87.0	83.9	80.2	81.4	84.1	85.0	85.6	87.1	87.9	85.9	80.1	80.6	81.4	87.1	80.6
PADD 4	8.1	6.4	6.4	7.4	7.8	6.8	6.9	8.4	8.5	7.2	7.2	7.8	7.4	8.4	7.8
PADD 5	29.9	30.3	24.5	32.6	31.2	29.0	29.4	30.4	29.8	29.9	29.5	30.6	32.6	30.4	30.6
U.S. Total	238.5	221.0	209.5	224.4	225.3	223.2	226.6	237.0	234.3	231.1	219.0	230.3	224.4	237.0	230.3
Finished Gasoline Inventories															
U.S. Total	17.3	17.1	17.6	17.2	14.7	17.6	17.4	18.3	15.8	16.6	18.2	19.3	17.2	18.3	19.3
Gasoline Blending Components Inventories															
U.S. Total	221.2	203.9	191.9	207.2	210.6	205.6	209.2	218.7	218.6	214.5	200.8	211.0	207.2	218.7	211.0

- = no data available

Notes: EIA completed modeling and analysis for this report on November 2, 2023.

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.

PADD = Petroleum Administration for Defense District (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 - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
Supply (billion cubic feet per day)															
Total Marketed Production	104.80	107.29	109.76	110.16	111.18	112.50	113.54	<i>114.53</i>	<i>114.59</i>	<i>114.25</i>	<i>114.16</i>	<i>115.40</i>	108.02	<i>112.95</i>	<i>114.60</i>
Alaska	1.06	1.00	0.96	1.07	1.08	1.01	0.90	<i>1.00</i>	<i>1.02</i>	<i>0.95</i>	<i>0.87</i>	<i>0.99</i>	1.02	<i>1.00</i>	<i>0.96</i>
Federal GOM (a)	2.06	2.10	2.16	2.12	2.13	1.89	2.01	<i>2.09</i>	<i>2.05</i>	<i>1.99</i>	<i>1.90</i>	<i>1.91</i>	2.11	<i>2.03</i>	<i>1.96</i>
Lower 48 States (excl GOM)	101.69	104.19	106.64	106.97	107.97	109.60	110.63	<i>111.44</i>	<i>111.52</i>	<i>111.31</i>	<i>111.39</i>	<i>112.49</i>	104.89	<i>109.92</i>	<i>111.68</i>
Total Dry Gas Production	96.63	98.92	101.20	101.57	102.28	103.19	104.14	<i>105.05</i>	<i>105.11</i>	<i>104.80</i>	<i>104.71</i>	<i>105.85</i>	99.60	<i>103.68</i>	<i>105.12</i>
LNG Gross Imports	0.15	0.01	0.07	0.05	0.09	0.02	0.03	<i>0.06</i>	<i>0.10</i>	<i>0.04</i>	<i>0.04</i>	<i>0.06</i>	0.07	<i>0.05</i>	<i>0.06</i>
LNG Gross Exports	11.50	10.80	9.74	10.35	11.45	11.76	11.42	<i>12.58</i>	<i>12.22</i>	<i>11.64</i>	<i>11.82</i>	<i>13.47</i>	10.59	<i>11.80</i>	<i>12.29</i>
Pipeline Gross Imports	8.89	7.73	7.84	8.41	8.45	7.32	7.87	<i>7.68</i>	<i>8.39</i>	<i>7.03</i>	<i>7.26</i>	<i>7.50</i>	8.22	<i>7.83</i>	<i>7.55</i>
Pipeline Gross Exports	8.46	8.52	8.13	8.19	8.91	8.73	9.12	<i>9.29</i>	<i>9.51</i>	<i>8.89</i>	<i>9.21</i>	<i>9.64</i>	8.32	<i>9.02</i>	<i>9.32</i>
Supplemental Gaseous Fuels	0.19	0.20	0.20	0.20	0.22	0.17	0.19	<i>0.20</i>	<i>0.20</i>	<i>0.20</i>	<i>0.20</i>	<i>0.20</i>	0.20	<i>0.19</i>	<i>0.20</i>
Net Inventory Withdrawals	20.14	-10.25	-8.94	2.33	11.97	-11.69	-6.46	<i>2.53</i>	<i>13.92</i>	<i>-12.20</i>	<i>-6.51</i>	<i>2.76</i>	0.74	<i>-0.95</i>	<i>-0.51</i>
Total Supply	106.04	77.30	82.49	94.03	102.64	78.51	85.23	<i>93.66</i>	<i>105.98</i>	<i>79.33</i>	<i>84.67</i>	<i>93.27</i>	89.91	<i>89.97</i>	<i>90.80</i>
Balancing Item (b)	-1.52	-1.39	-1.59	-1.63	0.27	-0.52	-1.34	<i>-0.61</i>	<i>-2.00</i>	<i>-2.12</i>	<i>-2.07</i>	<i>-1.04</i>	-1.53	<i>-0.55</i>	<i>-1.81</i>
Total Primary Supply	104.53	75.92	80.90	92.40	102.91	77.99	83.89	<i>93.05</i>	<i>103.98</i>	<i>77.21</i>	<i>82.59</i>	<i>92.23</i>	88.38	<i>89.42</i>	<i>89.00</i>
Consumption (billion cubic feet per day)															
Residential	25.97	7.80	3.56	17.28	23.50	7.29	3.62	<i>16.15</i>	<i>24.60</i>	<i>7.49</i>	<i>3.85</i>	<i>16.20</i>	13.60	<i>12.60</i>	<i>13.02</i>
Commercial	15.55	6.65	4.74	11.61	14.51	6.43	4.83	<i>11.27</i>	<i>14.72</i>	<i>6.55</i>	<i>5.14</i>	<i>11.37</i>	9.61	<i>9.24</i>	<i>9.44</i>
Industrial	25.73	22.46	21.68	23.72	24.83	22.40	21.95	<i>24.22</i>	<i>24.80</i>	<i>21.63</i>	<i>21.28</i>	<i>23.55</i>	23.39	<i>23.35</i>	<i>22.81</i>
Electric Power (c)	28.11	30.88	42.50	30.88	30.71	33.39	44.75	<i>32.25</i>	<i>30.25</i>	<i>33.00</i>	<i>43.58</i>	<i>31.91</i>	33.13	<i>35.30</i>	<i>34.70</i>
Lease and Plant Fuel	5.00	5.12	5.24	5.26	5.31	5.37	5.42	<i>5.47</i>	<i>5.47</i>	<i>5.46</i>	<i>5.45</i>	<i>5.51</i>	5.16	<i>5.39</i>	<i>5.47</i>
Pipeline and Distribution Use	3.98	2.83	3.01	3.48	3.86	2.93	3.14	<i>3.51</i>	<i>3.94</i>	<i>2.88</i>	<i>3.10</i>	<i>3.48</i>	3.32	<i>3.36</i>	<i>3.35</i>
Vehicle Use	0.17	0.17	0.17	0.17	0.18	0.18	0.18	<i>0.18</i>	<i>0.20</i>	<i>0.20</i>	<i>0.20</i>	<i>0.20</i>	0.17	<i>0.18</i>	<i>0.20</i>
Total Consumption	104.53	75.92	80.90	92.40	102.91	77.99	83.89	<i>93.05</i>	<i>103.98</i>	<i>77.21</i>	<i>82.59</i>	<i>92.23</i>	88.38	<i>89.42</i>	<i>89.00</i>
End-of-period Inventories (billion cubic feet)															
Working Gas Inventory	1,401	2,325	3,146	2,925	1,850	2,900	3,493	<i>3,260</i>	<i>1,994</i>	<i>3,104</i>	<i>3,703</i>	<i>3,449</i>	2,925	<i>3,260</i>	<i>3,449</i>
East Region (d)	242	482	759	698	334	646	851	<i>786</i>	<i>387</i>	<i>687</i>	<i>873</i>	<i>799</i>	698	<i>786</i>	<i>799</i>
Midwest Region (d)	296	557	917	831	417	701	995	<i>900</i>	<i>439</i>	<i>735</i>	<i>1,017</i>	<i>921</i>	831	<i>900</i>	<i>921</i>
South Central Region (d)	587	885	1,006	1,042	919	1,136	1,093	<i>1,109</i>	<i>840</i>	<i>1,203</i>	<i>1,237</i>	<i>1,211</i>	1,042	<i>1,109</i>	<i>1,211</i>
Mountain Region (d)	90	137	184	158	79	171	240	<i>203</i>	<i>125</i>	<i>166</i>	<i>227</i>	<i>197</i>	158	<i>203</i>	<i>197</i>
Pacific Region (d)	165	240	247	167	74	216	278	<i>231</i>	<i>177</i>	<i>285</i>	<i>316</i>	<i>291</i>	167	<i>231</i>	<i>291</i>
Alaska	21	25	32	30	27	30	36	<i>31</i>	<i>25</i>	<i>28</i>	<i>33</i>	<i>29</i>	30	<i>31</i>	<i>29</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/ngs/notes.html>) .

- = no data available

LNG: liquefied natural gas.

Notes: EIA completed modeling and analysis for this report on November 2, 2023.

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 - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
Wholesale/Spot															
Henry Hub Spot Price	4.84	7.77	8.30	5.76	2.76	2.25	2.69	3.38	3.56	3.05	3.36	3.56	6.67	2.77	3.38
Residential Retail															
New England	17.69	20.92	26.28	21.48	21.04	20.48	22.21	17.09	16.78	17.75	21.05	16.57	19.77	19.73	17.17
Middle Atlantic	12.78	15.58	23.79	16.88	15.60	16.03	20.85	13.55	12.27	13.81	19.13	12.84	15.15	15.39	13.16
E. N. Central	9.85	14.88	25.94	13.23	11.06	13.28	22.46	10.28	9.00	12.33	20.81	9.79	12.51	11.77	10.43
W. N. Central	11.30	15.08	24.74	13.24	13.24	15.44	22.10	11.14	9.77	12.69	20.30	10.57	13.09	13.30	11.01
S. Atlantic	13.85	21.38	31.73	17.21	17.33	20.92	29.82	15.17	13.94	18.75	26.43	14.79	17.11	18.00	15.80
E. S. Central	11.69	17.04	26.25	15.32	13.63	16.66	22.88	11.90	10.79	14.77	21.85	11.96	14.20	13.99	12.31
W. S. Central	12.55	20.70	30.82	17.46	14.58	19.81	28.30	14.05	10.83	16.06	23.05	13.10	16.25	16.24	13.17
Mountain	10.31	12.82	19.22	13.40	12.61	13.86	18.51	12.20	11.45	13.69	18.46	11.99	12.36	13.09	12.51
Pacific	17.02	17.75	20.46	18.89	20.13	17.11	18.07	16.07	16.53	15.83	16.60	15.39	18.14	18.20	16.06
U.S. Average	12.30	16.51	24.78	15.56	14.72	16.19	22.10	12.92	11.76	14.45	20.20	12.38	14.77	14.88	12.97
Commercial Retail															
New England	12.68	14.64	16.13	15.77	15.19	13.66	12.40	11.10	11.37	11.78	11.93	11.11	14.24	13.37	11.41
Middle Atlantic	10.34	10.75	11.98	11.97	11.94	9.25	8.21	8.35	8.96	8.20	7.72	8.22	11.09	9.92	8.47
E. N. Central	8.19	10.61	14.94	10.42	9.20	8.63	10.42	7.13	6.99	8.08	9.84	7.01	9.61	8.54	7.35
W. N. Central	9.97	11.43	14.68	10.99	11.58	11.33	11.59	8.63	8.50	8.94	10.07	7.86	10.82	10.65	8.49
S. Atlantic	10.75	12.25	14.25	13.13	12.97	11.26	11.32	10.12	9.85	10.37	10.58	9.75	12.17	11.54	10.01
E. S. Central	10.32	12.73	15.50	13.38	11.89	10.94	11.82	9.83	9.17	10.14	11.09	9.68	12.17	11.04	9.70
W. S. Central	9.97	12.69	14.80	12.67	11.01	9.68	10.30	8.51	7.82	8.60	9.31	8.32	11.89	9.93	8.31
Mountain	8.77	9.96	12.52	11.29	10.76	10.77	11.99	10.76	10.64	11.08	11.79	10.39	10.17	10.88	10.76
Pacific	13.08	13.56	15.52	14.41	16.85	12.61	13.36	12.39	12.80	11.84	11.96	11.48	13.95	14.19	12.08
U.S. Average	9.99	11.65	14.05	12.11	11.81	10.48	10.90	9.16	9.05	9.51	10.11	8.84	11.32	10.67	9.18
Industrial Retail															
New England	11.27	12.14	12.21	13.60	13.55	10.07	7.79	8.67	9.65	8.79	7.50	8.52	12.22	10.34	8.80
Middle Atlantic	10.73	10.85	12.16	12.54	7.52	8.97	7.70	8.30	8.68	7.67	7.79	8.48	11.35	7.93	8.38
E. N. Central	7.67	8.90	10.71	10.33	9.18	6.67	6.53	6.09	6.36	6.32	6.30	6.24	8.92	7.43	6.31
W. N. Central	7.57	8.15	9.10	8.16	8.23	4.55	4.24	4.81	5.70	4.66	4.54	5.11	8.20	5.60	5.05
S. Atlantic	7.26	8.61	10.84	8.89	6.92	4.78	5.01	5.12	5.78	5.01	5.15	5.46	8.82	5.51	5.37
E. S. Central	6.23	8.29	10.13	7.65	5.46	3.75	4.09	4.64	5.25	4.47	4.60	4.99	7.95	4.52	4.85
W. S. Central	5.33	7.33	8.05	5.60	3.39	2.21	2.79	3.53	3.82	3.14	3.42	3.75	6.60	3.01	3.53
Mountain	7.10	8.39	10.47	9.87	8.86	7.73	7.75	6.96	6.74	6.44	6.54	6.21	8.85	7.92	6.49
Pacific	8.83	9.03	9.60	9.44	10.84	8.16	7.96	7.83	8.43	7.26	7.16	7.35	9.20	8.74	7.61
U.S. Average	6.64	7.97	8.93	7.33	6.06	3.76	3.89	4.72	5.34	4.25	4.27	4.88	7.66	4.67	4.72

- = no data available

Notes: EIA completed modeling and analysis for this report on November 2, 2023.

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 is from Refinitiv, an LSEG company, via EIA (https://www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm).

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 - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
Supply (million short tons)															
Production	149.3	144.6	154.5	145.8	148.7	142.3	151.7	142.6	128.6	112.9	122.9	116.0	594.2	585.4	480.4
Appalachia	40.3	40.2	40.2	40.3	42.9	42.5	42.3	40.8	39.1	35.4	31.4	30.4	161.0	168.5	136.3
Interior	23.9	25.2	24.7	24.6	25.4	23.5	26.1	24.2	23.7	20.8	21.6	20.1	98.4	99.2	86.2
Western	85.1	79.3	89.5	80.9	80.4	76.4	83.3	77.7	65.9	56.7	69.9	65.5	334.8	317.7	258.0
Primary Inventory Withdrawals	-0.7	-0.9	0.2	-0.4	-1.6	0.3	3.6	0.0	-1.7	0.2	3.6	0.1	-1.8	2.3	2.3
Imports	1.3	1.6	2.0	1.4	1.0	1.0	1.1	1.1	0.8	0.8	1.1	0.8	6.3	4.2	3.5
Exports	20.4	23.4	21.1	21.0	24.6	24.1	24.5	24.3	23.1	23.2	22.7	24.7	86.0	97.4	93.7
Metallurgical Coal	10.5	13.1	11.5	11.4	12.4	12.6	13.9	13.1	12.8	13.5	12.6	13.2	46.5	52.0	52.0
Steam Coal	9.9	10.3	9.6	9.6	12.2	11.5	10.6	11.1	10.4	9.7	10.1	11.5	39.5	45.4	41.7
Total Primary Supply	129.6	121.9	135.5	125.8	123.5	119.5	131.9	119.4	104.6	90.8	105.0	92.2	512.7	494.4	392.5
Secondary Inventory Withdrawals	6.0	-0.7	7.3	-9.4	-20.1	-19.0	5.8	-22.6	-7.5	-9.9	18.7	-4.8	3.2	-55.9	-3.5
Waste Coal (a)	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.2	1.2	1.2	1.2	7.0	7.0	4.8
Total Supply	137.4	122.9	144.6	118.1	105.2	102.3	139.5	98.6	98.3	82.1	124.9	88.6	522.9	445.6	393.9
Consumption (million short tons)															
Coke Plants	4.2	3.9	3.9	4.0	4.0	3.9	4.1	4.2	4.2	4.2	4.3	4.4	16.0	16.1	17.1
Electric Power Sector (b)	123.4	108.1	135.4	105.9	91.2	82.0	122.5	88.5	88.3	73.0	115.7	78.5	472.8	384.2	355.5
Retail and Other Industry	6.9	6.7	6.5	6.6	6.5	5.6	5.8	6.0	5.9	4.8	4.9	5.7	26.7	23.9	21.2
Residential and Commercial	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.3	0.1	0.1	0.2	0.8	0.7	0.8
Other Industrial	6.7	6.6	6.3	6.3	6.3	5.5	5.7	5.8	5.6	4.7	4.8	5.5	25.9	23.2	20.5
Total Consumption	134.4	118.7	145.9	116.5	101.7	91.5	132.4	98.6	98.3	82.1	124.9	88.6	515.5	424.2	393.9
Discrepancy (c)	2.9	4.2	-1.3	1.6	3.5	10.8	7.1	0.0	0.0	0.0	0.0	0.0	7.4	21.4	0.0
End-of-period Inventories (million short tons)															
Primary Inventories (d)	19.7	20.6	20.4	20.8	22.4	22.1	18.5	18.6	20.2	20.0	16.4	16.2	20.8	18.6	16.2
Secondary Inventories	90.3	91.0	83.7	93.2	113.3	132.3	126.5	149.0	156.5	166.4	147.7	152.5	93.2	149.0	152.5
Electric Power Sector	86.1	86.9	79.4	88.9	109.0	127.7	121.6	144.2	152.3	162.0	143.0	147.8	88.9	144.2	147.8
Retail and General Industry	2.4	2.4	2.5	2.5	2.5	2.8	2.9	3.0	2.5	2.6	2.9	2.9	2.5	3.0	2.9
Coke Plants	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.5	1.6	1.6	1.6	1.6	1.7	1.6
Commercial & Institutional	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Coal Market Indicators															
Coal Miner Productivity															
(Tons per hour)	6.05	6.05	6.05	6.05	5.98	5.98	5.98	5.98	5.80	5.80	5.80	5.80	6.05	5.98	5.80
Total Raw Steel Production															
(Million short tons per day)	0.253	0.253	0.247	0.235	0.236	0.244	0.245	0.250	0.249	0.249	0.253	0.261	0.247	0.244	0.253
Cost of Coal to Electric Utilities															
(Dollars per million Btu)	2.18	2.25	2.49	2.54	2.57	2.49	2.49	2.44	2.44	2.42	2.42	2.38	2.37	2.50	2.41

(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 November 2, 2023.

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 - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
Electricity Supply (billion kilowatthours)															
Electricity generation (a)	1,023	1,025	1,187	996	987	984	1,210	1,008	1,024	1,023	1,227	1,012	4,231	4,188	4,285
Electric power sector	984	987	1,146	957	948	947	1,169	968	984	985	1,185	972	4,074	4,033	4,126
Industrial sector	35	34	36	35	35	33	36	35	35	34	36	35	140	139	141
Commercial sector	4	4	5	4	4	4	5	4	4	4	5	5	17	17	18
Net imports	7	10	15	10	10	10	11	9	11	12	14	11	41	41	48
Total utility-scale power supply	1,029	1,035	1,202	1,006	997	994	1,221	1,017	1,034	1,035	1,241	1,023	4,272	4,230	4,333
Losses and Unaccounted for (b)	45	58	45	53	43	55	59	50	44	68	56	49	202	208	217
Small-scale solar generation (c)	12	17	17	12	14	22	22	15	17	25	25	17	59	73	85
Residential sector	7	11	11	8	10	15	15	10	11	17	17	12	37	49	58
Commercial sector	4	5	5	3	4	6	6	4	5	7	7	5	17	20	23
Industrial sector	1	1	1	1	1	1	1	1	1	1	1	1	4	4	5
Electricity Consumption (billion kilowatthours unless noted)															
Sales to Ultimate Customers	949	942	1,119	917	918	906	1,125	931	955	932	1,147	938	3,927	3,880	3,971
Residential Sector	377	344	454	334	355	319	457	338	378	335	473	342	1,509	1,468	1,528
Commercial Sector	325	339	394	333	322	330	395	338	330	335	396	336	1,391	1,385	1,397
Industrial Sector	245	257	270	249	239	256	272	253	244	260	277	257	1,020	1,021	1,039
Transportation Sector	2	2	2	2	2	2	2	2	2	2	2	2	7	7	7
Direct Use (d)	36	35	37	35	35	33	37	36	36	35	38	36	143	142	145
Total Consumption	984	976	1,157	952	954	939	1,162	967	990	966	1,185	974	4,070	4,022	4,116
Average residential electricity usage per customer (kWh)	2,698	2,459	3,246	2,391	2,530	2,268	3,250	2,404	2,667	2,361	3,332	2,414	10,794	10,452	10,775
End-of-period Fuel Inventories Held by Electric Power Sector															
Coal (mmst)	86.1	86.9	79.4	88.9	109.0	127.7	121.6	144.2	152.3	162.0	143.0	147.8	88.9	144.2	147.8
Residual Fuel (mmb)	5.8	6.1	5.8	5.8	6.1	6.3	5.9	5.7	3.9	3.7	1.8	2.6	5.8	5.7	2.6
Distillate Fuel (mmb)	17.3	17.3	16.2	16.5	17.0	16.9	16.1	16.4	16.2	16.0	15.9	16.1	16.5	16.4	16.1
Prices															
Power Generation Fuel Costs (dollars per million Btu)															
Coal	2.18	2.25	2.49	2.54	2.57	2.49	2.49	2.44	2.44	2.42	2.42	2.38	2.37	2.50	2.41
Natural Gas	5.93	7.39	8.23	6.86	4.98	2.60	2.89	3.54	3.95	3.07	3.29	3.71	7.23	3.42	3.48
Residual Fuel Oil	16.59	25.86	26.65	21.22	19.23	17.88	17.66	17.29	17.41	18.20	17.26	17.19	21.58	18.06	17.46
Distillate Fuel Oil	21.32	30.71	26.71	24.73	22.84	19.91	22.52	23.13	23.51	22.57	22.17	23.12	25.00	22.24	22.97
Prices to Ultimate Customers (cents per kilowatthour)															
Residential Sector	13.91	14.96	15.74	15.44	15.77	16.12	15.91	15.18	15.36	15.98	16.01	15.31	15.04	15.75	15.69
Commercial Sector	11.52	12.21	13.24	12.50	12.64	12.45	13.11	11.91	12.02	12.22	13.33	12.24	12.41	12.55	12.50
Industrial Sector	7.28	8.28	9.25	8.36	8.06	7.74	8.54	8.04	8.19	7.81	8.51	8.14	8.32	8.10	8.17
Wholesale Electricity Prices (dollars per megawatt-hour)															
ERCOT North hub	42.73	83.19	130.71	53.01	28.05	57.27	188.81	41.82	38.96	35.33	46.57	41.87	77.41	78.99	40.68
CAISO SP15 zone	45.20	60.34	110.03	135.13	92.54	30.00	67.59	54.86	51.11	36.99	66.20	52.69	87.67	61.25	51.75
ISO-NE Internal hub	116.48	73.28	99.14	80.77	52.63	32.55	40.41	44.68	77.16	44.98	76.01	56.70	92.42	42.57	63.71
NYISO Hudson Valley zone	100.10	79.72	104.71	77.17	44.65	31.38	39.45	39.49	52.57	38.35	66.76	43.26	90.42	38.74	50.24
PJM Western hub	58.33	93.00	110.99	71.60	36.49	35.41	43.27	41.19	40.92	38.15	44.90	39.14	83.48	39.09	40.78
Midcontinent ISO Illinois hub	47.88	89.21	101.80	57.87	31.39	32.13	40.60	39.17	39.36	36.72	42.05	37.64	74.19	35.82	38.94
SPP ISO South hub	37.25	72.85	109.97	55.87	28.96	34.56	46.96	34.94	37.85	37.95	46.58	37.52	68.98	36.36	39.97
SERC index, Into Southern	42.45	84.96	94.82	59.33	30.53	31.66	36.45	32.89	33.71	31.56	34.63	32.25	70.39	32.88	33.04
FRCC index, Florida Reliability	41.11	78.70	92.71	58.54	30.31	33.06	36.79	33.81	34.16	33.67	36.48	34.83	67.77	33.49	34.78
Northwest index, Mid-Columbia	39.85	59.39	137.82	151.39	105.99	58.61	82.36	87.75	82.08	66.39	84.74	85.60	97.11	83.68	79.70
Southwest index, Palo Verde	39.02	60.50	128.25	130.12	84.19	31.60	71.95	56.90	59.89	51.01	51.22	55.26	89.47	61.16	54.34

Notes: EIA completed modeling and analysis for this report on November 2, 2023.

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 utility-scale power plants with capacity of at least one megawatt.

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

(c) Solar photovoltaic systems smaller than one megawatt such as those installed on rooftops.

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

Historical data: Latest data available from EIA databases supporting the following reports: Electric Power Monthly and Electric Power Annual (electricity supply and consumption, fuel inventories and costs, and retail electricity prices); S&P Global Market Intelligence (wholesale electricity prices).

Minor discrepancies with published historical data are due to independent rounding and possible revisions not yet reflected in the STEO.

Forecast data: 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 - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
Residential Sector															
New England	13.1	10.5	13.9	10.9	12.2	9.8	13.4	11.0	13.1	10.2	14.2	11.3	48.5	46.4	48.9
Middle Atlantic	35.9	29.9	42.5	30.3	33.3	27.5	39.9	30.2	35.4	28.9	42.8	30.5	138.7	130.8	137.5
E. N. Central	50.6	43.6	54.6	42.9	46.5	39.8	52.9	44.4	51.0	42.6	57.4	44.7	191.8	183.6	195.7
W. N. Central	30.5	24.6	31.2	25.6	29.4	24.1	30.9	26.0	30.6	24.3	32.6	26.2	111.9	110.4	113.7
S. Atlantic	94.5	89.6	113.7	85.9	87.2	83.8	117.1	86.1	96.2	90.9	123.8	88.9	383.8	374.1	399.9
E. S. Central	32.2	27.3	36.6	26.2	29.3	25.4	37.3	26.6	33.0	26.5	38.9	26.8	122.3	118.6	125.2
W. S. Central	56.6	58.5	80.7	51.0	51.6	52.4	87.8	54.5	55.9	53.6	81.9	53.4	246.8	246.2	244.9
Mountain	24.1	26.2	36.1	24.3	25.3	24.5	36.8	23.7	24.5	26.2	37.8	24.2	110.8	110.3	112.7
Pacific contiguous	38.4	32.4	43.1	36.1	39.5	30.2	39.3	34.1	37.3	30.6	41.9	35.1	150.0	143.1	144.9
AK and HI	1.3	1.1	1.2	1.3	1.2	1.1	1.1	1.3	1.3	1.1	1.1	1.3	4.8	4.8	4.8
Total	377.3	343.8	453.8	334.3	355.4	318.6	456.6	337.7	378.3	334.9	472.5	342.4	1,509.2	1,468.2	1,528.1
Commercial Sector															
New England	12.2	11.9	14.0	11.8	11.9	11.5	13.7	11.9	12.1	11.6	13.8	11.8	49.9	49.0	49.2
Middle Atlantic	36.5	34.6	40.9	34.9	35.0	33.1	40.0	34.9	35.4	33.5	40.8	34.8	146.8	143.0	144.4
E. N. Central	43.3	42.9	48.8	42.2	42.4	41.9	48.3	42.5	43.2	42.4	49.1	42.1	177.2	175.0	176.7
W. N. Central	25.2	24.8	28.6	24.9	25.3	25.1	29.1	25.3	25.9	25.1	29.3	25.1	103.5	104.8	105.4
S. Atlantic	76.4	83.6	94.7	80.1	75.4	81.7	96.6	81.3	78.0	84.3	97.6	81.6	334.8	334.9	341.4
E. S. Central	21.2	22.6	27.0	21.2	20.6	21.8	27.1	21.7	21.3	22.0	27.1	21.4	91.9	91.2	91.8
W. S. Central	48.2	54.0	63.5	52.6	47.4	51.2	64.4	55.7	50.2	52.1	62.5	54.8	218.3	218.7	219.6
Mountain	23.2	25.4	29.6	24.3	23.8	25.0	30.0	24.4	23.8	25.5	30.0	24.3	102.4	103.1	103.7
Pacific contiguous	37.8	38.0	45.5	39.2	38.8	37.0	44.6	39.1	39.0	37.0	44.8	38.9	160.6	159.6	159.6
AK and HI	1.3	1.3	1.4	1.4	1.3	1.3	1.4	1.4	1.4	1.3	1.4	1.4	5.4	5.4	5.5
Total	325.3	339.1	393.8	332.6	321.9	329.6	395.1	338.2	330.2	334.8	396.3	336.2	1,390.9	1,384.7	1,397.5
Industrial Sector															
New England	3.9	3.9	4.1	3.8	3.7	3.7	4.0	3.8	3.7	3.6	3.9	3.8	15.6	15.1	14.9
Middle Atlantic	17.6	18.4	19.5	18.3	17.3	17.7	19.3	18.5	17.6	17.8	19.5	18.8	73.8	72.9	73.8
E. N. Central	45.8	46.8	48.6	45.2	44.8	45.8	48.1	45.5	45.1	45.8	48.3	45.8	186.4	184.2	185.0
W. N. Central	24.1	24.7	26.7	24.8	24.1	25.5	27.0	24.8	24.4	26.0	27.6	25.4	100.3	101.3	103.5
S. Atlantic	35.2	35.8	37.1	34.9	33.6	35.2	36.5	35.3	33.9	35.5	36.9	35.7	143.0	140.5	142.0
E. S. Central	24.7	25.8	25.5	23.3	23.2	23.9	24.7	23.2	23.3	23.8	24.6	23.2	99.3	95.1	94.8
W. S. Central	52.4	57.0	59.0	55.4	53.6	62.4	64.7	58.5	56.5	65.7	68.3	60.8	223.8	239.3	251.4
Mountain	19.7	21.5	23.8	20.7	19.8	21.5	24.0	21.2	20.4	21.9	24.4	21.5	85.8	86.6	88.1
Pacific contiguous	20.1	22.1	24.5	20.9	18.3	19.2	22.2	21.1	18.3	19.0	22.1	21.0	87.7	80.8	80.4
AK and HI	1.1	1.2	1.3	1.2	1.1	1.2	1.3	1.2	1.2	1.2	1.3	1.2	4.8	4.8	4.8
Total	244.6	257.2	270.1	248.6	239.5	256.2	271.8	253.0	244.4	260.3	276.7	257.3	1,020.5	1,020.5	1,038.7
Total All Sectors (a)															
New England	29.3	26.5	32.1	26.6	27.9	25.1	31.2	26.8	29.0	25.5	32.0	26.9	114.5	111.0	113.5
Middle Atlantic	90.9	83.7	103.8	84.3	86.4	79.2	100.0	84.4	89.3	80.9	103.9	84.9	362.7	350.1	359.1
E. N. Central	139.9	133.5	152.2	130.4	133.8	127.6	149.5	132.4	139.4	130.8	154.9	132.7	555.9	543.3	557.9
W. N. Central	79.9	74.1	86.5	75.3	78.7	74.8	87.1	76.0	80.9	75.5	89.6	76.7	315.8	316.6	322.7
S. Atlantic	206.4	209.3	245.8	201.1	196.4	200.9	250.4	202.9	208.3	210.9	258.5	206.5	862.5	850.6	884.3
E. S. Central	78.0	75.7	89.1	70.6	73.1	71.1	89.0	71.6	77.6	72.3	90.6	71.4	313.5	304.8	311.9
W. S. Central	157.2	169.5	203.2	159.1	152.6	166.0	217.0	168.8	162.7	171.4	212.8	169.1	689.0	704.4	716.1
Mountain	67.1	73.2	89.5	69.3	68.9	71.1	90.9	69.2	68.8	73.7	92.2	70.1	299.1	300.1	304.7
Pacific contiguous	96.5	92.7	113.4	96.5	96.8	86.6	106.4	94.5	94.8	86.8	108.9	95.2	399.1	384.3	385.7
AK and HI	3.7	3.6	3.8	3.9	3.7	3.6	3.8	3.9	3.8	3.6	3.8	3.9	15.0	14.9	15.1
Total	948.8	941.7	1,119.4	917.2	918.4	905.9	1,125.2	930.6	954.6	931.6	1,147.3	937.5	3,927.2	3,880.1	3,970.9

Notes: EIA completed modeling and analysis for this report on November 2, 2023.

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

Electricity sales to ultimate customers are sold by electric utilities and power marketers for direct consumption by the customer and not available for resale. Includes electric sales to end users by third-party owners of behind-the-meter solar photovoltaic systems.

 Regions refer to U.S. Census divisions (https://www.eia.gov/tools/glossary/index.php?id=C#&census_division).

(a) Total includes sales of electricity to ultimate customers in transportation sector (not shown), as well as residential, commercial, and industrial sectors.

Historical data: Latest data available from EIA databases supporting the following reports: Electric Power Monthly and Electric Power Annual.

Minor discrepancies with published historical data are due to independent rounding and possible revisions not yet reflected in the STEO.

Forecast data: 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 - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
Residential Sector															
New England	23.90	24.21	24.66	26.31	30.65	29.58	27.58	27.10	30.36	28.61	26.69	26.99	24.73	28.70	28.15
Middle Atlantic	17.19	18.23	18.89	19.44	19.70	19.13	19.98	19.62	19.80	19.56	20.64	20.45	18.43	19.64	20.16
E. N. Central	14.11	15.38	16.01	16.00	16.14	16.58	15.89	15.37	15.32	16.00	15.61	15.52	15.36	15.98	15.60
W. N. Central	11.12	13.09	14.13	12.18	11.85	13.52	14.10	11.87	11.66	13.59	14.05	11.82	12.63	12.85	12.79
S. Atlantic	12.52	13.41	14.05	13.68	14.31	14.74	14.35	13.25	13.45	14.08	13.94	13.03	13.44	14.17	13.65
E. S. Central	11.88	12.96	13.66	13.30	13.17	13.20	12.80	12.62	12.91	13.44	12.93	12.85	12.96	12.94	13.02
W. S. Central	12.02	13.14	14.03	14.16	13.57	13.57	13.50	13.98	13.63	13.85	13.86	13.98	13.39	13.63	13.83
Mountain	12.09	12.78	13.17	12.92	12.96	13.89	14.00	13.41	13.10	13.76	13.76	13.36	12.79	13.61	13.53
Pacific	17.89	20.12	21.59	19.06	19.60	22.32	23.44	19.11	19.59	23.03	24.42	19.79	19.72	21.11	21.76
U.S. Average	13.91	14.96	15.74	15.44	15.77	16.12	15.91	15.18	15.36	15.98	16.01	15.31	15.04	15.75	15.69
Commercial Sector															
New England	18.41	17.38	18.26	18.47	20.56	18.40	18.72	17.90	19.57	17.63	18.46	18.39	18.13	18.89	18.52
Middle Atlantic	13.95	14.88	16.50	15.17	14.86	14.89	16.18	13.96	13.82	14.68	16.59	14.43	15.17	15.02	14.95
E. N. Central	10.95	11.71	11.97	11.76	12.01	12.06	11.76	10.97	11.28	11.83	11.93	11.29	11.61	11.70	11.60
W. N. Central	9.57	10.59	11.43	10.06	9.95	10.67	11.15	9.53	9.67	10.86	11.43	9.63	10.44	10.35	10.43
S. Atlantic	10.14	10.69	11.32	11.04	11.31	10.95	10.82	10.10	10.28	10.34	10.53	9.95	10.83	10.79	10.29
E. S. Central	11.49	12.00	12.81	12.38	12.57	12.10	12.28	12.01	12.49	12.40	12.70	12.34	12.21	12.24	12.49
W. S. Central	8.54	9.47	10.36	9.60	9.36	8.84	9.54	8.61	8.73	9.01	10.37	9.42	9.56	9.10	9.43
Mountain	9.55	10.31	11.07	10.42	10.35	11.09	11.67	10.71	10.36	10.90	11.58	10.78	10.38	11.00	10.95
Pacific	16.12	17.80	20.35	18.24	18.06	18.85	22.53	19.36	18.38	18.71	22.88	20.21	18.24	19.81	20.16
U.S. Average	11.52	12.21	13.24	12.50	12.64	12.45	13.11	11.91	12.02	12.22	13.33	12.24	12.41	12.55	12.50
Industrial Sector															
New England	14.85	14.74	15.48	15.01	16.24	15.24	15.65	14.51	15.39	14.50	15.32	14.78	15.02	15.41	15.01
Middle Atlantic	7.80	8.25	9.21	8.36	8.20	7.72	7.88	7.60	8.06	7.68	7.99	7.57	8.42	7.85	7.82
E. N. Central	7.52	8.35	8.77	8.28	8.31	7.89	8.05	7.97	8.49	8.05	8.18	8.06	8.24	8.05	8.19
W. N. Central	7.10	7.94	8.66	7.47	7.44	7.79	8.44	7.44	7.69	7.96	8.57	7.54	7.82	7.79	7.95
S. Atlantic	6.57	7.90	8.83	7.80	7.72	7.37	7.93	7.30	7.92	7.46	7.98	7.37	7.79	7.58	7.68
E. S. Central	6.16	7.14	8.16	7.31	6.98	6.67	6.83	6.55	6.93	6.65	6.83	6.61	7.20	6.76	6.75
W. S. Central	6.09	7.23	8.13	7.26	6.56	5.95	7.19	6.89	6.81	5.86	6.73	6.96	7.21	6.65	6.58
Mountain	6.55	7.24	8.44	7.84	7.65	7.65	8.49	7.85	7.75	8.00	8.61	8.04	7.56	7.93	8.12
Pacific	10.28	11.84	13.94	12.50	11.81	12.47	14.89	13.14	12.27	13.19	15.57	13.71	12.23	13.16	13.77
U.S. Average	7.28	8.28	9.25	8.36	8.06	7.74	8.54	8.04	8.19	7.81	8.51	8.14	8.32	8.10	8.17
All Sectors (a)															
New England	20.37	19.68	20.66	21.14	24.39	22.26	22.11	21.16	23.89	21.56	21.71	21.46	20.47	22.49	22.17
Middle Atlantic	14.03	14.60	16.08	15.20	15.38	14.75	16.08	14.58	15.04	14.87	16.63	15.06	15.02	15.24	15.47
E. N. Central	10.97	11.73	12.39	11.95	12.20	11.97	12.03	11.41	11.85	11.86	12.13	11.59	11.77	11.90	11.87
W. N. Central	9.41	10.53	11.55	9.93	9.89	10.60	11.36	9.65	9.83	10.74	11.50	9.68	10.38	10.40	10.47
S. Atlantic	10.62	11.38	12.21	11.60	12.03	11.90	12.05	10.95	11.36	11.46	11.80	10.83	11.48	11.75	11.39
E. S. Central	9.97	10.70	11.82	11.05	11.04	10.66	10.99	10.47	11.00	10.89	11.21	10.67	10.91	10.80	10.96
W. S. Central	8.97	9.99	11.17	10.25	9.80	9.24	10.44	9.75	9.75	9.31	10.54	9.97	10.16	9.85	9.93
Mountain	9.58	10.29	11.22	10.52	10.53	11.01	11.77	10.76	10.56	11.05	11.69	10.83	10.46	11.07	11.08
Pacific	15.60	17.18	19.43	17.29	17.49	18.63	21.25	17.86	17.66	19.00	21.97	18.60	17.46	18.88	19.41
U.S. Average	11.37	12.14	13.29	12.45	12.66	12.41	13.14	12.04	12.36	12.34	13.27	12.23	12.35	12.59	12.59

Notes: EIA completed modeling and analysis for this report on November 2, 2023.

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

Historical data for average price of electricity to ultimate consumers represents the cost per unit of electricity sold and is calculated by dividing electric revenue from ultimate consumers by the corresponding sales of electricity.

Prices are not adjusted for inflation.

Regions refer to U.S. Census divisions (https://www.eia.gov/tools/glossary/index.php?id=C#census_division).

(a) Average price to all sectors is weighted by sales of electricity to ultimate customers in the residential, commercial, industrial and transportation (not shown) sectors.

Historical data: Latest data available from EIA databases supporting the following reports: Electric Power Monthly and Electric Power Annual.

Minor discrepancies with published historical data are due to independent rounding and possible revisions not yet reflected in the STEO.

Forecast data: 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 - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
United States															
Natural Gas	336.5	363.2	507.3	375.8	367.4	395.2	538.4	395.6	368.9	394.6	529.4	395.7	1,582.7	1,696.7	1,688.7
Coal	218.2	190.0	235.2	182.7	156.7	140.5	214.1	151.7	152.3	126.0	203.7	133.7	826.1	663.1	615.7
Nuclear	195.6	184.4	201.5	190.1	194.5	183.1	205.5	192.4	199.8	193.1	208.7	192.7	771.5	775.5	794.3
Renewable Energy Sources:	226.0	244.9	197.5	201.8	225.5	224.7	206.8	223.0	258.1	267.3	239.5	245.0	870.3	879.9	1,009.8
Conventional Hydropower	69.6	69.1	62.5	52.4	60.9	64.1	58.9	55.4	71.3	79.2	64.9	60.2	253.6	239.3	275.6
Wind	118.0	122.0	81.5	112.5	125.7	102.5	86.1	123.1	135.9	110.0	91.4	127.8	434.0	437.3	465.1
Solar (a)	28.4	44.3	43.3	26.9	29.1	48.9	52.0	34.8	40.6	69.2	73.2	47.3	142.9	164.9	230.3
Biomass	6.0	5.7	6.3	5.7	5.6	5.1	5.8	5.6	5.9	5.4	6.1	5.6	23.7	22.1	23.0
Geothermal	4.0	3.9	4.0	4.2	4.2	4.0	3.9	4.1	4.4	3.5	3.9	4.1	16.1	16.3	15.9
Pumped Storage Hydropower	-1.2	-1.3	-2.0	-1.5	-1.6	-1.3	-1.9	-1.4	-1.6	-1.3	-1.9	-1.5	-6.0	-6.1	-6.3
Petroleum (b)	6.6	4.0	4.5	6.7	3.9	3.5	4.7	5.1	5.1	3.5	4.5	5.4	21.8	17.2	18.5
Other Gases	0.8	0.9	0.9	0.8	0.8	0.7	0.9	0.8	0.8	0.8	0.9	0.8	3.5	3.2	3.3
Other Nonrenewable Fuels (c)	1.1	1.0	1.0	0.9	0.9	0.9	0.9	0.8	0.8	0.5	0.4	0.3	4.0	3.4	2.1
Total Generation	983.7	987.3	1,146.0	957.4	948.1	947.3	1,169.3	968.1	984.1	984.6	1,185.2	972.1	4,074.3	4,032.8	4,126.1
New England (ISO-NE)															
Natural Gas	11.4	12.5	18.2	11.3	11.5	12.4	15.5	12.1	11.9	11.1	17.7	12.7	53.3	51.4	53.5
Coal	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.4	0.0	0.3	0.1	0.3	0.2	0.8
Nuclear	7.1	5.6	7.3	7.4	7.1	3.4	6.9	6.3	7.2	7.2	7.2	5.6	27.4	23.7	27.1
Conventional hydropower	2.0	2.2	0.7	1.6	1.9	1.4	1.6	1.8	2.0	2.2	1.2	1.7	6.5	6.7	7.1
Nonhydro renewables (d)	2.9	2.8	2.7	2.5	2.6	2.8	2.6	2.4	2.6	3.1	3.0	3.3	10.9	10.3	12.0
Other energy sources (e)	1.4	0.2	0.2	0.6	0.3	0.2	0.2	0.4	0.6	0.2	0.2	0.4	2.5	1.1	1.5
Total generation	25.1	23.3	29.1	23.5	23.6	20.1	26.7	23.0	24.7	23.8	29.6	24.0	101.0	93.4	102.0
Net energy for load (f)	30.6	26.8	33.5	28.0	29.0	25.6	32.0	28.5	30.4	27.8	34.3	29.5	118.9	115.0	122.0
New York (NYISO)															
Natural Gas	14.3	15.6	21.1	14.3	13.5	14.2	20.9	14.7	14.3	13.9	21.2	14.7	65.3	63.4	64.1
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	6.4	7.0	6.4	7.0	6.8	6.6	7.0	7.2	6.4	7.1	7.0	6.4	26.8	27.5	27.0
Conventional hydropower	7.1	6.8	6.8	6.6	7.1	6.6	6.9	7.1	7.0	6.9	6.9	7.1	27.4	27.7	27.9
Nonhydro renewables (d)	1.9	1.8	1.5	2.0	2.1	2.0	1.8	2.6	2.6	2.6	2.2	2.9	7.2	8.6	10.3
Other energy sources (e)	1.1	0.0	0.0	0.5	0.2	0.0	0.0	0.2	0.6	0.0	0.1	0.2	1.6	0.4	0.9
Total generation	30.8	31.3	35.9	30.4	29.7	29.4	36.7	31.8	30.9	30.4	37.5	31.4	128.3	127.6	130.2
Net energy for load (f)	38.1	35.0	44.0	35.6	36.1	33.3	42.1	36.2	38.0	36.5	45.8	37.2	152.7	147.8	157.4
Mid-Atlantic (PJM)															
Natural Gas	76.0	73.1	102.3	79.3	85.1	81.6	111.3	85.0	82.3	78.9	107.0	83.8	330.8	363.0	352.1
Coal	48.9	35.7	42.5	31.1	28.3	22.9	36.0	24.5	33.8	25.5	33.5	22.5	158.2	111.6	115.4
Nuclear	69.0	65.1	69.7	66.8	67.6	65.7	70.6	68.5	69.0	64.8	71.9	68.6	270.6	272.4	274.3
Conventional hydropower	2.5	2.3	1.6	1.9	2.6	1.8	2.0	2.2	2.7	2.6	1.7	2.1	8.4	8.5	9.0
Nonhydro renewables (d)	13.4	13.1	9.3	12.6	12.9	11.9	10.0	13.6	15.0	14.6	12.5	15.5	48.4	48.3	57.6
Other energy sources (e)	0.6	0.3	0.2	1.1	0.3	0.1	0.1	0.6	0.5	0.2	0.2	0.7	2.1	1.2	1.6
Total generation	210.5	189.5	225.6	192.9	196.9	183.9	230.0	194.3	203.3	186.6	226.7	193.3	818.5	805.1	809.9
Net energy for load (f)	203.4	185.4	216.7	189.7	192.5	176.2	214.4	188.3	199.6	182.1	219.9	187.3	795.1	771.5	788.8
Southeast (SERC)															
Natural Gas	63.5	66.7	86.0	64.6	64.1	65.7	82.4	65.1	71.3	75.8	92.4	76.7	280.8	277.3	316.2
Coal	32.3	32.8	32.0	28.1	23.6	26.5	38.8	24.2	23.0	18.9	34.9	15.3	125.1	113.1	92.2
Nuclear	51.4	51.1	55.4	51.1	51.7	52.9	57.4	55.6	55.8	57.6	59.5	54.6	209.0	217.6	227.6
Conventional hydropower	9.6	7.8	7.7	6.9	9.9	6.2	8.0	9.2	11.6	9.0	8.1	9.1	32.0	33.3	37.8
Nonhydro renewables (d)	5.0	7.2	6.4	4.7	4.9	7.2	7.6	5.8	5.8	8.2	8.2	6.5	23.3	25.5	28.7
Other energy sources (e)	-0.2	-0.2	-0.6	0.0	-0.3	-0.2	-0.5	-0.3	-0.2	-0.3	-0.5	-0.4	-1.1	-1.2	-1.3
Total generation	161.5	165.3	187.0	155.3	154.0	158.2	193.8	159.6	167.3	169.2	202.7	161.9	669.2	665.5	701.0
Net energy for load (f)	157.0	158.2	170.6	151.0	149.1	149.2	171.6	150.6	158.2	157.8	188.9	153.6	636.7	620.5	658.4
Florida (FRCC)															
Natural Gas	38.8	47.8	56.7	41.1	37.7	48.8	59.1	40.7	37.4	46.3	55.8	43.0	184.3	186.2	182.5
Coal	3.5	4.2	3.7	4.1	2.7	2.6	3.9	2.4	2.6	2.3	3.3	1.4	15.5	11.6	9.5
Nuclear	7.3	7.9	7.5	8.1	7.4	7.5	8.0	7.2	7.3	7.9	8.0	6.7	30.8	30.1	29.9
Conventional hydropower	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.2
Nonhydro renewables (d)	2.8	3.7	3.4	2.6	3.5	4.2	3.9	2.9	4.7	5.6	5.1	3.9	12.5	14.5	19.4
Other energy sources (e)	0.6	0.5	0.6	0.5	0.6	0.5	0.6	0.5	0.6	0.5	0.5	0.5	2.2	2.2	2.1
Total generation	53.1	64.1	71.9	56.4	51.9	63.6	75.6	53.7	52.7	62.7	72.7	55.6	245.5	244.8	243.7
Net energy for load (f)	52.2	63.6	73.9	57.8	54.4	65.5	77.2	56.7	52.6	63.6	74.2	55.8	247.5	253.9	246.2

Notes: EIA completed modeling and analysis for this report on November 2, 2023.

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

The electric power sector includes utility-scale generating power plants (total capacity is larger than 1 megawatt) operated by electric utilities and independent power producers whose primary business is to sell electricity over the transmission grid for consumption by the public.

(a) Generation from utility-scale (larger than 1 megawatt) solar photovoltaic and solar thermal power plants. Excludes generation from small-scale solar photovoltaic systems (see Table 7a).

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

Historical data: Latest data available from EIA databases supporting the following reports: Electric Power Monthly and Electric Power Annual.

Minor discrepancies with published historical data are due to independent rounding and possible revisions not yet reflected in the STEO.

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 - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
Midwest (MISO)															
Natural Gas	39.3	46.4	56.1	40.5	45.4	54.7	65.9	50.4	51.6	60.5	70.6	50.8	182.3	216.4	233.5
Coal	60.5	51.2	65.0	49.3	43.0	38.0	55.9	42.8	43.7	33.8	56.0	39.9	226.1	179.7	173.4
Nuclear	23.8	19.6	24.3	23.7	23.4	21.1	24.3	19.6	23.2	22.4	24.3	23.1	91.4	88.3	93.0
Conventional hydropower	2.1	2.8	2.1	2.1	2.2	2.0	2.0	2.1	2.5	2.9	2.4	2.2	9.1	8.3	9.9
Nonhydro renewables (d)	30.9	28.0	20.0	30.5	30.3	26.5	21.0	34.6	34.9	30.2	24.3	36.8	109.4	112.4	126.2
Other energy sources (e)	1.4	1.6	1.2	1.7	0.8	0.7	1.3	1.6	1.3	1.1	1.4	1.6	5.9	4.4	5.4
Total generation	158.0	149.7	168.8	147.8	145.1	143.0	170.4	151.1	157.2	151.0	178.9	154.4	624.2	609.6	641.5
Net energy for load (f)	167.1	163.4	182.5	158.8	158.6	157.9	184.3	161.7	165.6	162.3	191.2	163.4	671.8	662.5	682.6
Central (Southwest Power Pool)															
Natural Gas	12.8	13.7	25.1	17.2	15.8	21.5	29.9	16.3	15.7	20.5	27.3	16.2	68.8	83.4	79.7
Coal	24.0	21.4	31.2	20.5	20.4	17.2	27.1	16.9	17.2	17.9	26.6	14.5	97.1	81.7	76.2
Nuclear	4.3	4.3	3.9	2.1	4.3	4.3	4.3	4.2	4.3	2.9	4.3	3.5	14.6	17.1	15.0
Conventional hydropower	3.0	3.8	2.9	2.6	2.9	2.8	2.8	2.8	3.5	4.2	3.7	3.1	12.3	11.3	14.4
Nonhydro renewables (d)	30.7	31.1	22.6	29.5	31.3	25.6	22.6	32.1	32.8	26.8	24.5	32.3	113.9	111.6	116.5
Other energy sources (e)	0.3	0.4	0.2	0.2	0.2	0.1	0.2	0.3	0.2	0.1	0.2	0.3	1.1	0.8	0.8
Total generation	75.1	74.7	85.8	72.2	74.9	71.6	86.9	72.6	73.7	72.4	86.6	69.8	307.9	306.0	302.5
Net energy for load (f)	67.4	67.7	81.7	66.0	66.6	66.6	81.8	64.1	65.4	66.1	80.5	63.5	282.8	279.1	275.4
Texas (ERCOT)															
Natural Gas	33.7	42.9	65.3	40.9	36.4	49.6	71.1	45.9	35.1	44.2	60.9	41.8	182.8	203.0	182.0
Coal	17.2	16.2	19.5	15.9	11.4	15.2	19.7	12.8	10.0	12.2	15.8	11.7	68.8	59.1	49.7
Nuclear	11.0	9.9	10.7	10.0	10.5	9.0	10.9	10.2	11.0	9.8	10.6	9.4	41.6	40.7	40.8
Conventional hydropower	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.4	0.5	0.6
Nonhydro renewables (d)	30.8	39.1	27.7	28.9	36.6	33.8	33.9	33.8	41.9	44.3	44.2	40.3	126.6	138.1	170.8
Other energy sources (e)	0.4	0.4	0.3	0.3	0.2	0.4	0.4	0.4	0.3	0.3	0.2	0.2	1.5	1.4	1.0
Total generation	93.2	108.6	123.7	96.2	95.4	108.1	136.0	103.2	98.4	111.1	131.8	103.6	421.6	442.7	444.9
Net energy for load (f)	95.1	111.3	126.4	97.1	94.1	109.8	140.2	103.2	98.4	111.1	131.8	103.6	429.9	447.3	444.9
Northwest															
Natural Gas	20.2	15.4	27.7	26.3	25.3	18.8	30.1	24.4	20.4	13.8	26.3	20.2	89.6	98.6	80.7
Coal	24.1	20.5	29.7	24.7	20.2	14.3	24.0	20.5	16.5	11.5	23.6	19.7	99.0	79.1	71.3
Nuclear	2.5	2.3	2.5	2.6	2.4	1.0	2.5	2.5	2.4	2.4	2.4	2.4	9.9	8.4	9.7
Conventional hydropower	37.1	35.5	33.0	25.9	25.8	29.9	24.0	23.4	33.2	39.7	30.3	28.4	131.5	103.0	131.6
Nonhydro renewables (d)	17.9	20.0	16.0	16.6	18.9	19.1	18.8	18.7	21.3	21.3	20.6	19.8	70.5	75.5	82.9
Other energy sources (e)	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.8	0.6	0.6
Total generation	102.0	93.9	109.2	96.1	92.8	83.4	99.5	89.5	94.0	88.8	103.4	90.7	401.2	365.3	376.9
Net energy for load (f)	85.2	76.8	87.4	86.8	88.7	76.7	86.5	82.3	84.3	75.8	86.9	82.1	336.1	334.1	329.1
Southwest															
Natural Gas	9.7	13.0	18.8	13.9	11.5	15.7	22.4	16.3	11.9	15.5	23.4	14.2	55.5	66.0	65.0
Coal	6.6	6.9	8.8	6.9	5.5	3.1	6.8	5.2	3.1	3.4	6.7	6.1	29.2	20.6	19.3
Nuclear	8.2	7.5	8.7	7.6	8.6	6.8	8.6	7.5	8.5	7.4	8.6	7.5	31.9	31.5	32.0
Conventional hydropower	1.9	2.1	1.8	1.4	1.4	2.5	2.1	1.5	1.9	2.3	2.0	1.7	7.1	7.4	7.9
Nonhydro renewables (d)	5.8	7.0	5.1	5.6	6.4	6.5	6.0	6.4	8.9	8.5	7.5	7.6	23.5	25.3	32.5
Other energy sources (e)	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1
Total generation	32.1	36.6	43.3	35.4	33.5	34.6	45.9	37.0	34.3	37.1	48.2	37.1	147.4	150.9	156.8
Net energy for load (f)	27.4	34.8	42.0	28.8	28.3	32.9	45.8	29.4	28.0	34.2	45.4	29.3	133.0	136.4	137.0
California															
Natural Gas	15.9	15.2	29.2	25.5	20.2	11.5	28.9	23.9	16.1	13.5	26.1	20.9	85.9	84.5	76.6
Coal	0.5	0.7	2.4	1.9	1.1	0.6	1.7	1.9	1.6	0.2	2.6	1.9	5.5	5.3	6.3
Nuclear	4.6	4.2	5.0	3.8	4.7	4.9	4.9	3.6	4.7	3.6	4.8	4.8	17.6	18.2	17.8
Conventional hydropower	3.7	5.2	5.3	3.0	6.5	10.5	9.2	4.8	6.4	8.8	8.2	4.3	17.2	31.0	27.6
Nonhydro renewables (d)	13.9	21.6	19.9	13.4	14.8	20.3	19.2	14.3	15.8	22.3	21.8	15.2	68.8	68.5	75.1
Other energy sources (e)	-0.1	-0.2	0.1	-0.2	-0.6	-0.2	0.1	-0.2	-0.6	-0.4	-0.2	-0.4	-0.4	-0.9	-1.6
Total generation	38.5	46.7	61.8	47.5	46.7	47.7	63.9	48.4	44.1	48.0	63.3	46.6	194.6	206.7	202.0
Net energy for load (f)	59.2	64.4	81.3	63.6	60.5	59.9	76.7	63.2	60.0	63.9	82.6	63.0	268.4	260.3	269.6

Notes: EIA completed modeling and analysis for this report on November 2, 2023.

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

The electric power sector includes utility-scale generating power plants (total capacity is larger than 1 megawatt) operated by electric utilities and independent power producers whose primary business is to sell electricity over the transmission grid for consumption by the public.

(a) Generation from utility-scale (larger than 1 megawatt) solar photovoltaic and solar thermal power plants. Excludes generation from small-scale solar photovoltaic systems (see Table 7a).

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

Historical data: Latest data available from EIA databases supporting the following reports: Electric Power Monthly and Electric Power Annual.

Minor discrepancies with published historical data are due to independent rounding and possible revisions not yet reflected in the STEO.

Table 7e. U.S. Electric Generating Capacity (gigawatts at end of period)
U.S. Energy Information Administration | Short-Term Energy Outlook - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
Electric power sector (power plants larger than one megawatt)															
Fossil fuel energy sources															
Natural gas	479.4	482.7	483.7	483.6	486.2	488.2	488.0	488.2	488.9	487.3	487.8	488.1	483.6	488.2	488.1
Coal	199.4	194.4	191.0	187.9	186.3	182.6	181.4	178.6	177.9	177.4	177.4	177.0	187.9	178.6	177.0
Petroleum	29.7	29.4	29.4	29.2	28.4	28.2	28.2	27.8	27.8	27.8	27.8	27.8	29.2	27.8	27.8
Other gases	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Renewable energy sources															
Wind	135.0	137.9	137.9	141.3	143.1	144.5	145.3	149.6	150.1	153.1	153.2	156.1	141.3	149.6	156.1
Solar photovoltaic	62.1	64.5	66.6	70.8	73.1	76.7	82.5	95.1	102.1	110.5	114.0	130.7	70.8	95.1	130.7
Solar thermal	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Geothermal	2.6	2.6	2.7	2.6	2.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.7	2.7
Waste biomass	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Wood biomass	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Conventional hydroelectric	79.8	79.8	79.8	79.8	79.8	79.8	79.8	79.8	79.8	79.8	79.8	79.8	79.8	79.8	79.8
Pumped storage hydroelectric	23.0	23.0	23.0	23.0	23.2	23.2	23.2	23.2	23.3	23.3	23.3	23.3	23.0	23.2	23.3
Nuclear	95.4	94.7	94.7	94.7	94.7	94.7	95.8	95.8	96.9	96.9	96.9	96.9	94.7	95.8	96.9
Battery storage	5.3	6.6	8.0	9.0	9.4	10.8	14.4	18.0	20.4	25.0	25.9	32.1	9.0	18.0	32.1
Other nonrenewable sources (a)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Industrial and commercial sectors (combined heat and power plants larger than one megawatt)															
Fossil fuel energy sources															
Natural gas	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.9	18.9	18.9	18.8	18.8	18.9
Coal	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Petroleum	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Other gases	1.4	1.4	1.4	1.4	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Renewable energy sources															
Wood biomass	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.3	5.3	5.3	5.3	5.3	5.4	5.3	5.3
Waste biomass	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Solar	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.8	0.8	0.8	0.8	0.8	0.6	0.8	0.8
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	0.1	0.1	0.1
Geothermal	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
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	0.3	0.3	0.3
Battery storage	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other nonrenewable sources (a)	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.2	1.2	1.3
Small-scale solar photovoltaic capacity (systems smaller than one megawatt)															
Residential sector	22.3	23.5	24.9	26.3	27.8	29.6	31.4	32.6	33.9	35.2	36.5	37.9	26.3	32.6	37.9
Commercial sector	10.2	10.4	10.7	10.9	11.5	11.8	12.2	12.6	13.0	13.5	13.9	14.4	10.9	12.6	14.4
Industrial sector	2.2	2.3	2.3	2.3	2.4	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.3	2.6	2.8
All sectors total	34.7	36.2	37.9	39.5	41.7	43.9	46.0	47.8	49.5	51.3	53.2	55.0	39.5	47.8	55.0

Notes:
EIA completed modeling and analysis for this report on November 2, 2023.
The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.
Capacity values represent the amount of generating capacity that is operating (or expected to be operating) at the end of each period.
Changes in capacity reflect various factors including new generators coming online, retiring generators, capacity uprates and derates, delayed planned capacity projects, cancelled projects, and other factors.
(a) Other sources include hydrogen, pitch, chemicals, sulfur, purchased steam, nonrenewable waste, and miscellaneous technologies.

Data sources:
- Utility-scale capacity (power plants larger than one megawatt): EIA-860M Preliminary Monthly Electric Generator Inventory, August 2023.
- Small-scale solar capacity (systems smaller than one megawatt): Form EIA-861M Monthly Electric Power Industry Report.
Historical capacity data may differ from other EIA publications due to frequent updates to the Preliminary Monthly Electric Generator Inventory.

Table 8. U.S. Renewable Energy Consumption (Quadrillion Btu)
U.S. Energy Information Administration | Short-Term Energy Outlook - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
Electric Power Sector															
Geothermal	0.014	0.013	0.014	0.014	0.014	0.014	0.013	0.014	0.015	0.012	0.013	0.014	0.055	0.056	0.054
Hydroelectric Power (a)	0.253	0.236	0.213	0.188	0.214	0.223	0.200	0.189	0.243	0.270	0.222	0.205	0.890	0.825	0.940
Solar (b)	0.097	0.151	0.148	0.092	0.099	0.167	0.177	0.119	0.139	0.236	0.250	0.161	0.487	0.563	0.786
Waste Biomass (c)	0.047	0.043	0.044	0.043	0.043	0.041	0.042	0.042	0.043	0.041	0.042	0.041	0.176	0.168	0.168
Wood Biomass	0.051	0.046	0.053	0.047	0.044	0.040	0.047	0.045	0.048	0.043	0.052	0.046	0.198	0.175	0.189
Wind	0.403	0.416	0.278	0.384	0.429	0.350	0.294	0.420	0.464	0.375	0.312	0.436	1.481	1.492	1.587
Subtotal	0.864	0.906	0.749	0.768	0.843	0.833	0.773	0.828	0.952	0.978	0.891	0.904	3.287	3.278	3.724
Industrial Sector															
Biofuel Losses and Co-products (d)	0.203	0.202	0.197	0.206	0.199	0.202	0.205	0.210	0.201	0.200	0.204	0.201	0.808	0.816	0.806
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)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.003	0.003	0.003
Solar (b)	0.003	0.004	0.004	0.003	0.003	0.005	0.005	0.003	0.004	0.005	0.005	0.004	0.015	0.016	0.017
Waste Biomass (c)	0.042	0.040	0.037	0.042	0.042	0.040	0.038	0.041	0.041	0.039	0.038	0.041	0.161	0.161	0.159
Wood Biomass	0.319	0.324	0.322	0.314	0.309	0.292	0.299	0.324	0.318	0.318	0.329	0.333	1.278	1.225	1.298
Subtotal (e)	0.573	0.577	0.567	0.571	0.559	0.545	0.554	0.585	0.570	0.569	0.583	0.584	2.288	2.244	2.307
Commercial Sector															
Geothermal	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.022	0.021	0.021
Solar (b)	0.012	0.018	0.018	0.012	0.014	0.021	0.021	0.015	0.017	0.024	0.024	0.017	0.061	0.070	0.081
Waste Biomass (c)	0.009	0.009	0.009	0.009	0.010	0.011	0.014	0.011	0.010	0.010	0.011	0.011	0.037	0.047	0.043
Wood Biomass	0.020	0.021	0.021	0.021	0.020	0.020	0.021	0.021	0.020	0.020	0.021	0.021	0.083	0.082	0.082
Subtotal (e)	0.054	0.060	0.061	0.054	0.056	0.065	0.068	0.059	0.059	0.067	0.068	0.061	0.230	0.248	0.255
Residential Sector															
Geothermal	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.040	0.039	0.040
Solar (f)	0.038	0.057	0.057	0.041	0.046	0.069	0.070	0.049	0.052	0.078	0.078	0.054	0.192	0.234	0.262
Wood Biomass	0.104	0.105	0.106	0.106	0.111	0.112	0.109	0.106	0.111	0.112	0.109	0.106	0.422	0.439	0.439
Subtotal	0.152	0.172	0.173	0.157	0.167	0.192	0.189	0.165	0.173	0.200	0.197	0.170	0.654	0.712	0.740
Transportation Sector															
Biodiesel, Renewable Diesel, and Other (g)	0.099	0.118	0.118	0.126	0.140	0.173	0.168	0.175	0.178	0.193	0.194	0.200	0.462	0.655	0.765
Ethanol (g)	0.262	0.281	0.281	0.283	0.268	0.284	0.283	0.285	0.268	0.283	0.289	0.277	1.108	1.120	1.117
Subtotal	0.361	0.399	0.400	0.410	0.408	0.457	0.451	0.460	0.447	0.475	0.483	0.477	1.569	1.776	1.882
All Sectors Total															
Biodiesel, Renewable Diesel, and Other (g)	0.099	0.118	0.118	0.126	0.140	0.173	0.168	0.175	0.178	0.193	0.194	0.200	0.462	0.655	0.765
Biofuel Losses and Co-products (d)	0.203	0.202	0.197	0.206	0.199	0.202	0.205	0.210	0.201	0.200	0.204	0.201	0.808	0.816	0.806
Ethanol (f)	0.273	0.293	0.293	0.295	0.279	0.296	0.295	0.297	0.279	0.294	0.301	0.289	1.153	1.166	1.163
Geothermal	0.030	0.030	0.031	0.031	0.030	0.030	0.030	0.030	0.031	0.028	0.030	0.030	0.122	0.119	0.119
Hydroelectric Power (a)	0.254	0.237	0.214	0.189	0.215	0.224	0.201	0.190	0.244	0.271	0.222	0.206	0.894	0.829	0.944
Solar (b)(f)	0.150	0.230	0.227	0.147	0.163	0.262	0.273	0.186	0.211	0.343	0.357	0.235	0.755	0.883	1.146
Waste Biomass (c)	0.098	0.092	0.090	0.094	0.095	0.092	0.094	0.094	0.094	0.091	0.092	0.093	0.374	0.376	0.370
Wood Biomass	0.494	0.496	0.503	0.489	0.484	0.464	0.476	0.496	0.497	0.493	0.511	0.506	1.982	1.920	2.007
Wind	0.403	0.416	0.278	0.384	0.429	0.350	0.294	0.420	0.464	0.375	0.312	0.436	1.481	1.492	1.587
Total Consumption	2.004	2.114	1.950	1.960	2.034	2.092	2.035	2.098	2.201	2.290	2.222	2.196	8.028	8.258	8.908

Notes: EIA completed modeling and analysis for this report on November 2, 2023.

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

(a) Energy consumption for conventional hydroelectric power only. Hydroelectricity generated by pumped storage is not included in renewable energy.

and energy consumption by small-scale solar photovoltaic systems (less than 1 megawatts in size).

(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 solar photovoltaic systems (<1 megawatt), and it includes solar heating consumption in all sectors. Some biomass-based diesel may be consumed in the residential sector in heating oil.

Historical data: Latest data available from EIA databases supporting the following reports: Electric Power Monthly, Electric Power Annual, Minor discrepancies with published historical data are due to independent rounding and possible revisions not yet reflected in the STEO.

Forecast data: EIA Short-Term Integrated Forecasting System.

Table 9a. U.S. Macroeconomic Indicators and CO2 Emissions
U.S. Energy Information Administration | Short-Term Energy Outlook - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
Macroeconomic															
Real Gross Domestic Product (billion chained 2017 dollars - SAAR)	21,739	21,708	21,851	21,990	22,112	22,225	22,493	22,586	22,597	22,640	22,699	22,779	21,822	22,354	22,679
Real Personal Consumption Expend. (billion chained 2017 dollars - SAAR)	14,995	15,069	15,127	15,171	15,313	15,344	15,493	15,564	15,596	15,633	15,679	15,738	15,091	15,428	15,662
Real Private Fixed Investment (billion chained 2017 dollars - SAAR)	3,976	3,974	3,931	3,876	3,906	3,956	3,977	3,990	3,990	3,998	4,005	4,020	3,939	3,957	4,003
Business Inventory Change (billion chained 2017 dollars - SAAR)	249	120	82	178	24	19	47	33	30	24	33	49	157	31	34
Real Government Expenditures (billion chained 2017 dollars - SAAR)	3,659	3,641	3,667	3,715	3,759	3,790	3,818	3,833	3,842	3,851	3,857	3,861	3,670	3,800	3,853
Real Exports of Goods & Services (billion chained 2017 dollars - SAAR)	2,354	2,414	2,506	2,484	2,525	2,465	2,518	2,559	2,567	2,595	2,623	2,653	2,440	2,517	2,609
Real Imports of Goods & Services (billion chained 2017 dollars - SAAR)	3,495	3,530	3,487	3,450	3,460	3,393	3,378	3,424	3,470	3,510	3,549	3,593	3,491	3,414	3,530
Real Disposable Personal Income (billion chained 2017 dollars - SAAR)	16,067	16,010	16,152	16,239	16,663	16,808	16,780	16,859	17,009	17,137	17,260	17,366	16,117	16,777	17,193
Non-Farm Employment (millions)	150.8	152.0	153.3	154.3	155.2	155.9	156.6	157.2	157.4	157.3	157.2	157.1	152.6	156.2	157.3
Civilian Unemployment Rate (percent)	3.8	3.6	3.6	3.6	3.5	3.6	3.7	3.7	3.7	3.8	3.9	4.1	3.6	3.6	3.9
Housing Starts (millions - SAAR)	1.72	1.64	1.45	1.41	1.39	1.45	1.36	1.36	1.35	1.35	1.36	1.36	1.55	1.39	1.35
Industrial Production Indices (Index, 2017=100)															
Total Industrial Production	101.7	102.8	103.3	102.7	102.6	102.8	103.4	102.6	102.0	101.7	101.7	101.9	102.6	102.8	101.8
Manufacturing	100.1	100.8	100.9	100.0	99.9	100.1	100.1	99.4	98.8	98.5	98.6	99.1	100.5	99.9	98.7
Food	105.1	105.1	104.8	104.5	105.1	103.7	101.9	102.4	102.7	103.1	103.4	103.9	104.9	103.3	103.3
Paper	95.9	96.2	92.7	89.1	87.8	86.7	83.3	83.1	82.9	82.7	82.8	83.1	93.5	85.2	82.9
Petroleum and Coal Products	89.8	89.6	90.1	89.8	88.5	89.9	90.0	90.3	90.2	89.9	89.8	89.7	89.8	89.7	89.9
Chemicals	102.1	102.3	102.4	100.9	103.2	103.0	103.4	103.8	103.9	104.0	104.4	105.0	101.9	103.3	104.3
Nonmetallic Mineral Products	107.1	108.0	109.7	110.6	111.4	108.9	108.3	108.6	109.1	109.9	110.8	111.8	108.9	109.3	110.4
Primary Metals	94.9	96.4	95.7	92.5	92.7	95.9	95.5	96.0	94.8	94.4	95.7	97.3	94.9	95.0	95.6
Coal-weighted Manufacturing (a)	97.4	97.7	97.2	95.2	95.7	95.9	95.6	95.9	95.5	95.4	96.1	96.9	96.9	95.8	96.0
Distillate-weighted Manufacturing (a)	100.0	100.5	100.4	99.2	99.3	98.9	98.6	98.6	98.7	99.0	99.6	100.3	100.0	98.9	99.4
Electricity-weighted Manufacturing (a)	98.5	98.8	98.2	96.0	96.4	96.5	96.5	96.6	96.5	96.7	97.3	98.0	97.9	96.5	97.1
Natural Gas-weighted Manufacturing (a)	97.0	96.7	95.6	92.7	94.0	93.3	93.6	93.8	93.5	93.3	93.7	94.3	95.5	93.7	93.7
Price Indexes															
Consumer Price Index (all urban consumers) (index, 1982-1984=1.00)	2.85	2.92	2.95	2.99	3.01	3.03	3.06	3.09	3.10	3.12	3.13	3.15	2.93	3.05	3.13
Producer Price Index: All Commodities (index, 1982=1.00)	2.53	2.72	2.70	2.63	2.59	2.54	2.52	2.51	2.51	2.48	2.48	2.49	2.64	2.54	2.49
Producer Price Index: Petroleum (index, 1982=1.00)	3.16	4.21	3.74	3.44	3.09	2.91	3.08	2.72	2.77	2.89	2.91	2.80	3.64	2.95	2.84
GDP Implicit Price Deflator (index, 2017=100)	115.2	117.7	119.0	120.1	121.3	121.8	122.4	123.2	124.2	125.0	125.8	126.6	118.0	122.2	125.4
Miscellaneous															
Vehicle Miles Traveled (b) (million miles/day)	8,142	8,910	9,066	8,604	8,363	9,080	9,129	8,743	8,330	9,113	9,294	8,755	8,683	8,831	8,874
Air Travel Capacity (Available ton-miles/day, thousands)	656	686	692	700	683	734	727	720	685	716	737	707	684	716	711
Aircraft Utilization (Revenue ton-miles/day, thousands)	356	419	422	407	390	440	449	435	406	445	458	443	401	429	438
Airline Ticket Price Index (index, 1982-1984=100)	225.6	328.7	293.1	285.2	277.6	290.8	248.6	258.8	263.1	316.6	290.6	289.9	283.1	268.9	290.1
Raw Steel Production (million short tons per day)	0.253	0.253	0.247	0.235	0.236	0.244	0.245	0.250	0.249	0.249	0.253	0.261	0.247	0.244	0.253
Carbon Dioxide (CO2) Emissions (million metric tons)															
Petroleum	557	559	569	564	548	563	565	568	559	561	568	565	2,250	2,243	2,254
Natural Gas	510	373	401	460	501	382	422	463	512	379	409	459	1,744	1,768	1,759
Coal	244	215	264	212	184	167	229	183	181	153	229	165	935	764	728
Total Energy (c)	1,314	1,149	1,237	1,238	1,236	1,115	1,219	1,216	1,255	1,096	1,209	1,192	4,939	4,786	4,751

(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 November 2, 2023.

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 - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
Real Gross State Product (Billion \$2017)															
New England	1,031	1,024	1,029	1,034	1,039	1,042	1,055	1,059	1,058	1,059	1,062	1,065	1,029	1,049	1,061
Middle Atlantic	2,855	2,856	2,872	2,880	2,891	2,900	2,936	2,947	2,947	2,952	2,959	2,969	2,866	2,919	2,957
E. N. Central	2,594	2,581	2,586	2,590	2,598	2,611	2,641	2,651	2,649	2,652	2,657	2,661	2,588	2,625	2,655
W. N. Central	1,219	1,214	1,217	1,218	1,234	1,240	1,250	1,255	1,255	1,258	1,261	1,266	1,217	1,245	1,260
S. Atlantic	3,575	3,575	3,593	3,619	3,638	3,657	3,707	3,725	3,728	3,736	3,747	3,761	3,590	3,681	3,743
E. S. Central	883	882	885	892	898	902	913	916	916	917	918	920	886	907	918
W. S. Central	2,375	2,381	2,419	2,455	2,472	2,491	2,526	2,538	2,541	2,548	2,557	2,568	2,407	2,507	2,553
Mountain	1,358	1,353	1,363	1,375	1,385	1,391	1,407	1,413	1,415	1,418	1,423	1,429	1,362	1,399	1,421
Pacific	3,802	3,799	3,829	3,856	3,874	3,898	3,940	3,956	3,960	3,969	3,979	3,995	3,822	3,917	3,976
Industrial Output, Manufacturing (Index, Year 2017=100)															
New England	97.6	97.9	97.5	96.2	96.1	96.2	95.8	95.0	94.4	94.1	94.3	94.7	97.3	95.8	94.4
Middle Atlantic	95.9	96.6	96.4	95.4	95.1	95.2	95.0	94.2	93.4	93.0	93.0	93.5	96.1	94.9	93.2
E. N. Central	97.4	97.8	97.8	96.6	96.2	96.4	96.3	95.8	95.2	94.9	95.1	95.5	97.4	96.2	95.2
W. N. Central	100.9	101.7	101.8	101.3	101.4	101.8	101.6	100.9	100.3	100.0	100.1	100.5	101.5	101.4	100.2
S. Atlantic	102.5	103.2	103.2	102.3	102.1	102.4	102.5	101.9	101.3	101.1	101.2	101.8	102.8	102.2	101.3
E. S. Central	100.2	101.2	101.5	100.5	100.3	100.9	101.3	100.8	100.0	99.6	99.6	99.9	100.9	100.8	99.8
W. S. Central	102.4	103.6	104.3	104.1	104.1	104.6	105.3	104.6	104.1	103.9	104.1	104.7	103.6	104.7	104.2
Mountain	111.6	112.5	112.7	111.3	111.6	111.7	111.5	110.6	109.9	109.6	109.8	110.3	112.0	111.4	109.9
Pacific	97.7	98.3	98.4	97.5	97.3	97.2	96.9	96.1	95.4	95.1	95.2	95.6	98.0	96.9	95.3
Real Personal Income (Billion \$2017)															
New England	948	938	937	949	949	952	954	957	963	970	975	981	943	953	972
Middle Atlantic	2,409	2,387	2,386	2,379	2,390	2,398	2,403	2,411	2,428	2,445	2,460	2,474	2,390	2,401	2,452
E. N. Central	2,444	2,424	2,426	2,422	2,439	2,446	2,449	2,458	2,477	2,493	2,508	2,521	2,429	2,448	2,500
W. N. Central	1,162	1,158	1,169	1,164	1,179	1,176	1,177	1,181	1,190	1,198	1,205	1,212	1,163	1,178	1,201
S. Atlantic	3,389	3,378	3,407	3,426	3,457	3,478	3,488	3,506	3,536	3,566	3,594	3,619	3,400	3,482	3,579
E. S. Central	941	935	939	938	947	950	950	953	958	963	968	972	939	950	965
W. S. Central	2,080	2,080	2,103	2,105	2,124	2,138	2,144	2,154	2,172	2,189	2,206	2,221	2,092	2,140	2,197
Mountain	1,305	1,304	1,320	1,320	1,330	1,335	1,335	1,340	1,350	1,361	1,370	1,379	1,312	1,335	1,365
Pacific	2,950	2,923	2,931	2,938	2,937	2,956	2,965	2,980	3,006	3,031	3,055	3,076	2,936	2,960	3,042
Households (Thousands)															
New England	6,101	6,090	6,081	6,076	6,073	6,082	6,094	6,104	6,112	6,118	6,125	6,130	6,076	6,104	6,130
Middle Atlantic	16,124	16,093	16,063	16,047	16,033	16,057	16,084	16,114	16,136	16,155	16,174	16,192	16,047	16,114	16,192
E. N. Central	19,058	19,033	19,008	18,992	18,971	18,997	19,031	19,067	19,092	19,111	19,132	19,149	18,992	19,067	19,149
W. N. Central	8,655	8,654	8,654	8,654	8,657	8,680	8,705	8,731	8,753	8,770	8,787	8,803	8,654	8,731	8,803
S. Atlantic	27,104	27,175	27,241	27,289	27,331	27,433	27,536	27,636	27,718	27,786	27,855	27,915	27,289	27,636	27,915
E. S. Central	7,825	7,834	7,842	7,854	7,865	7,896	7,927	7,958	7,984	8,006	8,028	8,048	7,854	7,958	8,048
W. S. Central	15,856	15,897	15,935	15,966	15,991	16,053	16,119	16,184	16,238	16,286	16,339	16,389	15,966	16,184	16,389
Mountain	9,792	9,811	9,831	9,843	9,861	9,899	9,941	9,984	10,021	10,056	10,090	10,125	9,843	9,984	10,125
Pacific	19,052	19,033	19,015	18,999	18,987	19,016	19,048	19,080	19,105	19,124	19,148	19,173	18,999	19,080	19,173
Total Non-farm Employment (Millions)															
New England	7.4	7.5	7.5	7.5	7.6	7.6	7.6	7.7	7.7	7.7	7.7	7.7	7.5	7.6	7.7
Middle Atlantic	19.6	19.7	19.9	20.0	20.1	20.2	20.2	20.3	20.3	20.3	20.3	20.3	19.8	20.2	20.3
E. N. Central	21.9	22.0	22.2	22.3	22.4	22.5	22.6	22.7	22.7	22.6	22.6	22.6	22.1	22.5	22.6
W. N. Central	10.7	10.7	10.8	10.9	10.9	11.0	11.0	11.0	11.0	11.0	11.0	11.0	10.8	11.0	11.0
S. Atlantic	29.6	29.9	30.2	30.4	30.6	30.7	30.9	31.0	31.1	31.1	31.1	31.1	30.0	30.8	31.1
E. S. Central	8.4	8.5	8.5	8.6	8.6	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.5	8.7	8.7
W. S. Central	18.1	18.3	18.6	18.7	18.9	19.0	19.1	19.2	19.2	19.2	19.2	19.2	18.4	19.0	19.2
Mountain	11.5	11.6	11.7	11.7	11.8	11.9	11.9	12.0	12.0	12.0	12.0	12.0	11.6	11.9	12.0
Pacific	23.8	24.1	24.2	24.4	24.5	24.7	24.8	24.9	24.9	24.9	24.8	24.8	24.1	24.7	24.8

- = no data available

Notes: EIA completed modeling and analysis for this report on November 2, 2023.

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 - November 2023

	2022				2023				2024				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2022	2023	2024
Heating Degree Days															
New England	3,136	785	113	1,982	2,713	816	89	1,958	2,980	828	132	2,054	6,016	5,576	5,994
Middle Atlantic	2,933	669	73	1,960	2,451	654	71	1,835	2,755	662	87	1,881	5,635	5,011	5,385
E. N. Central	3,267	754	101	2,225	2,725	700	94	2,139	3,038	710	122	2,155	6,347	5,658	6,025
W. N. Central	3,486	792	111	2,517	3,168	656	92	2,359	3,183	708	154	2,360	6,907	6,275	6,406
South Atlantic	1,343	189	13	981	1,059	191	10	908	1,295	181	13	891	2,526	2,167	2,380
E. S. Central	1,828	250	22	1,339	1,392	259	14	1,258	1,712	236	19	1,243	3,439	2,923	3,210
W. S. Central	1,336	56	2	802	926	92	1	817	1,106	86	5	772	2,195	1,837	1,968
Mountain	2,298	732	84	2,012	2,558	727	128	1,794	2,138	701	152	1,815	5,126	5,207	4,806
Pacific	1,399	604	49	1,296	1,835	661	100	1,103	1,423	576	94	1,144	3,348	3,698	3,237
U.S. Average	2,146	490	54	1,552	1,921	486	61	1,445	2,004	472	75	1,454	4,243	3,913	4,005
Heating Degree Days, Prior 10-year Average															
New England	3,100	853	107	2,103	3,150	859	106	2,093	3,110	856	98	2,060	6,163	6,208	6,123
Middle Atlantic	2,881	681	70	1,904	2,939	689	69	1,907	2,889	685	63	1,884	5,536	5,604	5,522
E. N. Central	3,133	727	97	2,162	3,215	741	93	2,169	3,158	735	91	2,137	6,119	6,218	6,121
W. N. Central	3,221	726	125	2,358	3,319	754	121	2,374	3,295	729	120	2,338	6,430	6,569	6,482
South Atlantic	1,381	187	11	907	1,403	190	10	905	1,357	188	9	897	2,486	2,508	2,451
E. S. Central	1,764	244	15	1,229	1,811	251	14	1,231	1,757	248	14	1,215	3,251	3,307	3,234
W. S. Central	1,144	93	3	753	1,188	95	3	762	1,163	90	3	743	1,993	2,048	1,999
Mountain	2,173	681	131	1,810	2,193	696	128	1,834	2,207	696	128	1,814	4,794	4,851	4,845
Pacific	1,457	523	79	1,138	1,441	523	75	1,150	1,469	539	77	1,137	3,196	3,189	3,222
U.S. Average	2,095	478	62	1,472	2,132	485	60	1,477	2,102	483	59	1,456	4,107	4,155	4,099
Cooling Degree Days															
New England	0	81	567	0	0	53	474	3	0	99	510	1	647	530	610
Middle Atlantic	0	153	688	1	0	90	582	6	0	185	664	5	842	679	854
E. N. Central	1	256	554	2	0	178	524	18	1	249	608	7	812	721	864
W. N. Central	3	306	735	8	1	319	710	31	5	298	736	11	1,051	1,061	1,049
South Atlantic	157	712	1,200	233	204	589	1,241	221	138	712	1,286	257	2,302	2,254	2,393
E. S. Central	28	597	1,062	36	63	438	1,094	60	34	545	1,129	68	1,723	1,655	1,775
W. S. Central	57	1,099	1,668	170	151	900	1,872	225	104	923	1,626	210	2,994	3,147	2,863
Mountain	17	474	1,024	67	3	350	1,030	79	21	457	1,032	84	1,581	1,462	1,593
Pacific	31	223	762	82	26	106	605	81	28	205	720	79	1,097	818	1,032
U.S. Average	47	467	953	90	68	362	943	101	50	444	968	105	1,557	1,476	1,568
Cooling Degree Days, Prior 10-year Average															
New England	0	87	472	2	0	87	480	2	0	83	483	2	561	569	568
Middle Atlantic	0	163	612	8	0	160	617	8	0	154	623	8	783	785	785
E. N. Central	3	238	571	9	1	234	561	10	1	230	566	11	821	805	808
W. N. Central	7	299	682	11	4	292	674	12	4	301	680	14	999	982	999
South Atlantic	146	667	1,188	268	144	674	1,192	272	153	674	1,212	269	2,269	2,283	2,308
E. S. Central	44	517	1,056	83	36	520	1,058	83	41	518	1,076	83	1,701	1,697	1,719
W. S. Central	113	852	1,537	224	101	861	1,549	223	109	873	1,585	229	2,726	2,734	2,795
Mountain	24	463	954	85	24	461	959	83	22	447	970	86	1,526	1,526	1,525
Pacific	31	208	664	85	32	214	675	86	32	203	676	89	988	1,007	999
U.S. Average	53	413	890	109	50	416	895	110	53	414	909	111	1,464	1,470	1,488

- = no data available

Notes: EIA completed modeling and analysis for this report on November 2, 2023.

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

Regional degree days for each period are calculated by EIA as contemporaneous period population-weighted averages of state degree day data published by the National

See *Change in Regional and U.S. Degree-Day Calculations* (http://www.eia.gov/forecasts/steo/special/pdf/2012_sp_04.pdf) for more information.

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

Regions refer to U.S. Census divisions. See "Census division" in EIA's Energy Glossary (<http://www.eia.gov/tools/glossary/>) for a list of states in each region.**Historical data:** Latest data available from U.S. Department of Commerce, National Oceanic and Atmospheric Association (NOAA).**Forecasts:** Current month based on forecasts by the NOAA Climate Prediction Center (<http://www.cpc.ncep.noaa.gov/pacdir/DDdir/NHOME3.shtml>). Remaining months based on the 30-year trend.