

Short-Term Energy Outlook

STEO

September 2024



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Short-Term Energy Outlook

Overview

U.S. energy market indicators	2023	2024	2025
Brent crude oil spot price (dollars per barrel)	\$82	\$83	\$84
Retail gasoline price (dollars per gallon)	\$3.50	\$3.30	\$3.30
U.S. crude oil production (million barrels per day)	12.9	13.3	13.7
Natural gas price at Henry Hub (dollars per million British thermal units)	\$2.50	\$2.20	\$3.10
U.S. liquefied natural gas gross exports (billion cubic feet per day)	12	12	14
Shares of U.S. electricity generation			
Natural gas	42%	42%	39%
Coal	17%	16%	16%
Renewables	21%	23%	25%
Nuclear	19%	19%	19%
U.S. GDP (percentage change)	2.5%	2.6%	1.8%
U.S. CO₂ emissions (billion metric tons)	4.8	4.8	4.8

Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, September 2024

- New U.S. biofuels data.** Biomass-based diesel products are [making up an increasing share](#) of the total distillate fuel oil consumed in the United States. Beginning this month, we will publish forecasts for several new series that better capture how biofuels are being consumed and the share of total distillate fuel oil they account for. We expect that although U.S. total distillate fuel oil consumption will fall slightly this year to average 4.1 million barrels per day (b/d), biofuels will account for 9% (360,000 b/d) of that consumption, up from 8% last year and 5% in 2022.
- New propane retail price data.** Also starting this month, we will be publishing monthly retail propane price forecasts by region. In our forecast, the U.S. average retail propane price for the upcoming heating season (November–March) averages \$2.50 per gallon (gal), which would be unchanged from last winter. Prices for this winter range from an average of \$3.35/gal on the East Coast to \$2.00/gal in the Midwest, both of which are similar to last winter.
- Crude oil prices.** Despite a drop in the Brent crude oil spot price to \$73 per barrel (b) on September 6, we expect ongoing withdrawals from global oil inventories will push prices back above \$80/b this month. More oil will be taken out of inventories in the fourth quarter of 2024 (4Q24) that we previously expected because [OPEC+ announced that they will delay production increases](#) until December. Those increases had been set to start in October. Although market concerns over economic and oil demand growth, particularly in China, have increased, causing oil prices to fall, OPEC+ production cuts mean less oil is being produced globally than is being consumed. We expect the Brent crude oil spot price to average \$82/b in 4Q24 and average \$84/b in 2025.

- **Natural gas prices.** We forecast natural gas prices will remain relatively flat in the upcoming shoulder season during September and October before prices generally rise in 2025. Price increases in 2025 reflect U.S. natural gas production that does not keep pace with growth in [U.S. liquefied natural gas \(LNG\) exports](#). We expect the Henry Hub spot price will rise from less than \$2.00 per million British thermal units (MMBtu) in August to around \$3.10/MMBtu next year.
- **Electricity generation.** A [hot start to the summer](#) has contributed to rising electricity demand this year, which is spurring more electricity generation. We expect that U.S. electricity generators will produce 3% more electric power this year than they did in 2023. Most of this increase in generation is coming from solar power, but a significant amount is also coming from natural gas.
- **Solar generation.** [Significant capacity expansions](#) are supporting the increase in solar generation. Solar accounted for 59% of U.S. generating capacity additions in the first half of 2024, an increase that was supported by the development of [new battery storage capacity](#). We expect the largest gains in solar generation in 2024 in Texas (16 billion kilowatthours [BkWh]) and in California (9 BkWh).

Notable forecast changes

Current forecast: September 10, 2024; previous forecast: August 6, 2024

	2024	2025
Change in global oil inventories (million barrels per day)	-0.9	0.0
Previous forecast	-0.6	-0.1
Change	-0.3	0.1

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

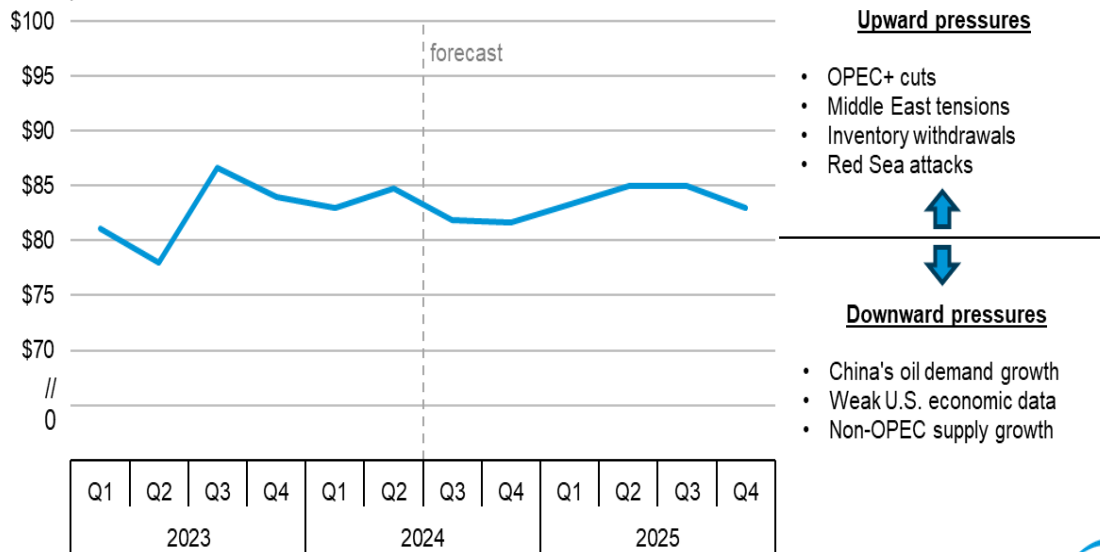
Global Oil Markets

Global oil prices and inventories

Although short-term prices have sometimes been volatile this year, oil prices have mostly traded within a relatively tight range. The Brent crude oil spot price averaged \$82 per barrel (b) in August, marking the eighth consecutive month where it averaged between \$80/b and \$90/b. Despite a drop in the Brent spot price to \$73/b on September 6, we expect ongoing withdrawals from global oil inventories stemming from OPEC+ production cuts will push the price back into that range relatively quickly.

Brent crude oil spot price and upward and downward price pressures

dollars per barrel



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, September 2024



Persistent economic concerns have reduced market expectations around global oil demand growth. Slowing global economic activity and [reduced fuel demand in China](#), one of the leading sources of global oil demand growth, as well as signs of slowing U.S. job growth in recent months, have limited any upward price momentum in recent months.

However, we still expect oil prices will rise in the coming months, driven by ongoing withdrawals from global oil inventories as a result of OPEC+ production cuts. The OPEC+ production cuts continue to cause less oil to be produced globally than is being consumed. Even before [OPEC+ announced that it will delay production increases](#) until December, we expected a significant reduction in global oil inventories through the end of this year. We now expect more oil will be taken out of inventories than we previously expected.

We estimate global oil inventories are falling by 0.9 million barrels per day (b/d) in 3Q24, and we expect they will decrease by more than 1.0 million b/d through 1Q25. As a result, we expect Brent prices will rise from \$74/b at the beginning of September to average \$82/b in December and \$83/b in 1Q25.

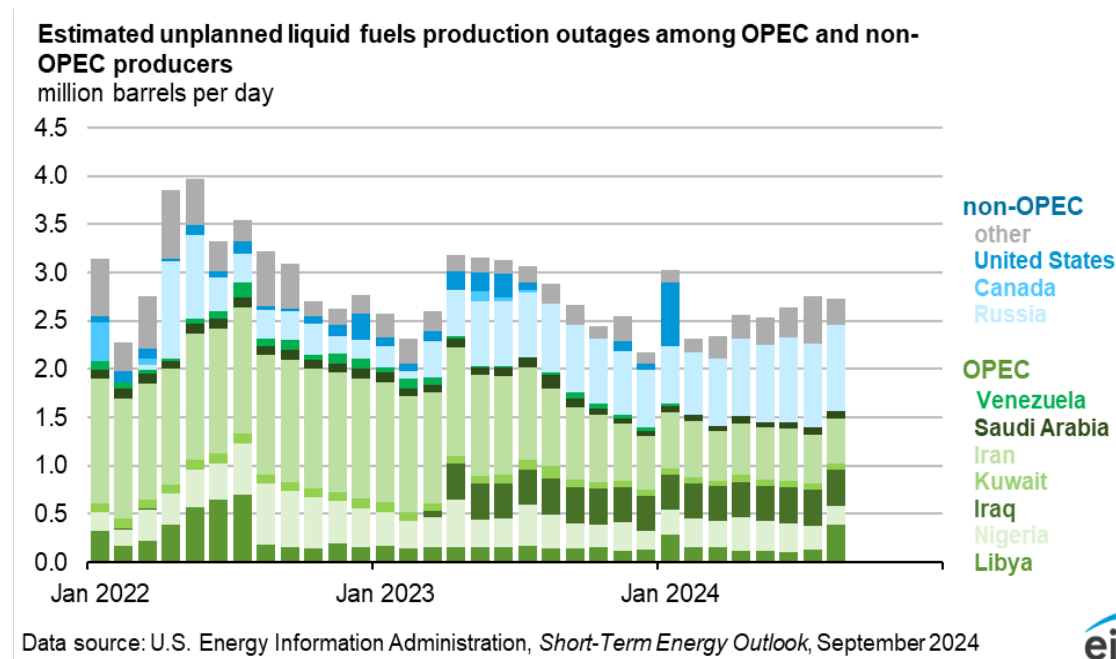
By mid-2025, we anticipate that the market will gradually return to moderate inventory builds as OPEC+ increases production through the year and as forecast production growth from countries outside of

OPEC+ begins to outweigh global oil demand growth. We estimate that global oil inventories will increase by an average of 0.5 million b/d in the second half of 2025 (2H25). We forecast the Brent price will average \$84/b in 2025.

Recent production outages in Libya add a new source of uncertainty for crude oil prices in the coming months. These outages compound existing uncertainties driven by [attacks on oil tankers in the Red Sea](#) shipping channel and the possibility the conflict in Gaza spills into neighboring countries, potentially disrupting regional oil production. Similarly, OPEC+ members could further delay the unwinding of voluntary oil production cuts now set to begin in December. Over the long term, whether global oil demand growth will outweigh supply growth from countries outside of OPEC+ remains a key uncertainty.

Global oil production and consumption

The duration of recent disruptions to crude oil production in Libya are a key uncertainty for the oil market in 4Q24. Political unrest and increased tensions between competing Libyan government factions have halted production across numerous oil fields in the country. Estimates are that production fell as low as 0.4 million b/d by the end of August, down from 1.1 million b/d in 1H24. We assume Libya's oil production will average 0.6 million b/d for the remainder of the year.



Although OPEC+ cuts and recent productions outages in Libya are limiting world oil production growth, we estimate that growth outside of OPEC+ will remain strong. We expect that global production of petroleum and other liquid fuels will increase by 0.3 million b/d in 2024. OPEC+ liquid fuels production in our forecast decreases by 1.4 million b/d in 2024, while production outside of OPEC+ increases by 1.7 million b/d, led by growth in the United States, Canada, Guyana, and Brazil. Global production of liquid fuels increases by 2.4 million b/d in 2025, with OPEC+ production increasing by 0.8 million b/d and 1.6 million b/d of production growth from countries outside of OPEC+.

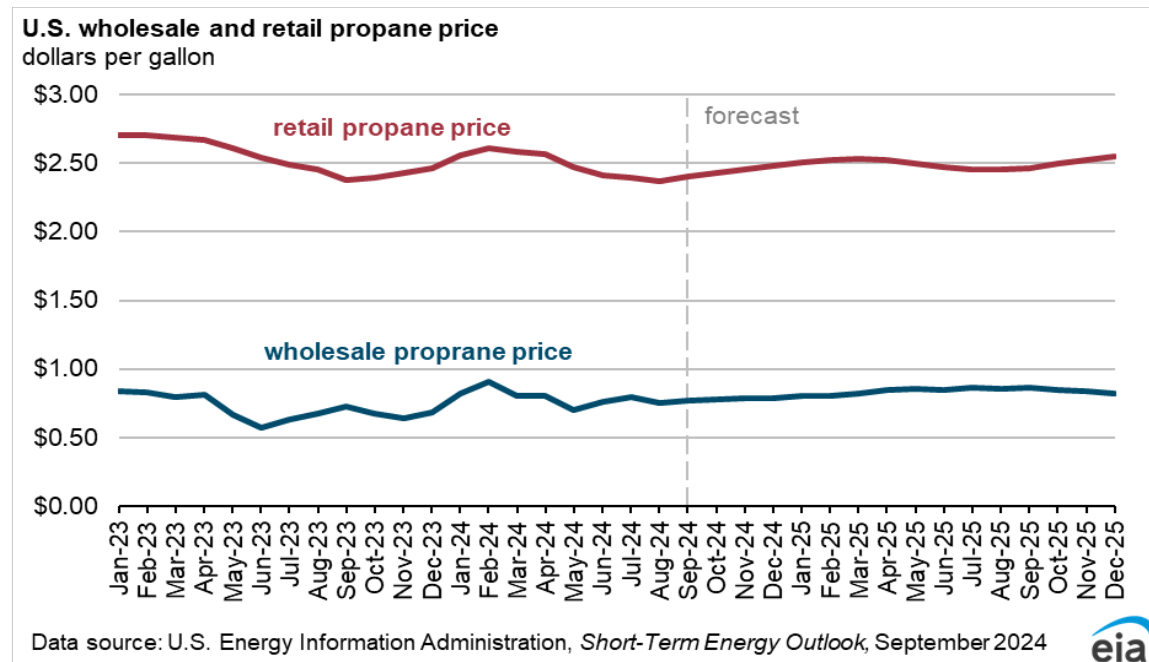
We forecast that global consumption of liquid fuels will increase by 0.9 million b/d in 2024 and 1.5 million b/d in 2025. Our 2024 forecast is down 0.2 million b/d from last month and our 2025 forecast is down 0.1 million b/d due to downward revisions to demand in China and OECD Europe. Most of the expected liquid fuels demand growth is from non-OECD countries, which increase their liquids consumption by 1.0 million b/d in 2024 and 1.3 million b/d in 2025. We revised our forecast petroleum consumption growth in China for 2024 and 2025 down because of slower economic activity as well as new monthly statistics showing a slowdown in diesel demand, jet fuel consumption, and crude oil refinery runs in China. We now forecast China’s petroleum and liquid fuels consumption will grow by about 0.1 million b/d in 2024 and 0.3 million b/d in 2025.

U.S. Petroleum Products

Mont Belvieu propane price forecast

We forecast the U.S. benchmark wholesale propane price in Mont Belvieu, Texas, will average 80 cents per gal (gal) during the 2024–25 winter heating season that runs from November through March, which is 4% (3 cents/gal) more than during the 2023–24 winter heating season.

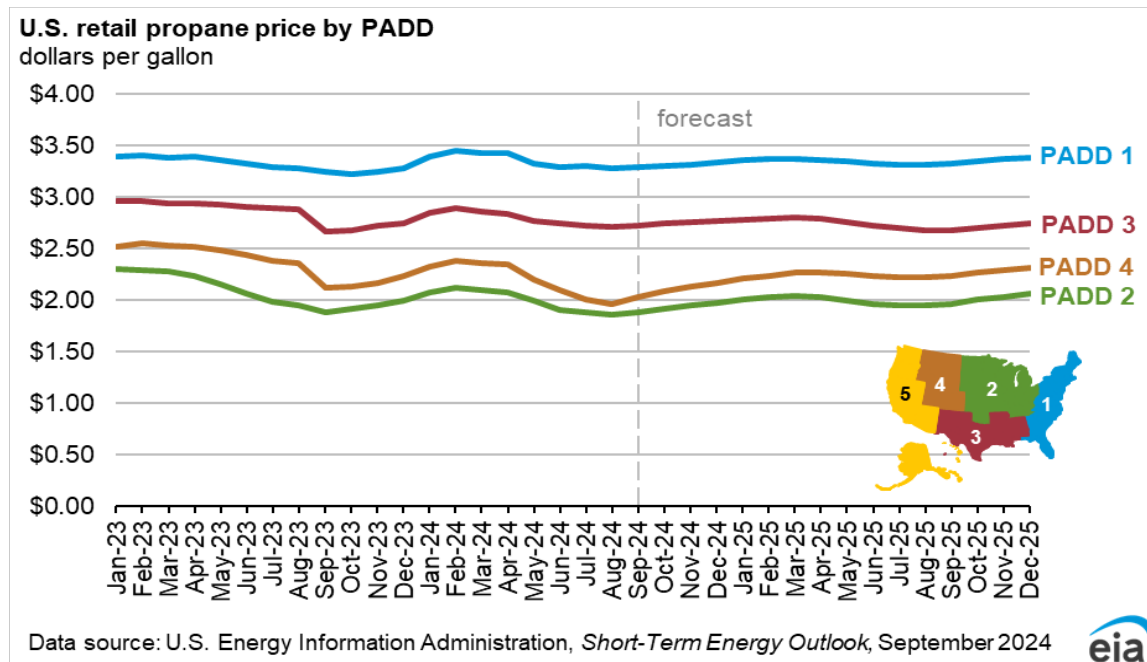
U.S. propane prices often exhibit seasonality, where prices increase in the winter, especially if the winter is colder-than-normal, increasing demand for propane’s use in space heating. We expect the Mont Belvieu spot price will increase from 76 cents/gal in August to end the winter at 82 cents/gal in March, when inventories fall to their seasonal low. We use [heating degree days](#) (HDDs) as a measure of how cold temperatures are—more HDDs indicate colder temperatures. We forecast HDDs this winter to be near the 10-year average. Wholesale propane prices are driven by [increases in the Brent crude oil price and Henry Hub natural gas price](#) during the upcoming winter. Despite our increased forecast of U.S. field production of propane compared with last year, growing demand from global markets for U.S. propane also puts some upward pressure on prices.



Retail propane price forecast

Relatively unchanged wholesale propane prices in our forecast between this winter and last means retail propane prices will also be close to those last winter. Our retail propane price forecast is closely linked to our Mont Belvieu wholesale propane price forecast. Beginning this month, in each STEO we will publish a monthly retail propane price forecast by region. Previously, we only published a winter-average price forecast in the STEOs from October through March. In the summer of 2024, we started collecting retail propane price data from April to October, in addition to our [existing data collection](#) during the winter heating season. This enhancement in our data collection allowed us to expand our forecast for retail propane prices.

We forecast that U.S. retail propane prices will average about \$2.50/gal this winter, almost unchanged from last winter. Like wholesale propane prices, retail propane prices typically increase in the winter when retail propane inventories draw down and demand increases. Retail propane prices vary significantly across regions based on local supply and consumption dynamics. Propane used for heating is most common in rural areas, and around [one-third of the households heated with propane](#) are in the Midwest. We forecast Midwest (PADD 2) retail propane prices for the winter heating season to average \$2.00/gal. On the East Coast (PADD 1), we forecast average retail propane prices this winter will be about \$3.35/gal. On the Gulf Coast (PADD 3), we forecast a \$2.80/gal average price this winter. And in the Rocky Mountains (PADD 4), we forecast a \$2.20/gal average price. We do not publish a forecast for West Coast (PADD 5) retail propane prices because we do not collect historical data to support this forecast.



New STEO biofuels table

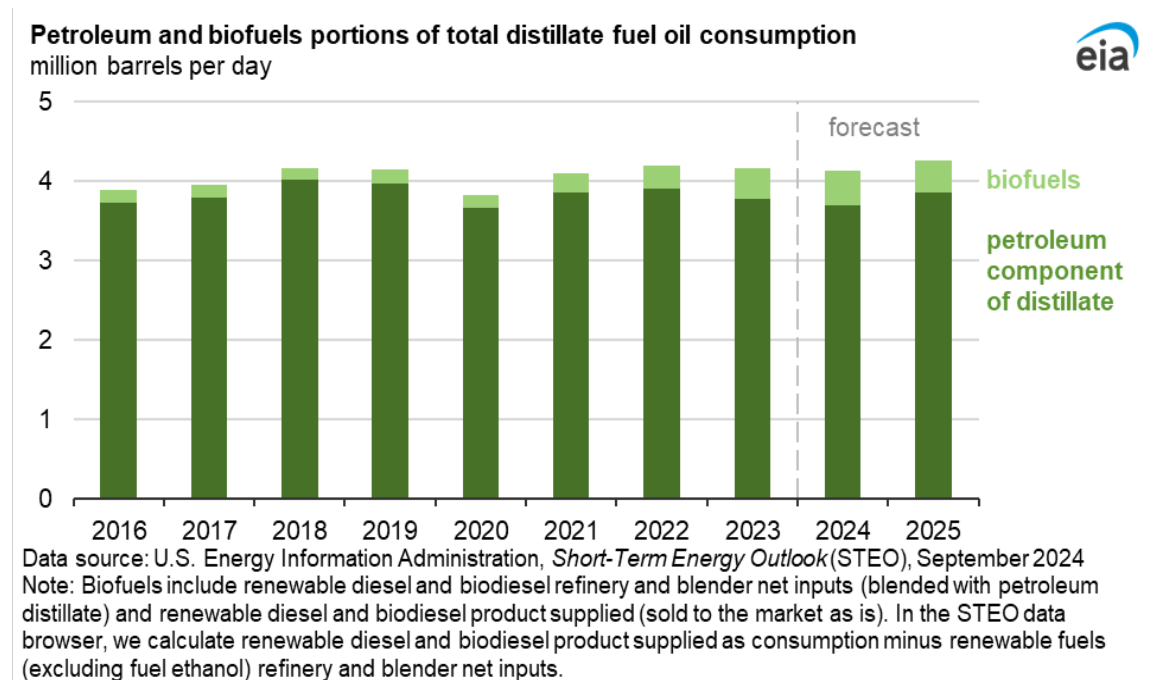
Biomass-based diesel products are [making up an increasing share](#) of total distillate fuel oil consumed in the United States. Most of this growth is occurring on the West Coast because of state-level policies in that region, notably California’s [Low Carbon Fuel Standard](#). Beginning this month, we will publish

forecasts for several new series that help to better capture how biofuels are being consumed and overall demand for distillate fuels. The most notable of these series is *total distillate fuel oil consumption*—a category that includes petroleum-based distillate fuel oil, renewable diesel, and biodiesel.

Previously, we only published product supplied of distillate fuel oil (the proxy we use for consumption) in [STEO Table 4a](#). These data included volumes of [biodiesel](#) and [renewable diesel](#) reported to EIA as refiner and blender net inputs. However, distillate fuel oil product supplied does not include the larger volume of biofuel consumption that we report as standalone biodiesel and renewable diesel product supplied, although much is likely blended with petroleum-based distillate fuel downstream of what we capture in our surveys. Our new data series, called total distillate fuel oil consumption, adds these biodiesel and renewable diesel product supplied volumes to petroleum-based distillate fuel oil product supplied. This new series provides a more complete picture of all fuels being used as distillate fuel oil.

Our data show that in 2023 total distillate fuel oil consumption was 4.2 million b/d in the United States, of which 92.5% was petroleum-based diesel and 7.5% (310,000 b/d) was either biodiesel or renewable diesel. We expect that although total distillate fuel oil consumption will fall slightly this year to 4.1 million b/d, the biofuel component will rise to 360,000 b/d.

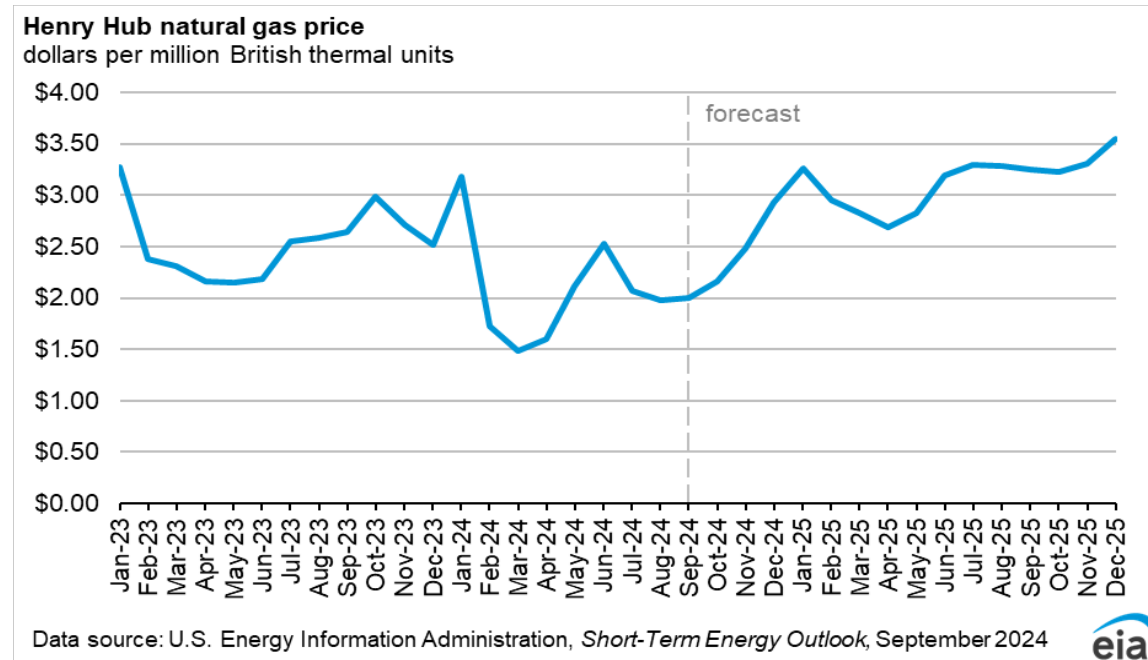
Our new total distillate fuel oil category and other STEO biofuel forecasts are available in [STEO Table 4d](#) as well as in the [STEO Data Browser](#).



Natural Gas

Natural gas prices

We forecast that natural gas prices will remain relatively flat in the upcoming shoulder season of September and October before generally rising in 2025. The U.S. benchmark Henry Hub natural gas price averaged \$1.98 per million British thermal units (MMBtu) in August, down 4% from July.



September Henry Hub prices in our forecast remain close to prices in August, as we enter the shoulder season when less natural gas is consumed overall and before demand for space heating increases in the United States. We expect U.S. natural gas consumption to decline by 8% to 79 billion cubic feet per day (Bcf/d) between August and September.

With relatively flat production and reduced natural gas consumption because of a seasonal decrease in demand from the electric power sector, we expect the Henry Hub natural gas spot price to stay close to \$2.00/MMBtu the next couple of months and remain below \$3.00/MMBtu through the end of 2024.

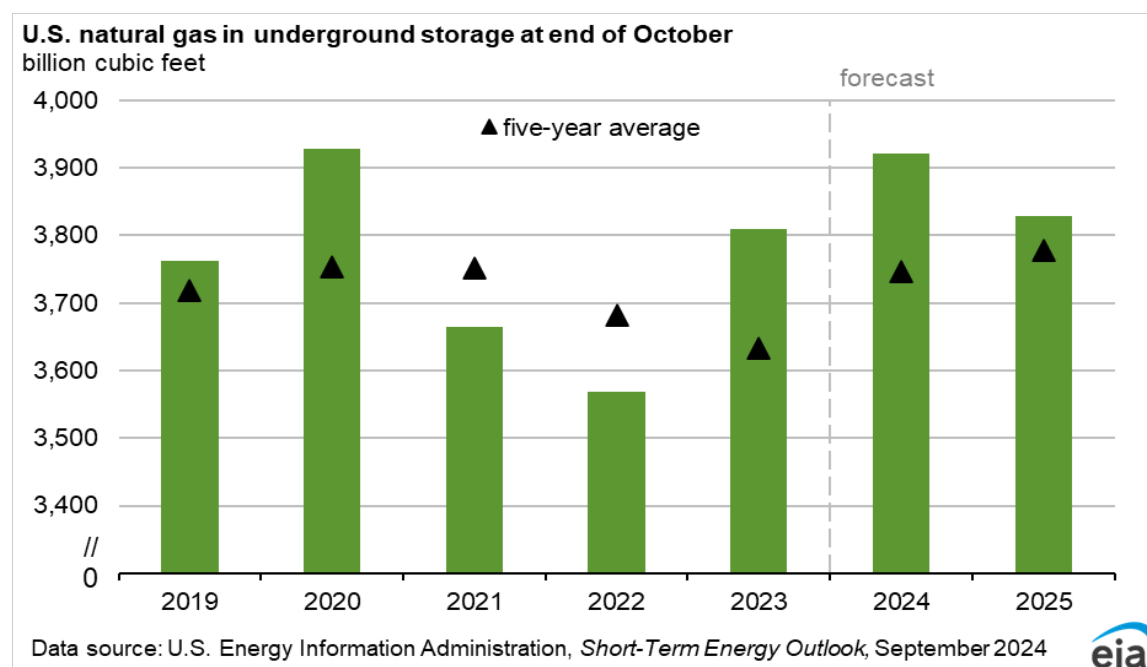
In 2025, we expect prices to rise as liquefied natural gas (LNG) exports increase while domestic consumption and production remain relatively flat for much of the year. We forecast U.S. consumption of natural gas to average about 90 Bcf/d in 2025, which is about the same as our forecast for total consumption in 2024. However, we expect that LNG exports will rise by more than 2 Bcf/d (17%) next year as [export capacity expands](#).

We expect U.S. dry natural gas production will remain relatively unchanged over the next several months as some producers, particularly in the Marcellus and Haynesville regions, [continue to curtail production](#) until prices rise. U.S. dry natural gas production averages 104 Bcf/d in 4Q24 in our forecast and 105 Bcf/d during 2025. Most of the growth in natural gas production comes in late 2025 when we

expect new LNG export facilities to ramp up production. We forecast the Henry Hub price to average around \$2.20/MMBtu in 2024 and \$3.10/MMBtu in 2025.

Natural gas storage

We expect less natural gas [storage injections](#) than the five-year average (2019–2023) through the remainder of this year’s injection season (April–October). Nevertheless, we expect inventories will end the injection season on October 31 with 5% more natural gas than the five-year average, down from a surplus of 11% at the end of August. Our anticipation of a narrowing surplus to the five-year average supports our expectation of rising prices in the coming months. If U.S. natural gas production is less than our forecast and consumption increases, leading to inventories ending the injection season closer to the five-year average, natural gas prices could be higher than forecast. At the same time, with peak hurricane season approaching, if LNG exports were disrupted because of a hurricane on the Gulf Coast, resulting in more U.S. inventories than expected, natural gas prices could be lower than in our forecast.



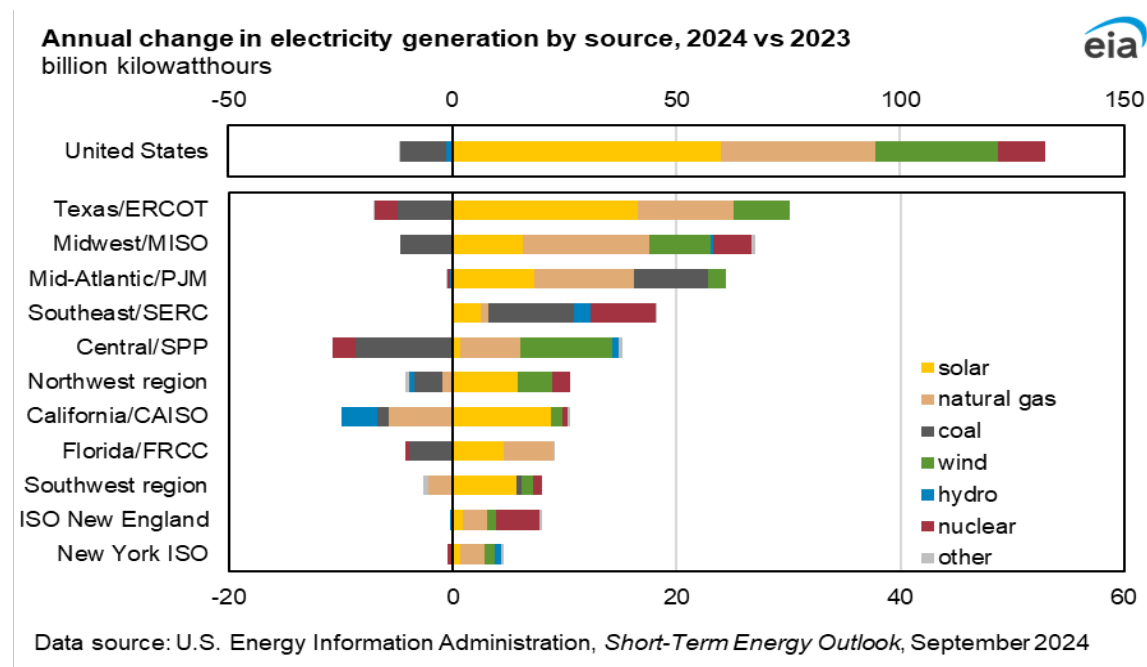
Electricity, Coal, and Renewables

Electricity generation

A [hot start to the summer](#) increased electricity generation this year. We forecast the U.S. power sector will generate 3% (121 billion kilowatthours [BkWh]) more electricity this year than in 2023, as a result of both more air-conditioning demand earlier in the summer and our expectation of increases in electricity demand during the fourth quarter. We forecast the U.S. power sector will generate an additional 1% (60 BkWh) more electricity in 2025, largely because of ongoing growth in electricity demand, particularly from the industrial sector.

Solar power continues to supply most of the increase in U.S. electricity generation. Nationwide, we forecast a 37% increase in solar power (60 BkWh) this year. The second-leading source of growth in U.S.

generation is natural gas, with a 2% increase (35 BkWh), followed by smaller increases in wind (up 6%, or 27 BkWh) and nuclear (up 1%, or 11 BkWh).



Generation by utility-scale solar-powered facilities is growing across all regions of the United States and is set to increase by 34% nationwide this year, supported by the rapid installation of new solar projects. [Solar generating capacity](#) grew in the first half of 2024 by 12 gigawatts, 59% of capacity additions across all types of energy sources during that period. This increase in solar capacity is aided by parallel development of [battery storage](#), which provides power to the grid during the rapid ramping up or down of solar power during the early morning or evening hours. We expect annual solar generation will increase the most between 2023 and 2024 in Texas/ERCOT (17 BkWh) and in California/CAISO (9 BkWh).

Low natural gas fuel costs and higher overall electricity demand are contributing to increased generation by natural gas-fired power plants in the United States this year. A small number of new combined-cycle power plants have come online in the past year, but that new generating capacity has been offset by retirements at other natural gas plants. Forecast natural gas generation in 2024 is increasing the most in the Midwest (up 11 BkWh) and in the Mid-Atlantic (up 9 BkWh). We expect less natural gas generation in California this year (down 6 BkWh) and in the Southwest (down 2 BkWh), in response to large increases in solar generation.

Generation from coal-fired power plants is down in most regions as it continues being displaced by increased generation from natural gas and renewables, along with [coal plant retirements](#). Coal-to-natural gas switching is most evident in the Central/SPP region, where we forecast 9 BkWh less coal generation this year than in 2023.

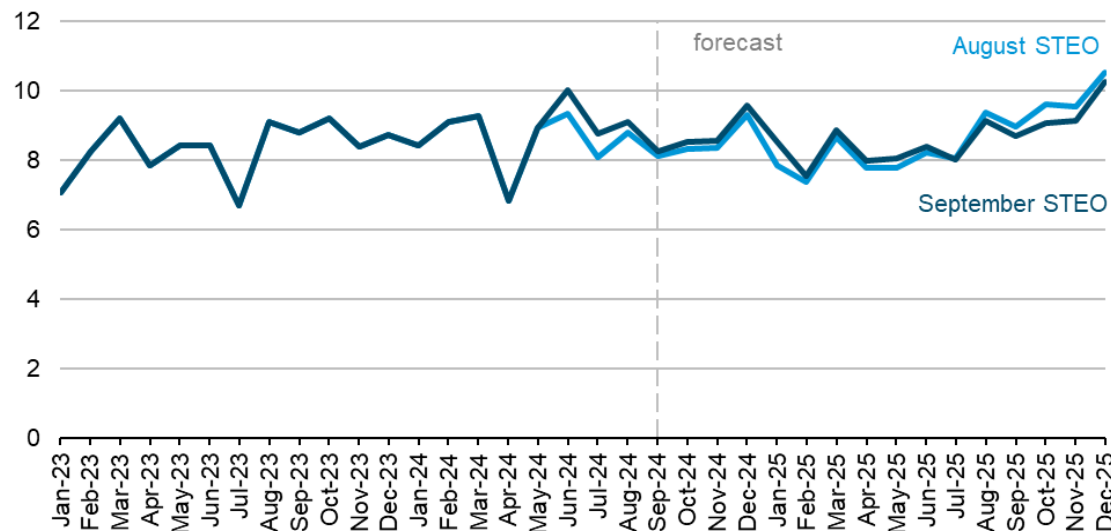
Coal markets

Despite a drop in U.S. metallurgical coal exports in July, we have raised our forecast for coal exports after incoming data showing strong exports in 1H24. However, we expect exports may fall slightly with a

potential slowing of global demand for U.S. coal. U.S. metallurgical coal exports fell 26% in July after a 34% jump in June that pushed total U.S. exports to 10 million short tons (MMst). However, the July drop was likely temporary, resulting from a more normal flow of export shipments after a June spike in exports as the Port of Baltimore reopened following the [Key Bridge collapse](#). After the strong pace of metallurgical coal exports in 1H24, especially to the key U.S. coal export market of India where steel demand [is rising](#), we raised our forecast of metallurgical coal exports for 2024 by 6% to 53 MMst from our August STEO. We forecast metallurgical coal exports to remain steady at 52 MMst in 2025, although the potential for a [decline in steel demand in China](#) is a possible downside risk to the forecast.

Meanwhile, thermal coal exports rose 7% in July. We have kept our forecast of [thermal coal exports](#) mostly unchanged at 53 MMst, as global coal-fired power generation [remains level](#) in 2024. We expect thermal coal exports to total 52 MMst in 2025. As a result, we forecast total U.S. coal exports of 105 MMst in 2024, up 5% from 2023.

U.S. coal exports million short tons



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook* (STEO), September 2024



Despite an increase in exports this year, U.S. coal production will decline because of falling domestic consumption. We forecast U.S. coal production will total about 500 MMst in 2024, down 13% from last year. With the shoulder season for electric generation approaching after cooler temperatures than normal in August for the mid-Atlantic and the Midwest, we have lowered our forecast of U.S. electric power coal consumption for 2024 by 1% to 379 MMst compared with the August STEO, and we expect overall coal consumption to be down 2% from 2023. We expect coal production will fall by more than consumption in 2024 as withdrawals from inventories supply a significant share of consumption this year.

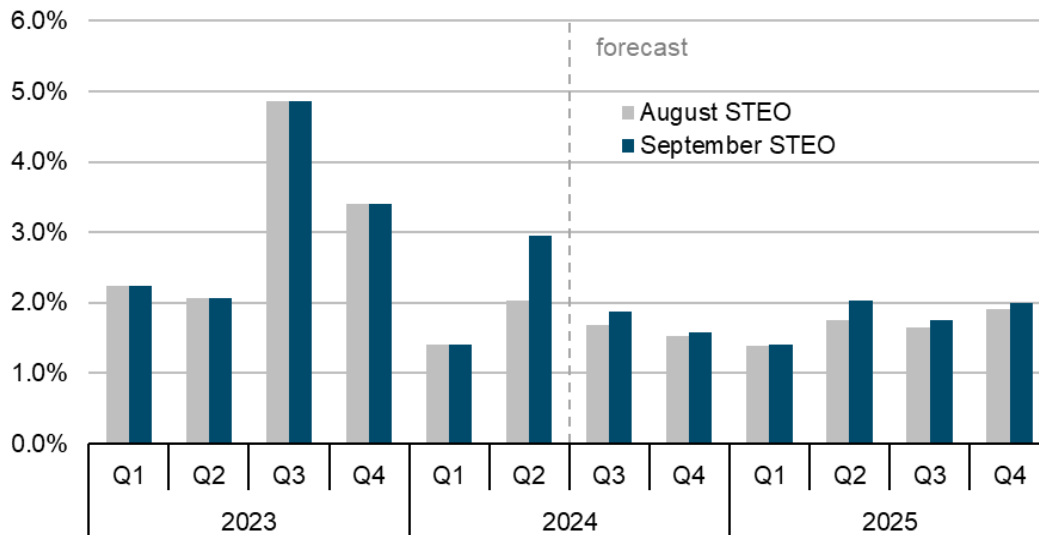
Economy, Weather, and CO₂

U.S. macroeconomics

Our forecast for September 2024 assumes real GDP will grow by 2.6% in 2024 and 1.8% in 2025, both revised up 0.2 percentage points from our August STEO. We revised our assumptions based on updated data from the Bureau of Economic Analysis. Their [most recent estimate](#) shows that real GDP grew at an annualized rate of 3.0% in the second quarter of 2024 (2Q24), 1.0 percentage point higher than the growth rate assumed in last month’s forecast.

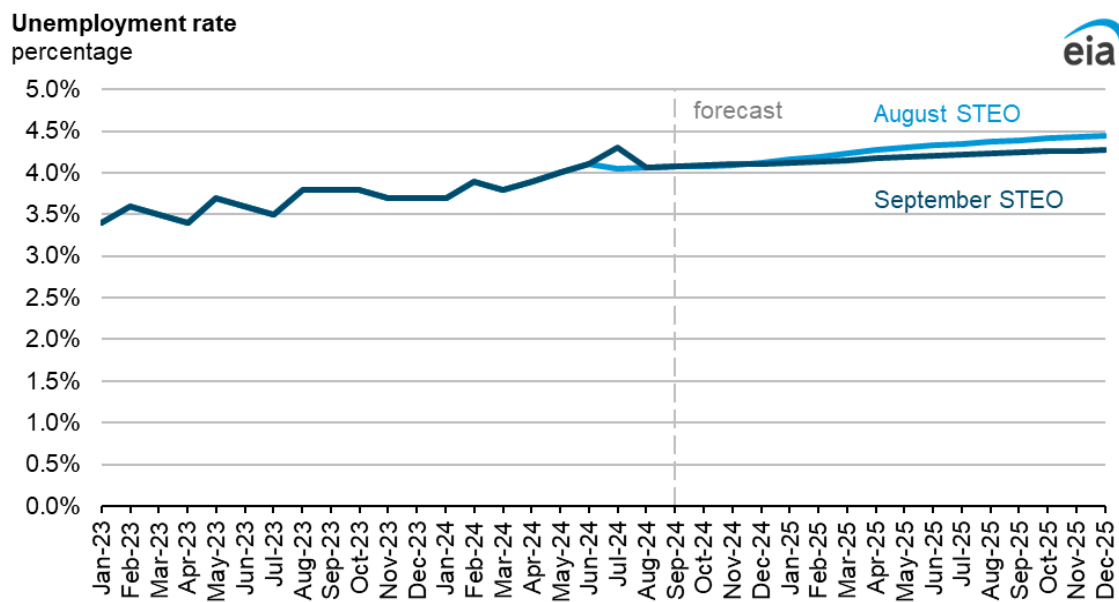
Real GDP

annualized quarterly growth rate



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook* (STEO), September 2024

The higher GDP growth came alongside signs of a softening U.S. labor market. The unemployment rate stands at [4.2% as of August 2024](#), an down of 0.1 percentage point from July. Although this data was released after we finished our analysis for this month’s STEO, the small decrease was in line with assumptions in our forecast.. Compared, with last month’s STEO, our forecast assumes the unemployment rate will be slightly lower in 2025.



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook* (STEO), September 2024

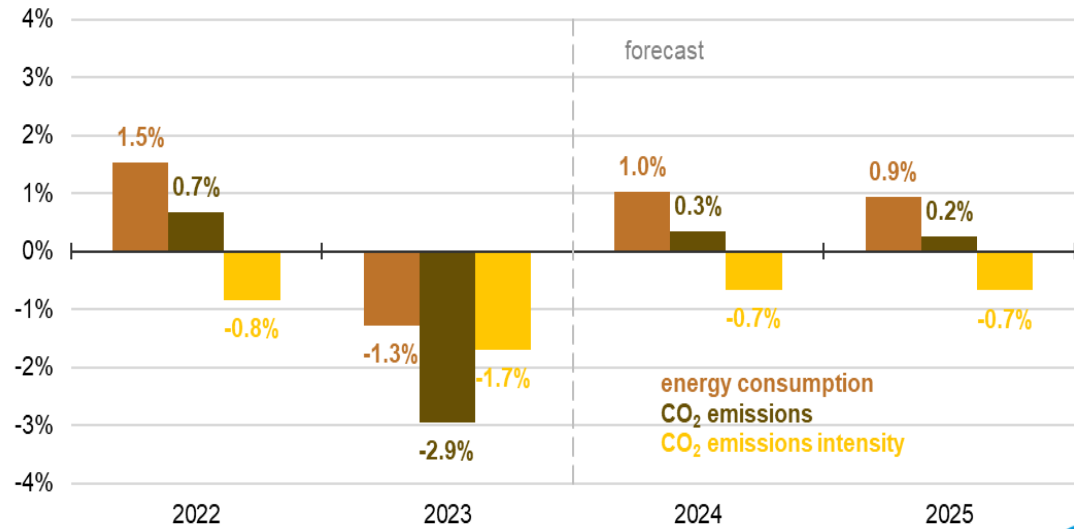
The macroeconomic forecasts are based on S&P Global’s macroeconomic model. We incorporate STEO energy price forecasts into the model to obtain our final macroeconomic assumptions.

Emissions

We expect U.S. energy-related carbon dioxide (CO₂) emissions to remain flat between 2023 and 2025. In 2024, the stability of total CO₂ emissions is a result of rising natural gas consumption across sectors this year offset by less generation from coal. Emissions in 2025 remain unchanged as a less than 1% decrease in natural gas emissions, caused by a decrease in natural gas-fired electricity generation, is offset by a 1% increase in petroleum emissions, associated with increased diesel consumption.

Although we expect U.S. CO₂ emissions to remain stable, we expect the carbon intensity of energy, or total energy-related CO₂ emissions per unit of energy consumed, to decline by 1% in both 2024 and 2025. This reduction is primarily caused by renewable energy sources supplying an increasing share of U.S. energy. We expect U.S. primary energy consumption to grow by almost 1% in both years, with more than 50% of this growth met by solar, wind, and hydropower. Increased use of renewable energy sources allows overall energy consumption to grow without raising emissions, therefore lowering carbon intensity.

Annual change in U.S. energy consumption, energy-related CO₂ emissions, and CO₂ emissions intensity percentage



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, September 2024



Weather

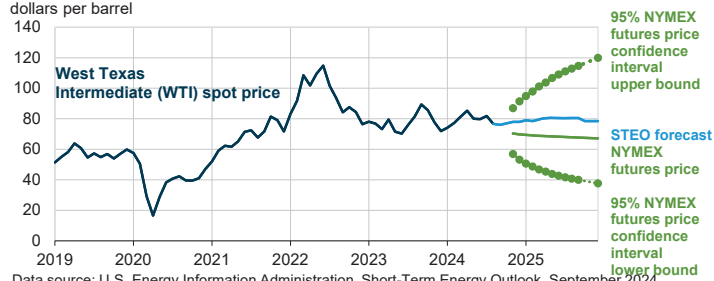
Although the summer got off to a much hotter start than last year, 3Q24 is set to be a bit milder than last year. Our forecast assumes the United States will average about 200 cooling degree days (CDDs) in September, 2% fewer cooling degree days than in September 2023, contributing to a slightly cooler third quarter in 2024 than in 2023. However, because of the heat waves earlier this summer, we expect all of 2024 to be hotter than 2023, totaling 1,570 CDDs overall (6% more CDDs than 2023). We expect a cooler start to the 2024–2025 winter heating season (November–March), with 9% more heating degree days in 4Q24 than in 4Q23.

Short-Term Energy Outlook Chart Gallery



September 10, 2024

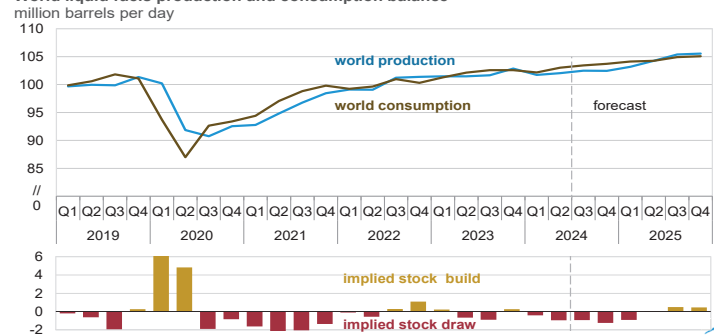
West Texas Intermediate (WTI) crude oil price and NYMEX confidence intervals



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024, CME Group, Bloomberg, L.P., and Refinitiv an LSEG Business
 Note: Confidence interval derived from options market information for the five trading days ending September 5, 2024. Intervals not calculated for months with sparse trading in near-the-money options contracts.



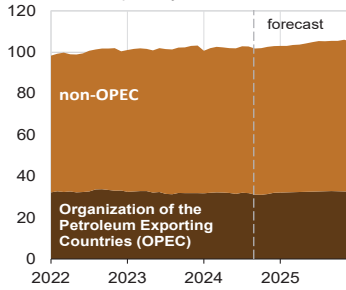
World liquid fuels production and consumption balance



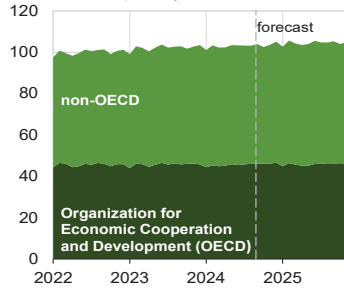
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024




World liquid fuels production
million barrels per day

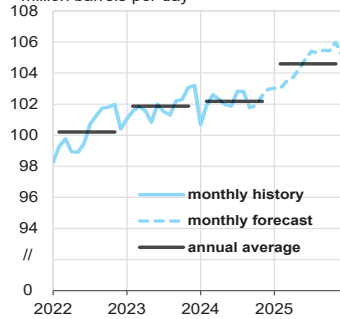


World liquid fuels consumption
million barrels per day

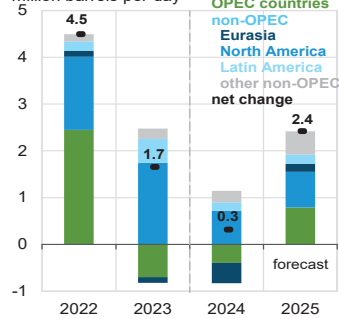



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024 

World crude oil and liquid fuels production
million barrels per day

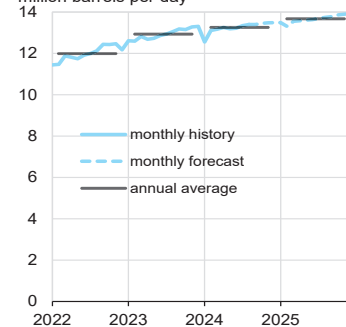


Components of annual change
million barrels per day

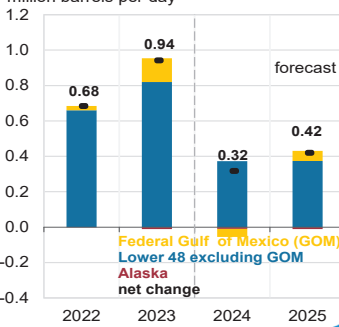



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024 

U.S. crude oil production
million barrels per day

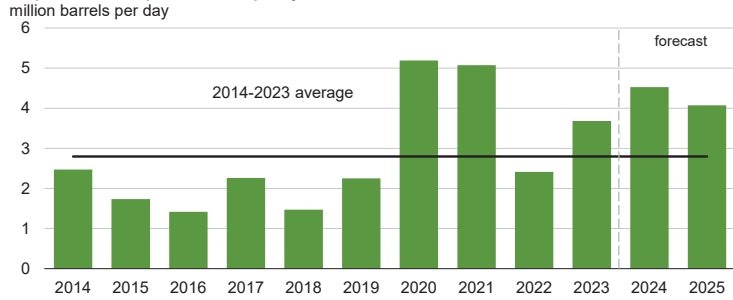


Components of annual change
million barrels per day



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024 

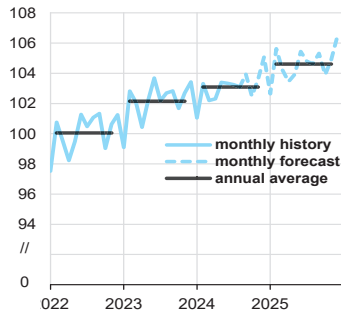
**Organization of the Petroleum Exporting Countries (OPEC)
surplus crude oil production capacity**



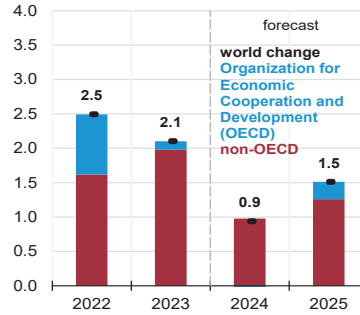
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September
 Note: Black line represents 2014-2023 average (2.8 million barrels per day).



World liquid fuels consumption
million barrels per day



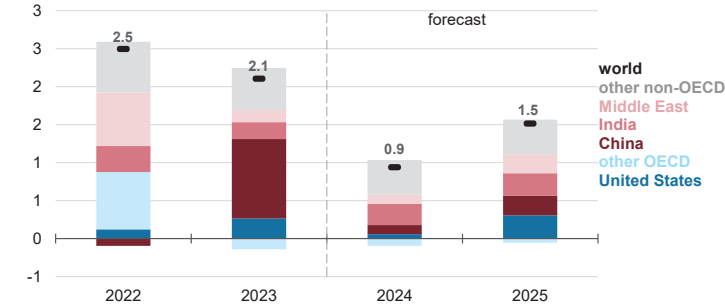
Components of annual change
million barrels per day



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024



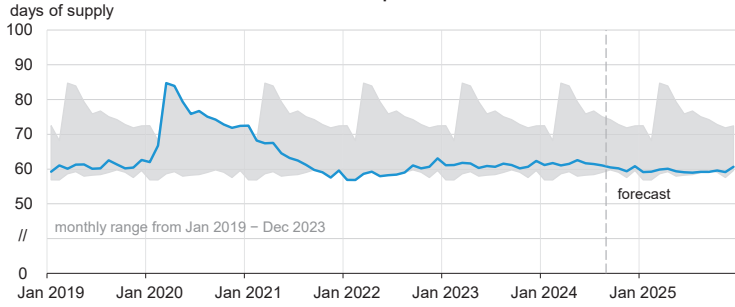
Annual change in world liquid fuels consumption
million barrels per day



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024



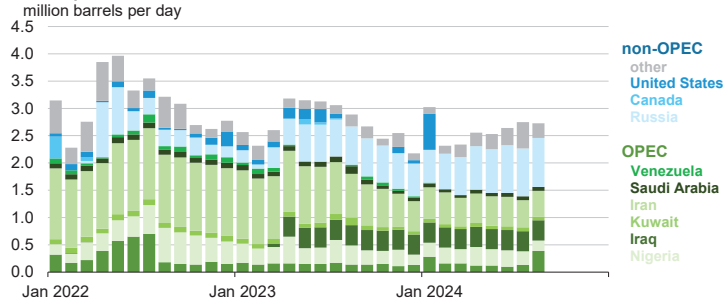
Organization for Economic Cooperation and Development (OECD)
commercial inventories of crude oil and other liquids



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024



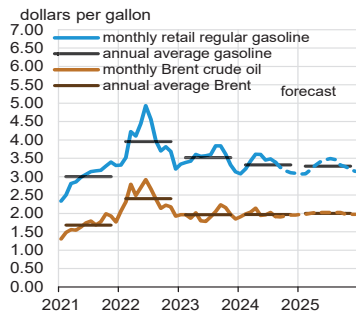
Estimated unplanned liquid fuels production outages among OPEC and non-OPEC producers



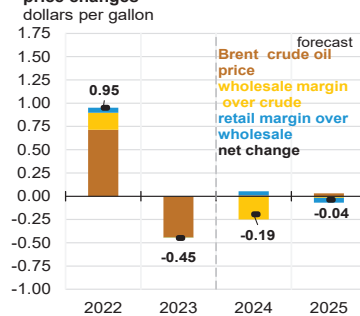
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024



U.S. gasoline and crude oil prices



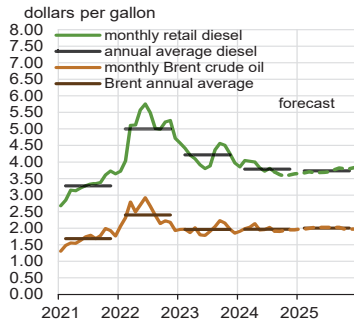
Components of annual gasoline price changes



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024, and Refinitiv an LSEG Business

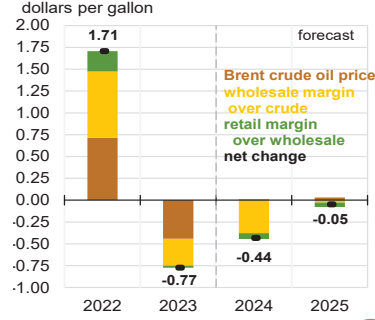


U.S. diesel and crude oil prices

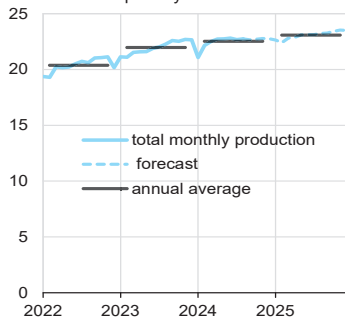


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024, and Refinitiv an LSEG Business

Components of annual diesel price changes

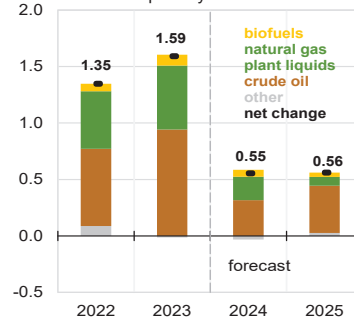


U.S. crude oil and liquid fuels production

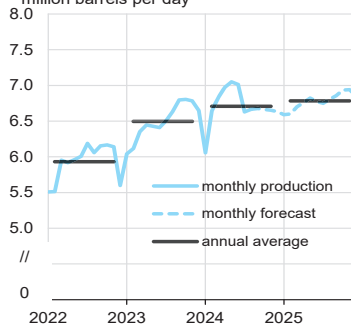


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024

Components of annual change

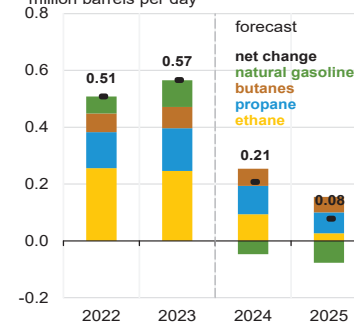


U.S. natural gas plant liquids production

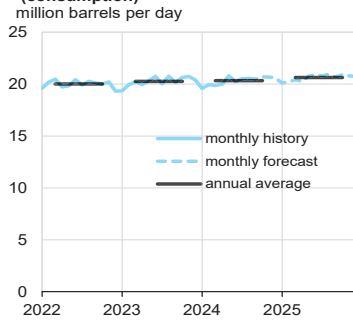


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024

Components of annual change

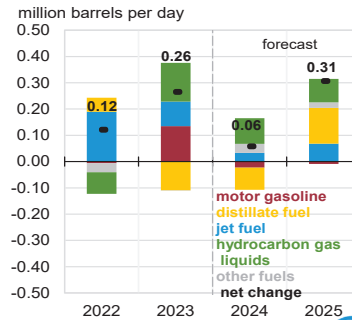


U.S. liquid fuels product supplied (consumption)

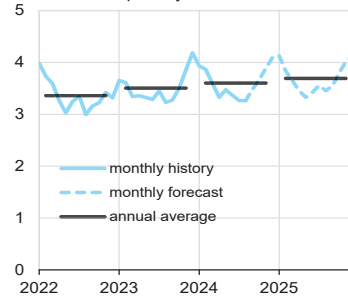


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024

Components of annual change

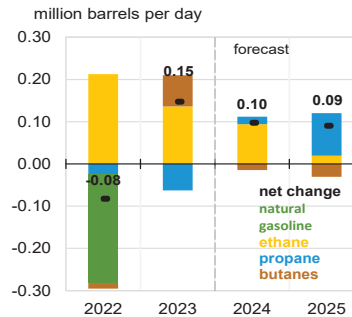


U.S. hydrocarbon gas liquids product supplied (consumption)

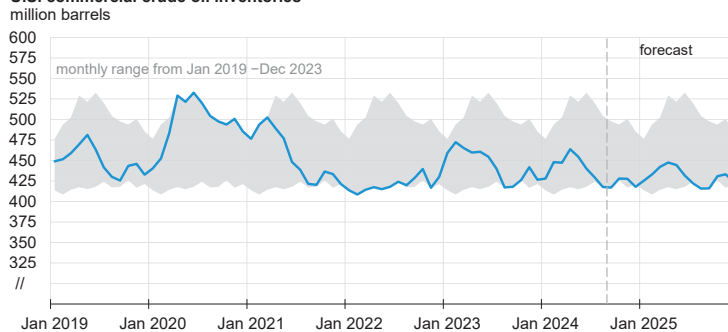


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024

Components of annual change



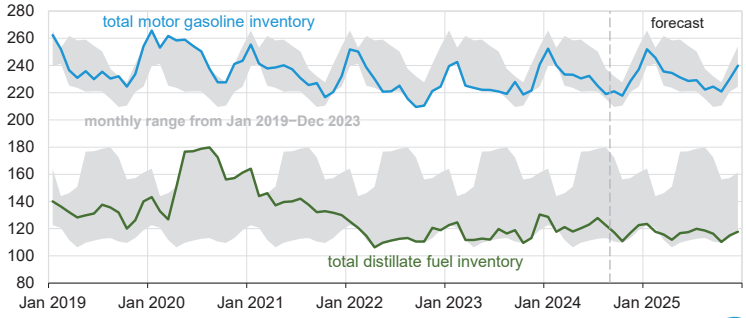
U.S. commercial crude oil inventories



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

U.S. gasoline and distillate inventories

million barrels

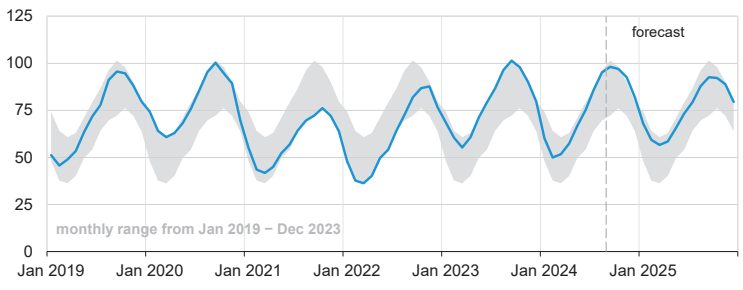


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024



U.S. commercial propane inventories

million barrels



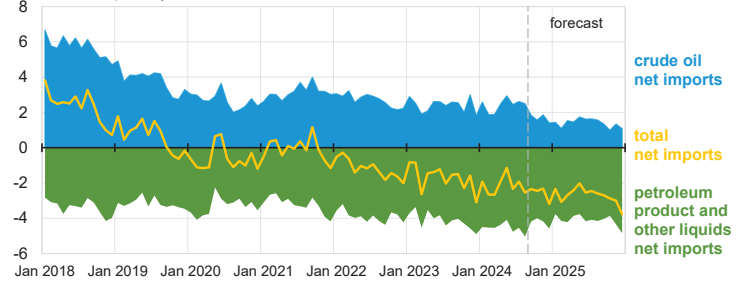
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024

Note: Excludes propylene.



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

million barrels per day

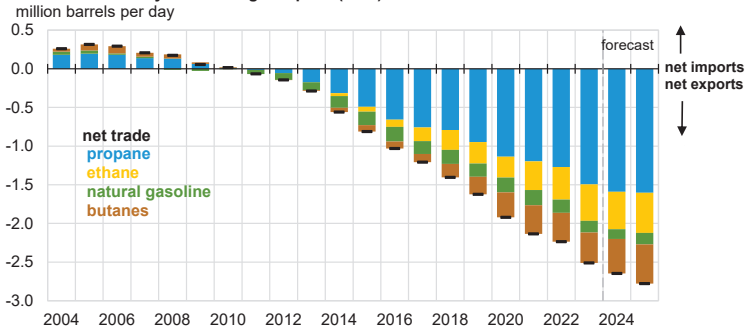


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September

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)



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024



Henry Hub natural gas price and NYMEX confidence intervals

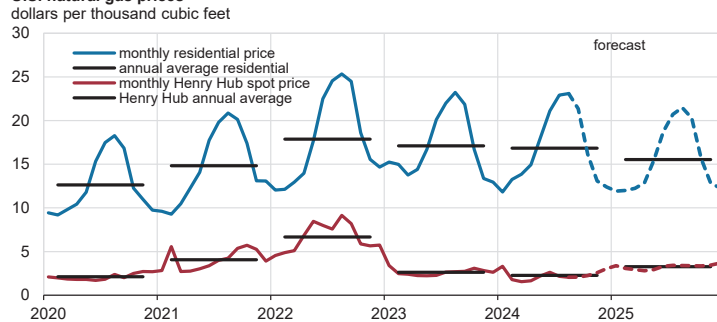


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024, CME Group, and Refinitiv an LSEG Business

Note: Confidence interval derived from options market information for the five trading days ending September 5, 2024. Intervals not calculated for months with sparse trading in near-the-money options contracts.



U.S. natural gas prices

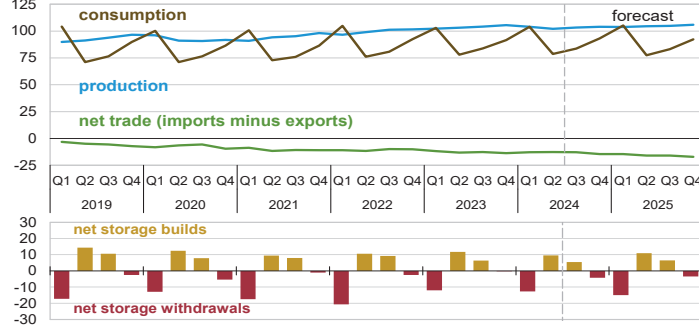


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024, and Refinitiv an LSEG Business



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

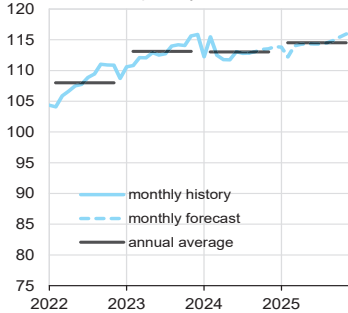
billion cubic feet per day



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024

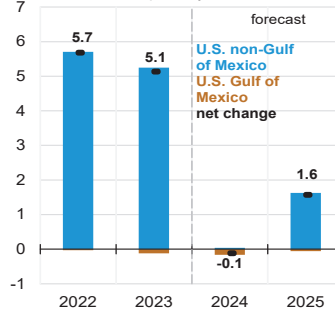
U.S. marketed natural gas production

billion cubic feet per day



Components of annual change

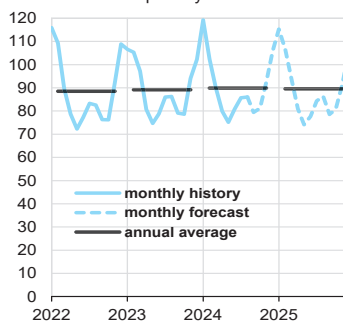
billion cubic feet per day



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024

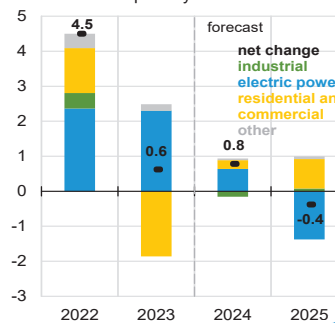
U.S. natural gas consumption

billion cubic feet per day



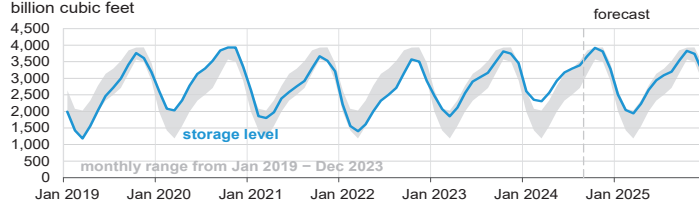
Components of annual change

billion cubic feet per day

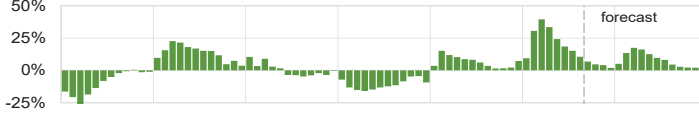


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024

U.S. working natural gas in storage

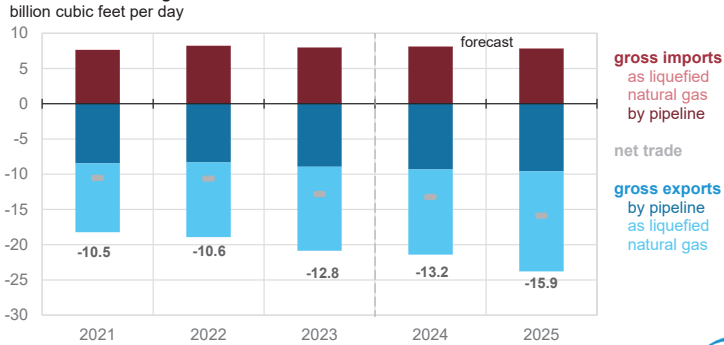


Percentage deviation from 2019 – 2023 average



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024

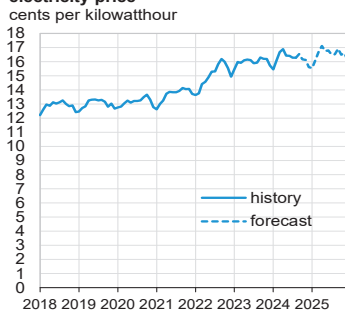
U.S. annual natural gas trade



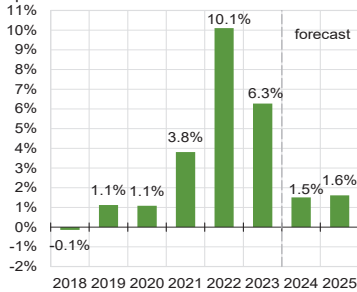
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024



U.S. monthly nominal residential electricity price



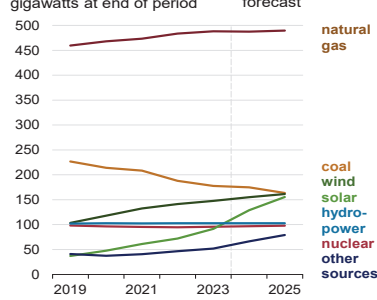
Annual growth in nominal residential electricity prices



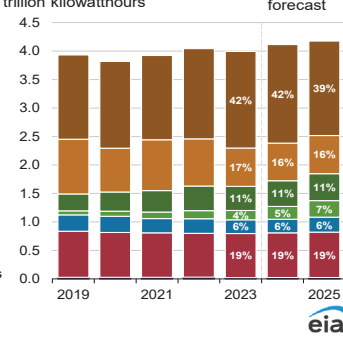
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024



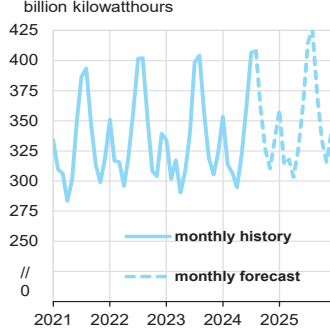
U.S. electric power sector generating capacity
gigawatts at end of period



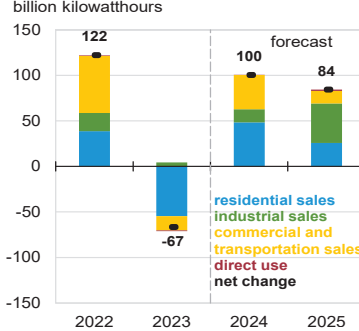
U.S. electricity generation by source
trillion kilowatthours



U.S. electricity consumption
billion kilowatthours

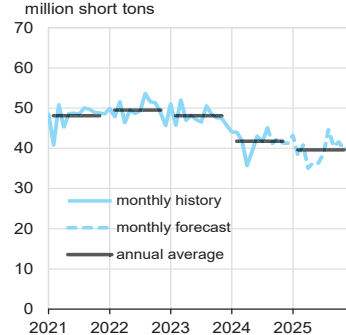


Components of annual change
billion kilowatthours

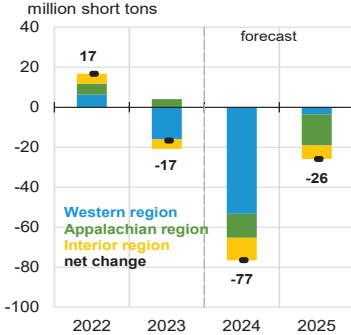


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024

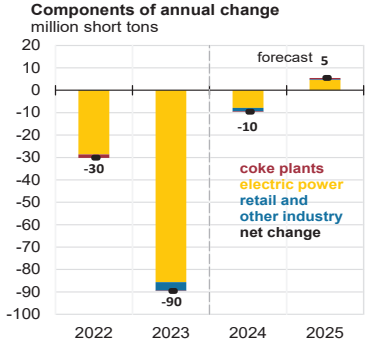
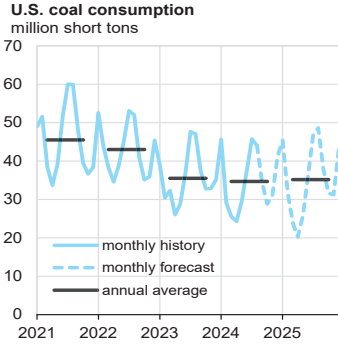
U.S. coal production
million short tons



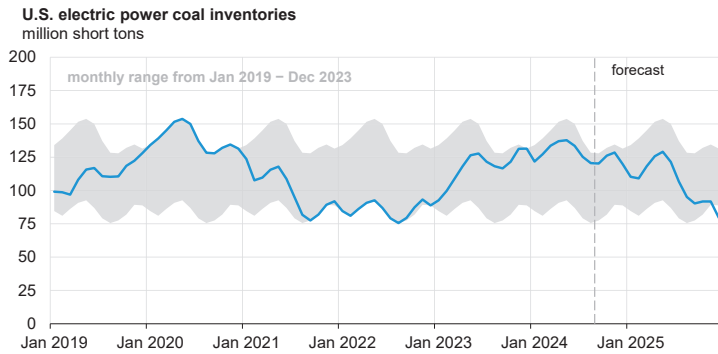
Components of annual change
million short tons



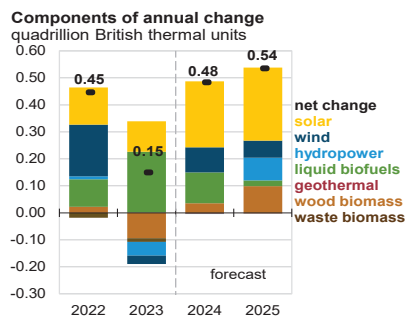
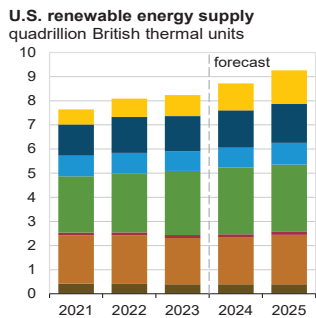
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024

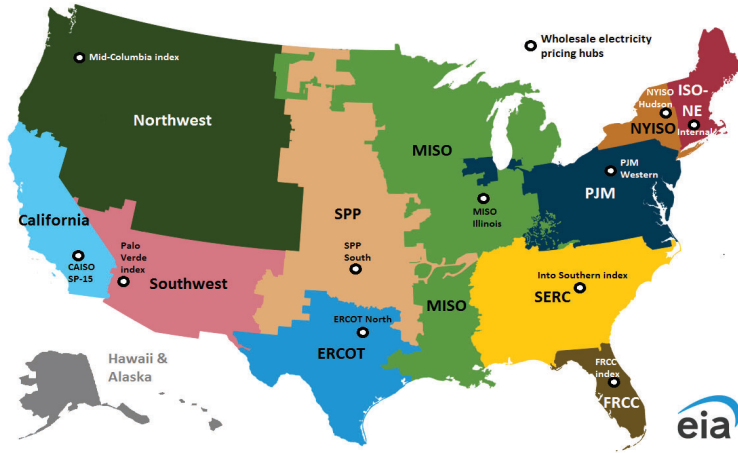


Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024

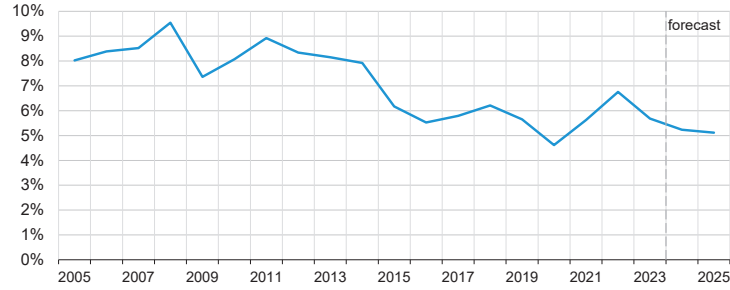
Note: Hydropower excludes pumped storage generation. Liquids include ethanol, biodiesel, renewable diesel, other biofuels, and biofuel losses and coproducts. Waste biomass includes municipal waste from biogenic sources, landfill gas, and non-wood waste.



Short-Term Energy Outlook electricity supply regions



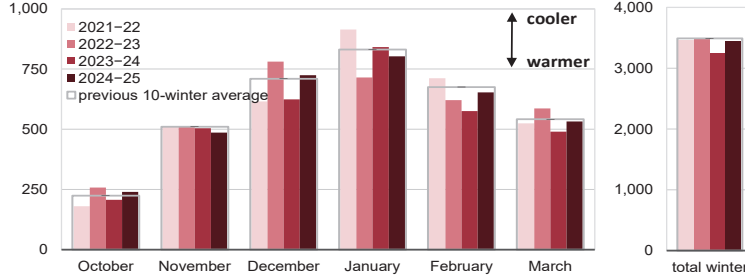
U.S. annual energy expenditures share of gross domestic product



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024



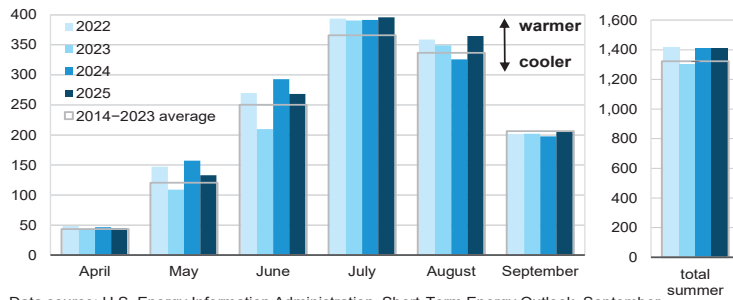
U.S. winter heating degree days population-weighted



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024
 Note: EIA calculations based on National Oceanic and Atmospheric Administration (NOAA) data. Projections reflect NOAA's 14-16 month outlook.



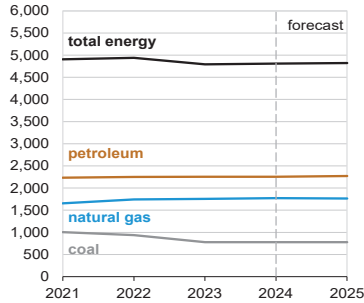
U.S. summer cooling degree days
population-weighted



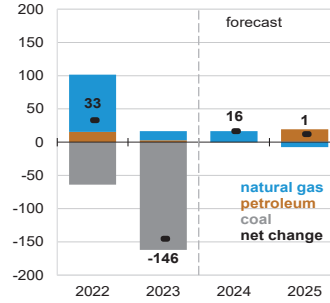
Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024
Note: EIA calculations based on National Oceanic and Atmospheric Administration (NOAA) data. Projections reflect NOAA's 14-16 month outlook.



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



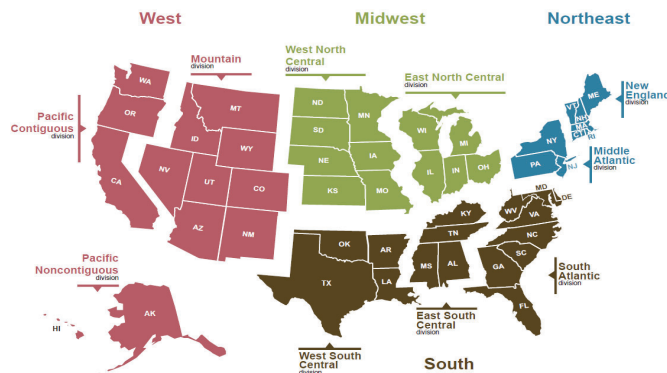
Components of annual change
million metric tons



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2024



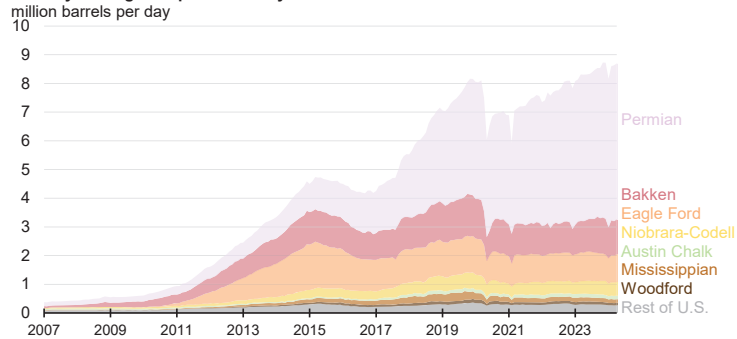
U.S. Census regions and divisions



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



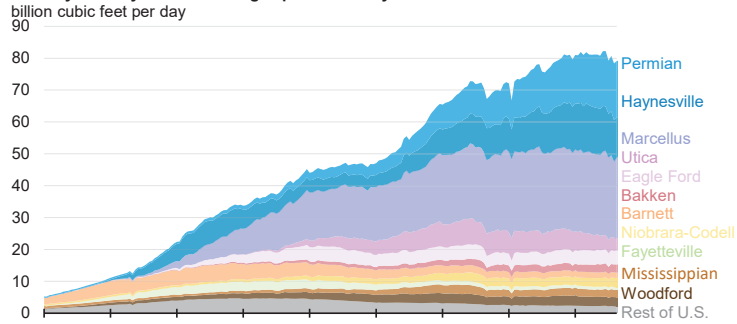
Monthly U.S. tight oil production by formation



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



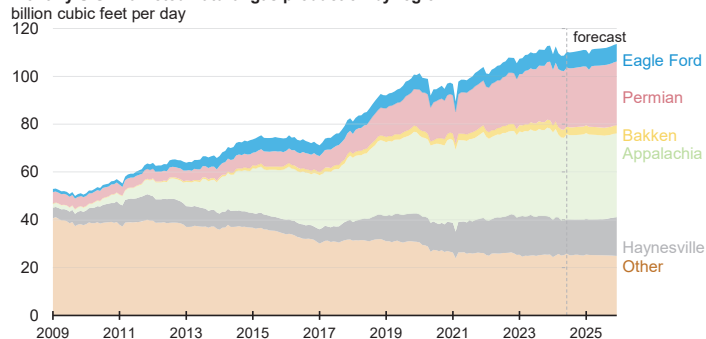
Monthly U.S. dry shale natural gas production by formation



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



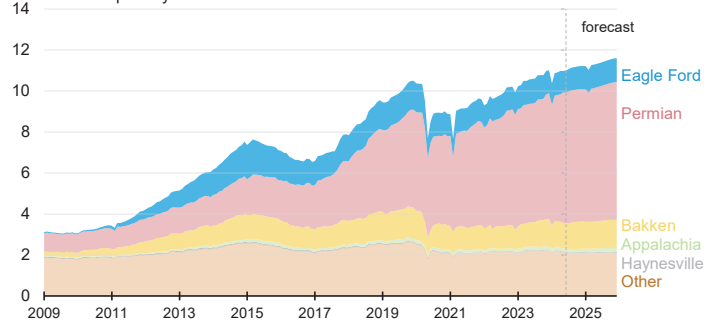
Monthly U.S. marketed natural gas production by region



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



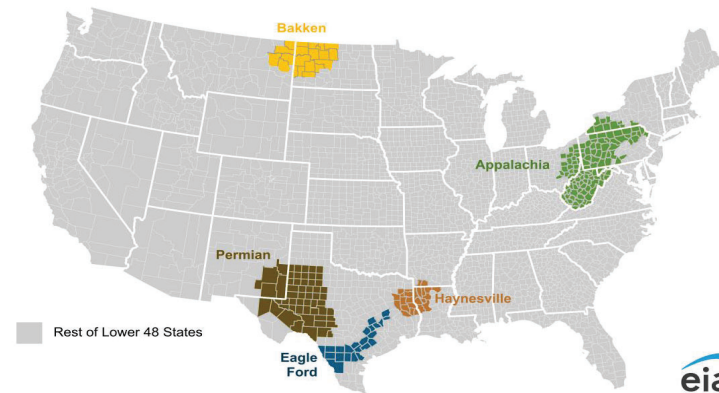
Monthly U.S. crude oil production by region
million barrels per day



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



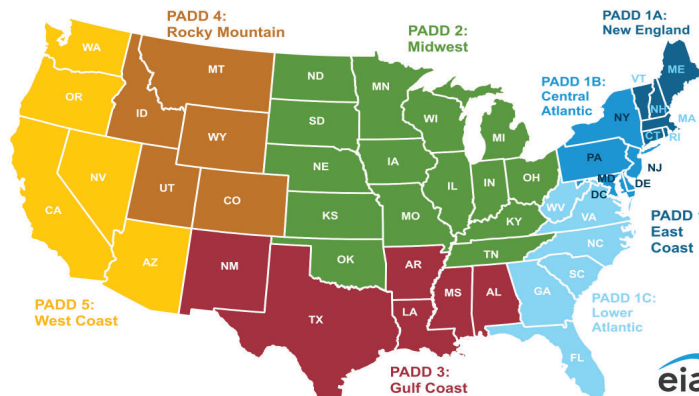
U.S. production regions



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, and the U.S. Census Bureau



U.S. Petroleum Administration for Defense Districts (PADD) regions



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



Table 1. U.S. Energy Markets Summary

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Energy Production															
Crude Oil Production (a) (million barrels per day)	12.67	12.76	13.05	13.25	12.94	13.22	13.38	13.47	13.45	13.60	13.73	13.89	12.93	13.25	13.67
Dry Natural Gas Production (billion cubic feet per day)	102.2	103.2	104.1	105.5	104.0	102.1	103.3	104.0	103.8	104.5	104.8	105.9	103.8	103.4	104.8
Coal Production (million short tons)	149	142	146	141	130	118	128	125	122	108	124	121	577	501	475
Energy Consumption															
Liquid Fuels (million barrels per day)	19.83	20.35	20.32	20.59	19.80	20.36	20.51	20.65	20.25	20.66	20.82	20.82	20.28	20.33	20.64
Natural Gas (billion cubic feet per day)	103.0	78.0	83.9	91.6	104.0	78.6	83.8	93.1	105.2	77.5	83.2	92.2	89.1	89.9	89.5
Coal (b) (million short tons)	102	91	132	101	100	91	124	101	101	82	133	106	426	416	422
Electricity (billion kilowatt hours per day)	10.59	10.32	12.62	10.30	10.70	10.78	12.76	10.56	11.01	10.92	13.17	10.75	10.96	11.20	11.47
Renewables (c) (quadrillion Btu)	2.04	2.10	2.05	2.04	2.09	2.25	2.19	2.19	2.21	2.44	2.33	2.28	8.24	8.72	9.26
Total Energy Consumption (d) (quadrillion Btu)	24.12	22.02	23.73	23.72	24.39	22.34	23.76	24.05	24.70	22.33	24.15	24.23	93.58	94.53	95.41
Energy Prices															
Crude Oil West Texas Intermediate Spo (dollars per barrel)	75.96	73.49	82.25	78.63	77.50	81.77	78.23	77.64	79.02	80.50	80.50	78.50	77.58	78.80	79.63
Natural Gas Henry Hub Spot (dollars per million Btu)	2.65	2.16	2.59	2.74	2.13	2.08	2.02	2.52	3.01	2.90	3.28	3.36	2.54	2.19	3.14
Coal (dollars per million Btu)	2.57	2.49	2.51	2.51	2.50	2.54	2.52	2.48	2.49	2.49	2.48	2.46	2.52	2.51	2.48
Macroeconomic															
Real Gross Domestic Product (billion chained 2017 dollars - SAAR) ...	22,112	22,225	22,491	22,679	22,759	22,925	23,031	23,122	23,203	23,319	23,420	23,536	22,377	22,959	23,369
Percent change from prior year	1.7	2.4	2.9	3.1	2.9	3.1	2.4	2.0	2.0	1.7	1.7	1.8	2.5	2.6	1.8
GDP Implicit Price Deflator (Index, 2017=100)	121.3	121.8	122.8	123.3	124.2	125.0	125.5	126.2	127.0	127.7	128.5	129.3	122.3	125.2	128.1
Percent change from prior year	5.3	3.5	3.2	2.6	2.4	2.6	2.2	2.4	2.2	2.2	2.4	2.4	3.6	2.4	2.3
Real Disposable Personal Income (billion chained 2017 dollars - SAAR) ...	16,663	16,797	16,820	16,856	16,912	16,954	17,077	17,175	17,322	17,459	17,593	17,733	16,784	17,029	17,527
Percent change from prior year	3.7	4.9	4.1	3.8	1.5	0.9	1.5	1.9	2.4	3.0	3.0	3.3	4.1	1.5	2.9
Manufacturing Production Index (Index, 2017=100)	100.0	100.1	100.0	99.7	99.4	100.0	100.2	100.5	100.6	101.2	101.6	102.2	100.0	100.0	101.4
Percent change from prior year	0.0	-0.6	-0.7	-0.3	-0.6	-0.1	0.2	0.8	1.2	1.2	1.4	1.7	-0.4	0.1	1.4
Weather															
U.S. Heating Degree-Days	1,922	485	61	1,335	1,906	413	63	1,450	1,988	469	74	1,443	3,803	3,832	3,975
U.S. Cooling Degree-Days	68	362	942	104	53	496	915	105	51	446	967	106	1,476	1,570	1,569

(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.

Notes:

EIA completed modeling and analysis for this report on September 5, 2024.

- = no data available

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

Prices are not adjusted for inflation.

Sources:

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.

Table 2. Energy Prices

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Crude Oil (dollars per barrel)															
West Texas Intermediate Spot Average	75.96	73.49	82.25	78.63	77.50	81.77	78.23	77.64	79.02	80.50	80.50	78.50	77.58	78.80	79.63
Brent Spot Average	81.04	78.02	86.64	83.93	82.96	84.72	81.89	81.64	83.34	85.00	85.00	83.00	82.41	82.80	84.09
U.S. Imported Average	69.63	71.34	81.09	76.21	72.40	79.36	75.70	74.92	76.32	77.75	77.75	75.75	74.62	75.85	77.00
U.S. Refiner Average Acquisition Cost	74.49	74.10	82.38	79.37	76.42	81.60	77.71	77.17	78.52	80.00	80.00	78.00	77.68	78.27	79.15
U.S. Liquid Fuels (dollars per gallon)															
Wholesale Petroleum Product Prices															
Gasoline	2.62	2.65	2.96	2.33	2.46	2.58	2.35	2.21	2.27	2.52	2.55	2.30	2.64	2.40	2.41
Diesel Fuel	2.95	2.45	3.09	2.84	2.70	2.51	2.33	2.32	2.41	2.40	2.53	2.53	2.83	2.46	2.47
Fuel Oil	2.77	2.30	2.88	2.80	2.64	2.42	2.21	2.23	2.39	2.29	2.41	2.44	2.69	2.37	2.38
Jet Fuel	3.05	2.33	2.91	2.73	2.68	2.52	2.28	2.19	2.41	2.45	2.49	2.41	2.75	2.41	2.44
No. 6 Residual Fuel Oil (a)	1.97	1.89	2.02	2.05	1.98	2.06	2.02	1.98	2.03	2.03	2.06	2.02	1.99	2.01	2.04
Propane Mont Belvieu Spot	0.82	0.68	0.68	0.67	0.84	0.75	0.78	0.79	0.81	0.85	0.86	0.83	0.71	0.79	0.84
Retail Prices Including Taxes															
Gasoline Regular Grade (b)	3.38	3.58	3.76	3.36	3.24	3.56	3.38	3.12	3.11	3.39	3.43	3.21	3.52	3.33	3.29
Gasoline All Grades (b)	3.49	3.69	3.87	3.48	3.36	3.68	3.49	3.24	3.23	3.51	3.55	3.33	3.64	3.45	3.41
On-highway Diesel Fuel	4.40	3.94	4.28	4.25	3.97	3.85	3.71	3.61	3.68	3.68	3.76	3.81	4.22	3.78	3.73
Heating Oil	4.06	3.51	3.82	3.98	3.79	3.66	3.52	3.55	3.59	3.39	3.36	3.58	3.84	3.63	3.48
Propane Residential	2.70	2.61	2.44	2.43	2.58	2.48	2.39	2.45	2.52	2.49	2.46	2.52	2.54	2.48	2.50
Natural Gas															
Henry Hub Spot (dollars per thousand cubic feet)	2.76	2.25	2.69	2.84	2.21	2.16	2.09	2.62	3.13	3.01	3.40	3.49	2.63	2.27	3.26
Henry Hub Spot (dollars per million Btu)	2.65	2.16	2.59	2.74	2.13	2.08	2.02	2.52	3.01	2.90	3.28	3.36	2.54	2.19	3.14
U.S. Retail Prices (dollars per thousand cubic feet)															
Industrial Sector	6.12	3.76	3.87	4.38	4.47	3.35	2.86	3.44	4.18	3.62	3.92	4.31	4.59	3.55	4.02
Commercial Sector	11.82	10.48	10.89	9.82	9.81	10.38	10.28	8.51	8.48	9.15	10.02	8.87	10.89	9.55	8.88
Residential Sector	14.72	16.19	22.33	13.72	12.76	17.04	22.41	13.23	12.03	14.80	20.79	13.01	15.19	14.22	13.39
U.S. Electricity															
Power Generation Fuel Costs (dollars per million Btu)															
Coal	2.57	2.49	2.51	2.51	2.50	2.54	2.52	2.48	2.49	2.49	2.48	2.46	2.52	2.51	2.48
Natural Gas	4.98	2.60	2.92	3.19	3.37	2.36	2.34	2.93	3.55	3.07	3.36	3.66	3.36	2.72	3.40
Residual Fuel Oil (c)	19.24	17.88	19.16	20.84	18.84	18.54	15.31	14.43	15.02	15.88	15.48	15.27	19.32	16.83	15.36
Distillate Fuel Oil	22.84	19.91	22.08	21.03	20.16	19.48	18.03	17.96	18.53	18.45	19.22	19.48	21.47	18.92	18.94
Prices to Ultimate Customers (cents per kilowatthour)															
Industrial Sector	8.06	7.74	8.55	7.83	7.88	8.08	8.51	7.81	7.96	8.13	8.50	7.82	8.05	8.08	8.11
Commercial Sector	12.64	12.45	13.18	12.63	12.75	12.76	13.38	12.65	12.75	13.01	13.73	13.00	12.74	12.90	13.15
Residential Sector	15.77	16.12	16.02	16.02	16.01	16.55	16.36	15.94	16.05	16.87	16.63	16.36	15.98	16.22	16.49

(a) Average for all sulfur contents.

(b) Average self-service cash price.

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

Notes:

EIA completed modeling and analysis for this report on September 5, 2024.

- = no data available

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

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

Sources:

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; *Monthly Energy Review*, DOE/EIA-0035; *Heating Oil and Propane Update*.

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).

Retail heating oil prices are from the Bureau of Labor Statistics, *Consumer Price Index*.

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

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 3a. World Petroleum and Other Liquid Fuels Production, Consumption, and Inventories
U.S. Energy Information Administration | Short-Term Energy Outlook - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Production (million barrels per day) (a)															
World total	101.49	101.46	101.66	102.85	101.73	102.05	102.48	102.47	103.18	104.26	105.39	105.53	101.87	102.18	104.60
Crude oil	76.93	76.32	75.92	77.02	76.55	75.92	76.37	76.67	77.81	78.11	79.01	79.27	76.55	76.38	78.56
Other liquids	24.55	25.14	25.74	25.83	25.18	26.13	26.10	25.79	25.37	26.15	26.39	26.26	25.32	25.80	26.04
World total	101.49	101.46	101.66	102.85	101.73	102.05	102.48	102.47	103.18	104.26	105.39	105.53	101.87	102.18	104.60
OPEC total (b)	32.71	32.44	31.63	31.88	32.02	31.87	31.68	31.50	32.24	32.52	32.78	32.68	32.16	31.77	32.56
Crude oil	27.38	27.23	26.37	26.58	26.63	26.60	26.38	26.17	26.96	27.24	27.50	27.40	26.89	26.45	27.28
Other liquids	5.33	5.21	5.26	5.30	5.40	5.26	5.30	5.33	5.28	5.28	5.28	5.28	5.27	5.32	5.28
Non-OPEC total	68.78	69.02	70.03	70.97	69.71	70.18	70.80	70.96	70.94	71.74	72.61	72.85	69.71	70.42	72.04
Crude oil	49.56	49.09	49.55	50.43	49.92	49.32	49.99	50.50	50.85	50.87	51.51	51.87	49.66	49.93	51.28
Other liquids	19.22	19.93	20.48	20.54	19.79	20.86	20.81	20.46	20.09	20.87	21.10	20.98	20.05	20.48	20.76
Consumption (million barrels per day) (c)															
World total	101.28	102.12	102.56	102.59	102.16	103.02	103.42	103.72	104.11	104.26	104.91	105.09	102.14	103.08	104.60
OECD total (d)	45.26	45.52	45.90	46.00	44.80	45.46	45.97	46.30	45.61	45.39	46.18	46.37	45.67	45.64	45.89
Canada	2.34	2.48	2.63	2.37	2.37	2.31	2.51	2.49	2.48	2.42	2.53	2.50	2.45	2.42	2.48
Europe	13.12	13.57	13.69	13.39	12.85	13.59	13.75	13.51	13.15	13.30	13.71	13.47	13.45	13.43	13.41
Japan	3.68	3.05	3.06	3.38	3.44	2.96	3.06	3.38	3.48	2.89	2.99	3.30	3.29	3.21	3.16
United States	19.83	20.35	20.32	20.59	19.80	20.36	20.51	20.65	20.25	20.66	20.82	20.82	20.28	20.33	20.64
U.S. Territories	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Other OECD	6.19	5.96	6.09	6.16	6.22	6.13	6.01	6.14	6.14	6.00	6.02	6.15	6.10	6.13	6.08
Non-OECD total	56.02	56.60	56.66	56.59	57.36	57.55	57.45	57.42	58.50	58.87	58.73	58.72	56.47	57.45	58.71
China	16.33	16.55	16.24	16.48	16.75	16.65	16.23	16.45	16.91	16.95	16.52	16.75	16.40	16.52	16.78
Eurasia	4.66	4.82	5.16	5.06	4.71	4.87	5.22	5.12	4.74	4.91	5.26	5.16	4.93	4.98	5.02
Europe	0.74	0.76	0.77	0.77	0.75	0.77	0.77	0.77	0.75	0.77	0.78	0.78	0.76	0.76	0.77
Other Asia	14.57	14.44	13.91	14.15	15.03	14.88	14.43	14.73	15.52	15.50	14.87	15.20	14.26	14.77	15.27
Other non-OECD	19.71	20.02	20.59	20.13	20.12	20.38	20.81	20.35	20.58	20.75	21.31	20.83	20.12	20.42	20.87
Total crude oil and other liquids inventory net withdrawals (million barrels per day)															
World total	-0.21	0.66	0.90	-0.26	0.43	0.97	0.95	1.26	0.93	0.00	-0.48	-0.44	0.28	0.90	0.00
United States	-0.07	-0.10	-0.26	0.30	0.13	-0.64	-0.02	0.26	0.00	-0.33	-0.07	0.28	-0.03	-0.07	-0.03
Other OECD	0.33	0.01	-0.17	0.21	-0.13	-0.24	0.30	0.31	0.28	0.10	-0.13	-0.22	0.09	0.06	0.01
Other inventory draws and balance	-0.47	0.76	1.33	-0.76	0.43	1.85	0.67	0.69	0.65	0.23	-0.29	-0.50	0.22	0.91	0.02
End-of-period commercial crude oil and other liquids inventories (million barrels)															
OECD total	2,748	2,781	2,816	2,766	2,757	2,828	2,792	2,729	2,699	2,720	2,738	2,733	2,766	2,729	2,733
United States	1,230	1,263	1,282	1,251	1,230	1,280	1,270	1,235	1,232	1,261	1,267	1,242	1,251	1,235	1,242
Other OECD	1,518	1,518	1,534	1,515	1,527	1,549	1,522	1,493	1,468	1,459	1,471	1,491	1,515	1,493	1,491

(a) Includes crude oil, lease condensate, natural gas plant liquids, other liquids, refinery processing gain, and other unaccounted-for liquids. Differences in the reported historical production data across countries could result in some inconsistencies in the delineation between crude oil and other liquid fuels.

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

(c) Consumption of petroleum by the OECD countries is the same as "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.

(d) 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 September 5, 2024.

- = no data available

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

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

Sources:

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

Forecasts: EIA Short-Term Integrated Forecasting System.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Petroleum and other liquid fuels production (a)															
Non-OPEC total (b)	68.78	69.02	70.03	70.97	69.71	70.18	70.80	70.96	70.94	71.74	72.61	72.85	69.71	70.42	72.04
North America total	29.15	29.22	30.19	30.82	29.91	30.55	30.77	31.06	31.02	31.08	31.40	31.83	29.85	30.57	31.33
Canada	5.77	5.37	5.79	6.10	5.95	5.79	6.08	6.34	6.42	6.11	6.27	6.45	5.76	6.04	6.31
Mexico	2.12	2.16	2.11	2.09	2.05	2.00	2.00	1.97	1.97	1.94	1.92	1.90	2.12	2.00	1.93
United States	21.26	21.69	22.30	22.63	21.91	22.76	22.69	22.75	22.62	23.03	23.20	23.48	21.97	22.53	23.09
Central and South America total	6.39	7.01	7.60	7.40	7.01	7.49	7.87	7.57	7.15	7.79	8.26	7.98	7.11	7.49	7.80
Argentina	0.81	0.81	0.82	0.84	0.86	0.87	0.87	0.89	0.89	0.91	0.92	0.94	0.82	0.87	0.91
Brazil	3.60	4.21	4.82	4.49	3.90	4.39	4.88	4.48	4.11	4.61	4.96	4.67	4.28	4.41	4.59
Colombia	0.80	0.81	0.81	0.81	0.80	0.82	0.80	0.80	0.80	0.80	0.79	0.79	0.81	0.81	0.79
Guyana	0.39	0.38	0.36	0.44	0.64	0.61	0.53	0.62	0.62	0.74	0.87	0.87	0.39	0.60	0.77
Europe total	4.02	3.95	3.85	3.96	3.95	3.85	3.99	4.12	4.25	4.16	4.06	4.16	3.94	3.98	4.16
Norway	2.03	2.03	1.98	2.06	2.06	2.00	2.03	2.17	2.20	2.13	2.12	2.21	2.02	2.07	2.17
United Kingdom	0.87	0.80	0.74	0.78	0.77	0.74	0.85	0.81	0.92	0.91	0.81	0.82	0.80	0.79	0.87
Eurasia total	14.11	13.65	13.43	13.68	13.66	13.28	13.15	13.08	13.35	13.44	13.57	13.49	13.72	13.29	13.46
Azerbaijan	0.65	0.62	0.62	0.61	0.60	0.59	0.60	0.61	0.62	0.64	0.66	0.66	0.62	0.60	0.64
Kazakhstan	2.02	1.97	1.85	1.99	2.00	1.89	1.91	1.87	2.02	2.03	2.07	1.91	1.96	1.92	2.01
Russia	11.06	10.68	10.58	10.70	10.68	10.40	10.24	10.21	10.31	10.39	10.46	10.54	10.75	10.38	10.42
Middle East total	3.23	3.27	3.23	3.25	3.19	3.17	3.13	3.13	3.16	3.20	3.28	3.32	3.24	3.16	3.24
Oman	1.07	1.06	1.05	1.05	1.01	1.00	1.00	1.01	1.01	1.02	1.03	1.03	1.06	1.00	1.02
Qatar	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.87	1.93	1.97	1.86	1.86	1.91
Africa total	2.53	2.60	2.62	2.68	2.63	2.49	2.51	2.62	2.61	2.63	2.63	2.60	2.61	2.56	2.62
Angola	1.12	1.18	1.18	1.22	1.20	1.16	1.16	1.10	1.08	1.07	1.06	1.04	1.17	1.16	1.07
Egypt	0.66	0.67	0.67	0.66	0.66	0.65	0.63	0.63	0.60	0.60	0.60	0.60	0.67	0.64	0.60
Asia and Oceania total	9.34	9.30	9.12	9.18	9.36	9.36	9.37	9.38	9.40	9.43	9.43	9.47	9.23	9.37	9.43
China	5.32	5.32	5.18	5.22	5.39	5.36	5.31	5.35	5.32	5.35	5.34	5.38	5.26	5.35	5.35
India	0.93	0.95	0.94	0.93	0.95	0.96	0.97	0.96	0.99	0.99	0.98	0.98	0.94	0.96	0.99
Indonesia	0.89	0.89	0.87	0.87	0.86	0.88	0.87	0.87	0.88	0.88	0.88	0.87	0.88	0.87	0.88
Malaysia	0.61	0.58	0.58	0.61	0.59	0.59	0.59	0.59	0.59	0.59	0.60	0.60	0.60	0.59	0.60
Unplanned production outages															
Non-OPEC total	0.56	1.02	0.92	0.87	1.04	1.11	-	-	-	-	-	-	0.84	-	-

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

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

Notes:

EIA completed modeling and analysis for this report on September 5, 2024.

- = no data available

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

Sources:

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

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 3c. World Petroleum and Other Liquid Fuels Production (million barrels per day)

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Petroleum and other liquid fuels production (a)															
World total	101.49	101.46	101.66	102.85	101.73	102.05	102.48	102.47	103.18	104.26	105.39	105.53	101.87	102.18	104.60
OPEC+ total (b)	44.97	44.20	42.82	43.12	42.99	42.25	42.17	42.15	42.78	43.13	43.50	43.29	43.77	42.39	43.18
United States	21.26	21.69	22.30	22.63	21.91	22.76	22.69	22.75	22.62	23.03	23.20	23.48	21.97	22.53	23.09
Non-OPEC+ excluding United States	35.26	35.57	36.55	37.11	36.84	37.05	37.61	37.57	37.77	38.10	38.68	38.76	36.13	37.27	38.33
OPEC total (c)	32.71	32.44	31.63	31.88	32.02	31.87	31.68	31.50	32.24	32.52	32.78	32.68	32.16	31.77	32.56
Algeria	1.48	1.45	1.42	1.43	1.38	1.37	-	-	-	-	-	-	1.44	-	-
Congo (Brazzaville)	0.27	0.26	0.26	0.27	0.26	0.26	-	-	-	-	-	-	0.27	-	-
Equatorial Guinea	0.10	0.10	0.10	0.09	0.10	0.09	-	-	-	-	-	-	0.10	-	-
Gabon	0.20	0.21	0.20	0.21	0.21	0.22	-	-	-	-	-	-	0.20	-	-
Iran	3.79	3.80	4.06	4.31	4.43	4.32	-	-	-	-	-	-	3.99	-	-
Iraq	4.52	4.30	4.44	4.44	4.40	4.35	-	-	-	-	-	-	4.42	-	-
Kuwait	3.00	2.90	2.88	2.85	2.77	2.81	-	-	-	-	-	-	2.91	-	-
Libya	1.24	1.22	1.25	1.27	1.20	1.28	-	-	-	-	-	-	1.24	-	-
Nigeria	1.50	1.48	1.49	1.60	1.57	1.52	-	-	-	-	-	-	1.52	-	-
Saudi Arabia	11.62	11.78	10.62	10.53	10.74	10.62	-	-	-	-	-	-	11.13	-	-
United Arab Emirates	4.27	4.15	4.12	4.11	4.15	4.17	-	-	-	-	-	-	4.16	-	-
Venezuela	0.73	0.78	0.79	0.78	0.81	0.85	-	-	-	-	-	-	0.77	-	-
OPEC+ total (b)	44.97	44.20	42.82	43.12	42.99	42.25	42.17	42.15	42.78	43.13	43.50	43.29	43.77	42.39	43.18
OPEC members subject to OPEC+ agreements (d)	26.95	26.64	25.54	25.53	25.58	25.41	25.51	25.47	25.84	26.11	26.36	26.25	26.16	25.49	26.14
OPEC+ other participants total	18.02	17.56	17.28	17.59	17.41	16.83	16.67	16.68	16.95	17.02	17.15	17.04	17.61	16.90	17.04
Azerbaijan	0.65	0.62	0.62	0.61	0.60	0.59	0.60	0.61	0.62	0.64	0.66	0.66	0.62	0.60	0.64
Bahrain	0.18	0.21	0.18	0.20	0.18	0.17	0.14	0.14	0.13	0.13	0.13	0.13	0.19	0.16	0.13
Brunei	0.11	0.08	0.09	0.10	0.10	0.08	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.09
Kazakhstan	2.02	1.97	1.85	1.99	2.00	1.89	1.91	1.87	2.02	2.03	2.07	1.91	1.96	1.92	2.01
Malaysia	0.61	0.58	0.58	0.61	0.59	0.59	0.59	0.59	0.59	0.59	0.60	0.60	0.60	0.59	0.60
Mexico	2.12	2.16	2.11	2.09	2.05	2.00	2.00	1.97	1.97	1.94	1.92	1.90	2.12	2.00	1.93
Oman	1.07	1.06	1.05	1.05	1.01	1.00	1.00	1.01	1.01	1.02	1.03	1.03	1.06	1.00	1.02
Russia	11.06	10.68	10.58	10.70	10.68	10.40	10.24	10.21	10.31	10.39	10.46	10.54	10.75	10.38	10.42
South Sudan	0.13	0.13	0.16	0.16	0.13	0.06	0.06	0.15	0.15	0.15	0.14	0.14	0.15	0.10	0.14
Sudan	0.07	0.07	0.07	0.07	0.06	0.04	0.03	0.06	0.05	0.05	0.05	0.04	0.07	0.05	0.05

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

(b) OPEC+ total = OPEC members subject to OPEC+ agreements plus Azerbaijan, Bahrain, Brunei, Kazakhstan, Malaysia, Mexico, Oman, Russia, South Sudan, and Sudan.

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

(d) Iran, Libya, and Venezuela are not subject to the OPEC+ agreements.

Notes:

EIA completed modeling and analysis for this report on September 5, 2024.

- = no data available

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

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

Sources:

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

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 3d. World Crude Oil Production (million barrels per day)
 U.S. Energy Information Administration | Short-Term Energy Outlook - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Crude oil production (a)															
World total	76.93	76.32	75.92	77.02	76.55	75.92	76.37	76.67	77.81	78.11	79.01	79.27	76.55	76.38	78.56
OPEC+ total (b)	38.18	37.50	36.24	36.37	36.16	35.52	35.45	35.43	36.07	36.43	36.84	36.63	37.07	35.64	36.49
United States	12.67	12.76	13.05	13.25	12.94	13.22	13.38	13.47	13.45	13.60	13.73	13.89	12.93	13.25	13.67
Non-OPEC+ excluding United States	26.08	26.06	26.63	27.40	27.45	27.19	27.55	27.77	28.29	28.07	28.43	28.75	26.55	27.49	28.39
OPEC total (c)	27.38	27.23	26.37	26.58	26.63	26.60	26.38	26.17	26.96	27.24	27.50	27.40	26.89	26.45	27.28
Algeria	1.01	0.98	0.95	0.96	0.91	0.90	-	-	-	-	-	-	0.97	-	-
Congo (Brazzaville)	0.27	0.25	0.26	0.26	0.25	0.25	-	-	-	-	-	-	0.26	-	-
Equatorial Guinea	0.06	0.06	0.06	0.05	0.06	0.05	-	-	-	-	-	-	0.06	-	-
Gabon	0.20	0.21	0.20	0.21	0.21	0.22	-	-	-	-	-	-	0.20	-	-
Iran	2.60	2.74	2.97	3.18	3.24	3.26	-	-	-	-	-	-	2.87	-	-
Iraq	4.41	4.19	4.33	4.33	4.29	4.24	-	-	-	-	-	-	4.32	-	-
Kuwait	2.68	2.59	2.56	2.53	2.46	2.49	-	-	-	-	-	-	2.59	-	-
Libya	1.14	1.15	1.15	1.17	1.10	1.19	-	-	-	-	-	-	1.15	-	-
Nigeria	1.24	1.19	1.21	1.31	1.28	1.24	-	-	-	-	-	-	1.24	-	-
Saudi Arabia	10.02	10.18	9.02	8.93	9.12	9.00	-	-	-	-	-	-	9.53	-	-
United Arab Emirates	3.06	2.94	2.91	2.90	2.91	2.93	-	-	-	-	-	-	2.95	-	-
Venezuela	0.70	0.75	0.76	0.75	0.79	0.83	-	-	-	-	-	-	0.74	-	-
OPEC+ total (b)	38.18	37.50	36.24	36.37	36.16	35.52	35.45	35.43	36.07	36.43	36.84	36.63	37.07	35.64	36.49
OPEC members subject to OPEC+ agreements (d)	22.94	22.60	21.49	21.48	21.49	21.33	21.42	21.38	21.76	22.04	22.30	22.20	22.12	21.41	22.08
OPEC+ other participants total	15.24	14.90	14.75	14.89	14.67	14.19	14.03	14.05	14.31	14.39	14.54	14.43	14.94	14.23	14.42
Azerbaijan	0.52	0.50	0.49	0.49	0.47	0.47	-	-	-	-	-	-	0.50	-	-
Bahrain	0.17	0.20	0.17	0.19	0.17	0.16	-	-	-	-	-	-	0.18	-	-
Brunei	0.08	0.06	0.07	0.08	0.08	0.06	-	-	-	-	-	-	0.07	-	-
Kazakhstan	1.61	1.58	1.49	1.57	1.58	1.52	-	-	-	-	-	-	1.56	-	-
Malaysia	0.39	0.36	0.36	0.38	0.37	0.36	-	-	-	-	-	-	0.37	-	-
Mexico	1.65	1.67	1.65	1.63	1.60	1.56	-	-	-	-	-	-	1.65	-	-
Oman	0.84	0.82	0.80	0.80	0.76	0.76	-	-	-	-	-	-	0.81	-	-
Russia	9.78	9.52	9.49	9.53	9.44	9.19	-	-	-	-	-	-	9.58	-	-
South Sudan	0.13	0.13	0.16	0.16	0.13	0.06	-	-	-	-	-	-	0.15	-	-
Sudan	0.07	0.07	0.07	0.07	0.06	0.03	-	-	-	-	-	-	0.07	-	-
Crude oil production capacity															
OPEC total	30.45	30.33	30.58	30.91	31.06	31.17	30.93	30.74	31.19	31.33	31.44	31.44	30.57	30.97	31.35
Middle East	25.83	25.69	25.92	26.13	26.35	26.37	26.42	26.41	26.51	26.66	26.78	26.78	25.89	26.39	26.68
Other	4.63	4.64	4.67	4.78	4.71	4.80	4.51	4.33	4.68	4.67	4.66	4.66	4.68	4.59	4.67
Surplus crude oil production capacity															
OPEC total	3.08	3.09	4.21	4.33	4.43	4.56	4.55	4.56	4.23	4.09	3.95	4.04	3.68	4.53	4.08
Middle East	3.05	3.04	4.13	4.25	4.33	4.45	4.44	4.45	4.13	4.00	3.87	3.97	3.63	4.42	3.99
Other	0.02	0.05	0.08	0.07	0.11	0.12	0.11	0.11	0.10	0.09	0.08	0.07	0.06	0.11	0.09
Unplanned production outages															
OPEC total	1.94	2.13	1.95	1.52	1.52	1.47	-	-	-	-	-	-	1.88	-	-

- (a) Differences in the reported historical production data across countries could result in some inconsistencies in the delineation between crude oil and other liquid fuels.
 (b) OPEC+ total = OPEC members subject to OPEC+ agreements plus Azerbaijan, Bahrain, Brunei, Kazakhstan, Malaysia, Mexico, Oman, Russia, South Sudan, and Sudan.
 (c) OPEC = Organization of the Petroleum Exporting Countries: Algeria, Congo (Brazzaville), Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, United Arab Emirates, and Venezuela.
 (d) Iran, Libya, and Venezuela are not subject to the OPEC+ agreements.

Notes:
 EIA completed modeling and analysis for this report on September 5, 2024.
 - = no data available
 The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.
 Minor discrepancies with published historical data are due to independent rounding.

Sources:
 Historical data: Energy Information Administration *International Energy Statistics* (<https://www.eia.gov/international/data/world>).
 Forecasts: EIA Short-Term Integrated Forecasting System.

Table 3e. World Petroleum and Other Liquid Fuels Consumption (million barrels per day)
U.S. Energy Information Administration | Short-Term Energy Outlook - September 2024

	2023				2024				2025				2023	2024	2025
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
Petroleum and other liquid fuels consumption (a)															
World total	101.28	102.12	102.56	102.59	102.16	103.02	103.42	103.72	104.11	104.26	104.91	105.09	102.14	103.08	104.60
OECD total (b)	45.26	45.52	45.90	46.00	44.80	45.46	45.97	46.30	45.61	45.39	46.18	46.37	45.67	45.64	45.89
Non-OECD total	56.02	56.60	56.66	56.59	57.36	57.55	57.45	57.42	58.50	58.87	58.73	58.72	56.47	57.45	58.71
World total	101.28	102.12	102.56	102.59	102.16	103.02	103.42	103.72	104.11	104.26	104.91	105.09	102.14	103.08	104.60
North America total	23.89	24.56	24.72	24.71	23.90	24.44	24.76	24.89	24.43	24.81	25.06	25.06	24.47	24.50	24.84
Canada	2.34	2.48	2.63	2.37	2.37	2.31	2.51	2.49	2.48	2.42	2.53	2.50	2.45	2.42	2.48
Mexico	1.72	1.73	1.75	1.75	1.72	1.77	1.72	1.74	1.69	1.72	1.71	1.73	1.74	1.74	1.71
United States	19.83	20.35	20.32	20.59	19.80	20.36	20.51	20.65	20.25	20.66	20.82	20.82	20.28	20.33	20.64
Central and South America total	6.63	6.77	6.88	6.81	6.70	6.84	6.96	6.89	6.79	6.94	7.05	6.98	6.77	6.85	6.94
Brazil	3.05	3.11	3.19	3.17	3.10	3.16	3.24	3.22	3.15	3.21	3.29	3.28	3.13	3.18	3.23
Europe total	13.86	14.34	14.46	14.17	13.59	14.36	14.52	14.29	13.90	14.08	14.49	14.25	14.21	14.19	14.18
Eurasia total	4.66	4.82	5.16	5.06	4.71	4.87	5.22	5.12	4.74	4.91	5.26	5.16	4.93	4.98	5.02
Russia	3.54	3.64	3.95	3.80	3.58	3.68	3.99	3.84	3.59	3.69	4.01	3.85	3.73	3.77	3.79
Middle East total	9.25	9.39	9.94	9.34	9.46	9.56	9.98	9.41	9.73	9.73	10.28	9.67	9.48	9.60	9.85
Africa total	4.57	4.58	4.50	4.66	4.67	4.68	4.60	4.77	4.79	4.81	4.72	4.89	4.58	4.68	4.80
Asia and Oceania total	38.42	37.67	36.91	37.84	39.13	38.26	37.38	38.37	39.74	39.00	38.05	39.07	37.71	38.28	38.96
China	16.33	16.55	16.24	16.48	16.75	16.65	16.23	16.45	16.91	16.95	16.52	16.75	16.40	16.52	16.78
India	5.38	5.35	5.05	5.30	5.62	5.57	5.35	5.67	5.90	5.97	5.58	5.93	5.27	5.55	5.84
Japan	3.68	3.05	3.06	3.38	3.44	2.96	3.06	3.38	3.48	2.89	2.99	3.30	3.29	3.21	3.16
Real gross domestic product (c)															
World index, 2015 Q1 = 100	126.0	127.0	128.0	129.0	130.0	131.0	131.9	133.1	134.0	135.1	136.2	137.5	127.5	131.5	135.7
Percent change from prior year	2.7	3.5	3.2	3.3	3.2	3.1	3.1	3.1	3.1	3.1	3.2	3.3	3.2	3.1	3.2
OECD index, 2015 = 100	-	-	-	-	-	-	-	-	-	-	-	-	116.0	117.9	120.1
Percent change from prior year	-	-	-	-	-	-	-	-	-	-	-	-	1.7	1.7	1.8
Non-OECD index, 2015 = 100	-	-	-	-	-	-	-	-	-	-	-	-	135.0	140.8	146.7
Percent change from prior year	-	-	-	-	-	-	-	-	-	-	-	-	4.4	4.3	4.3
Nominal U.S. Dollar index (d)															
Index, 2015 Q1 = 100	114.1	113.4	114.0	115.6	114.8	116.6	118.3	118.2	118.0	117.9	117.7	117.5	114.3	116.9	117.8
Percent change from prior year	4.2	0.5	-2.7	-2.4	0.6	2.8	3.7	2.2	2.8	1.1	-0.5	-0.5	-0.2	2.3	0.7

(a) Consumption of petroleum by the OECD countries is the same as "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.

(b) 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.

(c) 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.

(d) 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 data source is the Board of Governors of the U.S. Federal Reserve System Nominal Broad Trade-Weighted Dollar Index accessed via Oxford Economics. Forecast data are from Oxford Economics, and quarterly values are reindexed to 2015 Q1 by EIA.

Notes:

EIA completed modeling and analysis for this report on September 5, 2024.

- = no data available

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

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

Sources:

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

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 - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Supply (million barrels per day)															
U.S. total crude oil production (a)	12.67	12.76	13.05	13.25	12.94	13.22	13.38	13.47	13.45	13.60	13.73	13.89	12.93	13.25	13.67
Alaska	0.44	0.43	0.40	0.43	0.43	0.42	0.40	0.42	0.42	0.40	0.39	0.41	0.43	0.42	0.41
Federal Gulf of Mexico (b)	1.88	1.77	1.92	1.88	1.78	1.80	1.85	1.84	1.86	1.87	1.88	1.90	1.87	1.82	1.88
Lower 48 States (excl GOM) (c)	10.35	10.56	10.72	10.94	10.73	11.00	11.13	11.21	11.17	11.33	11.46	11.58	10.64	11.02	11.39
Appalachia region	0.15	0.15	0.15	0.16	0.15	0.16	0.16	0.16	0.17	0.18	0.18	0.19	0.15	0.16	0.18
Bakken region	1.14	1.17	1.26	1.31	1.23	1.24	1.30	1.33	1.32	1.32	1.36	1.37	1.22	1.27	1.34
Eagle Ford region	1.14	1.18	1.18	1.14	1.09	1.08	1.10	1.13	1.13	1.15	1.16	1.16	1.16	1.10	1.15
Haynesville region	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Permian region	5.73	5.79	5.88	6.06	6.06	6.33	6.44	6.45	6.42	6.54	6.61	6.70	5.86	6.32	6.57
Rest of Lower 48 States	2.14	2.22	2.22	2.23	2.17	2.14	2.10	2.11	2.10	2.11	2.13	2.13	2.20	2.13	2.12
Total Supply	19.83	20.35	20.32	20.59	19.79	20.36	20.51	20.65	20.25	20.66	20.82	20.82	20.27	20.33	20.64
Crude oil input to refineries	15.25	16.15	16.52	15.93	15.39	16.47	16.37	15.67	15.22	16.05	16.15	15.67	15.97	15.98	15.77
U.S. total crude oil production (a)	12.67	12.76	13.05	13.25	12.94	13.22	13.38	13.47	13.45	13.60	13.73	13.89	12.93	13.25	13.67
Transfers to crude oil supply	0.42	0.47	0.64	0.56	0.50	0.64	0.44	0.43	0.41	0.45	0.47	0.45	0.53	0.50	0.45
Crude oil net imports (d)	2.43	2.44	2.50	2.26	2.12	2.62	2.32	1.60	1.36	1.60	1.51	1.13	2.41	2.16	1.40
SPR net withdrawals (e)	0.01	0.26	-0.04	-0.04	-0.10	-0.10	-0.12	-0.12	-0.04	0.00	0.00	0.00	0.05	-0.11	-0.01
Commercial inventory net withdrawals	-0.39	0.12	0.40	-0.09	-0.23	0.08	0.25	-0.01	-0.27	0.11	0.17	-0.09	0.01	0.02	-0.02
Crude oil adjustment (f)	0.10	0.11	-0.03	-0.01	0.16	0.02	0.10	0.30	0.32	0.28	0.26	0.28	0.04	0.15	0.28
Refinery processing gain	0.97	1.00	1.06	1.05	0.91	0.97	1.05	1.04	0.97	1.03	1.07	1.05	1.02	0.99	1.03
Natural Gas Plant Liquids Production	6.17	6.43	6.64	6.74	6.51	7.01	6.66	6.65	6.63	6.79	6.80	6.91	6.50	6.71	6.78
Renewables and oxygenate production (g)	1.24	1.29	1.31	1.35	1.34	1.33	1.39	1.37	1.37	1.40	1.39	1.42	1.30	1.36	1.39
Fuel ethanol production	1.00	1.00	1.01	1.05	1.04	1.01	1.06	1.04	1.04	1.03	1.02	1.04	1.02	1.04	1.03
Petroleum products adjustment (h)	0.20	0.22	0.23	0.23	0.21	0.22	0.22	0.22	0.20	0.21	0.21	0.21	0.22	0.22	0.21
Petroleum products transfers to crude oil supply	-0.42	-0.47	-0.64	-0.56	-0.50	-0.64	-0.44	-0.43	-0.41	-0.45	-0.47	-0.45	-0.53	-0.50	-0.45
Petroleum product net imports (d)	-3.89	-3.79	-4.19	-4.59	-4.53	-4.40	-4.59	-4.26	-4.04	-3.93	-4.09	-4.35	-4.12	-4.44	-4.10
Hydrocarbon gas liquids	-2.48	-2.48	-2.50	-2.59	-2.59	-2.68	-2.72	-2.60	-2.76	-2.87	-2.75	-2.73	-2.51	-2.65	-2.78
Unfinished oils	0.28	0.27	0.21	0.18	0.09	0.21	0.33	0.36	0.32	0.40	0.43	0.35	0.24	0.25	0.38
Other hydrocarbons and oxygenates	-0.04	-0.06	-0.04	-0.05	-0.06	-0.08	-0.07	-0.05	-0.10	-0.09	-0.08	-0.08	-0.05	-0.07	-0.09
Motor gasoline blending components	0.43	0.67	0.57	0.41	0.40	0.62	0.52	0.43	0.59	0.76	0.74	0.58	0.52	0.49	0.67
Finished motor gasoline	-0.71	-0.59	-0.68	-0.81	-0.76	-0.62	-0.65	-0.78	-0.80	-0.61	-0.79	-0.93	-0.70	-0.70	-0.79
Jet fuel	-0.04	0.01	-0.06	-0.09	-0.09	-0.08	-0.11	-0.04	-0.04	0.01	0.00	0.02	-0.05	-0.08	0.00
Distillate fuel oil	-0.75	-0.96	-1.06	-1.02	-0.86	-1.20	-1.21	-0.94	-0.66	-0.87	-0.93	-0.86	-0.95	-1.05	-0.83
Residual fuel oil	0.01	-0.03	-0.03	-0.01	-0.03	-0.04	-0.06	-0.04	-0.02	-0.01	-0.05	-0.03	-0.02	-0.04	-0.03
Other oils (i)	-0.59	-0.61	-0.60	-0.62	-0.64	-0.54	-0.62	-0.59	-0.58	-0.66	-0.65	-0.66	-0.60	-0.60	-0.64
Petroleum product inventory net withdrawals	0.31	-0.48	-0.61	0.43	0.46	-0.62	-0.15	0.39	0.31	-0.44	-0.24	0.36	-0.09	0.02	0.00
Consumption (million barrels per day)															
U.S. total petroleum products consumption	19.83	20.35	20.32	20.59	19.80	20.36	20.51	20.65	20.25	20.66	20.82	20.82	20.28	20.33	20.64
Hydrocarbon gas liquids	3.53	3.32	3.32	3.85	3.80	3.39	3.34	3.88	3.87	3.40	3.52	3.98	3.50	3.60	3.69
Other hydrocarbons and oxygenates	0.22	0.28	0.28	0.29	0.30	0.33	0.31	0.33	0.30	0.32	0.32	0.35	0.27	0.32	0.32
Motor gasoline	8.69	9.13	9.02	8.94	8.57	9.12	9.14	8.86	8.66	9.15	9.05	8.79	8.94	8.92	8.91
Jet fuel	1.55	1.68	1.72	1.66	1.58	1.73	1.73	1.70	1.64	1.80	1.81	1.78	1.65	1.69	1.75
Distillate fuel oil	4.03	3.92	3.83	3.88	3.82	3.73	3.84	3.94	3.98	3.95	3.94	4.00	3.92	3.83	3.97
Residual fuel oil	0.29	0.22	0.26	0.32	0.28	0.30	0.28	0.27	0.26	0.29	0.27	0.27	0.27	0.28	0.27
Other oils (i)	1.52	1.79	1.88	1.65	1.44	1.77	1.87	1.68	1.53	1.76	1.91	1.67	1.71	1.69	1.72
Total petroleum and other liquid fuels net imports (d)	-1.46	-1.35	-1.69	-2.33	-2.41	-1.78	-2.27	-2.66	-2.69	-2.32	-2.58	-3.21	-1.71	-2.28	-2.70
End-of-period inventories (million barrels)															
Total commercial inventory	1230.0	1263.1	1282.4	1251.4	1230.3	1279.6	1270.2	1235.3	1231.7	1261.4	1267.4	1242.0	1251.4	1235.3	1242.0
Crude oil (excluding SPR)	465.2	454.7	417.9	426.5	447.2	440.2	417.0	418.0	442.2	431.8	415.9	423.8	426.5	418.0	423.8
Hydrocarbon gas liquids	173.9	225.7	277.2	223.3	169.2	235.1	278.4	228.8	189.0	239.2	278.2	235.6	223.3	228.8	235.6
Unfinished oils	88.9	87.3	88.4	84.2	91.7	87.8	83.8	78.9	88.7	86.9	86.0	80.3	84.2	78.9	80.3
Other hydrocarbons and oxygenates	34.5	30.2	30.3	33.1	38.2	33.4	34.1	34.4	36.5	35.3	35.0	35.3	33.1	34.4	35.3
Total motor gasoline	225.2	222.1	227.9	240.7	233.4	232.4	221.1	237.2	235.5	228.6	224.5	239.9	240.7	237.2	239.9
Finished motor gasoline	14.4	17.5	15.8	18.2	14.6	16.2	14.4	14.8	13.3	15.3	16.3	16.2	18.2	14.8	16.2
Motor gasoline blending components	210.8	204.5	212.1	222.5	218.8	216.2	206.6	222.3	222.2	213.3	208.2	223.7	222.5	222.3	223.7
Jet fuel	37.8	42.4	43.5	39.8	42.2	45.3	46.8	42.2	40.3	40.6	40.9	37.4	39.8	42.2	37.4
Distillate fuel oil	111.7	112.0	118.8	130.5	121.2	123.1	117.3	122.6	115.8	117.4	116.3	117.7	130.5	122.6	117.7
Residual fuel oil	29.6	30.5	27.8	24.1	29.9	27.5	25.3	25.2	26.3	26.2	24.4	24.3	24.1	25.2	24.3
Other oils (i)	63.2	58.2	50.6	49.3	57.3	54.9	46.4	48.0	57.3	55.3	46.2	47.8	49.3	48.0	47.8
Crude oil in SPR (e)	371.2	347.2	351.3	354.7	363.9	373.1	384.2	395.1	399.1	399.1	399.1	399.1	354.7	395.1	399.1

(a) Includes lease condensate.
 (b) Crude oil production from U.S. Federal leases in the Gulf of Mexico (GOM).
 (c) Regional production in this table is based on geographic regions and not geologic formations.
 (d) Net imports equal gross imports minus gross exports.
 (e) SPR: Strategic Petroleum Reserve
 (f) The crude oil adjustment equals the sum of disposition items (e.g. refinery inputs) minus the sum of supply items (e.g. production).
 (g) 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.
 (h) Petroleum products adjustment includes hydrogen/oxygenates/renewables/other hydrocarbons, motor gasoline blending components, and finished motor gasoline.
 (i) Other oils includes aviation gasoline blending components, finished aviation gasoline, kerosene, petrochemical feedstocks, special naphthas, lubricants, waxes, petroleum coke, asphalt and road oil, still gas, and miscellaneous products.

Notes:
 EIA completed modeling and analysis for this report on September 5, 2024.
 - = no data available
 The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.
 Minor discrepancies with published historical data are due to independent rounding.
Sources:
 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.
 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 - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
HGL production, consumption, and inventories															
Total HGL production	6.62	7.24	7.37	7.09	6.95	7.81	7.42	6.99	7.10	7.62	7.57	7.28	7.08	7.29	7.39
Natural gas processing plant production	6.17	6.43	6.64	6.74	6.51	7.01	6.66	6.65	6.63	6.79	6.80	6.91	6.50	6.71	6.78
Ethane	2.56	2.64	2.67	2.74	2.63	2.92	2.71	2.72	2.72	2.79	2.75	2.83	2.65	2.75	2.77
Propane	1.93	1.99	2.05	2.11	2.05	2.14	2.14	2.16	2.16	2.18	2.20	2.24	2.02	2.12	2.20
Butanes	1.01	1.05	1.09	1.10	1.07	1.12	1.15	1.15	1.16	1.17	1.18	1.20	1.06	1.12	1.18
Natural gasoline (pentanes plus)	0.68	0.75	0.83	0.80	0.75	0.84	0.66	0.62	0.59	0.64	0.68	0.64	0.76	0.72	0.64
Refinery and blender net production	0.47	0.83	0.75	0.36	0.46	0.82	0.77	0.37	0.49	0.86	0.78	0.39	0.60	0.61	0.63
Ethane/ethylene	0.01	0.00	0.01	0.02	0.01	-0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Propane	0.27	0.29	0.28	0.27	0.27	0.28	0.29	0.27	0.28	0.30	0.30	0.29	0.28	0.27	0.29
Propylene (refinery-grade)	0.24	0.26	0.25	0.26	0.24	0.27	0.27	0.28	0.28	0.28	0.27	0.28	0.25	0.27	0.28
Butanes/butylenes	-0.05	0.29	0.21	-0.19	-0.05	0.28	0.20	-0.19	-0.08	0.27	0.20	-0.18	0.07	0.06	0.05
Renewable/oxygenate plant net production of natural gasoli	-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
Total HGL consumption	3.53	3.32	3.32	3.85	3.80	3.39	3.34	3.88	3.87	3.40	3.52	3.98	3.50	3.60	3.69
Ethane/Ethylene	2.07	2.19	2.11	2.26	2.24	2.26	2.23	2.27	2.24	2.27	2.28	2.29	2.16	2.25	2.27
Propane	0.98	0.56	0.62	0.96	1.02	0.53	0.56	1.03	1.11	0.58	0.70	1.10	0.78	0.78	0.87
Propylene (refinery-grade)	0.25	0.27	0.27	0.28	0.26	0.28	0.29	0.29	0.30	0.29	0.29	0.29	0.27	0.28	0.29
Butanes/butylenes	0.23	0.30	0.33	0.34	0.28	0.31	0.26	0.29	0.22	0.26	0.25	0.30	0.30	0.29	0.26
HGL net imports	-2.48	-2.48	-2.50	-2.59	-2.59	-2.68	-2.72	-2.60	-2.76	-2.87	-2.75	-2.73	-2.51	-2.65	-2.78
Ethane	-0.48	-0.49	-0.50	-0.41	-0.48	-0.46	-0.50	-0.50	-0.50	-0.51	-0.51	-0.55	-0.47	-0.49	-0.52
Propane/propylene	-1.44	-1.44	-1.46	-1.64	-1.60	-1.61	-1.60	-1.55	-1.59	-1.70	-1.57	-1.56	-1.50	-1.59	-1.60
Butanes/butylenes	-0.39	-0.38	-0.40	-0.41	-0.41	-0.47	-0.50	-0.41	-0.50	-0.52	-0.53	-0.47	-0.40	-0.45	-0.51
Natural gasoline (pentanes plus)	-0.16	-0.17	-0.13	-0.14	-0.11	-0.13	-0.11	-0.14	-0.17	-0.14	-0.14	-0.15	-0.15	-0.12	-0.15
HGL inventories (million barrels)	173.9	225.7	277.2	223.3	169.2	235.1	278.4	228.8	189.0	239.2	278.2	235.6	223.3	228.8	235.6
Ethane	54.5	51.5	57.3	65.8	58.3	75.3	74.9	71.8	69.9	72.0	69.6	69.9	65.8	71.8	69.9
Propane	55.22	79.2	101.4	79.7	51.7	75.1	98.1	81.8	56.7	73.4	92.6	79.4	79.7	81.8	79.4
Propylene (at refineries only)	1.13	1.1	1.2	0.9	0.9	1.3	1.6	1.5	1.3	1.6	1.8	1.6	0.9	1.5	1.6
Butanes/butylenes	40.3	70.5	90.0	50.1	35.1	59.2	79.3	50.3	40.6	70.6	91.8	63.1	50.1	50.3	63.1
Natural gasoline (pentanes plus)	22.9	23.4	27.3	26.8	23.2	24.2	24.6	23.4	20.5	21.6	22.4	21.5	26.8	23.4	21.5
Refining															
Total refinery and blender net inputs	17.58	18.89	18.91	18.24	17.61	19.03	19.10	18.22	17.38	18.87	18.74	17.95	18.41	18.49	18.24
Crude oil	15.25	16.15	16.52	15.93	15.39	16.47	16.37	15.67	15.22	16.05	16.15	15.67	15.97	15.98	15.77
HGL	0.66	0.49	0.56	0.78	0.69	0.56	0.54	0.74	0.63	0.48	0.53	0.71	0.62	0.63	0.59
Other hydrocarbons/oxygenates	1.13	1.20	1.21	1.18	1.12	1.20	1.20	1.17	1.13	1.19	1.18	1.16	1.18	1.17	1.17
Unfinished oils	0.19	0.20	-0.01	0.11	-0.03	0.09	0.27	0.29	0.09	0.30	0.31	0.28	0.12	0.15	0.25
Motor gasoline blending components	0.36	0.85	0.64	0.23	0.43	0.71	0.72	0.34	0.31	0.84	0.57	0.12	0.52	0.55	0.46
Refinery Processing Gain	0.97	1.00	1.06	1.05	0.91	0.97	1.05	1.04	0.97	1.03	1.07	1.05	1.02	0.99	1.03
Total refinery and blender net production	18.56	19.89	19.98	19.29	18.52	20.00	20.15	19.26	18.35	19.89	19.80	18.99	19.43	19.48	19.26
HGL	0.47	0.83	0.75	0.36	0.46	0.82	0.77	0.37	0.49	0.86	0.78	0.39	0.60	0.61	0.63
Finished motor gasoline	9.29	9.83	9.81	9.65	9.24	9.80	9.81	9.67	9.13	9.72	9.58	9.37	9.65	9.63	9.45
Jet fuel	1.62	1.72	1.78	1.71	1.70	1.84	1.86	1.68	1.66	1.79	1.81	1.72	1.71	1.77	1.74
Distillate fuel oil	4.69	4.89	4.96	5.03	4.57	4.95	5.00	4.93	4.56	4.84	4.86	4.87	4.89	4.86	4.78
Residual fuel oil	0.27	0.27	0.27	0.28	0.37	0.31	0.32	0.31	0.29	0.30	0.30	0.30	0.27	0.33	0.30
Other oils (a)	2.21	2.35	2.40	2.26	2.17	2.28	2.40	2.29	2.22	2.40	2.47	2.35	2.30	2.29	2.36
Refinery distillation inputs	15.76	16.74	17.02	16.47	15.80	16.96	16.70	16.07	15.63	16.44	16.58	16.07	16.50	16.38	16.18
Refinery operable distillation capacity	18.12	18.27	18.27	18.32	18.39	18.33	18.34	18.34	18.08	18.08	18.08	18.08	18.25	18.35	18.08
Refinery distillation utilization factor	0.87	0.92	0.93	0.90	0.86	0.93	0.91	0.88	0.86	0.91	0.92	0.89	0.90	0.89	0.90

(a) Other oils include aviation gasoline blending components, finished aviation gasoline, kerosene, petrochemical feedstocks, special naphthas, lubricants, waxes, petroleum coke, asphalt and road oil, still gas, and miscellaneous products.

Notes:

EIA completed modeling and analysis for this report on September 5, 2024.

- = no data available

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

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

Sources:

Table 4c. U.S. Regional Motor Gasoline Prices and Inventories
 U.S. Energy Information Administration | Short-Term Energy Outlook - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Wholesale price (dollars per gallon)															
United States average	2.62	2.65	2.96	2.33	2.46	2.58	2.35	2.21	2.27	2.52	2.55	2.30	2.64	2.40	2.41
Retail prices (dollars per gallon) (a)															
All grades United States average	3.49	3.69	3.87	3.48	3.36	3.68	3.49	3.24	3.23	3.51	3.55	3.33	3.64	3.45	3.41
Regular grade United States average	3.38	3.58	3.76	3.36	3.24	3.56	3.38	3.12	3.11	3.39	3.43	3.21	3.52	3.33	3.29
PADD 1	3.30	3.44	3.61	3.25	3.19	3.45	3.30	3.03	3.02	3.26	3.28	3.08	3.40	3.24	3.16
PADD 2	3.24	3.48	3.60	3.14	3.07	3.39	3.29	2.93	2.92	3.24	3.27	3.01	3.37	3.18	3.12
PADD 3	3.02	3.15	3.34	2.85	2.86	3.12	2.95	2.70	2.73	3.00	3.04	2.79	3.09	2.91	2.89
PADD 4	3.57	3.59	3.93	3.32	2.92	3.38	3.38	3.13	3.12	3.27	3.44	3.17	3.61	3.21	3.25
PADD 5	4.18	4.52	4.80	4.55	4.13	4.59	4.11	4.02	3.97	4.32	4.34	4.19	4.52	4.21	4.21
End-of-period inventories (million barrels) (b)															
Total U.S. gasoline inventories	225.2	222.1	227.9	240.7	233.4	232.4	221.1	237.2	235.5	228.6	224.5	239.9	240.7	237.2	239.9
PADD 1	52.7	57.0	58.8	60.1	54.9	56.8	57.3	59.8	60.3	58.0	58.7	60.9	60.1	59.8	60.9
PADD 2	49.8	44.9	46.6	54.9	54.6	48.5	47.0	52.7	54.3	48.8	47.3	52.8	54.9	52.7	52.8
PADD 3	83.7	84.4	85.5	89.2	85.4	86.4	79.8	86.0	82.7	84.6	81.2	87.4	89.2	86.0	87.4
PADD 4	7.8	6.9	7.2	7.9	8.6	8.0	6.9	7.7	8.0	7.3	7.6	8.1	7.9	7.7	8.1
PADD 5	31.2	28.9	29.9	28.6	29.9	32.7	30.1	30.9	30.2	29.8	29.7	30.7	28.6	30.9	30.7

(a) Retail prices include all federal, state, and local taxes.

(b) Inventories include both finished motor gasoline and motor gasoline blending components

Notes:

EIA completed modeling and analysis for this report on September 5, 2024.

- = no data available

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

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

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.

Sources:

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.

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 4d. U.S. Biofuel Supply, Consumption, and Inventories
 U.S. Energy Information Administration | Short-Term Energy Outlook - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Supply (million barrels per day)															
Total biofuels supply	1.18	1.29	1.29	1.28	1.24	1.32	1.33	1.33	1.27	1.34	1.33	1.35	1.26	1.31	1.32
Fuel ethanol production	1.00	1.00	1.01	1.05	1.04	1.01	1.06	1.04	1.04	1.03	1.02	1.04	1.02	1.04	1.03
Biodiesel production	0.10	0.12	0.11	0.11	0.10	0.11	0.11	0.10	0.09	0.10	0.11	0.10	0.11	0.11	0.10
Renewable diesel production	0.14	0.17	0.18	0.18	0.19	0.21	0.22	0.22	0.22	0.24	0.24	0.24	0.17	0.21	0.24
Other biofuel production (a)	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.04	0.04	0.04	0.05	0.02	0.02	0.04
Fuel ethanol net imports	-0.09	-0.09	-0.08	-0.10	-0.12	-0.13	-0.10	-0.10	-0.12	-0.10	-0.09	-0.10	-0.09	-0.11	-0.10
Biodiesel net imports	0.02	0.00	0.01	0.02	0.03	0.02	0.01	0.01	0.00	-0.01	-0.01	0.00	0.02	0.02	-0.01
Renewable diesel net imports (b)	0.02	0.02	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.03	0.02
Other biofuel net imports (b)	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
Biofuel stock draw	-0.03	0.05	0.00	-0.03	-0.06	0.05	-0.01	0.00	-0.02	0.01	0.00	0.00	0.00	0.00	0.00
Total distillate fuel oil supply (c)	4.24	4.19	4.10	4.15	4.10	4.04	4.15	4.25	4.26	4.25	4.24	4.31	4.17	4.13	4.26
Distillate fuel production	4.69	4.89	4.96	5.03	4.57	4.95	5.00	4.93	4.56	4.84	4.86	4.87	4.89	4.86	4.78
Biodiesel production	0.10	0.12	0.11	0.11	0.10	0.11	0.11	0.10	0.09	0.10	0.11	0.10	0.11	0.11	0.10
Renewable diesel production	0.14	0.17	0.18	0.18	0.19	0.21	0.22	0.22	0.22	0.24	0.24	0.24	0.17	0.21	0.24
Distillate fuel oil net imports	-0.75	-0.96	-1.06	-1.02	-0.86	-1.20	-1.21	-0.94	-0.66	-0.87	-0.93	-0.86	-0.95	-1.05	-0.83
Biodiesel net imports	0.02	0.00	0.01	0.02	0.03	0.02	0.01	0.01	0.00	-0.01	-0.01	0.00	0.02	0.02	-0.01
Renewable diesel net imports	0.02	0.02	0.02	0.02	0.03	0.03	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.03	0.02
Total distillate fuel stock draw	0.06	0.01	-0.08	-0.14	0.09	-0.02	0.07	-0.06	0.08	-0.02	0.01	-0.02	-0.04	0.02	0.01
Consumption (million barrels per day)															
Total biofuels consumption	1.18	1.29	1.29	1.28	1.24	1.32	1.33	1.33	1.27	1.34	1.33	1.35	1.26	1.31	1.32
Fuel ethanol blended into motor gasoline	0.90	0.94	0.94	0.94	0.88	0.93	0.95	0.94	0.90	0.95	0.94	0.94	0.93	0.92	0.93
Biodiesel consumption	0.11	0.13	0.13	0.13	0.13	0.13	0.11	0.11	0.09	0.09	0.10	0.10	0.13	0.12	0.09
Biodiesel product supplied (d)	0.07	0.08	0.09	0.08	0.08	0.08	0.07	0.07	0.05	0.05	0.05	0.06	0.08	0.08	0.05
Biodiesel net inputs (e)	0.04	0.05	0.05	0.04	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.04
Renewable diesel consumption	0.15	0.20	0.20	0.19	0.21	0.24	0.25	0.25	0.24	0.26	0.25	0.26	0.19	0.24	0.26
Renewable diesel product supplied	0.14	0.19	0.19	0.18	0.21	0.23	0.24	0.24	0.23	0.25	0.24	0.25	0.18	0.23	0.25
Renewable diesel net inputs	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Other biofuel consumption	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.04	0.04	0.04	0.05	0.02	0.02	0.04
Total motor gasoline consumption	8.69	9.13	9.02	8.94	8.57	9.12	9.14	8.86	8.66	9.15	9.05	8.79	8.94	8.92	8.91
Petroleum-based gasoline	7.79	8.19	8.09	8.00	7.69	8.19	8.19	7.92	7.77	8.20	8.11	7.86	8.02	8.00	7.98
Fuel ethanol blended into motor gasoline	0.90	0.94	0.94	0.94	0.88	0.93	0.95	0.94	0.90	0.95	0.94	0.94	0.93	0.92	0.93
Total distillate fuel oil consumption (f)	4.24	4.19	4.10	4.15	4.11	4.04	4.15	4.25	4.26	4.25	4.24	4.31	4.17	4.13	4.26
Distillate fuel oil	4.03	3.92	3.83	3.88	3.82	3.73	3.84	3.94	3.98	3.95	3.94	4.00	3.92	3.83	3.97
Petroleum-based distillate	3.97	3.86	3.77	3.83	3.77	3.66	3.79	3.88	3.93	3.90	3.89	3.94	3.86	3.78	3.91
Biodiesel net inputs (g)	0.04	0.05	0.05	0.04	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.04
Renewable diesel net inputs	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Biodiesel product supplied (h)	0.07	0.08	0.09	0.08	0.08	0.08	0.07	0.07	0.05	0.05	0.05	0.06	0.08	0.08	0.05
Renewable diesel product supplied (h)	0.14	0.19	0.19	0.18	0.21	0.23	0.24	0.24	0.23	0.25	0.24	0.25	0.18	0.23	0.25
End-of-period inventories (million barrels)															
Total biofuels inventories	34.28	30.08	30.22	33.11	38.23	33.36	34.15	34.42	36.48	35.24	34.97	35.24	33.11	34.42	35.24
Ethanol	24.97	22.31	22.16	23.50	27.19	22.61	23.54	23.82	25.87	24.64	24.37	24.64	23.50	23.82	24.64
Biodiesel	5.06	3.98	3.58	3.83	4.40	3.73	3.95	3.95	3.95	3.95	3.95	3.95	3.83	3.95	3.95
Renewable diesel	3.68	3.70	4.10	4.71	6.32	6.38	6.15	6.19	6.19	6.19	6.19	6.19	4.05	6.26	6.19
Other biofuels	0.31	0.33	0.32	0.31	0.30	0.40	0.47	0.47	0.47	0.47	0.47	0.47	0.32	0.41	0.47
Total distillate fuel oil inventories	120.67	119.39	126.64	139.79	131.86	133.41	127.41	132.73	125.90	127.54	126.44	127.83	139.79	132.73	127.83
Distillate fuel oil	111.69	111.99	118.84	130.49	121.16	123.12	117.27	122.59	115.76	117.41	116.30	117.69	130.49	122.59	117.69
Biodiesel	5.06	3.98	3.58	3.83	4.40	3.73	3.95	3.95	3.95	3.95	3.95	3.95	3.83	3.95	3.95
Renewable diesel	3.68	3.70	4.10	4.71	6.32	6.38	6.15	6.19	6.19	6.19	6.19	6.19	4.05	6.26	6.19

(a) Includes renewable heating oil, renewable jet fuel (sustainable aviation fuel, alternative jet fuel, and biojet), renewable naphtha, renewable gasoline, and other emerging biofuels that are in various stages of development and commercialization

(b) Renewable diesel net imports and other biofuel net imports equal imports because we do not collect or receive export data for those fuels.

(c) Total distillate fuel oil supply equals the sum of the seven components shown minus refiner and blender net inputs of biodiesel and renewable diesel, which are listed in rows 44 and 45 of this table.

(d) The volumes of renewable fuels that are not reported as blended with petroleum fuels.

(e) The volumes of renewable fuels that are reported as blended with petroleum fuels.

(f) Equals the sum of distillate fuel oil, biodiesel product supplied, and renewable diesel product supplied.

(g) Prior to 2021, we did not publish biodiesel product supplied and instead included it as part of distillate fuel oil product supplied.

(h) Prior to 2021, we did not publish renewable diesel product supplied, and STEO values for that period are taken from the U.S. Environmental Protection Agency's Moderated Transaction System.

Notes:

EIA completed modeling and analysis for this report on September 5, 2024.

- = no data available

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

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

Sources:

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.

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 - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Supply (billion cubic feet per day)															
U.S. total marketed natural gas production	111.2	112.5	113.6	115.2	113.4	112.2	112.9	113.6	113.4	114.3	114.6	115.9	113.1	113.0	114.5
Alaska	1.1	1.0	0.9	1.0	1.1	1.0	0.9	1.0	1.0	1.0	0.9	1.0	1.0	1.0	1.0
Federal Gulf of Mexico (a)	2.1	1.9	2.0	1.9	1.8	1.8	1.9	1.8	1.8	1.8	1.8	1.8	2.0	1.8	1.8
Lower 48 States (excl GOM) (b)	108.0	109.6	110.7	112.2	110.4	109.4	110.1	110.8	110.6	111.6	111.9	113.1	110.1	110.2	111.8
Appalachia region	35.4	35.7	36.0	36.7	35.9	35.0	35.4	35.7	35.6	35.3	34.9	35.0	36.0	35.5	35.2
Bakken region	2.9	3.0	3.2	3.3	3.2	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.1	3.3	3.3
Eagle Ford region	6.5	6.7	6.7	6.7	6.6	6.4	6.7	6.8	6.8	7.1	7.1	7.3	6.6	6.6	7.1
Haynesville region	16.4	16.6	16.4	15.9	15.6	14.5	14.8	14.8	14.8	15.0	15.2	15.9	16.4	14.9	15.2
Permian region	21.7	22.5	23.2	24.1	24.0	24.6	24.7	25.0	24.6	25.8	26.2	26.5	22.9	24.6	25.8
Rest of Lower 48 States	25.0	25.1	25.1	25.5	25.1	25.4	25.2	25.2	25.4	25.2	25.2	25.0	25.2	25.2	25.2
Total primary supply	103.0	78.0	83.9	91.6	104.0	78.6	83.8	93.1	105.2	77.5	83.2	92.2	89.1	89.9	89.5
Balancing item (c)	0.4	-0.4	-1.4	-0.6	-0.2	-1.3	-1.4	-0.7	0.9	-0.3	0.6	-0.1	-0.5	-0.9	0.3
Total supply	102.6	78.5	85.2	92.3	104.1	79.9	85.1	93.8	104.3	77.8	82.5	92.4	89.6	90.7	89.2
U.S. total dry natural gas production	102.2	103.2	104.1	105.5	104.0	102.1	103.3	104.0	103.8	104.5	104.8	105.9	103.8	103.4	104.8
Net inventory withdrawals	12.0	-11.7	-6.4	0.3	12.7	-9.6	-5.4	4.2	14.9	-11.0	-6.5	3.4	-1.5	0.5	0.2
Supplemental gaseous fuels	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
Net imports	-11.8	-13.2	-12.6	-13.7	-12.8	-12.8	-12.9	-14.6	-14.6	-15.9	-15.9	-17.1	-12.8	-13.3	-15.9
LNG gross imports (d)	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1
LNG gross exports (d)	11.4	11.8	11.4	13.0	12.4	11.3	11.4	13.3	13.8	13.8	13.7	15.4	11.9	12.1	14.2
Pipeline gross imports	8.4	7.3	7.9	8.2	8.9	7.8	7.9	7.9	8.6	7.4	7.6	7.9	8.0	8.1	7.9
Pipeline gross exports	8.9	8.7	9.2	8.9	9.4	9.1	9.4	9.3	9.4	9.5	9.9	9.6	9.0	9.3	9.6
Consumption (billion cubic feet per day)															
Total consumption	103.0	78.0	83.9	91.6	104.0	78.6	83.8	93.1	105.2	77.5	83.2	92.2	89.1	89.9	89.5
Residential	23.5	7.3	3.6	15.0	22.8	6.7	3.7	16.1	24.2	7.3	3.8	16.1	12.3	12.3	12.8
Commercial	14.5	6.4	4.7	10.7	14.3	6.4	5.1	11.4	15.1	6.8	5.3	11.4	9.1	9.3	9.6
Industrial	24.8	22.4	22.0	24.3	24.9	22.3	21.8	23.9	24.9	22.2	21.9	24.2	23.4	23.2	23.3
Electric power (e)	30.8	33.4	44.8	32.6	32.5	34.7	44.4	32.5	31.3	32.7	43.4	31.3	35.4	36.1	34.7
Lease and plant fuel	5.3	5.4	5.4	5.5	5.4	5.4	5.4	5.4	5.4	5.5	5.5	5.5	5.4	5.4	5.5
Pipeline and distribution	3.9	2.9	3.1	3.4	3.9	3.0	3.1	3.5	4.0	2.9	3.1	3.5	3.3	3.4	3.4
Vehicle	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
End-of-period working natural gas inventories (billion cubic feet) (f)															
United States total	1,850	2,902	3,490	3,457	2,306	3,175	3,676	3,285	1,942	2,942	3,536	3,224	3,457	3,285	3,224
East region	334	646	853	787	369	670	841	738	341	620	802	727	787	738	727
Midwest region	417	701	993	950	507	781	1,048	913	447	706	1,011	887	950	913	887
South Central region	919	1,138	1,092	1,183	1,007	1,172	1,183	1,140	841	1,137	1,172	1,129	1,183	1,140	1,129
Mountain region	79	171	239	228	168	238	268	210	123	189	239	206	228	210	206
Pacific region	74	216	278	280	231	286	303	254	166	263	281	247	280	254	247
Alaska	27	30	35	30	24	28	33	29	24	27	32	28	30	29	28

- (a) Marketed production from U.S. Federal leases in the Gulf of Mexico.
- (b) Regional production in this table is based on geographic regions and not geologic formations.
- (c) The balancing item is the difference between total natural gas consumption (NGTCPUS) and total natural gas supply (NGPSUPP).
- (d) LNG: liquefied natural gas
- (e) Natural gas used for electricity generation and (a limited amount of) useful thermal output by electric utilities and independent power producers.
- (f) For a list of states in each inventory region refer to *Weekly Natural Gas Storage Report, Notes and Definitions* (<http://ir.eia.gov/ngs/notes.html>).

Notes:
EIA completed modeling and analysis for this report on September 5, 2024.
- = no data available
The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.
Minor discrepancies with published historical data are due to independent rounding.

Sources:
Historical data: Latest data available from Energy Information Administration databases supporting the following reports: *Natural Gas Monthly*, DOE/EIA-0130; and *Electric Power Monthly*, DOE/EIA-0226.
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 - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Wholesale price															
Henry Hub spot price	2.76	2.25	2.69	2.84	2.21	2.16	2.09	2.62	3.13	3.01	3.40	3.49	2.63	2.27	3.26
Residential retail (a)															
United States average	14.72	16.19	22.33	13.72	12.76	17.04	22.41	13.23	12.03	14.80	20.79	13.01	15.19	14.22	13.39
New England	21.06	20.48	22.57	18.66	19.12	20.55	23.47	18.13	17.86	18.82	22.23	17.65	20.33	19.35	18.27
Middle Atlantic	15.60	16.03	20.74	14.33	13.44	15.93	21.66	13.96	12.58	14.02	19.48	13.44	15.64	14.55	13.55
East North Central	11.06	13.26	22.96	10.49	9.29	14.65	23.10	10.56	9.11	12.67	21.57	10.49	11.91	11.25	10.81
West North Central	13.24	15.41	22.07	11.29	10.61	15.63	23.27	11.46	10.03	13.10	20.27	10.65	13.42	12.25	11.22
South Atlantic	17.33	20.92	30.29	16.00	14.48	21.79	29.30	15.29	14.20	19.52	27.69	15.50	18.39	16.75	16.39
East South Central	13.63	16.66	23.41	13.47	11.57	16.14	21.48	12.01	10.92	14.90	21.86	12.44	14.56	12.80	12.58
West South Central	14.58	19.81	28.70	16.42	12.75	22.47	27.72	14.49	11.44	16.95	23.96	13.76	17.00	15.68	13.91
Mountain	12.61	13.86	18.75	12.88	12.56	13.92	19.11	12.36	11.48	13.22	18.41	12.09	13.29	13.19	12.46
Pacific	20.13	17.11	18.10	17.87	17.78	18.25	17.77	16.22	16.81	16.10	17.22	16.31	18.74	17.39	16.58
Commercial retail (a)															
United States average	11.82	10.48	10.89	9.82	9.81	10.38	10.28	8.51	8.48	9.15	10.02	8.87	10.89	9.55	8.88
New England	15.21	13.66	12.55	12.15	12.88	12.89	11.83	10.71	11.00	11.53	11.87	11.19	13.74	12.09	11.24
Middle Atlantic	11.94	9.25	8.06	9.48	10.49	9.97	8.49	8.25	8.80	8.19	7.91	8.45	10.23	9.50	8.48
East North Central	9.20	8.63	10.65	7.73	7.41	8.99	9.86	6.44	6.48	7.81	9.93	7.10	8.79	7.49	7.11
West North Central	11.58	11.33	11.77	8.39	8.53	9.83	10.58	7.54	7.56	8.34	9.85	7.65	10.66	8.56	7.88
South Atlantic	12.97	11.26	11.39	10.73	10.31	10.33	10.20	9.20	9.07	9.77	10.30	9.69	11.75	9.96	9.54
East South Central	11.89	10.94	11.80	10.55	9.91	10.05	10.61	8.98	8.68	9.79	11.06	9.79	11.30	9.71	9.48
West South Central	11.01	9.68	10.37	9.73	9.21	9.86	9.81	8.14	7.45	8.36	9.38	8.51	10.31	9.11	8.20
Mountain	10.89	10.77	12.16	10.66	10.30	10.16	10.99	9.39	9.21	9.62	10.51	9.15	10.92	10.06	9.40
Pacific	16.85	12.61	13.49	13.58	14.05	12.48	12.47	11.81	12.47	11.74	12.31	12.06	14.59	12.80	12.17
Industrial retail (a)															
United States average	6.12	3.76	3.87	4.38	4.47	3.35	2.86	3.44	4.18	3.62	3.92	4.31	4.59	3.55	4.02
New England	13.56	10.07	7.88	9.28	11.17	9.58	6.51	7.43	8.74	8.16	7.18	8.40	10.66	9.60	8.23
Middle Atlantic	11.94	8.97	7.89	9.35	10.14	9.19	8.38	8.39	8.76	7.97	7.98	8.66	10.34	9.48	8.50
East North Central	9.18	6.67	6.91	6.22	6.54	6.33	6.17	5.53	5.84	5.99	6.27	6.21	7.62	6.15	6.02
West North Central	8.23	4.54	4.33	4.69	5.21	3.39	3.32	3.96	5.03	4.25	4.50	5.08	5.64	4.01	4.75
South Atlantic	6.92	4.78	5.01	5.36	5.16	4.48	4.46	4.47	5.23	4.79	5.24	5.50	5.57	4.65	5.20
East South Central	5.46	3.74	4.09	4.32	4.13	3.40	3.64	3.95	4.72	4.25	4.66	4.94	4.44	3.80	4.65
West South Central	3.39	2.22	2.71	2.79	2.47	1.96	2.30	2.80	3.38	3.05	3.45	3.65	2.77	2.42	3.39
Mountain	8.90	7.73	8.05	7.76	8.17	7.04	6.33	5.77	5.79	5.77	6.23	6.10	8.19	6.95	5.95
Pacific	10.84	8.16	8.03	9.02	8.82	7.46	7.06	7.20	7.90	6.92	7.05	7.43	9.22	8.02	7.38

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

Notes:

EIA completed modeling and analysis for this report on September 5, 2024.

- = no data available

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

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

Prices are not adjusted for inflation.

Regions refer to U.S. Census divisions.

Sources:

Historical data: Latest data available from Energy Information Administration databases supporting the *Natural Gas Monthly*, DOE/EIA-0130. Henry Hub spot price is from Refinitiv, an LSEG company, via EIA (https://www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm).

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 6. U.S. Coal Supply, Consumption, and Inventories (million short tons)
 U.S. Energy Information Administration | Short-Term Energy Outlook - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Supply															
Total supply	105.5	101.7	138.8	103.0	102.2	95.3	118.7	100.9	100.9	81.9	133.2	105.7	449.2	417.0	421.7
Secondary inventory withdrawals	-20.1	-19.1	11.1	-14.8	-2.0	0.2	12.9	0.5	2.3	-3.5	30.9	10.7	-42.8	11.6	40.4
Waste coal (a)	2.0	1.9	2.2	2.3	2.3	2.0	1.2	1.2	1.2	1.2	1.2	1.2	8.3	6.8	4.8
Total primary supply	123.6	118.9	125.5	115.6	101.8	93.1	104.6	99.2	97.4	84.3	101.1	93.8	483.7	398.7	376.5
U.S. total coal production	148.7	142.3	145.6	140.8	129.9	118.1	127.9	125.1	122.1	107.9	123.7	121.4	577.5	501.0	475.1
Appalachia	42.9	42.5	40.0	39.7	39.6	39.8	37.1	36.7	36.7	33.7	32.8	34.2	165.1	153.1	137.5
Interior	25.4	23.5	22.6	22.3	22.2	20.3	19.8	20.1	20.9	17.7	18.6	18.4	93.7	82.4	75.6
Western	80.4	76.4	83.0	78.9	68.1	58.0	71.0	68.3	64.6	56.5	72.2	68.7	318.7	265.4	261.9
Net imports	-23.5	-23.7	-23.6	-25.4	-26.5	-25.3	-25.5	-25.9	-24.3	-23.7	-24.8	-27.7	-96.2	-103.1	-100.4
Gross imports	1.0	1.0	1.0	1.0	0.3	0.5	0.7	0.7	0.6	0.7	1.1	0.8	4.0	2.3	3.2
Gross exports	24.5	24.7	24.6	26.3	26.8	25.8	26.1	26.7	24.9	24.4	25.8	28.5	100.2	105.4	103.6
Metallurgical coal	12.1	12.7	13.5	12.7	14.3	13.8	12.8	11.6	12.1	13.1	13.0	13.6	51.1	52.5	51.8
Steam coal	12.4	12.0	11.1	13.6	12.5	12.0	13.1	15.1	12.8	11.3	12.8	14.9	49.1	52.7	51.8
Primary inventory withdrawals	-1.6	0.3	3.6	0.1	-1.6	0.3	2.1	0.0	-0.4	0.1	2.2	0.0	2.4	0.8	1.8
Consumption															
U.S. total coal consumption	101.7	91.5	132.0	100.8	100.2	91.1	124.1	100.9	100.9	81.9	133.2	105.7	425.9	416.3	421.7
Coke plants	4.0	3.9	4.0	4.0	3.9	3.9	3.9	4.0	3.9	4.0	4.1	4.2	15.8	15.6	16.2
Electric power sector (b)	91.2	82.0	122.7	91.3	90.7	82.2	115.3	91.2	91.2	72.9	124.0	95.7	387.2	379.3	383.8
Retail and other industry	6.5	5.6	5.3	5.5	5.7	5.0	4.9	5.7	5.8	5.0	5.1	5.8	22.9	21.4	21.7
Residential and commercial	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.3	0.1	0.1	0.2	0.7	0.7	0.8
Other industrial	6.3	5.5	5.1	5.3	5.4	4.9	4.8	5.5	5.5	4.9	4.9	5.6	22.2	20.7	20.9
Discrepancy (c)	3.8	10.3	6.8	2.3	2.0	4.2	-5.4	0.0	0.0	0.0	0.0	0.0	23.2	0.7	0.0
End-of-period inventories	135.7	154.4	139.7	154.4	158.0	152.2	142.5	142.0	140.1	143.6	110.5	99.7	154.4	142.0	99.7
Primary inventories (d)	22.4	22.1	18.5	18.4	20.0	19.7	17.6	17.6	18.0	17.9	15.8	15.8	18.4	17.6	15.8
Secondary inventories	113.3	132.3	121.2	136.0	138.0	137.8	124.9	124.4	122.1	125.6	94.7	84.0	136.0	124.4	84.0
Electric power sector	109.0	127.7	116.6	131.4	133.6	133.5	120.3	119.8	118.2	121.5	90.3	79.5	131.4	119.8	79.5
Retail and general industry	2.5	2.8	2.7	2.9	2.8	2.6	2.9	2.9	2.4	2.6	2.8	2.9	2.9	2.9	2.9
Coke plants	1.7	1.7	1.7	1.6	1.4	1.6	1.5	1.5	1.3	1.4	1.4	1.4	1.6	1.5	1.4
Commercial & institutional	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.2
Coal market indicators															
Coal miner productivity (tons per hour)	6.75	6.75	6.75	6.75	6.56	6.56	6.56	6.56	6.27	6.27	6.27	6.27	6.75	6.56	6.27
Total raw steel production (million short tons)	21.23	22.17	22.51	22.30	22.22	22.36	23.00	23.29	23.01	23.91	24.30	24.78	88.20	90.87	96.00
Cost of coal to electric utilities (dollars per million Btu) ..	2.57	2.49	2.51	2.51	2.50	2.54	2.52	2.48	2.49	2.49	2.48	2.46	2.52	2.51	2.48

(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.

Notes:

EIA completed modeling and analysis for this report on September 5, 2024.

- = no data available

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

Sources:

Historical data: Latest data available from Energy Information Administration databases supporting the following reports: *Quarterly Coal Report*, DOE/EIA-0121; and *Electric Power Monthly*, DOE/EIA-0226.

Table 7a. U.S. Electricity Industry Overview

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Electricity supply (billion kilowatthours)															
Total utility-scale power supply	995	990	1,212	1,000	1,025	1,050	1,217	1,024	1,035	1,054	1,258	1,038	4,197	4,317	4,385
Electricity generation (a)	987	984	1,209	998	1,024	1,045	1,210	1,020	1,029	1,048	1,250	1,034	4,178	4,299	4,361
Electric power sector	949	947	1,168	958	984	1,008	1,170	981	991	1,010	1,209	994	4,022	4,143	4,203
Industrial sector	35	33	36	36	35	33	35	35	34	34	36	35	139	138	139
Commercial sector	4	4	5	4	4	4	5	5	4	4	5	5	17	18	18
Net imports	8	6	3	2	2	5	7	4	6	6	8	5	19	18	24
Small-scale solar generation (c)	14	22	22	16	17	25	25	17	19	29	29	20	74	85	96
Residential sector	10	15	15	11	12	17	17	12	13	19	19	13	50	58	65
Commercial sector	4	6	6	4	4	7	7	5	5	8	8	5	19	22	26
Industrial sector	1	1	1	1	1	1	1	1	1	2	2	1	4	5	5
Losses and Unaccounted for (b)	42	52	51	52	51	69	43	52	44	61	46	49	197	216	200
Electricity consumption (billion kilowatthours)															
Total consumption	953	939	1,161	948	974	981	1,174	972	991	993	1,212	989	4,000	4,101	4,185
Sales to ultimate customers	919	906	1,124	912	939	948	1,138	937	957	959	1,175	954	3,861	3,962	4,045
Residential sector	355	319	455	325	365	345	458	336	371	344	475	339	1,455	1,503	1,529
Commercial sector	322	330	392	331	330	347	398	338	334	348	405	340	1,375	1,413	1,427
Industrial sector	239	256	275	254	243	255	280	262	250	266	293	273	1,025	1,039	1,083
Transportation sector	2	2	2	2	2	2	2	2	2	2	2	2	7	7	7
Direct use (d)	34	33	36	36	35	33	36	35	34	34	37	36	139	139	140
Average residential electricity usage per customer (kWh)	2,530	2,268	3,243	2,316	2,568	2,427	3,229	2,364	2,580	2,393	3,309	2,359	10,357	10,587	10,641
End-of-period fuel inventories held by electric power sector															
Coal (million short tons)	109.0	127.7	116.6	131.4	133.6	133.5	120.3	119.8	118.2	121.5	90.3	79.5	131.4	119.8	79.5
Residual fuel (million barrels)	6.1	6.2	6.4	6.3	6.4	6.4	3.9	4.2	2.8	3.0	1.2	2.1	6.3	4.2	2.1
Distillate fuel (million barrels)	17.0	16.9	16.1	16.1	15.5	15.5	15.5	15.8	15.8	15.6	15.6	15.8	16.1	15.8	15.8
Prices															
Power generation fuel costs (dollars per million Btu)															
Coal	2.57	2.49	2.51	2.51	2.50	2.54	2.52	2.48	2.49	2.49	2.48	2.46	2.52	2.51	2.48
Natural gas	4.98	2.60	2.92	3.19	3.37	2.36	2.34	2.93	3.55	3.07	3.36	3.66	3.36	2.72	3.40
Residual fuel oil	19.24	17.88	19.16	20.84	18.84	18.54	15.31	14.43	15.02	15.88	15.48	15.27	19.32	16.83	15.36
Distillate fuel oil	22.84	19.91	22.08	21.03	20.16	19.48	18.03	17.96	18.53	18.45	19.22	19.48	21.47	18.92	18.94
Prices to ultimate customers (cents per kilowatthour)															
Residential sector	15.77	16.12	16.02	16.02	16.01	16.55	16.36	15.94	16.05	16.87	16.63	16.36	15.98	16.22	16.49
Commercial sector	12.64	12.45	13.18	12.63	12.75	12.76	13.38	12.65	12.75	13.01	13.73	13.00	12.74	12.90	13.15
Industrial sector	8.06	7.74	8.55	7.83	7.88	8.08	8.51	7.81	7.96	8.13	8.50	7.82	8.05	8.08	8.11
Wholesale electricity prices (dollars per megawatthour)															
ERCOT North hub	28.05	57.27	188.81	33.85	32.53	39.94	41.08	25.01	24.46	22.72	37.18	24.32	77.00	34.64	27.17
CAISO SP15 zone	92.54	30.00	67.59	50.54	33.41	7.97	42.23	41.98	43.73	37.48	47.18	48.38	60.17	31.40	44.19
ISO-NE Internal hub	52.63	32.55	40.41	39.84	47.50	34.50	46.41	45.99	59.21	42.02	47.73	50.08	41.36	43.60	49.76
NYISO Hudson Valley zone	44.65	31.38	39.45	36.35	43.48	33.82	43.25	40.51	44.64	40.24	45.81	43.85	37.96	40.26	43.63
PJM Western hub	36.49	35.41	43.27	42.17	35.76	37.75	49.89	40.49	46.21	41.63	49.42	43.01	39.34	40.97	45.07
Midcontinent ISO Illinois hub	31.39	32.13	40.60	33.58	32.52	30.38	37.15	31.88	35.62	34.33	38.71	34.49	34.42	32.98	35.79
SPP ISO South hub	28.96	34.56	46.96	28.50	31.66	33.95	40.86	30.80	33.83	34.34	40.48	34.16	34.74	34.32	35.70
SERC index, Into Southern	30.53	31.66	36.45	30.40	27.96	29.20	30.95	29.72	32.49	30.96	35.66	31.93	32.26	29.46	32.76
FRCC index, Florida Reliability	30.31	33.06	36.79	32.05	30.01	31.81	33.13	31.96	32.31	33.45	35.96	33.28	33.05	31.73	33.75
Northwest index, Mid-Columbia	105.99	58.61	82.36	79.49	99.74	32.91	56.96	60.82	63.85	49.51	57.55	65.88	81.61	62.61	59.20
Southwest index, Palo Verde	84.19	31.60	71.95	50.10	29.62	11.22	48.21	39.05	40.99	36.34	44.29	42.68	59.46	32.02	41.07

(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.

Notes:

EIA completed modeling and analysis for this report on September 5, 2024.

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

kWh = kilowatthours. Btu = British thermal units.

Prices are not adjusted for inflation.

Sources:

consumption, fuel inventories and costs, and retail electricity prices); S&P Global Market Intelligence (wholesale electricity prices).

Table 7b. U.S. Regional Electricity Sales to Ultimate Customers (billion kilowatthours)

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
All sectors (a)	918.5	906.0	1,124.5	912.3	938.8	947.7	1,138.3	936.9	956.7	959.4	1,175.1	953.5	3,861.3	3,961.7	4,044.7
New England	27.9	25.1	31.4	26.2	28.5	26.3	32.4	26.6	28.9	26.2	32.9	26.4	110.6	113.8	114.4
Middle Atlantic	86.4	79.2	99.7	82.7	90.3	86.4	102.6	83.1	91.1	86.1	104.1	83.6	348.1	362.4	364.8
E. N. Central	133.8	127.6	148.9	129.4	136.4	134.3	151.2	131.8	139.2	134.7	155.9	132.8	539.7	553.6	562.7
W. N. Central	78.7	74.8	86.6	75.1	79.4	75.8	86.4	78.8	83.2	77.6	91.0	80.6	315.2	320.4	332.4
S. Atlantic	196.4	200.9	251.0	199.0	204.1	214.2	255.1	204.3	207.9	217.4	264.9	207.6	847.3	877.8	897.7
E. S. Central	73.1	71.1	89.1	70.9	76.9	74.8	90.9	71.9	76.4	74.6	91.9	72.0	304.3	314.5	314.9
W. S. Central	152.7	166.1	219.2	162.8	154.9	167.6	215.2	171.6	162.8	173.9	229.8	180.8	700.8	709.4	747.2
Mountain	68.9	71.1	90.4	69.3	69.9	76.2	92.6	70.7	70.6	76.8	94.1	71.7	299.6	309.5	313.2
Pacific contiguous	96.8	86.6	104.4	93.0	94.6	88.5	108.0	94.3	92.9	88.5	106.8	94.2	380.9	385.3	382.4
AK and HI	3.7	3.6	3.7	3.9	3.7	3.6	3.8	3.9	3.7	3.6	3.8	3.8	14.9	14.9	14.9
Residential sector	355.4	318.6	455.4	325.2	364.5	344.5	458.5	335.6	370.7	343.8	475.4	338.9	1,454.7	1,503.1	1,528.8
New England	12.2	9.8	13.7	10.8	12.7	10.9	14.6	11.2	13.2	10.9	15.1	11.3	46.5	49.4	50.4
Middle Atlantic	33.3	27.5	40.1	30.2	36.2	32.7	42.2	30.4	37.2	32.6	43.1	30.7	131.2	141.5	143.6
E. N. Central	46.5	39.8	52.5	41.7	47.1	43.6	54.0	43.4	49.4	43.2	56.7	43.5	180.5	188.0	192.8
W. N. Central	29.4	24.1	30.8	24.2	28.8	24.1	30.2	26.0	30.8	24.5	32.5	26.4	108.6	109.2	114.1
S. Atlantic	87.2	83.8	117.9	84.2	91.6	92.0	120.4	86.9	92.5	92.8	125.7	87.7	373.0	390.8	398.7
E. S. Central	29.3	25.4	37.3	26.0	32.0	27.5	38.4	26.7	31.7	27.3	39.2	26.9	118.0	124.7	125.1
W. S. Central	51.6	52.4	86.9	49.5	52.7	56.1	79.1	50.7	53.2	55.4	84.0	51.8	240.4	238.6	244.5
Mountain	25.3	24.5	36.4	23.4	24.4	26.8	37.1	24.0	24.5	26.5	37.5	24.2	109.5	112.4	112.7
Pacific contiguous	39.5	30.2	38.7	33.8	37.8	29.7	41.3	35.0	37.0	29.6	40.5	35.1	142.2	143.8	142.2
AK and HI	1.2	1.1	1.1	1.3	1.2	1.1	1.1	1.3	1.2	1.1	1.1	1.3	4.7	4.7	4.7
Commercial sector	322.0	329.7	391.9	331.3	329.5	346.9	398.2	338.1	333.9	347.7	405.3	339.8	1,374.9	1,412.7	1,426.7
New England	11.9	11.5	13.6	11.7	12.2	11.7	13.8	11.7	12.1	11.5	13.8	11.5	48.7	49.4	49.0
Middle Atlantic	35.0	33.1	39.7	34.4	35.9	34.8	40.5	34.4	35.7	34.5	40.7	34.3	142.2	145.6	145.3
E. N. Central	42.4	41.9	48.0	42.1	43.3	43.7	48.5	42.5	43.4	43.4	49.4	42.4	174.5	178.1	178.5
W. N. Central	25.3	25.1	28.6	25.0	25.5	26.5	28.9	26.3	26.7	26.8	30.0	26.6	104.0	107.2	110.2
S. Atlantic	75.4	81.7	96.5	80.4	78.6	86.5	98.4	83.1	81.1	87.9	101.7	84.3	333.9	346.6	355.0
E. S. Central	20.6	21.8	27.1	21.6	21.5	23.1	27.5	21.8	21.2	22.7	27.5	21.5	91.1	93.8	92.9
W. S. Central	47.5	51.2	63.6	50.7	48.2	53.8	64.1	52.3	49.6	53.7	65.6	53.0	213.1	218.4	222.0
Mountain	23.8	25.0	29.9	24.6	24.6	26.9	30.6	24.9	25.0	27.3	31.3	25.4	103.2	107.1	109.0
Pacific contiguous	38.9	37.0	43.6	39.4	38.4	38.6	44.5	39.6	37.7	38.6	43.9	39.3	158.8	161.1	159.4
AK and HI	1.3	1.3	1.4	1.4	1.3	1.3	1.4	1.4	1.3	1.3	1.4	1.3	5.3	5.4	5.3
Industrial sector	239.4	256.2	275.3	254.1	243.1	254.6	280.0	261.6	250.3	266.3	292.8	273.2	1,024.9	1,039.3	1,082.7
New England	3.7	3.7	3.9	3.6	3.5	3.6	3.9	3.5	3.4	3.6	3.9	3.5	14.9	14.5	14.5
Middle Atlantic	17.3	17.7	18.9	17.3	17.3	18.0	19.1	17.4	17.3	18.2	19.4	17.7	71.3	71.9	72.6
E. N. Central	44.8	45.8	48.2	45.4	45.9	46.8	48.5	45.8	46.3	48.1	49.7	46.8	184.3	187.0	190.9
W. N. Central	24.1	25.5	27.2	25.8	25.1	25.2	27.3	26.5	25.7	26.3	28.5	27.6	102.6	104.0	108.1
S. Atlantic	33.5	35.2	36.4	34.0	33.6	35.4	36.1	34.1	34.0	36.5	37.2	35.2	139.1	139.2	142.9
E. S. Central	23.2	23.9	24.7	23.3	23.4	24.3	25.0	23.4	23.4	24.6	25.2	23.6	95.2	96.0	96.8
W. S. Central	53.6	62.4	68.6	62.5	54.0	57.8	72.0	68.5	59.9	64.7	80.1	75.9	247.2	252.3	280.6
Mountain	19.8	21.5	24.1	21.3	20.9	22.4	24.8	21.7	21.1	23.0	25.3	22.0	86.7	89.8	91.4
Pacific contiguous	18.3	19.2	21.9	19.6	18.2	19.9	22.0	19.5	18.1	20.1	22.2	19.6	79.0	79.6	80.0
AK and HI	1.1	1.2	1.3	1.2	1.2	1.2	1.3	1.2	1.2	1.2	1.3	1.3	4.8	4.8	4.9

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

Notes:

EIA completed modeling and analysis for this report on September 5, 2024.

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

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).

Sources:

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

Table 7c. U.S. Regional Electricity Prices to Ultimate Customers (Cents per Kilowatthour)

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
All sectors (a)															
United States average ...	12.66	12.41	13.20	12.50	12.75	12.88	13.38	12.47	12.78	13.04	13.60	12.71	12.72	12.90	13.06
New England	24.39	22.26	22.02	22.28	23.18	21.92	21.65	21.88	23.17	22.53	22.69	23.23	22.73	22.15	22.90
Middle Atlantic	15.39	14.75	16.17	15.25	15.57	15.76	16.93	15.73	16.13	16.25	17.44	16.15	15.43	16.04	16.54
E. N. Central	12.20	11.97	12.08	11.86	12.06	12.33	12.27	12.00	12.29	12.56	12.56	12.28	12.03	12.17	12.43
W. N. Central	9.89	10.60	11.47	9.89	9.99	10.70	11.41	9.83	9.99	10.77	11.53	9.96	10.49	10.50	10.58
S. Atlantic	12.03	11.91	12.20	11.95	12.08	11.97	12.02	11.61	11.83	11.95	12.18	11.81	12.03	11.93	11.96
E. S. Central	11.04	10.66	11.00	10.74	11.02	10.96	11.21	10.93	11.29	11.27	11.53	11.23	10.87	11.04	11.34
W. S. Central	9.80	9.24	10.41	9.40	9.50	9.61	10.21	9.28	9.40	9.60	10.32	9.28	9.76	9.69	9.70
Mountain	10.53	11.01	11.79	10.72	10.70	11.31	11.72	10.51	10.55	11.47	12.07	11.05	11.07	11.11	11.35
Pacific	17.49	18.63	21.48	18.76	19.17	20.66	22.83	19.40	19.70	21.39	23.39	19.85	19.15	20.59	21.16
Residential sector															
United States average ...	15.77	16.12	16.02	16.02	16.01	16.55	16.36	15.94	16.05	16.87	16.63	16.36	15.98	16.22	16.49
New England	30.65	29.58	27.18	27.72	27.62	26.58	25.39	26.39	27.04	27.09	26.65	28.28	28.72	26.45	27.21
Middle Atlantic	19.70	19.13	19.86	19.63	19.63	20.21	21.17	20.67	20.59	21.13	21.90	21.35	19.61	20.45	21.27
E. N. Central	16.13	16.58	15.98	16.21	16.02	16.90	16.15	16.22	16.12	17.34	16.54	16.71	16.20	16.31	16.65
W. N. Central	11.85	13.52	14.23	12.65	12.28	14.00	14.19	12.32	12.07	14.08	14.18	12.46	13.08	13.20	13.19
S. Atlantic	14.30	14.74	14.54	14.64	14.51	14.68	14.27	14.14	14.19	14.68	14.42	14.44	14.55	14.39	14.43
E. S. Central	13.17	13.20	12.94	13.27	13.17	13.58	13.23	13.48	13.57	14.11	13.59	13.88	13.13	13.35	13.76
W. S. Central	13.57	13.57	13.51	13.75	13.47	13.87	13.87	13.51	13.21	13.94	13.84	13.58	13.59	13.70	13.67
Mountain	12.96	13.89	14.10	13.74	13.58	14.42	14.04	13.41	13.35	14.52	14.59	14.40	13.71	13.90	14.26
Pacific	19.60	22.32	23.94	21.02	22.03	25.17	25.41	21.82	22.97	26.41	26.29	22.21	21.70	23.60	24.44
Commercial sector															
United States average ...	12.64	12.45	13.18	12.63	12.75	12.76	13.38	12.65	12.75	13.01	13.73	13.00	12.74	12.90	13.15
New England	20.56	18.40	18.70	19.33	20.58	19.55	19.35	19.43	20.85	20.23	20.18	20.43	19.23	19.72	20.42
Middle Atlantic	14.86	14.89	16.41	15.19	15.09	15.55	16.72	15.39	15.33	15.90	17.21	15.80	15.38	15.72	16.10
E. N. Central	12.01	12.07	11.90	11.86	12.07	12.33	12.02	12.01	12.26	12.60	12.30	12.34	11.96	12.10	12.37
W. N. Central	9.95	10.66	11.38	9.90	9.93	10.45	11.34	9.83	9.89	10.59	11.52	10.00	10.50	10.41	10.53
S. Atlantic	11.32	10.95	10.90	11.01	11.16	10.86	10.62	10.58	10.83	10.82	10.77	10.77	11.03	10.79	10.79
E. S. Central	12.57	12.09	12.07	12.02	12.44	12.30	12.34	12.26	12.67	12.67	12.77	12.68	12.18	12.34	12.70
W. S. Central	9.35	8.83	9.54	9.14	9.06	9.07	10.00	9.79	9.77	10.09	11.02	10.39	9.23	9.51	10.36
Mountain	10.35	11.09	11.65	10.77	10.57	11.22	11.51	10.42	10.17	11.12	11.84	10.88	11.00	10.97	11.05
Pacific	18.06	18.84	22.70	19.62	19.51	20.40	23.67	19.92	19.55	20.49	23.96	20.37	19.90	20.97	21.19
Industrial sector															
United States average ...	8.06	7.74	8.55	7.83	7.88	8.08	8.51	7.81	7.96	8.13	8.50	7.82	8.05	8.08	8.11
New England	16.25	15.24	15.80	15.91	16.58	15.91	16.08	16.04	16.88	16.40	16.71	16.67	15.80	16.15	16.66
Middle Atlantic	8.21	7.72	7.82	7.76	8.19	8.17	8.14	7.89	8.35	8.26	8.13	7.89	7.87	8.10	8.16
E. N. Central	8.31	7.89	8.02	7.88	8.01	8.08	8.20	8.00	8.24	8.24	8.31	8.12	8.02	8.07	8.23
W. N. Central	7.44	7.79	8.43	7.29	7.42	7.78	8.42	7.39	7.60	7.89	8.51	7.51	7.75	7.76	7.89
S. Atlantic	7.72	7.38	8.07	7.54	7.64	7.67	8.34	7.70	7.86	7.76	8.49	7.77	7.68	7.84	7.98
E. S. Central	6.98	6.66	6.90	6.73	6.76	6.72	6.84	6.78	6.96	6.82	7.00	6.89	6.82	6.78	6.92
W. S. Central	6.56	5.95	7.27	6.16	6.03	5.97	6.37	5.77	5.71	5.48	6.04	5.56	6.50	6.04	5.71
Mountain	7.65	7.64	8.45	7.36	7.48	7.70	8.51	7.41	7.73	8.38	8.63	7.56	7.80	7.81	8.11
Pacific	11.81	12.47	14.83	13.19	12.57	14.48	16.34	14.03	13.40	15.82	17.09	14.71	13.15	14.45	15.35

(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.

Notes:

EIA completed modeling and analysis for this report on September 5, 2024.

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

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).

Sources:

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

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 - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
United States															
Total generation	948.6	947.4	1,168.3	958.1	984.5	1,008.1	1,170.0	980.6	991.2	1,010.2	1,208.5	993.6	4,022.3	4,143.1	4,203.5
Natural gas	367.6	395.1	537.6	394.9	394.6	409.5	533.3	392.4	375.2	385.6	519.5	376.9	1,695.3	1,729.8	1,657.2
Coal	156.7	140.6	216.1	157.3	156.9	143.9	203.2	156.4	159.3	127.8	219.1	165.0	670.7	660.4	671.2
Nuclear	194.5	183.1	205.2	192.6	197.0	190.5	203.4	195.1	198.3	192.8	208.7	197.4	775.3	786.0	797.3
Renewable energy sources:	225.8	224.8	204.8	209.4	232.2	260.2	225.8	231.9	253.9	300.6	257.7	249.9	864.7	950.0	1,062.2
Conventional hydropower	60.8	64.1	58.5	55.2	63.5	62.1	56.0	55.8	65.2	74.6	64.1	59.3	238.7	237.3	263.1
Wind	125.9	102.6	84.6	111.8	122.4	124.9	86.7	118.2	127.1	130.1	90.6	123.0	425.0	452.2	470.9
Solar (a)	29.2	49.0	52.0	33.3	37.4	64.5	73.3	48.2	52.5	87.5	93.2	58.0	163.5	223.5	291.1
Biomass	5.6	5.1	5.7	4.7	5.0	4.9	5.8	5.1	5.3	5.0	5.7	5.0	21.1	20.8	21.1
Geothermal	4.2	4.0	4.0	4.2	3.9	3.8	4.1	4.4	3.8	3.4	4.1	4.5	16.5	16.1	15.9
Pumped storage hydropower	-1.6	-1.3	-1.8	-1.2	-1.1	-1.2	-1.9	-1.2	-1.1	-1.0	-1.9	-1.3	-5.9	-5.5	-5.4
Petroleum (b)	3.9	3.5	4.7	3.5	3.5	3.9	4.5	4.7	4.4	3.4	4.2	4.6	15.6	16.6	16.5
Other gases	0.8	0.7	0.9	0.8	0.7	0.7	0.9	0.8	0.8	0.8	0.9	0.8	3.2	3.1	3.3
Other nonrenewable fuels (c)	0.9	0.9	0.8	0.8	0.7	0.6	0.7	0.6	0.4	0.2	0.3	0.2	3.4	2.6	1.2
New England (ISO-NE)															
Total generation	23.6	20.2	27.2	22.8	25.0	23.8	28.6	24.0	25.1	24.0	30.5	25.1	93.7	101.4	104.6
Natural gas	11.5	12.3	15.8	12.5	12.8	11.6	17.2	12.7	11.6	11.8	18.2	11.4	52.2	54.4	53.0
Coal	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.2	0.1	0.1
Nuclear	7.1	3.4	6.9	5.8	7.0	7.3	7.2	5.6	7.1	6.1	7.2	7.2	23.2	27.0	27.5
Conventional hydropower	1.9	1.4	1.6	1.8	2.0	1.6	1.1	1.7	2.0	2.2	1.2	1.7	6.7	6.5	7.1
Nonhydro renewables (d)	2.6	2.8	2.6	2.4	2.8	3.1	3.0	3.4	3.7	3.7	3.6	4.1	10.4	12.3	15.1
Other energy sources (e)	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.5	0.8	0.2	0.2	0.5	1.0	1.1	1.8
Net energy for load (f)	29.0	25.6	32.2	27.9	29.6	27.0	32.6	28.4	29.8	27.5	34.4	29.3	114.7	117.8	121.0
New York (NYISO)															
Total generation	29.7	29.4	36.7	32.0	32.6	32.5	36.4	30.5	30.3	30.3	37.2	31.4	127.9	132.0	129.2
Natural gas	13.5	14.2	21.1	15.6	16.1	15.7	20.7	14.1	13.9	13.6	20.6	14.1	64.4	66.6	62.2
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	6.8	6.6	6.9	7.2	6.5	7.2	6.6	6.8	6.7	7.0	7.2	7.2	27.5	27.1	28.0
Conventional hydropower	7.1	6.6	6.9	7.0	7.5	6.9	6.8	7.0	6.8	6.9	6.9	7.1	27.6	28.3	27.6
Nonhydro renewables (d)	2.1	2.0	1.8	2.1	2.4	2.6	2.3	2.4	2.5	2.9	2.5	2.8	8.1	9.7	10.7
Other energy sources (e)	0.2	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.4	0.0	0.1	0.2	0.2	0.4	0.7
Net energy for load (f)	36.1	33.3	42.1	35.5	37.0	35.7	43.2	35.7	37.4	36.4	45.3	36.9	147.0	151.6	156.1
Mid-Atlantic (PJM)															
Total generation	197.1	183.9	231.0	195.1	208.6	198.8	229.3	194.3	205.4	193.3	229.5	194.5	807.2	831.0	822.7
Natural gas	85.1	81.5	112.3	85.4	93.5	88.7	110.4	80.6	86.8	85.4	106.0	80.0	364.3	373.2	358.3
Coal	28.3	22.9	36.2	25.7	29.1	28.2	33.9	28.5	33.1	21.8	36.7	29.5	113.1	119.7	121.0
Nuclear	67.6	65.7	70.6	68.8	68.9	64.4	70.8	68.3	67.4	66.3	71.3	67.6	272.6	272.3	272.6
Conventional hydropower	2.6	1.8	2.0	2.5	3.0	2.2	1.5	2.0	2.6	2.5	1.6	2.1	8.9	8.7	8.8
Nonhydro renewables (d)	13.1	12.0	9.8	12.4	13.9	15.2	12.6	14.2	15.2	17.1	13.7	14.8	47.2	56.0	60.8
Other energy sources (e)	0.3	0.1	0.2	0.4	0.2	0.1	0.1	0.6	0.4	0.2	0.1	0.6	1.0	1.0	1.2
Net energy for load (f)	192.5	176.2	214.4	187.0	199.4	191.6	219.1	187.1	201.1	189.2	223.0	189.7	770.1	797.3	803.1
Southeast (SERC)															
Total generation	153.6	158.2	194.5	158.4	164.4	170.6	191.8	156.2	164.8	170.9	205.1	162.6	664.7	682.9	703.3
Natural gas	63.7	65.7	82.4	62.6	62.1	67.6	83.7	61.8	62.7	68.5	84.1	59.6	274.4	275.2	275.0
Coal	23.7	26.5	39.7	25.2	30.5	31.1	37.3	23.8	27.9	25.1	43.7	30.8	115.0	122.6	127.6
Nuclear	51.7	52.9	57.4	57.4	55.9	56.5	56.3	56.4	56.5	58.7	60.6	57.1	219.3	225.1	232.8
Conventional hydropower	9.9	6.2	8.0	8.6	10.5	7.6	7.2	8.8	11.3	9.0	8.0	9.1	32.7	34.2	37.5
Nonhydro renewables (d)	4.9	7.2	7.4	5.0	5.4	8.1	7.8	5.6	6.4	9.7	9.3	6.2	24.5	26.9	31.8
Other energy sources (e)	-0.3	-0.2	-0.5	-0.4	0.0	-0.3	-0.5	-0.3	-0.1	-0.2	-0.6	-0.3	-1.3	-1.1	-1.3
Net energy for load (f)	148.9	149.2	171.6	149.4	155.4	156.8	175.4	148.7	156.4	159.6	191.4	154.4	619.2	636.2	661.8
Florida (FRCC)															
Total generation	52.5	63.6	75.7	55.9	53.4	67.3	74.8	57.1	52.0	62.7	73.2	55.9	247.7	252.6	243.9
Natural gas	38.3	48.8	59.0	42.9	40.3	50.5	59.2	43.4	36.9	45.7	56.1	41.4	189.0	193.5	180.1
Coal	2.7	2.6	3.9	2.5	1.4	2.3	2.5	1.5	1.5	1.8	2.6	1.6	11.7	7.8	7.5
Nuclear	7.4	7.5	8.0	7.1	7.5	7.5	7.2	7.4	7.8	7.4	7.5	7.7	29.9	29.6	30.4
Conventional hydropower	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.2	0.2
Nonhydro renewables (d)	3.5	4.2	4.1	3.1	3.9	6.0	5.3	4.2	5.4	7.2	6.3	4.8	14.8	19.4	23.7
Other energy sources (e)	0.6	0.5	0.6	0.4	0.3	0.9	0.5	0.4	0.4	0.6	0.6	0.4	2.1	2.2	2.0
Net energy for load (f)	54.4	65.5	77.2	56.6	52.9	68.2	76.1	57.2	51.3	63.5	74.7	56.0	253.8	254.4	245.4

(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

Notes:

EIA completed modeling and analysis for this report on September 5, 2024.

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

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.

Sources:

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 - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Midwest (MISO)															
Total generation	145.1	142.9	171.5	143.6	147.1	151.5	173.7	153.3	156.8	151.7	180.3	156.4	603.2	625.6	645.3
Natural gas	45.4	54.7	67.3	47.8	48.9	56.0	67.8	53.9	50.2	54.2	67.6	52.9	215.2	226.5	224.9
Coal	43.0	38.0	57.3	44.9	42.8	38.6	56.3	40.8	44.9	37.6	60.3	42.5	183.2	178.5	185.3
Nuclear	23.4	21.1	24.3	18.4	20.9	21.8	24.9	23.1	22.4	20.9	24.2	23.9	87.2	90.7	91.5
Conventional hydropower	2.2	2.0	1.9	2.0	2.1	2.0	2.0	2.1	2.5	2.9	2.4	2.2	8.0	8.2	9.9
Nonhydro renewables (d)	30.3	26.5	19.4	29.8	31.7	32.6	21.3	32.1	36.0	35.2	24.6	33.6	106.0	117.7	129.4
Other energy sources (e)	0.8	0.7	1.3	0.8	0.6	0.5	1.5	1.4	0.9	0.9	1.3	1.3	3.6	4.0	4.3
Net energy for load (f)	158.6	157.9	184.3	155.2	159.9	160.1	184.7	163.1	164.7	163.2	193.2	165.7	656.0	667.8	686.9
Central (Southwest Power Pool)															
Total generation	75.0	71.6	87.6	73.3	75.8	76.1	87.2	72.9	74.1	74.1	88.1	72.0	307.5	311.9	308.3
Natural gas	15.8	21.6	30.5	18.3	19.9	22.5	29.7	19.5	18.8	19.3	28.8	18.3	86.1	91.6	85.2
Coal	20.4	17.2	27.4	18.4	17.7	15.5	25.1	16.5	16.1	13.0	24.1	14.9	83.4	74.8	68.0
Nuclear	4.3	4.3	4.3	4.4	4.3	3.2	4.2	3.5	4.2	4.3	4.2	3.1	17.2	15.1	15.9
Conventional hydropower	2.9	2.8	2.7	2.7	3.1	2.8	3.0	2.8	3.5	4.2	3.7	3.1	11.1	11.8	14.3
Nonhydro renewables (d)	31.4	25.6	22.5	29.4	30.6	31.7	25.0	30.4	31.3	33.2	27.1	32.5	108.9	117.7	124.1
Other energy sources (e)	0.2	0.1	0.2	0.2	0.2	0.4	0.2	0.2	0.2	0.3	0.1	0.2	0.7	1.0	0.7
Net energy for load (f)	66.6	66.6	81.8	65.7	68.9	70.1	83.4	68.0	67.8	67.6	81.7	65.9	280.7	290.4	283.0
Texas (ERCOT)															
Total generation	95.4	108.1	134.7	100.1	101.6	114.2	133.4	112.2	105.3	120.7	146.0	115.1	438.3	461.4	487.2
Natural gas	36.5	49.6	70.1	42.7	42.4	50.1	65.8	49.0	40.9	45.1	66.0	45.8	198.9	207.4	197.8
Coal	11.4	15.2	19.7	15.0	12.0	12.4	17.8	14.2	12.8	12.4	20.9	15.7	61.3	56.5	61.8
Nuclear	10.5	9.0	10.9	10.3	10.0	9.1	10.3	9.3	10.7	9.9	10.7	10.2	40.7	38.6	41.5
Conventional hydropower	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.6	0.5	0.6
Nonhydro renewables (d)	36.6	33.8	33.6	31.7	36.6	42.2	39.0	39.4	40.5	52.8	48.2	43.2	135.6	157.3	184.7
Other energy sources (e)	0.2	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.1	1.2	1.2	0.8
Net energy for load (f)	94.2	109.8	140.6	100.0	101.0	117.8	133.4	112.2	105.3	120.7	146.0	115.1	444.5	464.5	487.2
Northwest															
Total generation	91.8	82.6	95.4	88.0	90.3	84.0	99.0	90.7	93.7	89.3	102.2	91.5	357.8	364.0	376.7
Natural gas	24.3	17.9	27.8	23.9	25.7	19.4	28.8	19.1	22.8	14.4	23.8	17.0	93.9	92.9	77.9
Coal	20.2	14.4	23.6	20.2	17.4	11.1	22.7	24.7	17.5	10.4	23.3	24.4	78.4	75.9	75.6
Nuclear	2.4	1.0	2.5	2.5	2.5	2.5	2.5	2.4	2.4	1.2	2.4	2.4	8.4	10.0	8.5
Conventional hydropower	25.8	29.9	23.5	23.8	25.6	26.4	24.5	26.0	29.8	35.7	30.4	28.2	103.0	102.5	124.2
Nonhydro renewables (d)	18.9	19.2	17.8	17.5	18.9	24.6	20.2	18.3	21.0	27.5	22.1	19.3	73.3	82.0	89.9
Other energy sources (e)	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.8	0.7	0.6
Net energy for load (f)	88.1	76.7	86.5	84.3	89.4	80.5	88.6	83.2	84.7	77.7	87.0	83.1	335.6	341.8	332.4
Southwest															
Total generation	34.5	35.4	46.2	35.6	35.2	37.5	46.9	37.6	36.0	39.6	49.7	38.3	151.8	157.2	163.5
Natural gas	12.5	16.5	23.0	16.7	13.2	15.9	22.0	15.6	12.0	13.7	21.9	15.2	68.8	66.7	62.8
Coal	5.5	3.1	6.5	4.3	5.1	4.0	5.8	5.0	4.6	4.9	7.1	5.1	19.4	19.9	21.7
Nuclear	8.6	6.8	8.6	7.6	8.7	7.4	8.7	7.5	8.4	7.4	8.6	7.5	31.5	32.3	31.9
Conventional hydropower	1.4	2.5	2.0	1.4	1.7	2.2	1.9	1.5	1.7	2.2	1.9	1.6	7.3	7.3	7.4
Nonhydro renewables (d)	6.4	6.5	6.1	5.6	6.6	8.0	8.5	8.0	9.4	11.5	10.2	9.0	24.6	31.2	40.0
Other energy sources (e)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	-0.1	0.1	-0.1	-0.3
Net energy for load (f)	28.3	32.9	45.8	29.9	28.9	35.7	45.3	30.1	28.8	35.7	45.9	30.0	136.9	139.9	140.5
California															
Total generation	46.7	47.7	63.7	49.5	46.8	48.2	65.1	48.0	44.0	50.0	63.1	47.1	207.6	208.1	204.2
Natural gas	20.2	11.5	27.2	25.6	18.8	10.9	27.4	21.9	18.0	13.2	25.7	20.4	84.6	78.9	77.3
Coal	1.1	0.6	1.7	1.1	0.7	0.6	1.3	0.8	0.5	0.5	0.0	0.0	4.4	3.4	1.0
Nuclear	4.7	4.9	4.9	3.2	4.9	3.6	4.8	4.7	4.6	3.7	4.7	3.6	17.7	18.1	16.7
Conventional hydropower	6.5	10.5	9.4	4.9	7.2	9.8	7.7	3.4	4.4	8.3	7.4	3.8	31.3	28.1	23.9
Nonhydro renewables (d)	14.7	20.3	20.5	14.9	15.4	23.4	24.1	17.5	16.9	24.5	25.4	19.7	70.5	80.4	86.5
Other energy sources (e)	-0.6	-0.2	0.0	-0.2	-0.3	-0.1	-0.1	-0.3	-0.4	-0.2	-0.2	-0.5	-1.0	-0.9	-1.3
Net energy for load (f)	60.5	59.9	76.7	62.9	59.1	61.5	78.4	63.0	60.2	65.4	82.1	63.7	260.0	262.0	271.5

(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

Notes:

EIA completed modeling and analysis for this report on September 5, 2024.

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

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.

Sources:

Table 7e. U.S. Electricity Generating Capacity (gigawatts at end of period)
 U.S. Energy Information Administration | Short-Term Energy Outlook - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Electric power sector (power plants larger than one megawatt)															
Fossil fuel energy sources															
Natural gas	485.5	487.1	487.5	488.3	487.5	486.3	487.1	487.6	486.8	489.0	490.2	489.6	488.3	487.6	489.6
Coal	184.6	180.9	178.8	177.6	176.8	175.5	175.5	174.9	174.9	171.6	169.8	163.7	177.6	174.9	163.7
Petroleum	28.2	28.0	28.0	28.0	28.0	27.9	27.9	27.4	27.4	26.4	26.4	26.2	28.0	27.4	26.2
Other gases	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3
Renewable energy sources															
Wind	142.5	144.0	144.6	147.7	148.9	150.1	151.7	154.9	155.5	156.1	157.6	161.4	147.7	154.9	161.4
Solar photovoltaic	73.4	77.1	80.1	89.9	95.7	101.9	114.6	127.6	131.2	137.3	141.8	154.2	89.9	127.6	154.2
Solar thermal	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.5	1.4	1.4
Geothermal	2.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Waste biomass	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Wood biomass	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Conventional hydroelectric	79.7	79.7	79.7	79.7	79.6	79.5	79.6	79.6	79.6	79.6	79.6	79.6	79.7	79.6	79.6
Pumped storage hydroelectric	23.1	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2
Nuclear	94.7	94.7	95.8	95.8	95.8	96.9	96.9	96.9	96.9	96.9	96.9	97.7	95.8	96.9	97.7
Battery storage	9.6	10.8	13.4	15.6	16.9	19.9	25.8	30.8	32.4	37.5	39.5	44.6	15.6	30.8	44.6
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	18.7	18.6	18.6	18.5	18.5	18.5	18.6	18.3	18.3	18.3	18.3	18.3	18.5	18.3	18.3
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	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.5	1.5
Other gases	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
Renewable energy sources															
Wood biomass	5.5	5.5	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
Waste biomass	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.3	1.3
Solar	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
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	0.1	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
Other nonrenewable sources (a)	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Small-scale solar photovoltaic capacity (systems smaller than one megawatt)															
All sectors total	41.7	43.8	45.9	47.7	49.3	50.8	52.5	54.4	56.3	58.2	60.1	62.2	47.7	54.4	62.2
Residential sector	27.8	29.6	31.4	32.9	33.8	34.7	36.0	37.2	38.5	39.9	41.2	42.6	32.9	37.2	42.6
Commercial sector	11.5	11.8	12.0	12.3	12.9	13.4	13.9	14.4	14.9	15.4	16.0	16.5	12.3	14.4	16.5
Industrial sector	2.4	2.5	2.5	2.6	2.6	2.6	2.7	2.8	2.8	2.9	2.9	3.0	2.6	2.8	3.0

(a) Other sources include hydrogen, pitch, chemicals, sulfur, purchased steam, nonrenewable waste, and miscellaneous technologies.

Notes:

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The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

Capacity values represent the amount of generating capacity that is operating (or expected to be operating) at the end of each period factors.

Sources:

Historical data: Utility-scale capacity (power plants larger than one megawatt): EIA-860M Preliminary Monthly Electric Generator Inventory, June 2024.

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 - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
All Sectors	2.045	2.103	2.047	2.044	2.091	2.253	2.188	2.191	2.211	2.441	2.330	2.276	8.240	8.723	9.258
Biodiesel, renewable diesel, and other (g)	0.140	0.173	0.175	0.172	0.177	0.193	0.192	0.198	0.181	0.195	0.198	0.208	0.660	0.760	0.782
Biofuel losses and co-products (d)	0.199	0.202	0.206	0.214	0.209	0.203	0.211	0.212	0.207	0.209	0.208	0.213	0.821	0.836	0.837
Ethanol (f)	0.280	0.297	0.299	0.300	0.279	0.294	0.303	0.299	0.279	0.298	0.299	0.298	1.176	1.175	1.175
Geothermal	0.030	0.029	0.030	0.030	0.029	0.029	0.030	0.031	0.029	0.028	0.030	0.031	0.120	0.119	0.118
Hydroelectric power (a)	0.209	0.220	0.201	0.189	0.218	0.217	0.192	0.191	0.224	0.256	0.220	0.203	0.818	0.818	0.902
Solar (b)(f)	0.162	0.262	0.272	0.181	0.201	0.327	0.356	0.238	0.259	0.417	0.437	0.280	0.878	1.122	1.393
Waste biomass (c)	0.102	0.098	0.097	0.101	0.101	0.097	0.097	0.101	0.099	0.097	0.098	0.101	0.398	0.396	0.394
Wood biomass	0.493	0.472	0.478	0.475	0.461	0.466	0.510	0.517	0.499	0.498	0.532	0.523	1.918	1.954	2.052
Wind	0.430	0.350	0.289	0.382	0.418	0.426	0.296	0.403	0.434	0.444	0.309	0.420	1.450	1.543	1.607
Electric power sector	0.838	0.830	0.766	0.773	0.855	0.951	0.842	0.854	0.932	1.088	0.951	0.915	3.207	3.503	3.885
Geothermal	0.014	0.014	0.014	0.014	0.013	0.013	0.014	0.015	0.013	0.012	0.014	0.015	0.056	0.055	0.054
Hydroelectric power (a)	0.208	0.219	0.200	0.188	0.217	0.216	0.191	0.191	0.222	0.255	0.219	0.202	0.814	0.814	0.898
Solar (b)	0.100	0.167	0.177	0.114	0.128	0.220	0.250	0.165	0.179	0.298	0.318	0.198	0.558	0.763	0.993
Waste biomass (c)	0.043	0.041	0.042	0.041	0.042	0.039	0.040	0.040	0.041	0.040	0.041	0.041	0.167	0.162	0.162
Wood biomass	0.044	0.040	0.045	0.033	0.038	0.037	0.051	0.040	0.043	0.040	0.050	0.039	0.162	0.166	0.171
Wind	0.430	0.350	0.289	0.382	0.418	0.426	0.296	0.403	0.434	0.444	0.309	0.420	1.450	1.543	1.607
Industrial sector (e)	0.568	0.553	0.554	0.573	0.563	0.561	0.587	0.607	0.595	0.596	0.607	0.616	2.249	2.319	2.413
Biofuel losses and co-products (d)	0.199	0.202	0.206	0.214	0.209	0.203	0.211	0.212	0.207	0.209	0.208	0.213	0.821	0.836	0.837
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	0.005	0.005	0.003	0.004	0.005	0.005	0.004	0.004	0.006	0.006	0.004	0.016	0.018	0.019
Waste biomass (c)	0.041	0.040	0.037	0.042	0.042	0.041	0.039	0.042	0.041	0.040	0.039	0.042	0.160	0.162	0.161
Wood biomass	0.318	0.300	0.299	0.307	0.302	0.305	0.325	0.342	0.336	0.335	0.348	0.350	1.224	1.275	1.369
Commercial sector (e)	0.064	0.071	0.073	0.066	0.066	0.074	0.076	0.069	0.069	0.078	0.079	0.071	0.274	0.285	0.297
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	0.020	0.020	0.020
Solar (b)	0.014	0.021	0.021	0.014	0.016	0.023	0.024	0.016	0.019	0.027	0.027	0.019	0.069	0.079	0.092
Waste biomass (c)	0.017	0.017	0.018	0.018	0.018	0.018	0.018	0.019	0.017	0.017	0.018	0.019	0.071	0.072	0.071
Wood biomass	0.020	0.020	0.021	0.021	0.020	0.020	0.021	0.021	0.020	0.020	0.021	0.021	0.082	0.082	0.082
Residential sector	0.166	0.191	0.193	0.174	0.163	0.192	0.201	0.177	0.167	0.200	0.209	0.182	0.725	0.733	0.759
Geothermal	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.040	0.040	0.040
Solar (f)	0.045	0.069	0.070	0.051	0.054	0.078	0.078	0.053	0.057	0.086	0.086	0.059	0.235	0.263	0.288
Wood biomass	0.111	0.112	0.114	0.114	0.100	0.104	0.114	0.114	0.100	0.104	0.114	0.114	0.450	0.431	0.431
Transportation sector	0.408	0.457	0.461	0.458	0.443	0.474	0.482	0.484	0.448	0.480	0.484	0.492	1.785	1.883	1.904
Biodiesel, renewable diesel, and other (g)	0.140	0.173	0.175	0.172	0.177	0.193	0.192	0.198	0.181	0.195	0.198	0.208	0.660	0.760	0.782
Ethanol (g)	0.268	0.284	0.286	0.287	0.266	0.281	0.290	0.286	0.267	0.285	0.286	0.285	1.125	1.123	1.123

(a) Energy consumption for conventional hydroelectric power only. Hydroelectricity generated by pumped storage is not included in renewable energy.
 (b) Solar energy consumption by utility-scale power plants (capacity greater than or equal to 1 megawatt) in the electric power, commercial, and industrial sectors 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.
 (g) Fuel ethanol and biodiesel, renewable diesel, and other biofuels consumption in the transportation sector includes production, stock change, and imports less exports.
 Some biomass-based diesel may be consumed in the residential sector in heating oil.

Notes:
 EIA completed modeling and analysis for this report on September 5, 2024.
 The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.
Sources:
 Monthly Energy Review, and Petroleum Supply Monthly.
 Minor discrepancies with published historical data are due to independent rounding and possible revisions not yet reflected in the STEO.
 Forecasts: EIA Short-Term Integrated Forecasting System.

Table 9a. U.S. Macroeconomic Indicators and CO₂ Emissions

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Macroeconomic															
Real Gross Domestic Product (billion chained 2017 dollars - SAAR)	22,112	22,225	22,491	22,679	22,759	22,925	23,031	23,122	23,203	23,319	23,420	23,536	22,377	22,959	23,369
Real Personal Consumption Expend. (billion chained 2017 dollars - SAAR)	15,313	15,344	15,461	15,587	15,643	15,733	15,844	15,924	15,993	16,067	16,139	16,221	15,426	15,786	16,105
Real Private Fixed Investment (billion chained 2017 dollars - SAAR)	3,906	3,956	3,981	4,016	4,084	4,115	4,105	4,111	4,134	4,165	4,197	4,227	3,965	4,104	4,181
Business Inventory Change (billion chained 2017 dollars - SAAR)	24	19	102	70	36	91	83	82	79	97	110	114	54	73	100
Real Government Expenditures (billion chained 2017 dollars - SAAR)	3,759	3,790	3,843	3,887	3,904	3,930	3,938	3,946	3,952	3,958	3,964	3,969	3,820	3,929	3,961
Real Exports of Goods & Services (billion chained 2017 dollars - SAAR)	2,525	2,465	2,497	2,528	2,538	2,548	2,576	2,602	2,626	2,654	2,682	2,711	2,504	2,566	2,668
Real Imports of Goods & Services (billion chained 2017 dollars - SAAR)	3,460	3,393	3,428	3,447	3,498	3,558	3,583	3,615	3,663	3,700	3,752	3,788	3,432	3,564	3,726
Real Disposable Personal Income (billion chained 2017 dollars - SAAR)	16,663	16,797	16,820	16,856	16,912	16,954	17,077	17,175	17,322	17,459	17,593	17,733	16,784	17,029	17,527
Non-Farm Employment (millions)	155.0	155.8	156.4	157.1	157.8	158.4	159.0	159.5	159.8	160.0	160.1	160.3	156.1	158.7	160.0
Civilian Unemployment Rate (percent)	3.5	3.6	3.7	3.7	3.8	4.0	4.2	4.1	4.1	4.2	4.2	4.3	3.6	4.0	4.2
Housing Starts (millions - SAAR)	1.37	1.46	1.38	1.48	1.41	1.34	1.28	1.32	1.35	1.37	1.38	1.40	1.42	1.34	1.37
Industrial Production Indices (Index, 2017=100)															
Total Industrial Production	102.8	102.9	103.2	102.7	102.2	103.1	103.2	103.4	103.5	103.9	104.2	104.7	102.9	103.0	104.1
Manufacturing	100.0	100.1	100.0	99.7	99.4	100.0	100.2	100.5	100.6	101.2	101.6	102.2	100.0	100.0	101.4
Food	104.7	103.4	101.9	102.5	101.8	102.5	103.3	103.7	104.1	104.8	105.3	105.8	103.1	102.8	105.0
Paper	86.8	85.2	84.8	86.2	86.6	86.7	87.5	87.9	88.1	89.4	89.7	90.2	85.7	87.1	89.4
Petroleum and coal products	89.0	89.7	91.1	93.0	93.0	93.2	94.1	93.5	93.6	93.7	93.5	93.3	90.7	93.5	93.5
Chemicals	103.3	104.0	104.0	103.4	103.0	104.9	105.7	106.4	107.6	109.0	109.4	110.2	103.7	105.0	109.0
Nonmetallic mineral products	108.6	105.5	104.5	104.2	100.7	100.0	99.8	100.0	100.4	101.5	101.8	102.8	105.7	100.1	101.6
Primary metals	94.7	95.5	94.9	94.3	93.6	93.9	94.6	95.6	96.6	99.7	99.8	100.9	94.8	94.4	99.2
Coal-weighted manufacturing (a)	96.2	95.9	95.8	95.8	94.4	94.6	95.2	95.7	96.3	98.1	98.0	98.7	95.9	94.9	97.8
Distillate-weighted manufacturing (a)	98.8	98.1	97.9	97.9	96.7	96.9	97.2	97.8	98.2	99.4	99.7	100.4	98.2	97.2	99.4
Electricity-weighted manufacturing (a)	97.2	97.4	97.4	97.1	96.3	96.9	97.6	98.5	99.1	100.6	100.9	101.6	97.3	97.3	100.5
Natural Gas-weighted manufacturing (a)	95.0	95.1	95.5	95.3	93.9	94.8	95.5	96.3	96.9	98.5	98.4	99.0	95.2	95.1	98.2
Price Indexes															
Consumer Price Index (all urban consumers) (index, 1982-1984=1.00)	3.01	3.03	3.06	3.08	3.11	3.13	3.14	3.16	3.17	3.18	3.20	3.22	3.05	3.13	3.19
Producer Price Index: All Commodities (index, 1982=1.00)	2.60	2.53	2.55	2.55	2.55	2.54	2.50	2.52	2.53	2.52	2.53	2.54	2.56	2.53	2.53
Producer Price Index: Petroleum (index, 1982=1.00)	3.09	2.91	3.17	2.82	2.79	2.83	2.56	2.35	2.40	2.52	2.58	2.46	3.00	2.63	2.49
GDP Implicit Price Deflator (index, 2017=100)	121.3	121.8	122.8	123.3	124.2	125.0	125.5	126.2	127.0	127.7	128.5	129.3	122.3	125.2	128.1
Miscellaneous															
Vehicle Miles Traveled (a) (million miles/day)	8,426	9,159	9,334	8,835	8,381	9,252	9,485	8,937	8,596	9,398	9,551	8,954	8,941	9,015	9,127
Raw Steel Production (million short tons per day)	21.227	22.165	22.510	22.298	22.216	22.362	22.997	23.293	23.015	23.907	24.295	24.783	88.200	90.867	96.000
Carbon Dioxide (CO₂) Emissions (million metric tons)															
Total Energy (c)	1,237	1,115	1,228	1,213	1,240	1,129	1,221	1,220	1,251	1,102	1,240	1,229	4,793	4,809	4,821
Petroleum	548	563	570	572	543	566	575	570	550	568	580	573	2,253	2,253	2,272
Natural gas	501	383	416	455	512	382	416	463	512	381	413	458	1,756	1,772	1,765
Coal	186	167	240	184	183	180	228	186	186	151	245	195	777	777	777

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

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

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

Notes:

EIA completed modeling and analysis for this report on September 5, 2024.

- = no data available

SAAR = Seasonally-adjusted annual rate

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

Sources:

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

Table 9b. U.S. Regional Macroeconomic Data

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Real Gross State Product (billion \$2017)															
New England	1,148	1,153	1,166	1,175	1,178	1,184	1,189	1,192	1,195	1,200	1,204	1,209	1,161	1,186	1,202
Middle Atlantic	3,192	3,202	3,235	3,255	3,270	3,296	3,314	3,328	3,338	3,353	3,365	3,379	3,221	3,302	3,359
E. N. Central	2,832	2,841	2,870	2,891	2,890	2,912	2,924	2,933	2,939	2,951	2,961	2,973	2,858	2,915	2,956
W. N. Central	1,353	1,360	1,377	1,384	1,379	1,391	1,396	1,400	1,403	1,410	1,415	1,421	1,369	1,391	1,412
S. Atlantic	4,092	4,107	4,154	4,192	4,215	4,247	4,267	4,285	4,301	4,325	4,345	4,368	4,136	4,254	4,335
E. S. Central	998	1,000	1,011	1,019	1,023	1,031	1,035	1,039	1,041	1,045	1,049	1,053	1,007	1,032	1,047
W. S. Central	2,563	2,590	2,634	2,664	2,680	2,701	2,716	2,729	2,742	2,759	2,776	2,794	2,613	2,706	2,768
Mountain	1,527	1,535	1,556	1,574	1,585	1,597	1,605	1,613	1,619	1,630	1,639	1,649	1,548	1,600	1,634
Pacific	4,249	4,277	4,327	4,362	4,375	4,402	4,420	4,437	4,456	4,479	4,500	4,522	4,304	4,409	4,489
Industrial Output, Manufacturing (index, year 2017=100)															
New England	96.5	96.1	95.8	95.1	94.9	95.0	95.1	95.2	95.3	95.9	96.2	96.6	95.9	95.1	96.0
Middle Atlantic	95.3	95.3	95.3	94.7	94.3	94.7	94.8	95.0	95.1	95.7	95.9	96.4	95.2	94.7	95.8
E. N. Central	96.7	96.7	96.5	96.0	95.7	96.1	96.3	96.6	96.8	97.3	97.7	98.2	96.5	96.2	97.5
W. N. Central	101.4	101.5	101.4	100.9	100.8	101.7	101.7	101.9	101.9	102.5	102.8	103.4	101.3	101.5	102.6
S. Atlantic	102.6	102.9	103.0	102.8	102.7	103.6	104.1	104.5	104.7	105.4	106.0	106.7	102.8	103.7	105.7
E. S. Central	100.2	100.3	100.1	99.7	99.7	100.4	100.9	101.2	101.4	102.0	102.4	103.0	100.1	100.6	102.2
W. S. Central	104.5	105.2	105.5	105.0	105.2	106.6	106.8	107.2	107.4	108.1	108.6	109.2	105.1	106.4	108.4
Mountain	111.1	111.2	111.2	111.0	111.3	112.5	112.6	112.7	112.9	113.8	114.3	115.0	111.1	112.3	114.0
Pacific	97.1	96.7	96.2	96.3	95.5	95.4	95.2	95.3	95.3	95.7	96.0	96.5	96.6	95.3	95.9
Real Personal Income (billion \$2017)															
New England	953	956	957	960	968	971	979	984	992	1,000	1,008	1,015	956	976	1,004
Middle Atlantic	2,518	2,531	2,543	2,532	2,551	2,560	2,578	2,595	2,617	2,637	2,656	2,675	2,531	2,571	2,646
E. N. Central	2,615	2,624	2,627	2,633	2,648	2,657	2,674	2,688	2,709	2,727	2,745	2,763	2,625	2,667	2,736
W. N. Central	1,296	1,297	1,300	1,300	1,304	1,305	1,309	1,315	1,325	1,334	1,345	1,357	1,298	1,308	1,340
S. Atlantic	3,711	3,727	3,740	3,767	3,809	3,829	3,859	3,883	3,919	3,952	3,985	4,018	3,737	3,845	3,969
E. S. Central	1,010	1,011	1,017	1,017	1,028	1,034	1,042	1,047	1,055	1,062	1,069	1,076	1,014	1,038	1,066
W. S. Central	2,318	2,311	2,326	2,339	2,356	2,365	2,384	2,399	2,421	2,442	2,464	2,486	2,324	2,376	2,453
Mountain	1,428	1,440	1,441	1,450	1,466	1,470	1,480	1,488	1,500	1,513	1,525	1,537	1,440	1,476	1,519
Pacific	3,086	3,108	3,113	3,114	3,147	3,154	3,176	3,193	3,218	3,243	3,267	3,292	3,105	3,167	3,255
Households (thousands)															
New England	6,088	6,103	6,117	6,125	6,139	6,152	6,168	6,180	6,195	6,210	6,222	6,235	6,125	6,180	6,235
Middle Atlantic	16,074	16,101	16,126	16,141	16,173	16,201	16,238	16,273	16,313	16,351	16,383	16,416	16,141	16,273	16,416
E. N. Central	19,005	19,040	19,078	19,104	19,144	19,175	19,213	19,246	19,284	19,322	19,352	19,383	19,104	19,246	19,383
W. N. Central	8,702	8,729	8,754	8,773	8,799	8,819	8,842	8,864	8,888	8,912	8,932	8,952	8,773	8,864	8,952
S. Atlantic	27,263	27,363	27,467	27,556	27,676	27,784	27,904	28,013	28,124	28,231	28,324	28,419	27,556	28,013	28,419
E. S. Central	7,902	7,933	7,963	7,989	8,020	8,046	8,074	8,099	8,126	8,149	8,171	8,193	7,989	8,099	8,193
W. S. Central	15,960	16,022	16,092	16,152	16,223	16,288	16,366	16,440	16,517	16,591	16,657	16,722	16,152	16,440	16,722
Mountain	9,791	9,820	9,852	9,878	9,914	9,947	9,986	10,024	10,066	10,109	10,147	10,186	9,878	10,024	10,186
Pacific	18,984	19,002	19,028	19,041	19,072	19,099	19,139	19,173	19,213	19,253	19,289	19,326	19,041	19,173	19,326
Total Non-farm Employment (millions)															
New England	7.6	7.6	7.6	7.6	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.6	7.7	7.7
Middle Atlantic	20.0	20.1	20.2	20.3	20.4	20.5	20.5	20.6	20.6	20.6	20.6	20.6	20.2	20.5	20.6
E. N. Central	22.4	22.5	22.5	22.5	22.6	22.7	22.8	22.8	22.8	22.8	22.8	22.8	22.5	22.7	22.8
W. N. Central	10.9	10.9	11.0	11.0	11.1	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.0	11.2	11.2
S. Atlantic	30.6	30.8	30.9	31.1	31.2	31.4	31.5	31.6	31.7	31.8	31.8	31.9	30.8	31.4	31.8
E. S. Central	8.6	8.7	8.7	8.7	8.8	8.8	8.8	8.9	8.9	8.9	8.9	8.9	8.7	8.8	8.9
W. S. Central	18.9	19.0	19.1	19.2	19.3	19.4	19.4	19.5	19.6	19.6	19.7	19.7	19.0	19.4	19.6
Mountain	11.8	11.9	12.0	12.1	12.1	12.2	12.2	12.3	12.3	12.3	12.4	12.4	12.0	12.2	12.4
Pacific	24.3	24.4	24.4	24.6	24.7	24.7	24.8	24.9	24.9	24.9	24.9	25.0	24.4	24.8	24.9

Notes:

EIA completed modeling and analysis for this report on September 5, 2024.

- = no data available

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

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.

Sources:

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

Table 9c. U.S. Regional Weather Data

U.S. Energy Information Administration | Short-Term Energy Outlook - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Heating Degree Days															
United States average	1,922	485	61	1,335	1,906	413	63	1,450	1,988	469	74	1,443	3,803	3,832	3,975
New England	2,711	816	90	1,923	2,762	745	109	2,037	2,943	818	130	2,028	5,541	5,652	5,920
Middle Atlantic	2,452	653	71	1,772	2,518	562	71	1,864	2,721	654	86	1,857	4,947	5,016	5,318
E. N. Central	2,726	700	95	1,899	2,656	547	116	2,135	3,002	701	120	2,129	5,420	5,453	5,952
W. N. Central	3,171	657	92	2,012	2,840	598	136	2,354	3,172	706	154	2,352	5,932	5,928	6,384
South Atlantic	1,062	191	10	891	1,252	138	12	883	1,272	178	12	876	2,153	2,285	2,338
E. S. Central	1,389	256	14	1,158	1,660	166	17	1,228	1,685	232	19	1,223	2,817	3,071	3,160
W. S. Central	929	92	1	694	1,077	49	3	767	1,094	85	5	764	1,716	1,896	1,947
Mountain	2,570	731	127	1,666	2,228	688	105	1,843	2,168	711	154	1,841	5,095	4,864	4,874
Pacific	1,830	650	100	1,038	1,577	614	76	1,160	1,442	583	94	1,157	3,618	3,427	3,276
Heating Degree Days, Prior 10-year average															
United States average	2,133	485	60	1,477	2,103	483	59	1,444	2,048	476	57	1,435	4,155	4,088	4,016
New England	3,151	859	106	2,093	3,110	856	98	2,056	3,030	842	94	2,051	6,209	6,120	6,018
Middle Atlantic	2,939	689	69	1,907	2,889	685	63	1,878	2,798	671	61	1,868	5,604	5,516	5,398
E. N. Central	3,215	741	93	2,169	3,159	735	91	2,113	3,031	717	86	2,090	6,218	6,097	5,923
W. N. Central	3,319	754	121	2,374	3,295	730	120	2,303	3,193	714	116	2,287	6,568	6,448	6,310
South Atlantic	1,403	190	10	905	1,357	188	9	896	1,311	182	9	880	2,508	2,450	2,382
E. S. Central	1,811	251	14	1,231	1,756	248	14	1,205	1,695	242	14	1,187	3,307	3,224	3,137
W. S. Central	1,188	95	3	762	1,164	90	3	731	1,123	86	2	723	2,048	1,987	1,935
Mountain	2,193	696	128	1,833	2,209	696	128	1,800	2,220	694	124	1,808	4,850	4,834	4,846
Pacific	1,444	523	75	1,148	1,471	538	77	1,129	1,503	553	79	1,147	3,191	3,216	3,281
Cooling Degree Days															
United States average	68	362	942	104	53	496	915	105	51	446	967	106	1,476	1,570	1,569
New England	0	53	468	5	0	151	459	1	0	99	510	1	526	610	610
Middle Atlantic	0	91	585	10	0	244	609	5	0	183	657	5	686	859	845
E. N. Central	0	179	523	10	2	310	522	7	1	245	598	7	712	841	851
W. N. Central	1	319	709	14	11	332	643	11	5	297	733	11	1,043	997	1,046
South Atlantic	201	584	1,235	240	146	756	1,217	257	139	715	1,288	259	2,260	2,376	2,402
E. S. Central	63	442	1,095	73	40	623	1,093	67	34	545	1,127	68	1,674	1,824	1,774
W. S. Central	150	897	1,866	215	126	1,051	1,542	212	105	936	1,648	214	3,127	2,930	2,903
Mountain	3	350	1,027	99	9	489	1,018	83	20	450	1,014	83	1,479	1,599	1,568
Pacific	26	110	614	77	20	200	733	77	28	200	703	77	827	1,031	1,009
Cooling Degree Days, Prior 10-year average															
United States average	50	415	895	109	53	414	909	111	55	424	923	112	1,470	1,487	1,515
New England	0	87	480	2	0	83	483	2	0	90	494	2	569	568	587
Middle Atlantic	0	160	617	8	0	154	623	9	0	162	640	8	785	785	811
E. N. Central	1	234	561	10	1	230	566	10	1	238	581	10	805	808	831
W. N. Central	4	292	674	12	4	301	680	12	5	308	690	12	982	997	1,016
South Atlantic	144	675	1,192	272	153	674	1,212	271	157	685	1,227	277	2,283	2,309	2,346
E. S. Central	36	520	1,058	83	41	519	1,077	85	44	531	1,094	85	1,697	1,721	1,754
W. S. Central	101	861	1,549	223	108	872	1,584	228	118	899	1,595	227	2,734	2,793	2,838
Mountain	24	460	960	83	22	447	971	88	19	452	985	87	1,527	1,528	1,544
Pacific	32	213	676	86	32	202	677	88	30	199	682	85	1,006	999	996

Notes:

EIA completed modeling and analysis for this report on September 5, 2024.

- = no data available

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

Regional degree days for each period are calculated by EIA as contemporaneous period population-weighted averages of state degree day data published by the National Oceanic and Atmospheric Administration (NOAA).

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

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

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

Sources:

Table 10a. Drilling Productivity Metrics
 U.S. Energy Information Administration | Short-Term Energy Outlook - September 2024

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Active rigs															
Appalachia region	51	50	43	40	42	39	-	-	-	-	-	-	46	-	-
Bakken region	41	37	34	33	34	34	-	-	-	-	-	-	36	-	-
Eagle Ford region	78	67	55	55	57	56	-	-	-	-	-	-	64	-	-
Haynesville region	72	63	49	46	43	36	-	-	-	-	-	-	58	-	-
Permian region	352	349	326	311	312	313	-	-	-	-	-	-	334	-	-
Rest of Lower 48 States, excluding GOM	141	127	112	108	104	96	-	-	-	-	-	-	122	-	-
New wells drilled															
Appalachia region	292	284	247	226	239	222	-	-	-	-	-	-	1,049	-	-
Bakken region	240	223	202	200	206	207	-	-	-	-	-	-	865	-	-
Eagle Ford region	353	307	269	273	286	285	-	-	-	-	-	-	1,202	-	-
Haynesville region	221	192	148	133	124	103	-	-	-	-	-	-	694	-	-
Permian region	1,418	1,412	1,356	1,314	1,321	1,324	-	-	-	-	-	-	5,500	-	-
Rest of Lower 48 States, excluding GOM	815	766	719	661	602	551	-	-	-	-	-	-	2,961	-	-
New wells drilled per rig															
Appalachia region	5.7	5.7	5.7	5.7	5.6	5.7	-	-	-	-	-	-	22.8	-	-
Bakken region	5.9	6.0	6.0	6.1	6.1	6.1	-	-	-	-	-	-	23.9	-	-
Eagle Ford region	4.5	4.6	4.9	5.0	5.0	5.1	-	-	-	-	-	-	19.0	-	-
Haynesville region	3.1	3.0	3.0	2.9	2.9	2.9	-	-	-	-	-	-	12.0	-	-
Permian region	4.0	4.0	4.2	4.2	4.2	4.2	-	-	-	-	-	-	16.5	-	-
Rest of Lower 48 States, excluding GOM	5.8	6.1	6.4	6.1	5.8	5.7	-	-	-	-	-	-	24.4	-	-
New wells completed															
Appalachia region	258	241	236	245	263	231	-	-	-	-	-	-	980	-	-
Bakken region	258	310	310	225	191	241	-	-	-	-	-	-	1,103	-	-
Eagle Ford region	454	403	368	301	364	301	-	-	-	-	-	-	1,526	-	-
Haynesville region	168	121	121	139	113	110	-	-	-	-	-	-	549	-	-
Permian region	1,459	1,343	1,352	1,399	1,352	1,339	-	-	-	-	-	-	5,553	-	-
Rest of Lower 48 States, excluding GOM	694	768	735	748	628	596	-	-	-	-	-	-	2,945	-	-
Cumulative drilled but uncompleted wells															
Appalachia region	785	828	839	820	796	787	-	-	-	-	-	-	820	-	-
Bakken region	584	497	389	364	379	345	-	-	-	-	-	-	364	-	-
Eagle Ford region	638	542	443	415	337	321	-	-	-	-	-	-	415	-	-
Haynesville region	715	786	813	807	818	811	-	-	-	-	-	-	807	-	-
Permian region	929	998	1,002	917	899	895	-	-	-	-	-	-	917	-	-
Rest of Lower 48 States, excluding GOM	2,496	2,494	2,478	2,391	2,365	2,320	-	-	-	-	-	-	2,391	-	-
Crude oil production from newly completed wells, one-year trend (thousand barrels per day) (a) (c)															
Appalachia region	14	14	14	13	11	11	-	-	-	-	-	-	14	-	-
Bakken region	51	60	67	64	56	58	-	-	-	-	-	-	60	-	-
Eagle Ford region	82	89	81	63	62	67	-	-	-	-	-	-	79	-	-
Haynesville region	1	0	0	0	0	0	-	-	-	-	-	-	0	-	-
Permian region	436	434	443	438	429	430	-	-	-	-	-	-	438	-	-
Rest of Lower 48 States, excluding GOM	78	82	86	87	87	86	-	-	-	-	-	-	83	-	-
Crude oil production from newly completed wells per rig, one-year trend (thousand barrels per day) (a)															
Appalachia region	0.3	0.3	0.3	0.3	0.3	0.3	-	-	-	-	-	-	0.3	-	-
Bakken region	1.2	1.5	1.9	1.9	1.7	1.7	-	-	-	-	-	-	1.6	-	-
Eagle Ford region	1.1	1.2	1.3	1.2	1.1	1.2	-	-	-	-	-	-	1.2	-	-
Haynesville region	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-	-	0.0	-	-
Permian region	1.2	1.2	1.3	1.4	1.4	1.4	-	-	-	-	-	-	1.3	-	-
Rest of Lower 48 States, excluding GOM	0.5	0.6	0.7	0.8	0.8	0.8	-	-	-	-	-	-	0.7	-	-
Existing crude oil production change, one-year trend (thousand barrels per day) (a) (c)															
Appalachia region	-10.2	-12.5	-14.3	-13.8	-12.5	-12.6	-	-	-	-	-	-	-12.7	-	-
Bakken region	-41.4	-37.7	-50.1	-60.0	-57.3	-51.2	-	-	-	-	-	-	-47.4	-	-
Eagle Ford region	-73.5	-80.6	-87.4	-78.1	-67.7	-69.7	-	-	-	-	-	-	-79.9	-	-
Haynesville region	-0.8	-0.9	-0.7	-0.4	-0.3	-0.3	-	-	-	-	-	-	-0.7	-	-
Permian region	-410.1	-412.7	-404.7	-389.5	-392.5	-394.0	-	-	-	-	-	-	-404.2	-	-
Rest of Lower 48 States, excluding GOM	-71.2	-69.0	-77.5	-83.4	-88.9	-88.1	-	-	-	-	-	-	-75.3	-	-
Natural gas production from newly completed wells, one-year trend (million cubic feet per day) (a) (d)															
Appalachia region	1,278.9	1,264.3	1,283.4	1,215.0	1,147.4	1,147.5	-	-	-	-	-	-	1,260.3	-	-
Bakken region	59.7	68.7	75.5	70.6	62.8	64.7	-	-	-	-	-	-	68.7	-	-
Eagle Ford region	387.8	337.6	327.7	323.0	300.0	297.7	-	-	-	-	-	-	343.8	-	-
Haynesville region	995.5	922.6	761.7	594.9	483.2	497.3	-	-	-	-	-	-	817.4	-	-
Permian region	833.2	829.5	835.3	817.5	780.8	782.0	-	-	-	-	-	-	828.8	-	-
Rest of Lower 48 States, excluding GOM	382.6	357.6	387.3	373.5	320.8	314.0	-	-	-	-	-	-	375.3	-	-
Natural gas production from newly completed wells per rig, one-year trend (million cubic feet per day) (a) (d)															
Appalachia region	24.6	24.6	26.4	29.9	28.2	27.1	-	-	-	-	-	-	26.4	-	-
Bakken region	1.5	1.7	2.1	2.1	1.9	1.9	-	-	-	-	-	-	1.9	-	-
Eagle Ford region	5.1	4.4	5.3	5.9	5.4	5.2	-	-	-	-	-	-	5.2	-	-
Haynesville region	13.7	12.9	13.4	12.6	10.5	12.6	-	-	-	-	-	-	13.1	-	-
Permian region	2.4	2.4	2.4	2.6	2.5	2.5	-	-	-	-	-	-	2.4	-	-
Rest of Lower 48 States, excluding GOM	2.4	2.6	3.2	3.4	3.0	3.1	-	-	-	-	-	-	2.9	-	-
Existing natural gas production change, one-year trend (million cubic feet per day) (a) (c) (d)															
Appalachia region	-1,178.3	-1,074.5	-1,026.8	-1,207.5	-1,444.6	-1,436.2	-	-	-	-	-	-	-1,121.6	-	-
Bakken region	-42.6	-7.9	-35.8	-70.9	-49.9	-30.4	-	-	-	-	-	-	-39.4	-	-
Eagle Ford region	-309.7	-286.7	-310.5	-315.4	-319.5	-315.7	-	-	-	-	-	-	-305.6	-	-
Haynesville region	-912.8	-913.6	-853.3	-763.7	-757.3	-766.2	-	-	-	-	-	-	-860.4	-	-
Permian region	-644.3	-617.1	-629.5	-597.6	-604.9	-612.8	-	-	-	-	-	-	-619.5	-	-
Rest of Lower 48 States, excluding GOM	-536.8	-388.8	-296.5	-328.0	-419.0	-408.1	-	-	-	-	-	-	-386.7	-	-

(a) The Production From Newly Completed Wells and the Existing Production Change data series are reported as smoothed monthly data over a twelve-month period. The smoothing is done using the Locally Weighted Scatterplot Smoothing (LOWESS) function. LOWESS calculates a locally weighted average for each point, giving more weight to nearby monthly data and less weights to distant data. The smoothed data may change each month according to updated data.

(b) The most recent six months of well-level data is incomplete due to known lags in reporting. For these months, the values are imputed based on historical reporting patterns and other relevant factors.

(c) The sum of "Production from Newly Completed Wells" and "Existing Production Change" may not equal the month-over-month crude oil or natural gas production changes reported in tables 4a and 5a, respectively. This discrepancy arises from the statistical smoothing techniques applied to aggregated basin level data, variations in data imputation methodologies, and utilizing different data sources.

(d) Natural gas production in this table is marketed natural gas production.

Notes:

EIA completed modeling and analysis for this report on September 5, 2024.

-- no data available

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

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

Sources:

Historical data: Latest data available from Baker Hughes, Energen, FracFocus, etc.

Table 10b. Crude Oil and Natural Gas Production from Shale and Tight Formations

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

	2023				2024				2025				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2023	2024	2025
Total U.S. tight oil production (million barrels per day) (a)	8.18	8.31	8.46	8.66	8.46	8.66	-	-	-	-	-	-	8.41	-	-
Austin Chalk formation	0.13	0.12	0.13	0.12	0.11	0.12	-	-	-	-	-	-	0.12	-	-
Bakken formation	1.08	1.11	1.19	1.24	1.17	1.18	-	-	-	-	-	-	1.16	-	-
Eagle Ford formation	0.99	1.01	1.00	0.94	0.92	0.96	-	-	-	-	-	-	0.99	-	-
Mississippian formation	0.15	0.14	0.14	0.14	0.13	0.13	-	-	-	-	-	-	0.14	-	-
Niobrara Codell formation	0.42	0.45	0.46	0.48	0.47	0.48	-	-	-	-	-	-	0.45	-	-
Permian formations	5.02	5.08	5.16	5.36	5.32	5.44	-	-	-	-	-	-	5.15	-	-
Woodford formation	0.10	0.10	0.10	0.09	0.08	0.08	-	-	-	-	-	-	0.10	-	-
Other U.S. formations	0.29	0.30	0.29	0.29	0.26	0.27	-	-	-	-	-	-	0.29	-	-
Total U.S. shale dry natural gas production (billion cubic feet per day) (a)	81.3	81.4	81.1	81.7	79.4	79.3	-	-	-	-	-	-	81.4	-	-
Bakken formation	2.2	2.3	2.5	2.6	2.4	2.6	-	-	-	-	-	-	2.4	-	-
Barnett formation	1.9	1.9	1.8	1.8	1.7	1.7	-	-	-	-	-	-	1.8	-	-
Eagle Ford formation	4.4	4.5	4.4	4.4	4.3	4.3	-	-	-	-	-	-	4.4	-	-
Fayetteville formation	0.9	0.9	0.9	0.9	0.8	0.8	-	-	-	-	-	-	0.9	-	-
Haynesville formation	14.6	14.8	14.6	14.2	13.5	12.3	-	-	-	-	-	-	14.5	-	-
Marcellus formation	25.6	25.5	25.4	26.1	25.1	25.5	-	-	-	-	-	-	25.6	-	-
Mississippian formation	2.4	2.4	2.3	2.3	2.4	2.3	-	-	-	-	-	-	2.4	-	-
Niobrara Codell formation	2.6	2.6	2.7	2.8	2.8	2.9	-	-	-	-	-	-	2.7	-	-
Permian formations	15.5	16.0	16.5	17.1	17.3	17.8	-	-	-	-	-	-	16.3	-	-
Utica formation	5.9	5.3	4.9	4.5	4.2	4.0	-	-	-	-	-	-	5.2	-	-
Woodford formation	3.1	2.9	2.9	2.9	2.8	2.9	-	-	-	-	-	-	2.9	-	-
Other U.S. formations	2.3	2.3	2.3	2.3	2.2	2.2	-	-	-	-	-	-	2.3	-	-

(a) These production estimates are based on geologic formations, not geographic regions

Notes:

EIA completed modeling and analysis for this report on September 5, 2024.

- = no data available

The approximate break between historical and forecast values is shown with historical data with no shading; estimates and forecasts are shaded gray.

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

Sources:

Historical data: Latest data available from Enverus state administrative data.