



Short-Term Energy Outlook

Forecast highlights

Global liquid fuels

- The Brent crude oil spot price in our forecast averages \$98 per barrel (b) in the fourth quarter of 2022 (4Q22) and \$97/b in 2023. The possibility of petroleum supply disruptions and slower-than-expected crude oil production growth continues to create the potential for higher oil prices, while the possibility of slower-than-forecast economic growth creates the potential for lower prices.
- U.S. crude oil production in our forecast averages 11.8 million barrels per day (b/d) in 2022 and 12.6 million b/d in 2023, which would set a record for the most U.S. crude oil production during a year. The current record is 12.3 million b/d, set in 2019.
- We estimate that 99.4 million b/d of petroleum and liquid fuels was consumed globally in August 2022, up by 1.6 million b/d from August 2021. We forecast that global consumption will rise by an average of 2.1 million b/d for all of 2022 and by an average of 2.0 million b/d in 2023. As a result of high natural gas prices globally, we increased our forecast for oil consumption in 4Q22 and 1Q23 as electricity providers, particularly in Europe, may switch to oil-based generating fuels.
- We expect retail gasoline prices will average \$3.60 per gallon (gal) in 4Q22 and \$3.61/gal in 2023. Retail diesel prices in our forecast average \$4.90/gal in 4Q22 and \$4.28/gal in 2023.

Natural gas

- In August, the Henry Hub spot price averaged \$8.80 per million British thermal units (MMBtu), up from \$7.28/MMBtu in July. Natural gas prices rose in August because of continued strong demand for natural gas in the electric power sector, which has kept natural gas inventories below their five-year (2017–2021) average. We expect the Henry Hub price to average about \$9/MMBtu in 4Q22 and then fall to an average of about \$6/MMBtu in 2023 as U.S. natural gas production rises.
- U.S. natural gas inventories ended August at 2.7 trillion cubic feet (Tcf), which was 12% below the five-year average. We forecast that inventories will end the injection season (April through October) at more than 3.4 Tcf, which would be 7% below the five-year average.

- U.S. LNG exports in our forecast average 11.7 billion cubic feet per day (Bcf/d) in 4Q22, up 1.7 Bcf/d from 3Q22. Factors that will affect the volume of LNG exports in the coming months include the planned outage at Cove Point in October and Freeport LNG resuming partial operations by mid- to late-November. We forecast LNG exports will average 12.3 Bcf/d in 2023.
- U.S. consumption of natural gas in our forecast averages 86.6 Bcf/d in 2022, up 3.6 Bcf/d from 2021, driven by increases across all consuming sectors. We expect consumption to fall by 1.9 Bcf/d in 2023 because of declines in consumption in the industrial and electric power sectors.
- Dry natural gas production has been rising relatively steadily since 1Q22, when it averaged 94.6 Bcf/d. We forecast U.S. dry natural gas production to average 99.0 Bcf/d in 4Q22 and then rise to 100.4 Bcf/d for 2023.

Electricity, coal, renewables, and emissions

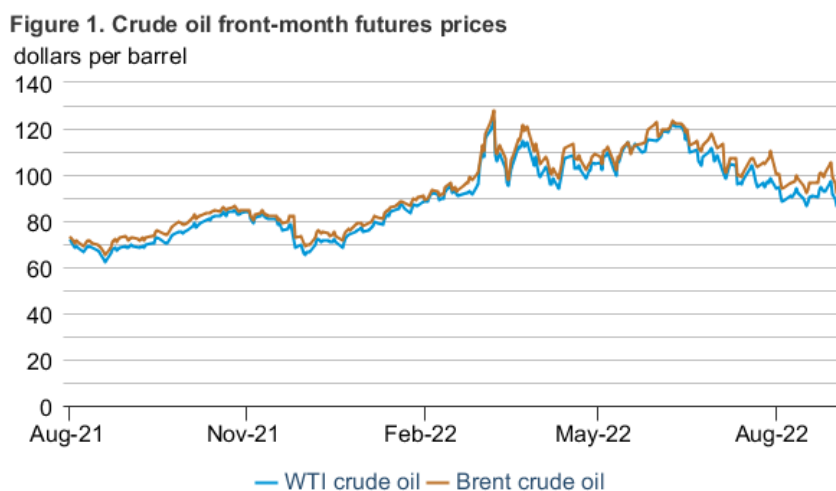
- We expect U.S. sales of electricity to ultimate customers to rise by 2.6% in 2022, mostly because of more economic activity but also because of slightly hotter summer weather in than last year much of the country. We forecast U.S. sales of electricity to fall by 0.4% in 2023.
- The largest increases in U.S. electricity generation in our forecast come from renewable energy sources, mostly solar and wind. We expect renewable sources will provide 22% of U.S. generation in 2022 and 24% in 2023, up from 20% in 2021.
- Natural gas fuels 37% of U.S. electricity generation in 2022, a share similar to 2021, and we forecast it to fall to 36% in 2023. Coal-fired electricity generation in our forecast provides 21% of the U.S. total in 2022 and 19% in 2023. Growing generation from renewable sources limits growth in natural gas generation while coal's generation share declines due to the expected retirement of coal-fired capacity.
- We forecast the U.S. residential price of electricity will average 14.8 cents per kilowatthour in 2022, up 7.5% from 2021. Higher retail electricity prices largely reflect an increase in wholesale power prices driven by rising natural gas prices. The Southwest region has the lowest forecast wholesale prices in 2022, averaging \$69 per megawatthour (MWh), up 25% from 2021. The highest forecast wholesale prices are at more than \$100/MWh in ISO New England (up 96% from 2021) and New York ISO (up 124% from 2021).
- U.S. coal production in the forecast increases by 22 million short tons (MMst) in 2022 to total 600 MMst for the year. We expect production will total 590 MMst in 2023.

- We expect energy-related carbon dioxide (CO₂) emissions in the United States to increase by 1.7% in 2022 and then to decrease 1.8% back to around 2021 levels in 2023.

Petroleum and Natural Gas Markets Review

Crude oil

Prices: The front-month futures price for Brent crude oil settled at \$92.36 per barrel (b) on September 1, a decrease of \$7.67/b from the August 1 price of \$100.03/b. The front-month futures price for West Texas Intermediate (WTI) crude oil for delivery at Cushing, Oklahoma, decreased by \$7.28/b during the same period, settling at \$86.61/b on September 1 (**Figure 1**).



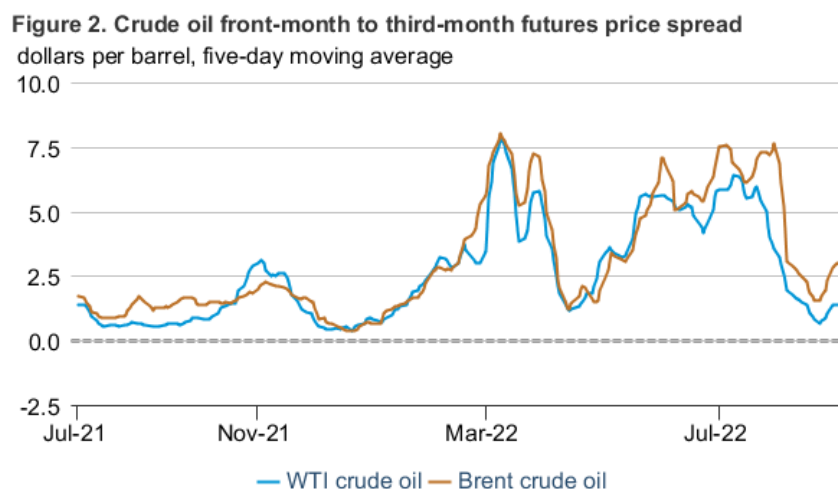
 Data source: CME Group, Intercontinental Exchange, and Bloomberg L.P.
Note: WTI=West Texas Intermediate


Crude oil prices were lower on average in August than they were in July before ending with a rapid decrease in the week before Labor Day. From August 29 through September 1, the Brent crude oil price decreased \$13/b and the WTI price decreased \$10/b. The monthly average Brent front-month futures price was \$98/b in August, about \$7/b lower than in July, and the WTI price was \$91/b, \$8/b lower than in July. The lower prices in August likely reflected overall increases in global petroleum inventories. The increase in inventories came with ongoing growth in global production of crude oil and other liquid fuels, which we estimate reached 101 million barrels per day (b/d) in August, the highest global production since December 2019.

We estimate that crude oil prices will generally remain near August average levels through the end of 2023. Although we expect average crude oil prices to mostly remain between \$90/b–\$100/b through next year, the possibility for significant volatility around those averages is high. Recent events contributing to increased uncertainty in the crude oil market and in our forecast include:

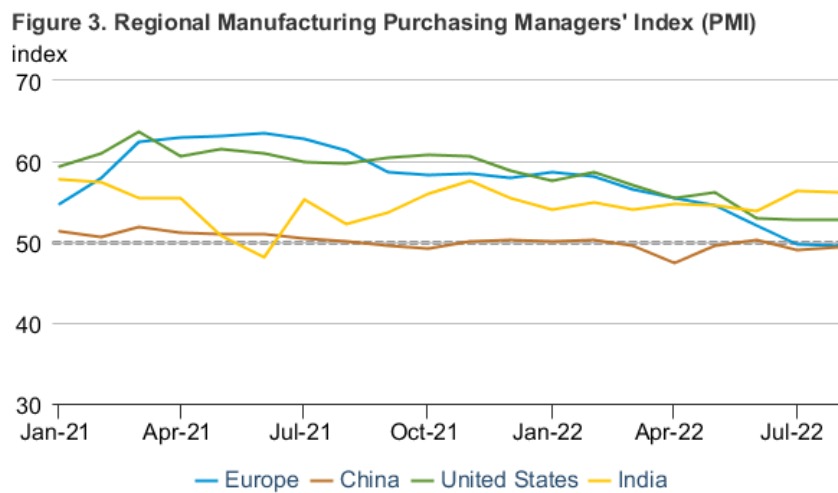
- The impact of the [recent OPEC decision](#) to reduce crude oil production by 0.1 million b/d in October and whether there will be further production cuts in the future
- The threat of increasing conflict following the outbreak of [violent clashes](#) in the Libyan capital of Tripoli
- Uncertainty around the potential expiration of the current coordinated [petroleum release](#) from strategic reserves in November
- The potential return to an Iran nuclear deal that could lift sanctions on the country and allow Iran's crude oil exports into the market
- The risk of hurricanes that could result in potential production outages and limited export traffic along the U.S. Gulf Coast

Crude oil front-month to third-month futures price spread: The front-month to third-month crude oil futures price spread (1-3 spread) is a measure of market backwardation, a market environment that encourages crude oil to flow out of inventories and into the market (**Figure 2**). Backwardation occurs when crude oil futures contract prices in the near term are higher than crude oil prices in the long term. In response to Russia's full-scale invasion of Ukraine in the spring, the 1-3 spread for Brent increased from an average of \$1/b in January to nearly \$7/b in March. Following a decline in April, it returned to near \$7/b levels in July. In August, the spread narrowed to \$3/b, the narrowest spread since April. The decrease in backwardation in August suggests that the market call to draw oil from inventories has decreased since midsummer, indicating market conditions that are more balanced between supply and demand than earlier this year.



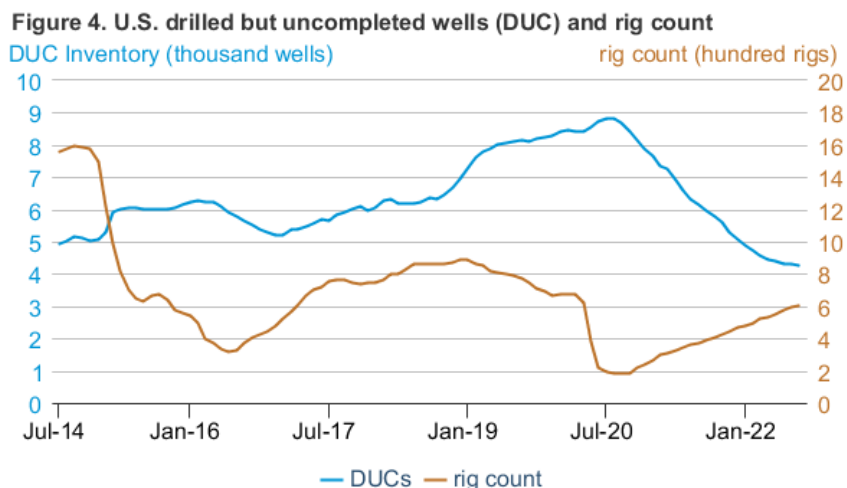
 Data sources: CME Group, Intercontinental Exchange, and Bloomberg L.P.
Note: WTI=West Texas Intermediate

Manufacturing Purchasing Managers' Index: Regional Purchasing Managers' Indexes (PMIs) for manufacturing in July decreased in the United States, Europe, and China (**Figure 3**). A PMI serves as an indicator of increasing or decreasing manufacturing activities. An index rating above 50 represents growth in activity while a rating below 50 indicates a contraction. The U.S. manufacturing PMI decreased in July to 52.8, its lowest rating since June 2020, suggesting a slowing rate of growth. In Europe, the PMI value dropped to 49.8, also its lowest rating since June 2020, while the drop below 50 also suggests market contraction. The latest Europe and U.S. PMIs suggest that these conditions have continued into August, contributing to further concerns about economic conditions and petroleum demand. The low PMI signals a weakening economic environment in Europe, further exacerbated by the decreasing value of the euro, which **fell to parity** with the U.S. dollar in late August.



eia Data source: Bloomberg L.P., IHS Markit, and the Institute for Supply Management

U.S. drilled but uncompleted wells and rig count: Since July 2020, the number of U.S. wells that are drilled but uncompleted (DUCs) has been decreasing and has fallen below the number in 2014 (the earliest year in our dataset) in 2022 (**Figure 4**). DUCs are oil and natural gas wells that have undergone their drilling phase but have not yet undergone casing, cementing, and other procedures that are necessary to establish a fully operational well. Prior to the onset of the COVID-19 pandemic, the number of DUCs had been steadily growing since 2017 in the United States, driven primarily by new production in the Permian Basin. Since July 2020, however, the number of DUCs has been **decreasing** at a relatively steady pace. At the same time, the Baker Hughes rotary rig count for oil producing wells has been increasing, rising above 600 rigs in July, the highest it has been since March 2020.



eia Data source: U.S. Energy Information Administration and Baker Hughes

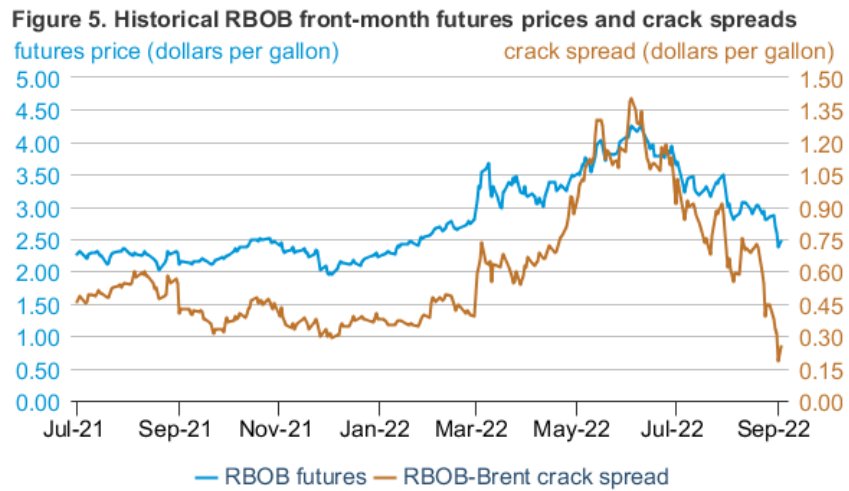
The number of DUCs serves as an indicator of the relative supply of wells that may be transitioned to operational status, and the increasing rig count reflects the higher number of wells being drilled. Growth in crude oil production in the United States since 2021 has largely consisted of completing wells from the available DUCs, while new drilling in response to high crude oil prices appears to be lagging the rate of completion. Continued U.S. production increases are likely to continue drawing on available DUCs that are viable candidates for completion at current prices. Continued increases in rig counts will contribute to more drilled wells, which could soon outpace well completions and increase the number of DUCs. However, on September 2, the latest weekly rig count indicated a decrease in 9 rigs from the previous week, down to 596, the largest week-on-week decrease since September 2021.

Our August [Drilling Productivity Report](#) showed the smallest monthly percentage decline in DUCs since July 2020. We currently forecast that U.S. crude oil production will increase to 12.2 million b/d in the fourth quarter and will rise to an average of 12.6 million b/d in 2023. This increase would constitute an annual increase of 0.5 million b/d in 2022 and an additional increase of 0.9 million b/d in 2023.

Petroleum products

Gasoline prices: The front-month futures price of RBOB (the petroleum component of gasoline used in many parts of the country) settled at \$2.39 per gallon (gal) on September 1, down 61 cents/gal from August 1 (**Figure 5**). The RBOB-Brent crack spread (the difference between the price of RBOB and the price of Brent crude oil) settled at \$0.19/gal on September 1, down 43 cents/gal during the same period. The RBOB-Brent crack spread declined by 12 cents/gal on September 1 when the front-month RBOB contract rolled over to October delivery, which reflects winter grade gasoline that is cheaper for refineries to produce. Before the contract roll over, the RBOB-Brent crack spread had already decreased from an average of 85 cents/gal in

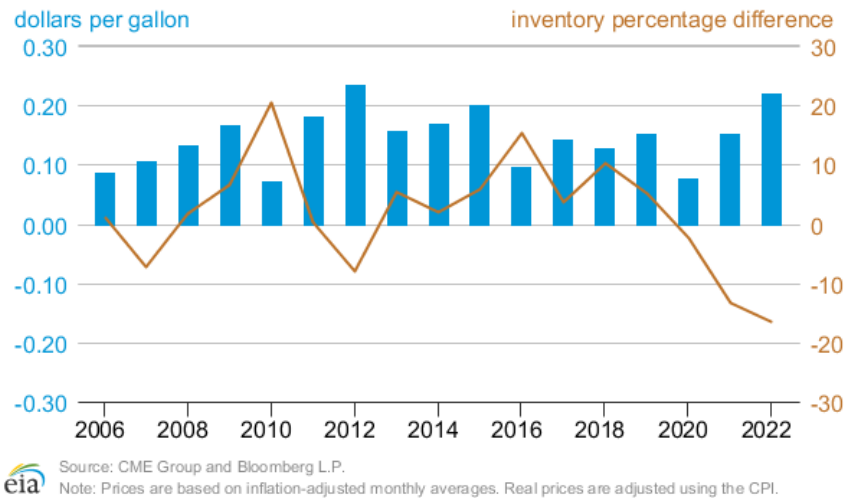
July to an average of 58 cents/gal in August, which could be the result of less-than-average seasonal demand and anticipation of the contract roll-over.



Data source: CME Group and Bloomberg L.P.
 Note: RBOB is the petroleum component of gasoline used in many parts of the country.

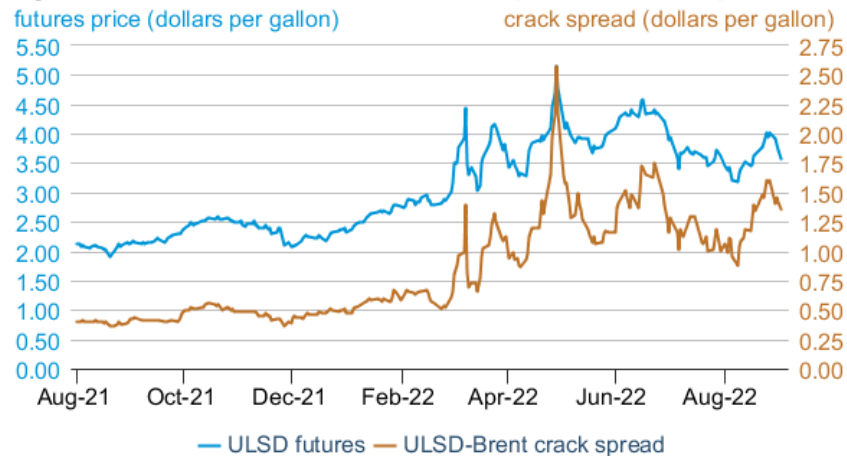
The front-month RBOB contract for September delivery sold at an average premium of 22 cents/gal to the second-month contract for October delivery during August trading. This price spread was the second-highest inflation-adjusted price spread since 2006, when the RBOB futures contract began trading (**Figure 6**). Most of this premium was due to the difference between winter and summer grade gasoline, but market fundamentals also affected the spread. Typically, when inventories are lower, this premium is greater because low inventories add more pressure to prices in near-term contracts than long-term contracts. This dynamic occurs because low inventories occur during tight market conditions in which demand must be met from inventories, and, under these conditions, purchasers are willing to pay a premium to secure needed supply. We estimate that gasoline inventories in the East Coast (PADD 1) were 16% below their five-year (2017–2021) average at the end of August. In 2012, the year with the highest average front-month to second-month price spread, inventories were also below their five-year average, albeit by not as much as this year.

Figure 6. August front-month to 2nd month RBOB price spread and PADD 1 gasoline stocks compared with five-year average



Ultra-low sulfur diesel prices: The front-month futures price for ultra-low sulfur diesel (ULSD) for delivery in New York Harbor settled at \$3.56/gal on September 1, a 12 cents/gal (4%) increase from August 1 (**Figure 7**). The ULSD-Brent crack spread (the difference between the price of ULSD and the price of Brent crude oil) increased 30 cents/gal (29%) during the same period and settled at \$1.36/gal on September 1.

Figure 7. Historical ULSD front-month futures prices and crack spreads



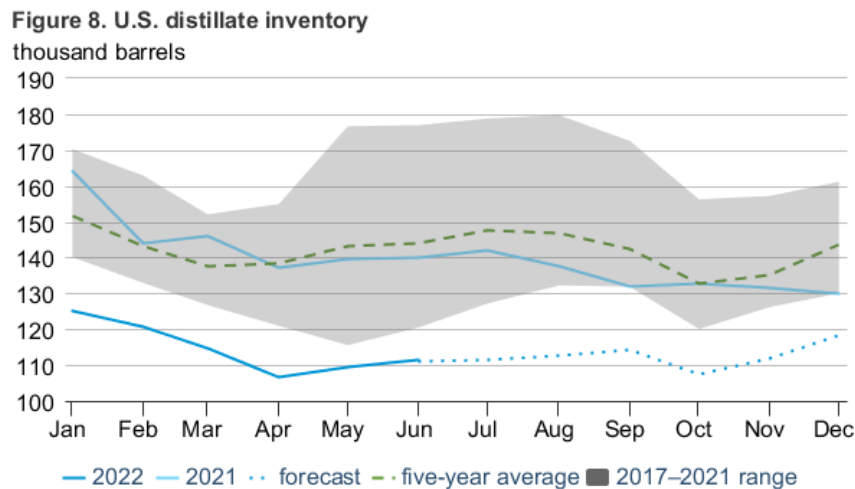
Data source: CME Group and Bloomberg L.P.
 Note: ULSD=ultra-low sulfur diesel

ULSD prices increased this month as rapidly increasing natural gas prices in Europe and Asia increased demand for distillate fuel as a [substitute fuel for power generation](#) in those markets amid low distillate stocks globally. From August 8 to August 26, ULSD prices increased by 83 cents/gal (26%). This increase in ULSD prices occurred despite slowing economic and trucking activity in the United States. A recent decline in the American Trucking Association’s [Truck Tonnage Index](#) suggests less consumption of goods, less home construction, and slower

manufacturing activity contributed to a slight decline in diesel fuel demand. Although changes in crude oil prices normally account for most changes in ULSD prices, as crude oil is the single [largest input cost](#) for producing ULSD, the Brent crude oil price increased only 4% between August 8 and August 26. Because ULSD prices increased by more than crude oil prices, it resulted in the ULSD-Brent crack spread increasing by 73 cents/gal (83%) over the same period.

ULSD prices rose in August primarily due to increased interest in fuel switching from natural gas to distillate fuel oil caused by rising natural gas prices in Europe. From August 8 to August 26, front-month natural gas prices at the Dutch Title Transfer Facility (TTF) increased by 72%, reaching a record high. High natural gas prices are making it economical for European operators to switch from natural gas to distillate fuel oil in electricity generation. From August 26 to September 1, ULSD prices declined by 45 cents/gal (11%) as natural gas prices declined and concerns around an economic slowdown that could reduce distillate demand regained the focus of the market.

U.S. distillate inventories: Inventories in the United States began the year at 130 million barrels, 14% less than their five-year average (**Figure 8**). As of June 2022, inventories decreased to 111 million barrels or 23% below the five-year average. We forecast U.S. distillate inventories will build to 118 million barrels or 17% below the five-year average by the end of this year, and will remain below their previous five-year low.

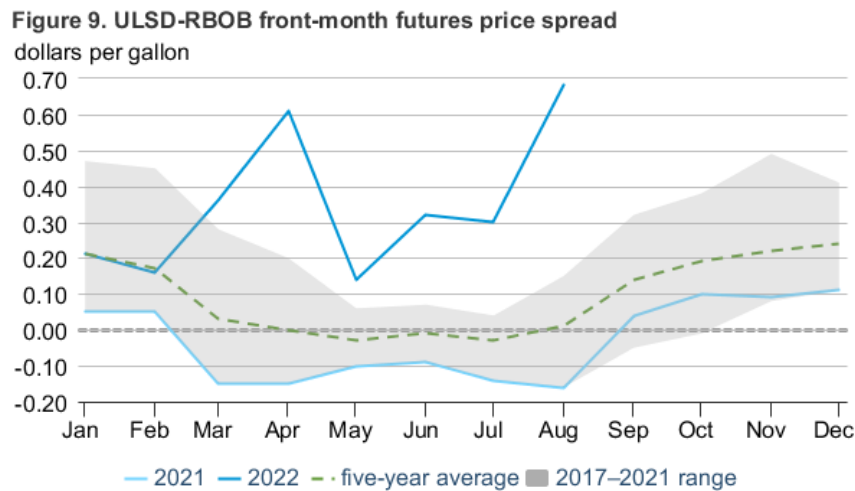


eia Data source: EIA *Petroleum Supply Monthly* and Short-Term Energy Outlook, September 2022

Western sanctions against Russia’s petroleum product exports following its full-scale invasion of Ukraine in February have been a major driver of global distillate markets and subsequent inventory draws this year. Low inventories in New England (PADD 1A), the Central Atlantic (PADD 1B), and the Midwest (PADD 2) suggest both higher and more volatile ULSD prices in the coming months. In the Midwest, where distillate fuel is widely used for harvesting crops, [Weekly Petroleum Status Report](#) data for the week ending August 26 shows distillate inventories are

17% below the five-year average. In New England and the Central Atlantic, where heating oil is used as a [primary source of heat](#) in some homes, inventories are 56% below the five-year average.

ULSD-RBOB future price spread: ULSD front-month futures prices traded at an average monthly premium to RBOB of 68 cents/gal in August, the highest premium in real terms since November 2008 (**Figure 9**). Although front-month ULSD and RBOB futures typically follow seasonal trends (RBOB trades at a premium in the summer, and ULSD trades at a premium in the winter), global demand for distillate and reduced exports from Russia, a major supplier of distillate fuel and natural gas to Europe, have disrupted this trend. This increased demand for distillate, as well as a concurrent [decline in gasoline demand](#), has encouraged refiners to maximize distillate production. The monthly ULSD-Brent crack spread this August of \$1.27/gal is 87 cents/gal (222%) higher than last August while the RBOB-Brent crack spread of 58 cents/gal is only 3 cents/gal (6%) higher compared with last year. Looking forward, we forecast that the combination of the upcoming switch to [winter grade gasoline](#), which is less expensive for refiners to produce, and the typical decline in gasoline demand after the summer driving season will contribute to declining refiner margins for gasoline. We forecast diesel fuel refiner margins will remain above August levels through the end of the year.



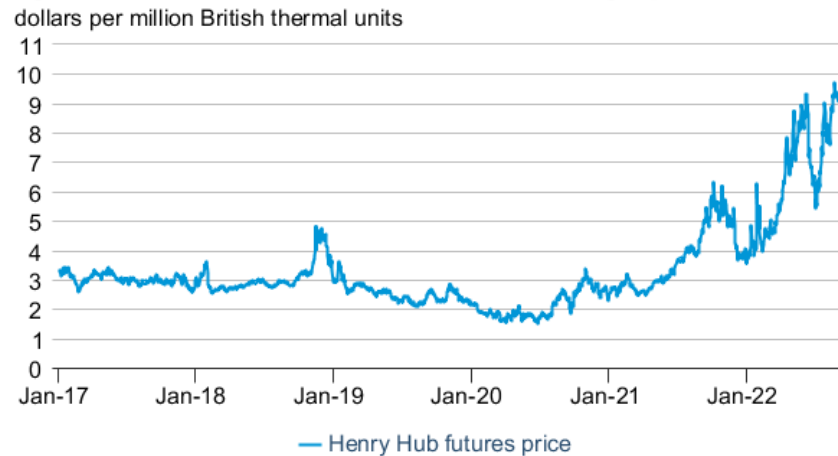
Data Source: CME Group and Bloomberg L.P

Natural Gas

Prices: The front-month natural gas futures contract for delivery at the Henry Hub closed at \$9.26 per million British thermal units (MMBtu) on September 1, 2022, which was up 12% (98 cents/MMBtu) from August 1, 2022 (**Figure 10**). Closing prices for front-month natural gas futures averaged \$8.78/MMBtu during August, the highest August monthly average in real terms since 2008. Natural gas prices remained elevated throughout August as inventories remained below the five-year (2017–2021) average, and consumption in the electric power

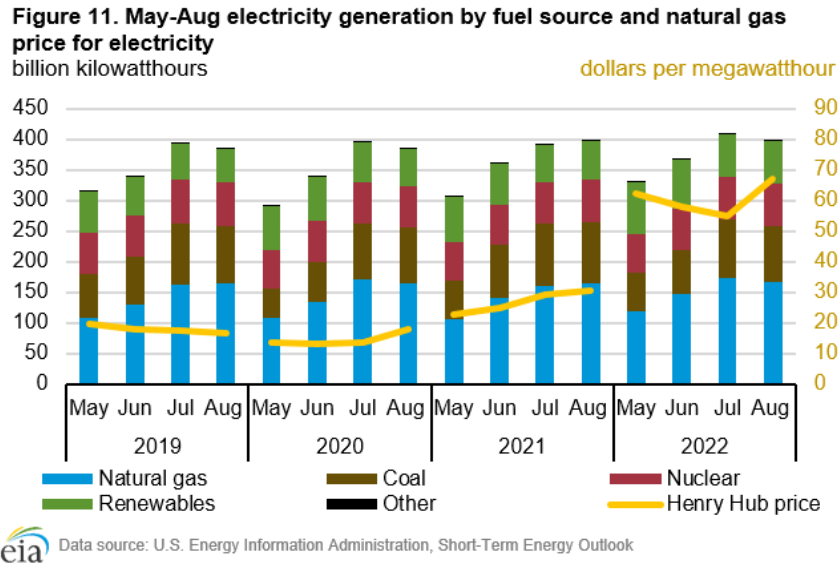
sector remained strong. Hotter-than-normal temperatures in much of the country increased demand for air conditioning, and constraints in the coal market limited coal-fired electricity generation, both increasing consumption of natural gas to produce electricity.

Figure 10. Historical nominal front-month U.S. natural gas prices



 Data source: CME Group and Bloomberg L.P.

The United States generates more electricity during the summer compared with other times of the year. This summer, the percentage share of electricity generation from natural gas has been similar to previous years, despite [high natural gas prices](#) that have more than doubled from the same time last year (**Figure 11**). Previously, high natural gas prices would have resulted in more coal-fired electricity generation. However, coal-fired power plants have been limited in their ability to increase power generation due to [historically low inventories](#), constraints in fuel delivery to coal plants, and continued [coal capacity retirements](#). Even as the capacity for renewable electricity generation has increased over recent years, power providers continue to use natural gas-fired electricity generation most often to meet fluctuations in electricity demand.

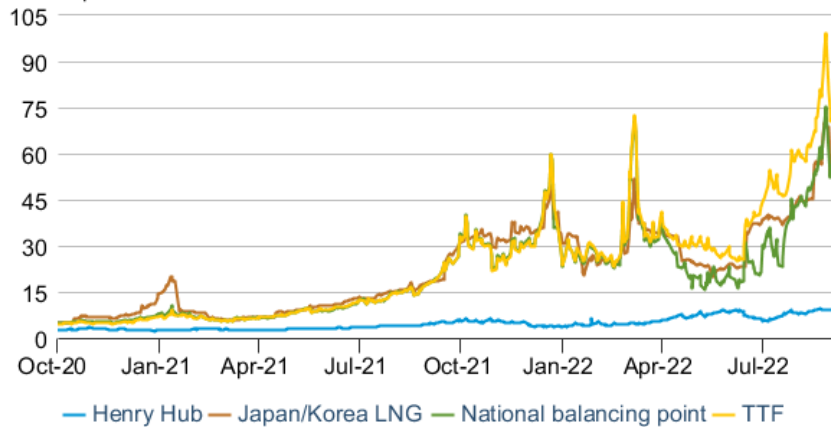


In the United States, natural gas is the most common fuel source used by power providers to quickly increase or decrease power supply to meet electricity demand from moment to moment. This instantaneous balance is crucial in U.S. power markets due to the lack of large-scale electricity storage. Most natural gas-fired turbine power plants can increase or decrease their electricity generation in a matter of minutes. In contrast, other sources of generation, such as nuclear power plants, generally provide a stable amount of electricity at all hours of the day, while renewable sources such as wind turbines and solar power facilities provide a fluctuating amount of electricity based on weather conditions. Natural gas was [key to meeting electricity demand peaks](#) throughout the country during the hot July, especially in Texas, where several records were set for daily peak electricity demand.

International natural gas prices: Real prices for natural gas futures for delivery at the Title Transfer Facility (TTF) in the Netherlands set a record high at more than \$99/MMBtu in late August (**Figure 12**). Prices in East Asia reached a record high of more than \$69/MMBtu in August. International natural gas prices have been rising since June amid several factors:

- The June [shutdown of the Freeport LNG facility](#) in South Texas reduced global supply of liquefied natural gas (LNG) by about 2 billion cubic feet per day (Bcf/d). Prior to the shutdown, LNG exports from Freeport in the first five months of 2022 accounted for approximately 17% of total U.S. LNG exports.
- [Natural gas pipeline exports from Russia to Europe have declined in 2022](#), reaching 1.2 Bcf/d in mid-July, the least in nearly 40 years.
- On August 19, Gazprom announced the Nord Stream 1 pipeline (which delivers natural gas from Russia to Europe) would be offline for three days for unplanned maintenance from August 31 to September 2.

Figure 12. International natural gas prices
dollars per million British thermal units



Data source: CME Group and Bloomberg L.P.
Note: TTF=Title Transfer Facility

Europe finished the 2021–2022 winter heating season with natural gas inventories at 26% full compared with the five-year average of 34%, according to data from Gas Infrastructure Europe’s (GIE) [Aggregated Gas Storage Inventory \(AGSI+\)](#). Because of limitations in and uncertainty about natural gas pipeline imports from Russia, Europe has been [importing record amounts of LNG in 2022](#) to refill inventory before the upcoming winter. The recent supply constraints affecting the global LNG market and the reduced pipeline flows into Europe have contributed to the increase in the TTF futures price and the increase in the price premium for LNG cargoes delivered to Europe relative to LNG cargoes delivered to East Asia.

[Strong demand for LNG in Europe](#) continues to drive high international natural gas prices. The percentage of U.S. LNG exports to Europe has [increased in 2022](#), averaging 69% in the first half of 2022 compared with 32% in the first half of 2021. U.S. facilities exported LNG at close to their combined capacity in August (excluding the offline Freeport LNG facility), with capacity utilization averaging 93% across all operating facilities.

Notable forecast changes

- We have updated several of the equations in the natural gas model, including those that forecast residential and commercial consumption of natural gas, natural gas pipeline imports and exports, and natural gas production in Alaska. The changes include updating the variables and sample periods on which these regression equations are evaluated. We also updated the liquefied natural gas imports forecast to better reflect recent trends. These changes contributed to 1.4 billion cubic feet per day (Bcf/d) more forecast consumption of natural gas in 2022 and 0.8 Bcf/d more consumption in 2023. In addition, we have increased our forecast for production of natural gas in Alaska by just under 0.1 Bcf/d in both years, and we have lowered our forecast of net exports of

natural gas by 0.7 Bcf/d in 2022 and by 0.5 Bcf/d in 2023, mostly because of more expected pipeline imports.

- You can find more information in the [detailed table of forecast changes](#).

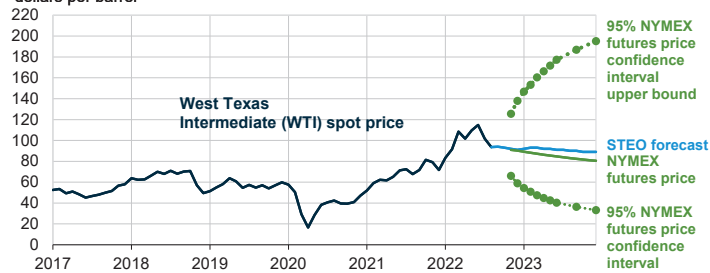
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Short-Term Energy Outlook Chart Gallery



September 7, 2022

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

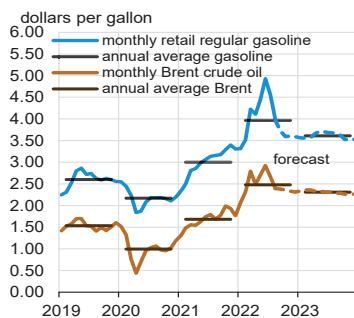


Note: Confidence interval derived from options market information for the five trading days ending Sep 1, 2022. Intervals not calculated for months with sparse trading in near-the-money options contracts.

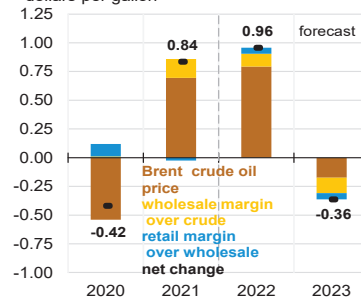
Sources: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022, CME Group, Bloomberg, L.P., and Refinitiv an LSEG Business



U.S. gasoline and crude oil prices



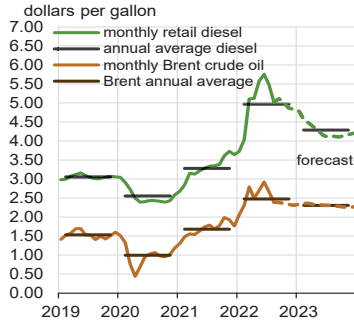
Components of annual gasoline price changes
dollars per gallon



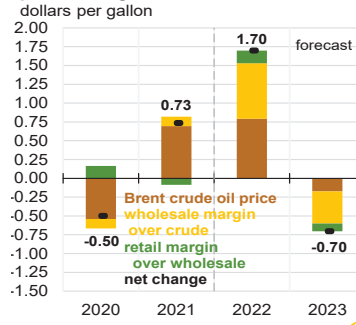
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022, and Refinitiv an LSEG Business



U.S. diesel and crude oil prices



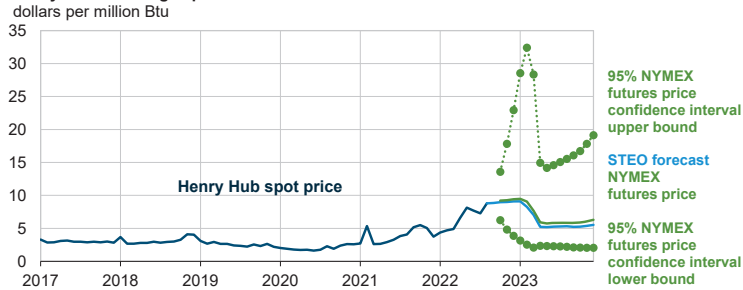
Components of annual diesel prices changes



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022, and Refinitiv an LSEG Business



Henry Hub natural gas price and NYMEX confidence intervals

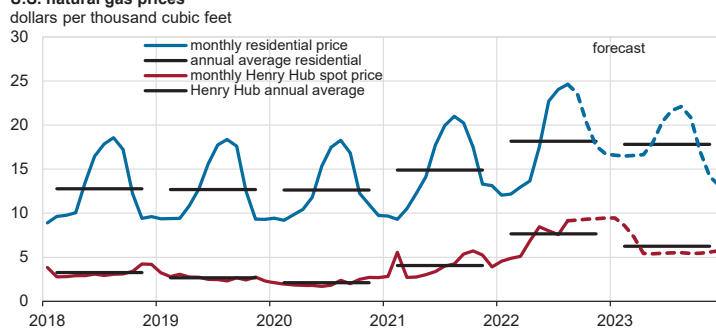


Note: Confidence interval derived from options market information for the five trading days ending Sep 1, 2022. Intervals not calculated for months with sparse trading in near-the-money options contracts.

Sources: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022, CME Group, and Refinitiv an LSEG Business



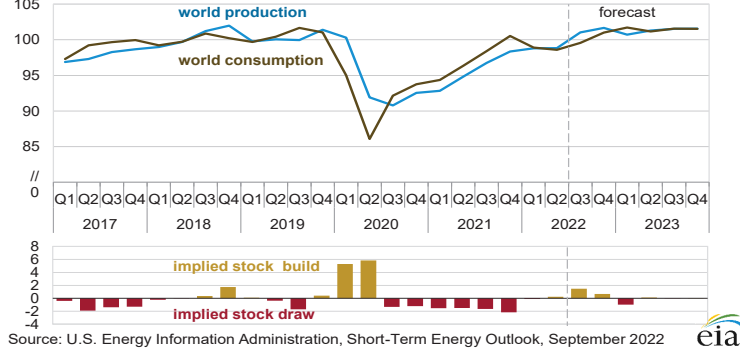
U.S. natural gas prices



Sources: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022, and Refinitiv an LSEG Business



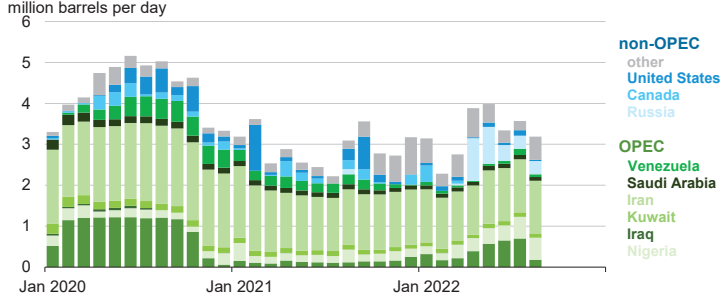
World liquid fuels production and consumption balance
million barrels per day



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022



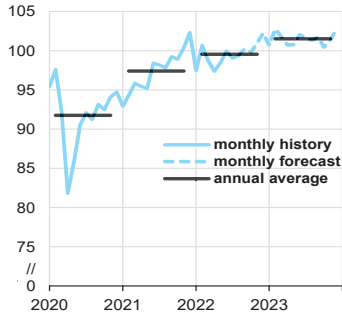
Estimated unplanned liquid fuels production outages among OPEC and non-OPEC producers
million barrels per day



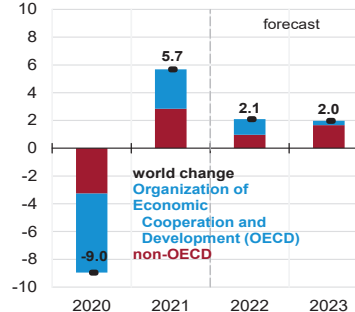
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022



World liquid fuels consumption
million barrels per day



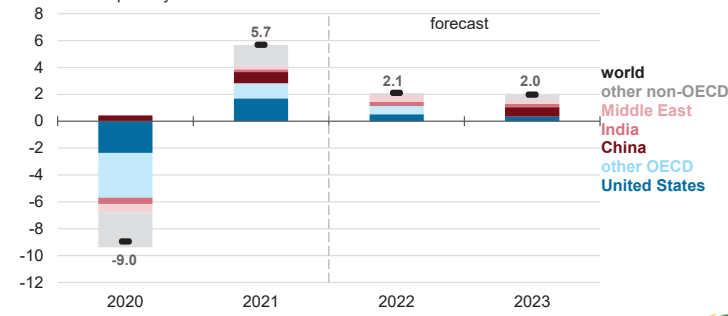
Components of annual change
million barrels per day



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022

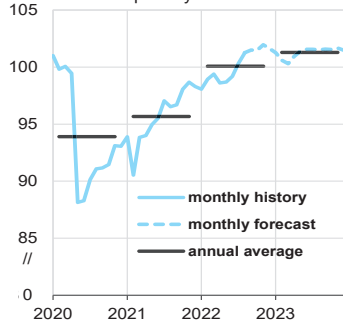


Annual change in world liquid fuels consumption
million barrels per day

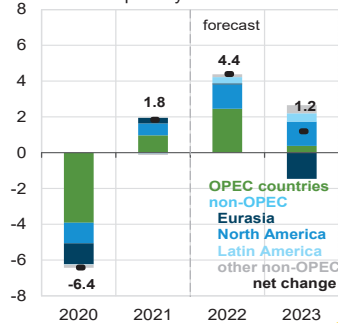


Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022

World crude oil and liquid fuels production
million barrels per day

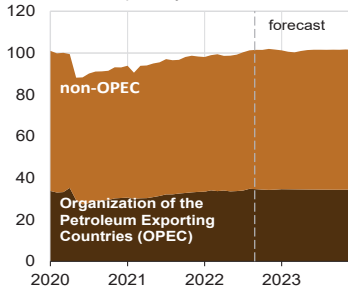


Components of annual change
million barrels per day

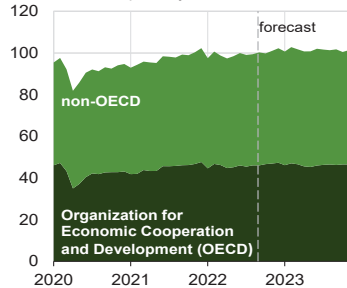


Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022

World liquid fuels production
million barrels per day

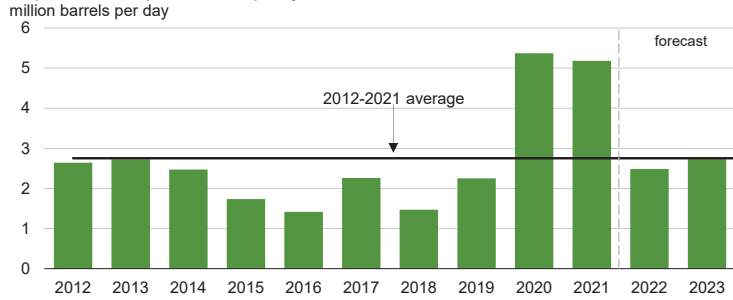


World liquid fuels consumption
million barrels per day



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022

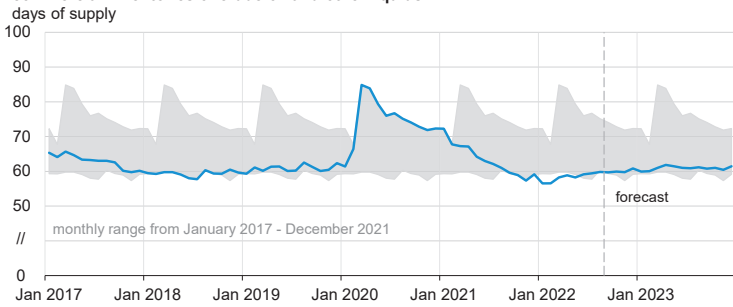
**Organization of the Petroleum Exporting Countries (OPEC)
surplus crude oil production capacity**



Note: Black line represents 2012-2021 average (2.8 million barrels per day).
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022



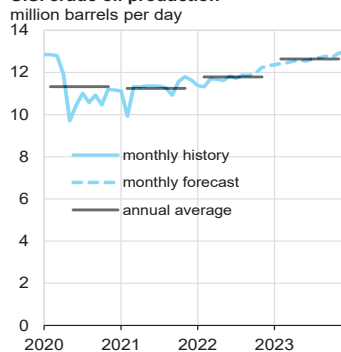
**Organization for Economic Cooperation and Development (OECD)
commercial inventories of crude oil and other liquids**



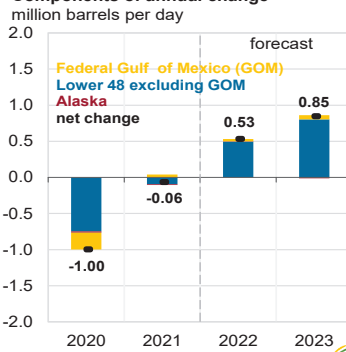
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022



U.S. crude oil production



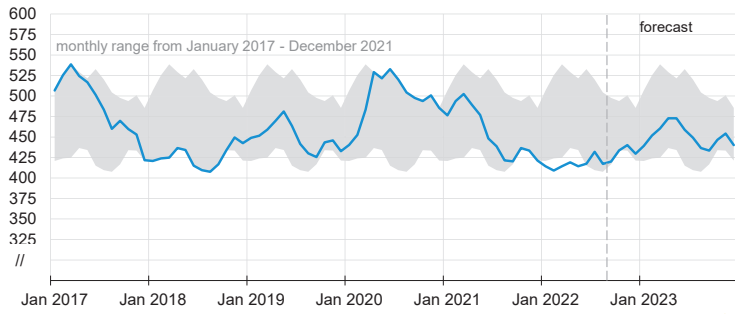
Components of annual change



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022



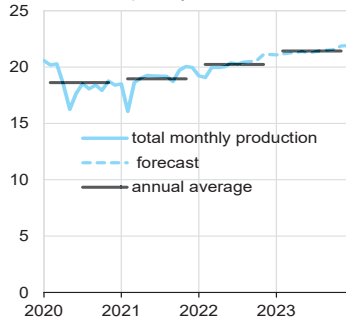
U.S. commercial crude oil inventories
million barrels



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022



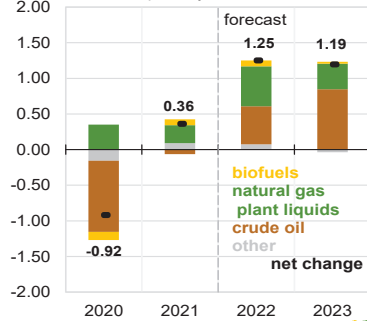
U.S. crude oil and liquid fuels production
million barrels per day



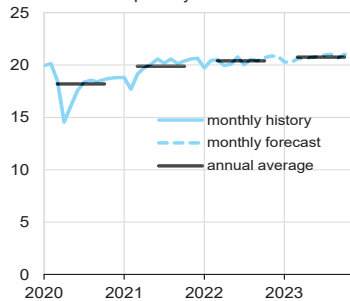
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September



Components of annual change
million barrels per day



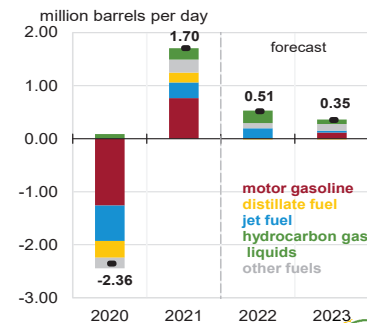
U.S. liquid fuels product supplied (consumption)
million barrels per day



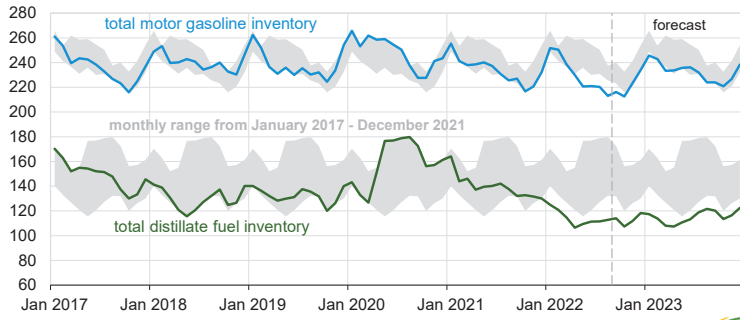
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022



Components of annual change
million barrels per day



U.S. gasoline and distillate inventories
million barrels

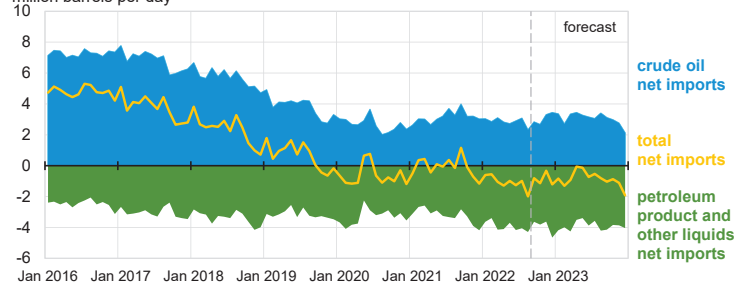


Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022



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

million barrels per day



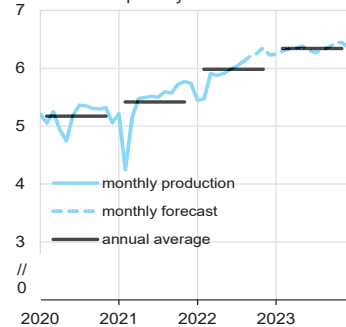
Note: Petroleum product and other liquids include: gasoline, distillate fuels, hydrocarbon gas liquids, jet fuel, residual fuel oil, unfinished oils, other hydrocarbons/oxygenates, and other oils.

Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022



U.S. natural gas plant liquids production

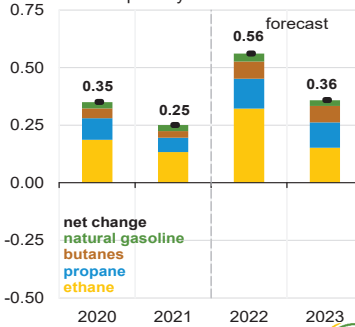
million barrels per day



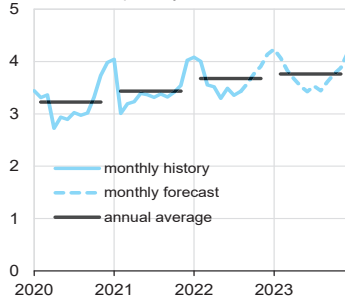
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022

Components of annual change

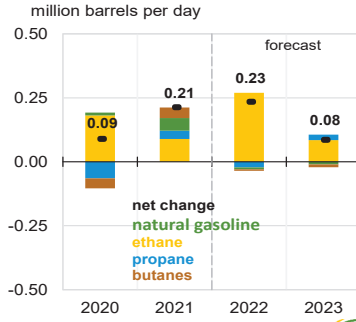
million barrels per day



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



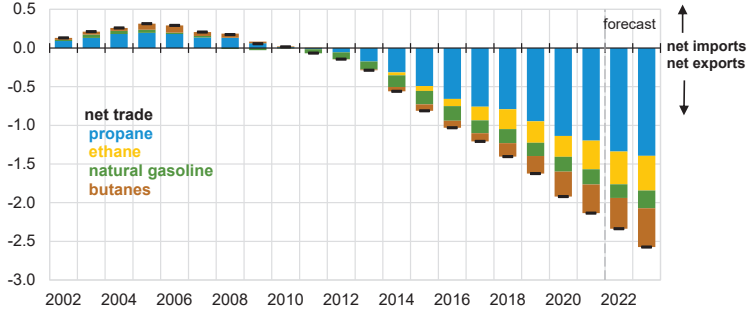
Components of annual change



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022



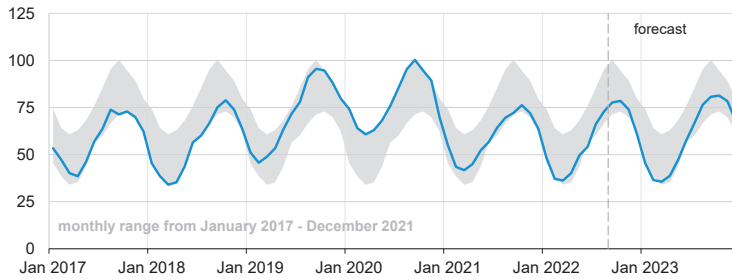
U.S. net trade of hydrocarbon gas liquids (HGL)
million barrels per day



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022



U.S. commercial propane inventories
million barrels

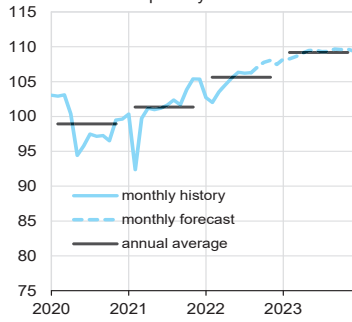


Note: Excludes propylene.

Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022



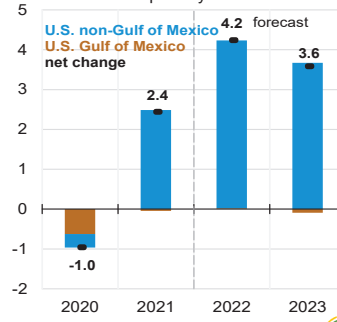
U.S. marketed natural gas production
billion cubic feet per day



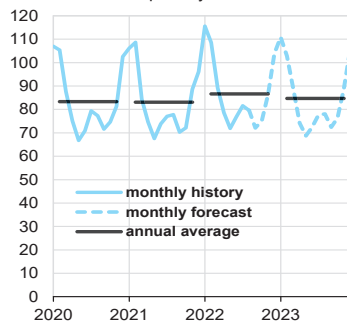
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022



Components of annual change
billion cubic feet per day



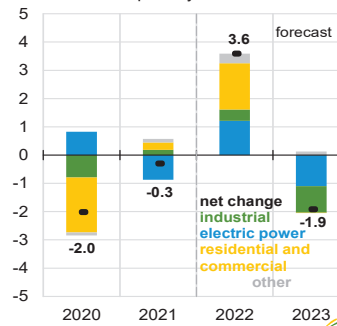
U.S. natural gas consumption
billion cubic feet per day



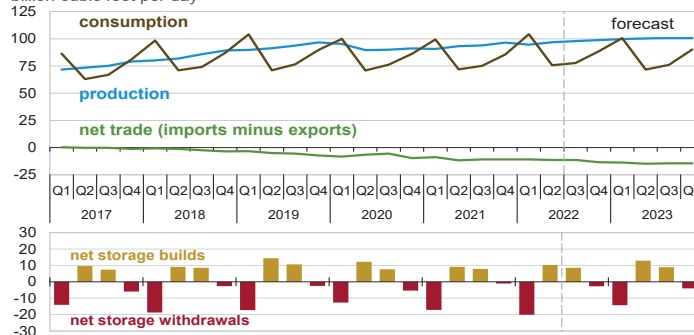
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022



Components of annual change
billion cubic feet per day



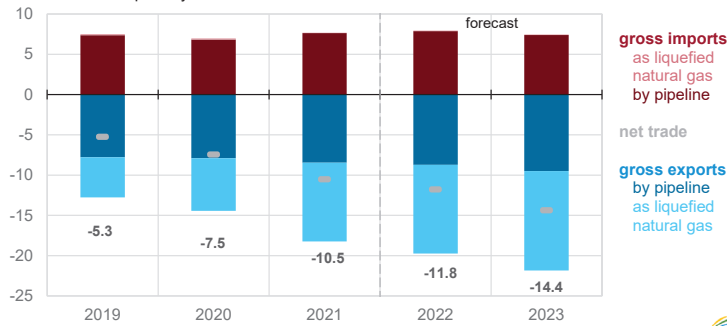
U.S. natural gas production, consumption, and net imports
billion cubic feet per day



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022

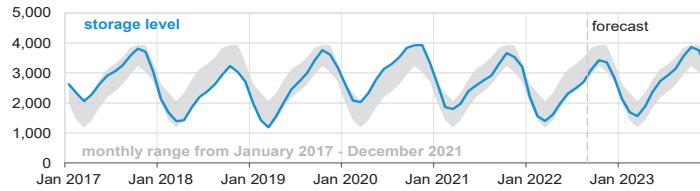


U.S. annual natural gas trade
billion cubic feet per day

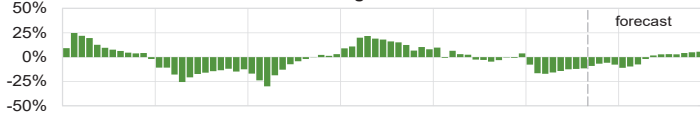


Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022

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

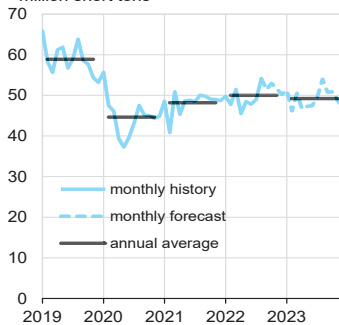


Percent deviation from 2017 - 2021 average

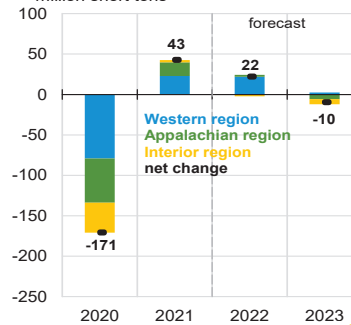


Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022

U.S. coal production
million short tons

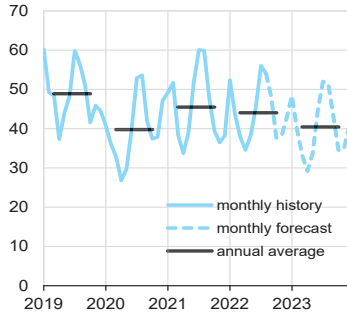


Components of annual change
million short tons

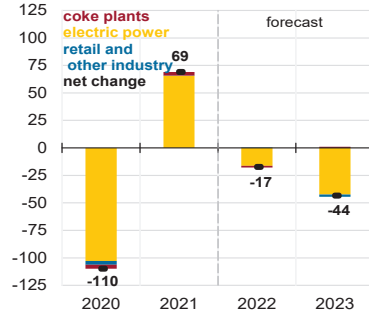


Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022

U.S. coal consumption
million short tons



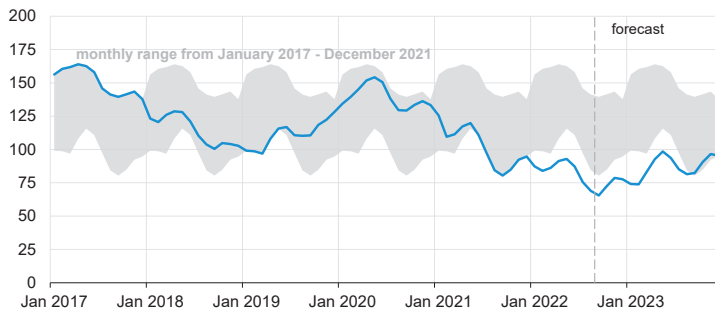
Components of annual change
million short tons



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022



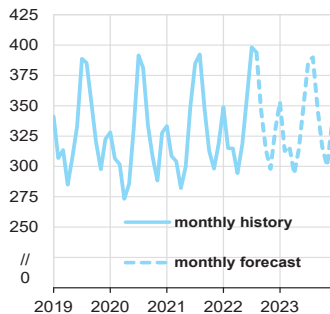
U.S. electric power coal inventories
million short tons



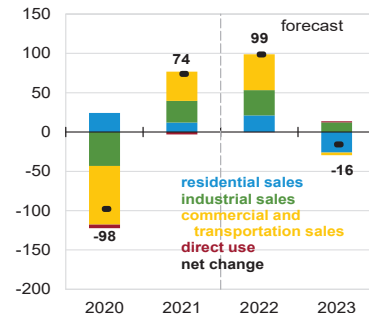
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022



U.S. electricity consumption
billion kilowatthours



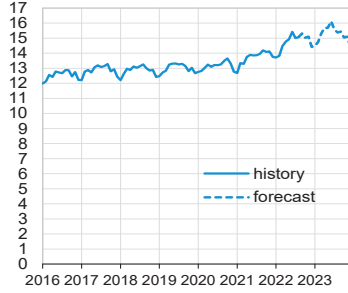
Components of annual change
billion kilowatthours



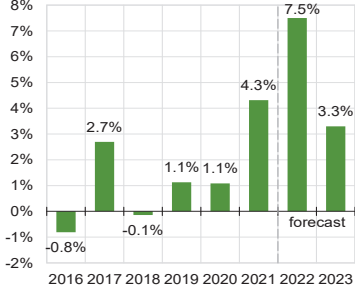
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022



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

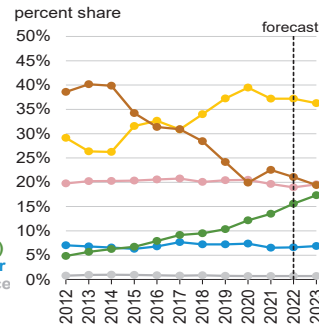
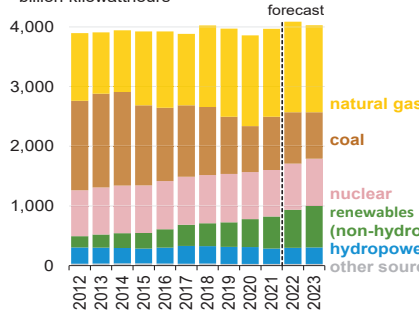


Annual growth in nominal residential electricity prices
percent



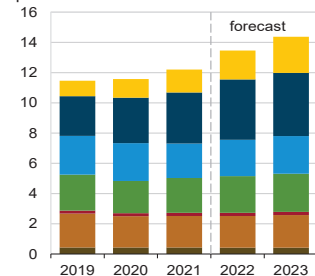
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022

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

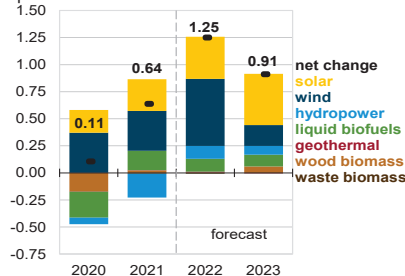


Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022

U.S. renewable energy supply
quadrillion British thermal units



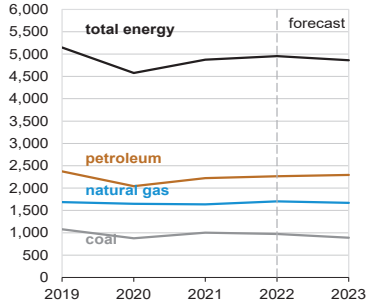
Components of annual change
quadrillion British thermal units



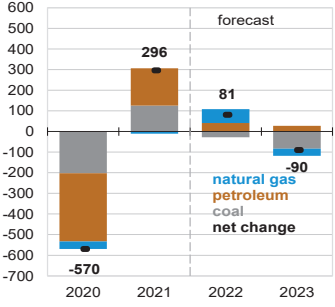
Note: Hydropower excludes pumped storage generation. Liquids include ethanol, biodiesel, renewable diesel, other biofuels, and biofuel losses and coproducts. Waste biomass includes municipal waste from biogenic sources, landfill gas, and non-wood waste.

Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022

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

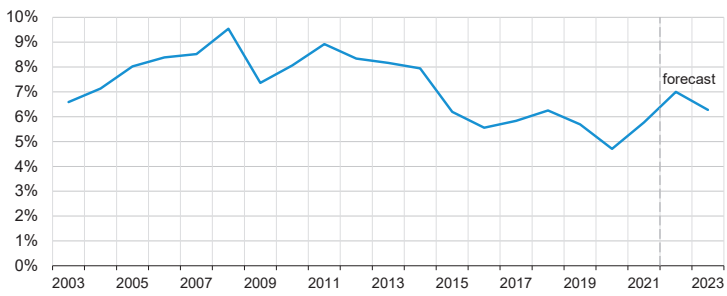


Components of annual change
million metric tons



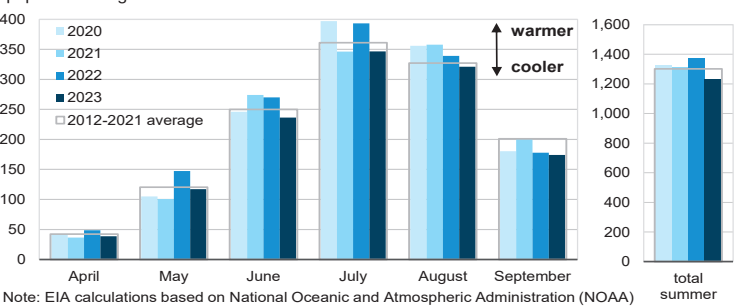
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022

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



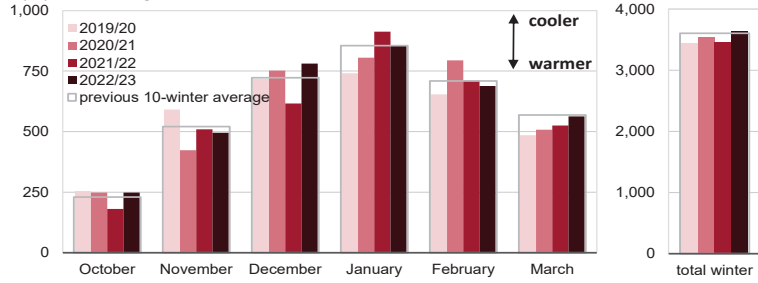
Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022

U.S. summer cooling degree days
population-weighted



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

U.S. winter heating degree days
population-weighted

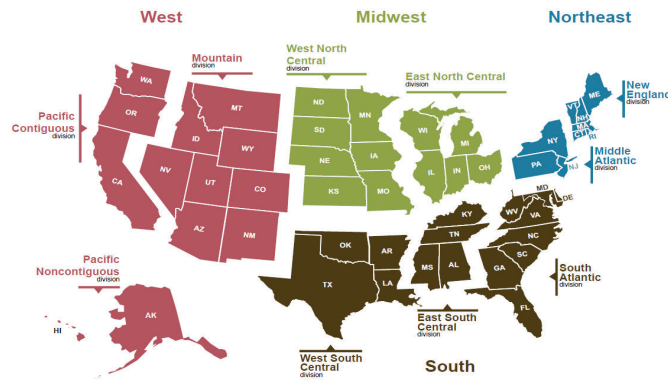


Note: EIA calculations based on National Oceanic and Atmospheric Administration (NOAA) data. Projections reflect NOAA's 14-16 month outlook.

Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022



U.S. Census regions and divisions



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 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Energy Production															
Crude Oil Production (a) (million barrels per day)	10.82	11.34	11.18	11.66	11.47	11.70	<i>11.81</i>	<i>12.16</i>	<i>12.42</i>	<i>12.55</i>	<i>12.70</i>	<i>12.87</i>	11.25	<i>11.79</i>	<i>12.63</i>
Dry Natural Gas Production (billion cubic feet per day)	90.59	93.15	93.86	96.52	94.60	96.87	<i>97.85</i>	<i>98.99</i>	<i>99.65</i>	<i>100.51</i>	<i>100.59</i>	<i>100.67</i>	93.55	<i>97.09</i>	<i>100.36</i>
Coal Production (million short tons)	140	143	148	147	149	142	<i>154</i>	<i>155</i>	<i>148</i>	<i>141</i>	<i>154</i>	<i>147</i>	578	<i>600</i>	<i>590</i>
Energy Consumption															
Liquid Fuels (million barrels per day)	18.58	20.13	20.30	20.54	20.22	20.27	<i>20.32</i>	<i>20.81</i>	<i>20.39</i>	<i>20.71</i>	<i>20.88</i>	<i>21.02</i>	19.89	<i>20.40</i>	<i>20.75</i>
Natural Gas (billion cubic feet per day)	99.44	71.95	75.10	85.62	104.30	75.77	<i>77.83</i>	<i>88.59</i>	<i>100.70</i>	<i>71.76</i>	<i>76.11</i>	<i>90.16</i>	82.97	<i>86.56</i>	<i>84.63</i>
Coal (b) (million short tons)	139	125	168	114	134	118	<i>158</i>	<i>119</i>	<i>121</i>	<i>108</i>	<i>147</i>	<i>110</i>	546	<i>528</i>	<i>485</i>
Electricity (billion kilowatt hours per day)	10.51	10.23	12.22	10.10	10.87	10.65	<i>12.38</i>	<i>10.24</i>	<i>10.92</i>	<i>10.53</i>	<i>12.21</i>	<i>10.32</i>	10.77	<i>11.04</i>	<i>10.99</i>
Renewables (c) (quadrillion Btu)	2.95	3.16	2.95	3.14	3.35	3.56	<i>3.24</i>	<i>3.31</i>	<i>3.52</i>	<i>3.89</i>	<i>3.46</i>	<i>3.50</i>	12.21	<i>13.45</i>	<i>14.37</i>
Total Energy Consumption (d) (quadrillion Btu)	25.05	23.16	24.54	24.57	26.48	23.68	<i>24.79</i>	<i>25.17</i>	<i>26.02</i>	<i>23.75</i>	<i>24.95</i>	<i>25.49</i>	97.33	<i>100.12</i>	<i>100.20</i>
Energy Prices															
Crude Oil West Texas Intermediate Spot (dollars per barrel)	58.09	66.19	70.61	77.27	95.18	108.93	<i>96.27</i>	<i>91.98</i>	<i>92.67</i>	<i>91.65</i>	<i>90.32</i>	<i>89.00</i>	68.21	<i>98.07</i>	<i>90.91</i>
Natural Gas Henry Hub Spot (dollars per million Btu)	3.56	2.94	4.36	4.77	4.66	7.48	<i>8.31</i>	<i>9.03</i>	<i>8.14</i>	<i>5.23</i>	<i>5.28</i>	<i>5.39</i>	3.91	<i>7.37</i>	<i>6.01</i>
Coal (dollars per million Btu)	1.91	1.93	2.03	2.05	2.19	2.26	<i>2.31</i>	<i>2.29</i>	<i>2.29</i>	<i>2.28</i>	<i>2.26</i>	<i>2.23</i>	1.98	<i>2.26</i>	<i>2.26</i>
Macroeconomic															
Real Gross Domestic Product (billion chained 2012 dollars - SAAR)	19,056	19,368	19,479	19,806	19,728	19,682	<i>19,708</i>	<i>19,766</i>	<i>19,856</i>	<i>19,969</i>	<i>20,090</i>	<i>20,199</i>	19,427	<i>19,721</i>	<i>20,029</i>
Percent change from prior year	0.5	12.2	4.9	5.5	3.5	1.6	<i>1.2</i>	<i>-0.2</i>	<i>0.7</i>	<i>1.5</i>	<i>1.9</i>	<i>2.2</i>	5.7	<i>1.5</i>	<i>1.6</i>
GDP Implicit Price Deflator (Index, 2012=100)	115.8	117.5	119.3	121.3	123.7	126.4	<i>127.8</i>	<i>129.3</i>	<i>130.3</i>	<i>131.1</i>	<i>131.9</i>	<i>132.8</i>	118.5	<i>126.8</i>	<i>131.5</i>
Percent change from prior year	2.1	4.1	4.6	5.9	6.8	7.5	<i>7.2</i>	<i>6.6</i>	<i>5.3</i>	<i>3.8</i>	<i>3.2</i>	<i>2.7</i>	4.2	<i>7.0</i>	<i>3.7</i>
Real Disposable Personal Income (billion chained 2012 dollars - SAAR)	17,219	15,807	15,641	15,462	15,152	15,134	<i>15,171</i>	<i>15,303</i>	<i>15,411</i>	<i>15,640</i>	<i>15,865</i>	<i>16,069</i>	16,032	<i>15,190</i>	<i>15,746</i>
Percent change from prior year	15.1	-4.3	-0.9	0.1	-12.0	-4.3	<i>-3.0</i>	<i>-1.0</i>	<i>1.7</i>	<i>3.3</i>	<i>4.6</i>	<i>5.0</i>	2.3	<i>-5.3</i>	<i>3.7</i>
Manufacturing Production Index (Index, 2017=100)	96.9	98.3	99.2	100.6	101.6	102.6	<i>102.4</i>	<i>102.1</i>	<i>102.0</i>	<i>102.4</i>	<i>103.0</i>	<i>103.3</i>	98.8	<i>102.2</i>	<i>102.7</i>
Percent change from prior year	-0.8	15.8	5.1	4.5	4.8	4.4	<i>3.2</i>	<i>1.4</i>	<i>0.4</i>	<i>-0.2</i>	<i>0.6</i>	<i>1.2</i>	5.8	<i>3.4</i>	<i>0.5</i>
Weather															
U.S. Heating Degree-Days	2,107	472	51	1,306	2,148	492	<i>67</i>	<i>1,524</i>	<i>2,106</i>	<i>487</i>	<i>78</i>	<i>1,532</i>	3,936	<i>4,231</i>	<i>4,202</i>
U.S. Cooling Degree-Days	50	411	904	128	47	466	<i>910</i>	<i>95</i>	<i>43</i>	<i>392</i>	<i>842</i>	<i>93</i>	1,493	<i>1,518</i>	<i>1,370</i>

(a) Includes lease condensate.

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

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

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

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

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

- = no data available

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

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

Prices are not adjusted for inflation.

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

Petroleum Supply Annual, DOE/EIA-0340/2; *Weekly Petroleum Status Report*, DOE/EIA-0208; *Petroleum Marketing Monthly*, DOE/EIA-0380; *Natural Gas Monthly*, DOE/EIA-0130;

Electric Power Monthly, DOE/EIA-0226; *Quarterly Coal Report*, DOE/EIA-0121; and *International Petroleum Monthly*, DOE/EIA-0520.

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

Forecasts: EIA Short-Term Integrated Forecasting System. U.S. macroeconomic forecasts are based on the S&P Global model of the U.S. Economy.

Weather forecasts from National Oceanic and Atmospheric Administration.

Table 2. Energy Prices

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

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Crude Oil (dollars per barrel)															
West Texas Intermediate Spot Average	58.09	66.19	70.61	77.27	95.18	108.93	96.27	91.98	92.67	91.65	90.32	89.00	68.21	98.07	90.91
Brent Spot Average	61.12	68.91	73.45	79.42	101.17	113.84	103.89	97.98	98.67	97.65	96.32	95.00	70.89	104.21	96.91
U.S. Imported Average	55.29	64.75	68.42	73.66	89.85	105.87	94.21	89.17	89.88	88.93	87.57	86.25	65.92	94.54	88.24
U.S. Refiner Average Acquisition Cost	57.14	66.11	70.31	76.36	92.62	109.64	94.90	90.23	90.90	89.91	88.59	87.25	67.83	96.90	89.14
U.S. Liquid Fuels (cents per gallon)															
Refiner Prices for Resale															
Gasoline	180	216	232	243	278	376	308	273	274	288	283	270	219	309	279
Diesel Fuel	178	204	219	241	301	418	371	364	331	299	294	294	211	364	304
Fuel Oil	162	180	197	222	284	419	359	345	312	284	285	284	188	350	299
Refiner Prices to End Users															
Jet Fuel	163	182	199	226	283	400	352	347	324	288	285	286	195	347	295
No. 6 Residual Fuel Oil (a)	162	181	194	211	252	260	234	216	230	228	227	224	190	241	227
Retail Prices Including Taxes															
Gasoline Regular Grade (b)	256	297	316	333	371	450	409	360	356	369	366	353	302	398	361
Gasoline All Grades (b)	265	306	325	343	380	460	420	372	369	383	380	367	311	409	375
On-highway Diesel Fuel	290	321	336	366	432	549	520	490	461	426	411	416	329	499	428
Heating Oil	272	283	297	346	415	554	511	475	441	401	384	382	300	461	411
Natural Gas															
Henry Hub Spot (dollars per thousand cubic feet)	3.70	3.06	4.53	4.96	4.84	7.77	8.64	9.38	8.45	5.43	5.49	5.60	4.06	7.66	6.24
Henry Hub Spot (dollars per million Btu)	3.56	2.94	4.36	4.77	4.66	7.48	8.31	9.03	8.14	5.23	5.28	5.39	3.91	7.37	6.01
U.S. Retail Prices (dollars per thousand cubic feet)															
Industrial Sector	5.73	4.09	5.11	6.86	6.82	8.20	9.19	10.37	10.34	7.17	6.46	6.77	5.50	8.56	7.70
Commercial Sector	7.54	8.85	10.12	10.27	9.98	11.62	13.51	13.23	13.36	12.85	11.95	10.52	8.82	11.61	12.24
Residential Sector	9.75	13.87	20.38	13.81	12.32	16.31	24.06	17.58	16.54	17.83	21.51	14.11	12.27	15.40	16.36
U.S. Electricity															
Power Generation Fuel Costs (dollars per million Btu)															
Coal	1.91	1.93	2.03	2.05	2.19	2.26	2.31	2.29	2.29	2.28	2.26	2.23	1.98	2.26	2.26
Natural Gas	7.24	3.26	4.36	5.42	5.68	7.38	8.41	9.37	8.72	5.44	5.47	5.73	4.97	7.78	6.27
Residual Fuel Oil (c)	11.28	13.09	14.22	16.10	16.91	26.17	22.56	19.80	19.16	19.00	17.91	17.51	13.66	20.61	18.45
Distillate Fuel Oil	13.54	15.20	16.19	18.03	21.11	30.70	28.50	27.76	25.69	22.95	22.38	22.48	15.50	25.71	23.71
Prices to Ultimate Customers (cents per kilowatthour)															
Industrial Sector	7.09	6.92	7.62	7.38	7.42	8.40	8.47	7.79	7.75	8.25	8.23	7.56	7.26	8.03	7.96
Commercial Sector	10.99	11.07	11.59	11.37	11.63	12.34	12.34	12.05	12.36	12.89	12.63	12.00	11.27	12.11	12.48
Residential Sector	13.10	13.84	13.99	13.97	13.98	15.08	15.12	14.82	14.81	15.86	15.47	14.81	13.72	14.75	15.24

(a) Average for all sulfur contents.

(b) Average self-service cash price.

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

- = no data available

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

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

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

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

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

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

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

Forecasts: EIA Short-Term Integrated Forecasting System.

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

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

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Production (million barrels per day) (a)															
OECD	30.26	30.85	31.15	32.23	31.60	31.86	<i>32.62</i>	<i>33.38</i>	<i>33.80</i>	<i>33.91</i>	<i>33.94</i>	<i>34.43</i>	31.13	<i>32.37</i>	<i>34.02</i>
U.S. (50 States)	17.79	19.16	19.03	19.91	19.44	20.12	<i>20.40</i>	<i>20.94</i>	<i>21.16</i>	<i>21.32</i>	<i>21.44</i>	<i>21.77</i>	18.98	<i>20.23</i>	<i>21.43</i>
Canada	5.62	5.37	5.49	5.68	5.66	5.53	<i>5.72</i>	<i>5.85</i>	<i>5.92</i>	<i>5.88</i>	<i>5.90</i>	<i>5.92</i>	5.54	<i>5.69</i>	<i>5.91</i>
Mexico	1.93	1.95	1.90	1.92	1.91	1.89	<i>1.89</i>	<i>1.86</i>	<i>1.90</i>	<i>1.87</i>	<i>1.83</i>	<i>1.79</i>	1.92	<i>1.89</i>	<i>1.85</i>
Other OECD	4.92	4.37	4.73	4.71	4.58	4.32	<i>4.60</i>	<i>4.72</i>	<i>4.81</i>	<i>4.84</i>	<i>4.77</i>	<i>4.95</i>	4.68	<i>4.56</i>	<i>4.84</i>
Non-OECD	62.57	63.98	65.61	66.11	67.20	66.97	<i>68.41</i>	<i>68.30</i>	<i>66.92</i>	<i>67.38</i>	<i>67.60</i>	<i>67.13</i>	64.58	<i>67.72</i>	<i>67.26</i>
OPEC	30.34	30.88	32.28	33.10	33.75	33.78	<i>34.50</i>	<i>34.41</i>	<i>34.60</i>	<i>34.48</i>	<i>34.43</i>	<i>34.44</i>	31.66	<i>34.11</i>	<i>34.49</i>
Crude Oil Portion	25.08	25.49	26.84	27.67	28.19	28.33	<i>29.02</i>	<i>28.89</i>	<i>29.04</i>	<i>29.05</i>	<i>28.95</i>	<i>28.92</i>	26.28	<i>28.61</i>	<i>28.99</i>
Other Liquids (b)	5.26	5.39	5.44	5.44	5.56	5.45	<i>5.48</i>	<i>5.52</i>	<i>5.56</i>	<i>5.43</i>	<i>5.48</i>	<i>5.52</i>	5.38	<i>5.50</i>	<i>5.50</i>
Eurasia	13.42	13.66	13.63	14.27	14.39	13.43	<i>13.58</i>	<i>13.88</i>	<i>12.50</i>	<i>12.30</i>	<i>12.30</i>	<i>12.30</i>	13.75	<i>13.82</i>	<i>12.35</i>
China	4.99	5.03	5.01	4.93	5.18	5.19	<i>5.13</i>	<i>5.18</i>	<i>5.22</i>	<i>5.25</i>	<i>5.24</i>	<i>5.28</i>	4.99	<i>5.17</i>	<i>5.25</i>
Other Non-OECD	13.81	14.41	14.69	13.80	13.89	14.58	<i>15.21</i>	<i>14.83</i>	<i>14.59</i>	<i>15.36</i>	<i>15.63</i>	<i>15.10</i>	14.18	<i>14.63</i>	<i>15.17</i>
Total World Production	92.83	94.83	96.76	98.34	98.80	98.83	<i>101.03</i>	<i>101.68</i>	<i>100.72</i>	<i>101.30</i>	<i>101.55</i>	<i>101.56</i>	95.71	<i>100.09</i>	<i>101.28</i>
Non-OPEC Production	62.48	63.95	64.47	65.24	65.05	65.04	<i>66.52</i>	<i>67.27</i>	<i>66.12</i>	<i>66.82</i>	<i>67.11</i>	<i>67.12</i>	64.05	<i>65.98</i>	<i>66.79</i>
Consumption (million barrels per day) (c)															
OECD	42.59	44.14	45.87	46.89	45.85	45.34	<i>45.87</i>	<i>46.99</i>	<i>46.59</i>	<i>45.63</i>	<i>46.36</i>	<i>46.70</i>	44.89	<i>46.01</i>	<i>46.32</i>
U.S. (50 States)	18.58	20.13	20.30	20.54	20.22	20.27	<i>20.32</i>	<i>20.81</i>	<i>20.39</i>	<i>20.71</i>	<i>20.88</i>	<i>21.02</i>	19.89	<i>20.40</i>	<i>20.75</i>
U.S. Territories	0.21	0.19	0.19	0.20	0.22	0.20	<i>0.20</i>	<i>0.22</i>	<i>0.22</i>	<i>0.20</i>	<i>0.21</i>	<i>0.22</i>	0.20	<i>0.21</i>	<i>0.21</i>
Canada	2.19	2.16	2.43	2.33	2.26	2.19	<i>2.44</i>	<i>2.47</i>	<i>2.44</i>	<i>2.38</i>	<i>2.49</i>	<i>2.46</i>	2.28	<i>2.34</i>	<i>2.44</i>
Europe	11.96	12.67	13.88	13.94	13.15	13.42	<i>13.69</i>	<i>13.77</i>	<i>13.52</i>	<i>13.14</i>	<i>13.54</i>	<i>13.30</i>	13.12	<i>13.51</i>	<i>13.37</i>
Japan	3.77	3.07	3.17	3.66	3.70	2.99	<i>3.17</i>	<i>3.51</i>	<i>3.77</i>	<i>3.11</i>	<i>3.14</i>	<i>3.44</i>	3.41	<i>3.34</i>	<i>3.36</i>
Other OECD	5.89	5.93	5.90	6.23	6.30	6.28	<i>6.04</i>	<i>6.22</i>	<i>6.25</i>	<i>6.09</i>	<i>6.12</i>	<i>6.26</i>	5.99	<i>6.21</i>	<i>6.18</i>
Non-OECD	51.78	52.21	52.53	53.64	53.06	53.25	<i>53.70</i>	<i>54.03</i>	<i>55.12</i>	<i>55.55</i>	<i>55.20</i>	<i>54.83</i>	52.54	<i>53.51</i>	<i>55.17</i>
Eurasia	4.66	4.73	5.09	4.95	4.48	4.33	<i>4.69</i>	<i>4.62</i>	<i>4.28</i>	<i>4.44</i>	<i>4.75</i>	<i>4.67</i>	4.86	<i>4.53</i>	<i>4.54</i>
Europe	0.74	0.74	0.74	0.76	0.75	0.75	<i>0.76</i>	<i>0.76</i>	<i>0.75</i>	<i>0.77</i>	<i>0.77</i>	<i>0.77</i>	0.75	<i>0.76</i>	<i>0.76</i>
China	15.27	15.48	14.99	15.33	15.14	15.12	<i>15.13</i>	<i>15.67</i>	<i>16.37</i>	<i>16.27</i>	<i>15.64</i>	<i>15.56</i>	15.27	<i>15.27</i>	<i>15.96</i>
Other Asia	13.43	12.98	12.84	13.69	13.82	13.78	<i>13.46</i>	<i>13.89</i>	<i>14.46</i>	<i>14.43</i>	<i>13.85</i>	<i>14.15</i>	13.23	<i>13.74</i>	<i>14.22</i>
Other Non-OECD	17.68	18.27	18.87	18.91	18.88	19.26	<i>19.66</i>	<i>19.09</i>	<i>19.26</i>	<i>19.64</i>	<i>20.18</i>	<i>19.68</i>	18.44	<i>19.22</i>	<i>19.69</i>
Total World Consumption	94.37	96.34	98.40	100.53	98.91	98.59	<i>99.57</i>	<i>101.01</i>	<i>101.71</i>	<i>101.18</i>	<i>101.56</i>	<i>101.54</i>	97.43	<i>99.53</i>	<i>101.50</i>
Total Crude Oil and Other Liquids Inventory Net Withdrawals (million barrels per day)															
U.S. (50 States)	0.36	0.51	0.37	0.83	0.81	0.51	<i>0.41</i>	<i>0.60</i>	<i>0.02</i>	<i>-0.52</i>	<i>0.00</i>	<i>0.39</i>	0.52	<i>0.58</i>	<i>-0.03</i>
Other OECD	0.87	0.15	0.97	0.67	-0.12	-0.62	<i>-0.60</i>	<i>-0.41</i>	<i>0.32</i>	<i>0.12</i>	<i>0.00</i>	<i>-0.13</i>	0.66	<i>-0.44</i>	<i>0.08</i>
Other Stock Draws and Balance	0.31	0.86	0.31	0.68	-0.57	-0.13	<i>-1.27</i>	<i>-0.85</i>	<i>0.66</i>	<i>0.28</i>	<i>0.01</i>	<i>-0.28</i>	0.54	<i>-0.71</i>	<i>0.16</i>
Total Stock Draw	1.55	1.52	1.65	2.18	0.12	-0.24	<i>-1.46</i>	<i>-0.66</i>	<i>0.99</i>	<i>-0.12</i>	<i>0.01</i>	<i>-0.02</i>	1.72	<i>-0.56</i>	<i>0.21</i>
End-of-period Commercial Crude Oil and Other Liquids Inventories (million barrels)															
U.S. Commercial Inventory	1,311	1,281	1,251	1,199	1,154	1,180	<i>1,222</i>	<i>1,204</i>	<i>1,207</i>	<i>1,262</i>	<i>1,265</i>	<i>1,239</i>	1,199	<i>1,204</i>	<i>1,239</i>
OECD Commercial Inventory	2,917	2,874	2,755	2,641	2,607	2,689	<i>2,787</i>	<i>2,808</i>	<i>2,782</i>	<i>2,826</i>	<i>2,828</i>	<i>2,815</i>	2,641	<i>2,808</i>	<i>2,815</i>

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

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

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

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

- = no data available

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

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

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

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

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

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

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 3b. Non-OPEC Petroleum and Other Liquids Production (million barrels per day)
U.S. Energy Information Administration | Short-Term Energy Outlook - September 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
North America	25.34	26.47	26.42	27.52	27.02	27.54	<i>28.01</i>	<i>28.66</i>	<i>28.99</i>	<i>29.07</i>	<i>29.17</i>	<i>29.48</i>	26.44	<i>27.81</i>	<i>29.18</i>
Canada	5.62	5.37	5.49	5.68	5.66	5.53	<i>5.72</i>	<i>5.85</i>	<i>5.92</i>	<i>5.88</i>	<i>5.90</i>	<i>5.92</i>	5.54	<i>5.69</i>	<i>5.91</i>
Mexico	1.93	1.95	1.90	1.92	1.91	1.89	<i>1.89</i>	<i>1.86</i>	<i>1.90</i>	<i>1.87</i>	<i>1.83</i>	<i>1.79</i>	1.92	<i>1.89</i>	<i>1.85</i>
United States	17.79	19.16	19.03	19.91	19.44	20.12	<i>20.40</i>	<i>20.94</i>	<i>21.16</i>	<i>21.32</i>	<i>21.44</i>	<i>21.77</i>	18.98	<i>20.23</i>	<i>21.43</i>
Central and South America	5.64	6.29	6.69	5.79	5.83	6.41	<i>6.99</i>	<i>6.62</i>	<i>6.39</i>	<i>7.16</i>	<i>7.49</i>	<i>7.00</i>	6.10	<i>6.47</i>	<i>7.01</i>
Argentina	0.65	0.69	0.73	0.74	0.77	0.78	<i>0.80</i>	<i>0.81</i>	<i>0.85</i>	<i>0.86</i>	<i>0.88</i>	<i>0.90</i>	0.70	<i>0.79</i>	<i>0.87</i>
Brazil	3.22	3.89	4.21	3.42	3.33	3.79	<i>4.28</i>	<i>3.82</i>	<i>3.49</i>	<i>4.22</i>	<i>4.52</i>	<i>3.98</i>	3.69	<i>3.81</i>	<i>4.06</i>
Colombia	0.77	0.74	0.77	0.77	0.77	0.77	<i>0.78</i>	<i>0.77</i>	<i>0.77</i>	<i>0.77</i>	<i>0.78</i>	<i>0.77</i>	0.76	<i>0.77</i>	<i>0.77</i>
Ecuador	0.51	0.50	0.49	0.41	0.48	0.47	<i>0.49</i>	<i>0.53</i>	<i>0.55</i>	<i>0.57</i>	<i>0.59</i>	<i>0.61</i>	0.48	<i>0.49</i>	<i>0.58</i>
Other Central and S. America	0.48	0.46	0.49	0.46	0.49	0.60	<i>0.65</i>	<i>0.68</i>	<i>0.73</i>	<i>0.73</i>	<i>0.72</i>	<i>0.73</i>	0.47	<i>0.61</i>	<i>0.73</i>
Europe	4.34	3.84	4.12	4.12	4.01	3.74	<i>4.03</i>	<i>4.17</i>	<i>4.27</i>	<i>4.30</i>	<i>4.23</i>	<i>4.42</i>	4.10	<i>3.99</i>	<i>4.30</i>
Norway	2.11	1.90	2.06	2.05	1.98	1.74	<i>2.01</i>	<i>2.13</i>	<i>2.24</i>	<i>2.28</i>	<i>2.28</i>	<i>2.36</i>	2.03	<i>1.96</i>	<i>2.29</i>
United Kingdom	1.08	0.81	0.93	0.93	0.96	0.90	<i>0.90</i>	<i>0.91</i>	<i>0.90</i>	<i>0.89</i>	<i>0.81</i>	<i>0.91</i>	0.94	<i>0.92</i>	<i>0.88</i>
Eurasia	13.42	13.66	13.63	14.27	14.39	13.43	<i>13.58</i>	<i>13.88</i>	<i>12.50</i>	<i>12.30</i>	<i>12.30</i>	<i>12.30</i>	13.75	<i>13.82</i>	<i>12.35</i>
Azerbaijan	0.75	0.70	0.71	0.71	0.70	0.67	<i>0.67</i>	<i>0.66</i>	<i>0.65</i>	<i>0.64</i>	<i>0.64</i>	<i>0.65</i>	0.72	<i>0.67</i>	<i>0.64</i>
Kazakhstan	1.87	1.86	1.72	2.01	2.01	1.77	<i>1.56</i>	<i>1.95</i>	<i>2.02</i>	<i>1.94</i>	<i>1.95</i>	<i>2.01</i>	1.87	<i>1.82</i>	<i>1.98</i>
Russia	10.42	10.71	10.80	11.16	11.30	10.59	<i>10.95</i>	<i>10.87</i>	<i>9.41</i>	<i>9.30</i>	<i>9.31</i>	<i>9.24</i>	10.78	<i>10.93</i>	<i>9.32</i>
Turkmenistan	0.25	0.25	0.25	0.25	0.26	0.26	<i>0.26</i>	<i>0.26</i>	<i>0.27</i>	<i>0.27</i>	<i>0.27</i>	<i>0.27</i>	0.25	<i>0.26</i>	<i>0.27</i>
Other Eurasia	0.13	0.14	0.14	0.13	0.13	0.14	<i>0.14</i>	<i>0.14</i>	<i>0.14</i>	<i>0.14</i>	<i>0.13</i>	<i>0.13</i>	0.13	<i>0.14</i>	<i>0.14</i>
Middle East	3.09	3.12	3.16	3.17	3.23	3.26	<i>3.23</i>	<i>3.21</i>	<i>3.22</i>	<i>3.22</i>	<i>3.21</i>	<i>3.21</i>	3.13	<i>3.23</i>	<i>3.21</i>
Oman	0.96	0.97	0.98	1.01	1.05	1.07	<i>1.06</i>	<i>1.04</i>	<i>1.04</i>	<i>1.04</i>	<i>1.04</i>	<i>1.04</i>	0.98	<i>1.05</i>	<i>1.04</i>
Qatar	1.80	1.82	1.83	1.83	1.85	1.86	<i>1.86</i>	<i>1.86</i>	<i>1.86</i>	<i>1.86</i>	<i>1.86</i>	<i>1.86</i>	1.82	<i>1.86</i>	<i>1.86</i>
Asia and Oceania	9.18	9.10	9.05	8.95	9.17	9.21	<i>9.24</i>	<i>9.28</i>	<i>9.32</i>	<i>9.34</i>	<i>9.29</i>	<i>9.30</i>	9.07	<i>9.23</i>	<i>9.31</i>
Australia	0.46	0.42	0.49	0.48	0.45	0.47	<i>0.47</i>	<i>0.44</i>	<i>0.43</i>	<i>0.43</i>	<i>0.42</i>	<i>0.41</i>	0.46	<i>0.46</i>	<i>0.42</i>
China	4.99	5.03	5.01	4.93	5.18	5.19	<i>5.13</i>	<i>5.18</i>	<i>5.22</i>	<i>5.25</i>	<i>5.24</i>	<i>5.28</i>	4.99	<i>5.17</i>	<i>5.25</i>
India	0.90	0.89	0.89	0.88	0.88	0.90	<i>0.90</i>	<i>0.89</i>	<i>0.89</i>	<i>0.91</i>	<i>0.88</i>	<i>0.87</i>	0.89	<i>0.89</i>	<i>0.89</i>
Indonesia	0.88	0.85	0.85	0.85	0.84	0.83	<i>0.85</i>	<i>0.84</i>	<i>0.84</i>	<i>0.83</i>	<i>0.82</i>	<i>0.81</i>	0.86	<i>0.84</i>	<i>0.83</i>
Malaysia	0.66	0.62	0.57	0.59	0.61	0.60	<i>0.66</i>	<i>0.68</i>	<i>0.69</i>	<i>0.68</i>	<i>0.67</i>	<i>0.67</i>	0.61	<i>0.64</i>	<i>0.68</i>
Vietnam	0.21	0.21	0.20	0.21	0.21	0.20	<i>0.20</i>	<i>0.19</i>	<i>0.19</i>	<i>0.19</i>	<i>0.18</i>	<i>0.18</i>	0.21	<i>0.20</i>	<i>0.19</i>
Africa	1.48	1.47	1.41	1.41	1.40	1.46	<i>1.44</i>	<i>1.45</i>	<i>1.43</i>	<i>1.43</i>	<i>1.41</i>	<i>1.41</i>	1.44	<i>1.44</i>	<i>1.42</i>
Egypt	0.66	0.67	0.65	0.66	0.66	0.68	<i>0.67</i>	<i>0.67</i>	<i>0.67</i>	<i>0.66</i>	<i>0.66</i>	<i>0.67</i>	0.66	<i>0.67</i>	<i>0.67</i>
South Sudan	0.16	0.16	0.15	0.16	0.15	0.15	<i>0.16</i>	<i>0.16</i>	<i>0.17</i>	<i>0.17</i>	<i>0.17</i>	<i>0.17</i>	0.16	<i>0.16</i>	<i>0.17</i>
Total non-OPEC liquids	62.48	63.95	64.47	65.24	65.05	65.04	<i>66.52</i>	<i>67.27</i>	<i>66.12</i>	<i>66.82</i>	<i>67.11</i>	<i>67.12</i>	64.05	<i>65.98</i>	<i>66.79</i>
OPEC non-crude liquids	5.26	5.39	5.44	5.44	5.56	5.45	<i>5.48</i>	<i>5.52</i>	<i>5.56</i>	<i>5.43</i>	<i>5.48</i>	<i>5.52</i>	5.38	<i>5.50</i>	<i>5.50</i>
Non-OPEC + OPEC non-crude	67.75	69.34	69.92	70.68	70.60	70.50	<i>72.00</i>	<i>72.79</i>	<i>71.68</i>	<i>72.25</i>	<i>72.59</i>	<i>72.64</i>	69.43	<i>71.48</i>	<i>72.29</i>
Unplanned non-OPEC Production Outages	0.61	0.50	0.80	0.86	0.76	1.33	-	-	-	-	-	-	0.70	-	-

- = no data available

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

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

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

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

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

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

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

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 3c. OPEC Crude Oil (excluding condensates) Production (million barrels per day)
U.S. Energy Information Administration | Short-Term Energy Outlook - September 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Crude Oil															
Algeria	0.87	0.88	0.92	0.95	0.97	1.00	-	-	-	-	-	-	0.90	-	-
Angola	1.11	1.08	1.11	1.13	1.15	1.19	-	-	-	-	-	-	1.11	-	-
Congo (Brazzaville)	0.28	0.27	0.26	0.26	0.27	0.29	-	-	-	-	-	-	0.26	-	-
Equatorial Guinea	0.11	0.10	0.10	0.09	0.09	0.09	-	-	-	-	-	-	0.10	-	-
Gabon	0.16	0.17	0.18	0.19	0.19	0.19	-	-	-	-	-	-	0.18	-	-
Iran	2.18	2.47	2.47	2.45	2.55	2.53	-	-	-	-	-	-	2.39	-	-
Iraq	3.94	3.98	4.07	4.25	4.30	4.42	-	-	-	-	-	-	4.06	-	-
Kuwait	2.33	2.36	2.45	2.53	2.61	2.69	-	-	-	-	-	-	2.42	-	-
Libya	1.18	1.16	1.18	1.12	1.06	0.76	-	-	-	-	-	-	1.16	-	-
Nigeria	1.31	1.32	1.28	1.31	1.27	1.11	-	-	-	-	-	-	1.30	-	-
Saudi Arabia	8.49	8.53	9.55	9.87	10.08	10.30	-	-	-	-	-	-	9.11	-	-
United Arab Emirates	2.61	2.65	2.76	2.86	2.94	3.04	-	-	-	-	-	-	2.72	-	-
Venezuela	0.52	0.53	0.53	0.68	0.70	0.72	-	-	-	-	-	-	0.56	-	-
OPEC Total	25.08	25.49	26.84	27.67	28.19	28.33	<i>29.02</i>	<i>28.89</i>	<i>29.04</i>	<i>29.05</i>	<i>28.95</i>	<i>28.92</i>	26.28	<i>28.61</i>	<i>28.99</i>
Other Liquids (a)	5.26	5.39	5.44	5.44	5.56	5.45	<i>5.48</i>	<i>5.52</i>	<i>5.56</i>	<i>5.43</i>	<i>5.48</i>	<i>5.52</i>	5.38	<i>5.50</i>	<i>5.50</i>
Total OPEC Production	30.34	30.88	32.28	33.10	33.75	33.78	<i>34.50</i>	<i>34.41</i>	<i>34.60</i>	<i>34.48</i>	<i>34.43</i>	<i>34.44</i>	31.66	<i>34.11</i>	<i>34.49</i>
Crude Oil Production Capacity															
Middle East	25.21	25.50	25.50	25.48	25.48	25.46	<i>25.52</i>	<i>25.60</i>	<i>25.90</i>	<i>26.03</i>	<i>26.03</i>	<i>26.03</i>	25.42	<i>25.52</i>	<i>26.00</i>
Other	6.12	6.10	5.96	5.98	5.83	5.46	<i>5.38</i>	<i>5.66</i>	<i>5.74</i>	<i>5.78</i>	<i>5.70</i>	<i>5.67</i>	6.04	<i>5.58</i>	<i>5.72</i>
OPEC Total	31.33	31.59	31.45	31.46	31.31	30.92	<i>30.90</i>	<i>31.26</i>	<i>31.64</i>	<i>31.81</i>	<i>31.73</i>	<i>31.70</i>	31.46	<i>31.10</i>	<i>31.72</i>
Surplus Crude Oil Production Capacity															
Middle East	5.66	5.52	4.21	3.53	3.00	2.48	<i>1.87</i>	<i>2.35</i>	<i>2.58</i>	<i>2.74</i>	<i>2.76</i>	<i>2.76</i>	4.72	<i>2.42</i>	<i>2.71</i>
Other	0.59	0.59	0.40	0.27	0.12	0.11	<i>0.01</i>	<i>0.02</i>	<i>0.02</i>	<i>0.02</i>	<i>0.02</i>	<i>0.02</i>	0.46	<i>0.06</i>	<i>0.02</i>
OPEC Total	6.25	6.10	4.61	3.80	3.12	2.59	<i>1.88</i>	<i>2.37</i>	<i>2.60</i>	<i>2.76</i>	<i>2.78</i>	<i>2.78</i>	5.18	<i>2.49</i>	<i>2.73</i>
Unplanned OPEC Production Outages	2.49	2.12	2.15	2.03	1.98	2.42	-	-	-	-	-	-	2.20	-	-

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

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

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

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

Forecasts are not published for individual OPEC countries.

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

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

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 3d. World Petroleum and Other Liquids Consumption (million barrels per day)
U.S. Energy Information Administration | Short-Term Energy Outlook - September 2022

	2021				2022				2023				2021	2022	2023
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
North America	22.40	23.95	24.34	24.60	24.24	24.35	24.44	24.96	24.52	24.81	25.09	25.21	23.83	24.50	24.91
Canada	2.19	2.16	2.43	2.33	2.26	2.19	2.44	2.47	2.44	2.38	2.49	2.46	2.28	2.34	2.44
Mexico	1.63	1.66	1.61	1.72	1.76	1.88	1.67	1.68	1.69	1.71	1.71	1.72	1.65	1.75	1.71
United States	18.58	20.13	20.30	20.54	20.22	20.27	20.32	20.81	20.39	20.71	20.88	21.02	19.89	20.40	20.75
Central and South America	5.89	6.03	6.25	6.37	6.21	6.28	6.35	6.36	6.18	6.31	6.42	6.36	6.14	6.30	6.32
Brazil	2.79	2.90	3.02	3.12	2.95	2.96	3.04	3.04	2.93	2.99	3.06	3.05	2.96	3.00	3.01
Europe	12.70	13.41	14.62	14.70	13.90	14.17	14.44	14.54	14.27	13.90	14.31	14.08	13.87	14.26	14.14
Eurasia	4.66	4.73	5.09	4.95	4.48	4.33	4.69	4.62	4.28	4.44	4.75	4.67	4.86	4.53	4.54
Russia	3.42	3.53	3.82	3.66	3.32	3.23	3.50	3.41	3.16	3.25	3.54	3.40	3.61	3.37	3.34
Middle East	8.08	8.50	9.04	8.78	8.88	9.19	9.58	8.84	9.13	9.36	9.89	9.27	8.60	9.12	9.41
Asia and Oceania	36.28	35.34	34.78	36.67	36.69	35.77	35.67	37.17	38.72	37.74	36.58	37.25	35.76	36.32	37.56
China	15.27	15.48	14.99	15.33	15.14	15.12	15.13	15.67	16.37	16.27	15.64	15.56	15.27	15.27	15.96
Japan	3.77	3.07	3.17	3.66	3.70	2.99	3.17	3.51	3.77	3.11	3.14	3.44	3.41	3.34	3.36
India	4.94	4.37	4.41	4.87	5.08	5.02	4.75	5.04	5.27	5.33	4.98	5.30	4.65	4.97	5.22
Africa	4.36	4.38	4.28	4.47	4.51	4.50	4.40	4.53	4.60	4.62	4.53	4.70	4.37	4.49	4.61
Total OECD Liquid Fuels Consumption	42.59	44.14	45.87	46.89	45.85	45.34	45.87	46.99	46.59	45.63	46.36	46.70	44.89	46.01	46.32
Total non-OECD Liquid Fuels Consumption	51.78	52.21	52.53	53.64	53.06	53.25	53.70	54.03	55.12	55.55	55.20	54.83	52.54	53.51	55.17
Total World Liquid Fuels Consumption	94.37	96.34	98.40	100.53	98.91	98.59	99.57	101.01	101.71	101.18	101.56	101.54	97.43	99.53	101.50
Real Gross Domestic Product (a)															
World Index, 2015 Q1 = 100	116.5	117.5	119.1	120.7	121.4	121.3	122.2	123.1	123.9	124.7	125.7	126.9	118.4	122.0	125.3
Percent change from prior year	3.4	11.5	5.1	4.6	4.3	3.2	2.7	1.9	2.0	2.8	2.9	3.1	6.1	3.0	2.7
OECD Index, 2015 = 100													109.6	112.4	113.7
Percent change from prior year													5.5	2.6	1.1
Non-OECD Index, 2015 = 100													123.8	128.0	133.2
Percent change from prior year													6.5	3.4	4.0
Nominal U.S. Dollar Index (b)															
Index, 2015 Q1 = 100	106.5	106.1	107.5	109.1	109.6	113.0	115.5	116.0	115.9	115.5	114.9	114.2	107.3	113.5	115.1
Percent change from prior year	-4.6	-8.2	-3.4	0.9	2.9	6.5	7.5	6.4	5.8	2.2	-0.5	-1.6	-3.9	5.8	1.4

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

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

- = no data available

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

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

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

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

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

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 4a. U.S. Petroleum and Other Liquids Supply, Consumption, and Inventories
U.S. Energy Information Administration | Short-Term Energy Outlook - September 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Supply (million barrels per day)															
Crude Oil Supply															
Domestic Production (a)	10.82	11.34	11.18	11.66	11.47	11.70	<i>11.81</i>	<i>12.16</i>	<i>12.42</i>	<i>12.55</i>	<i>12.70</i>	<i>12.87</i>	11.25	<i>11.79</i>	<i>12.63</i>
Alaska	0.46	0.44	0.41	0.44	0.45	0.44	<i>0.44</i>	<i>0.45</i>	<i>0.44</i>	<i>0.40</i>	<i>0.43</i>	<i>0.44</i>	0.44	<i>0.44</i>	<i>0.43</i>
Federal Gulf of Mexico (b)	1.83	1.80	1.49	1.71	1.67	1.72	<i>1.75</i>	<i>1.82</i>	<i>1.87</i>	<i>1.84</i>	<i>1.75</i>	<i>1.73</i>	1.71	<i>1.74</i>	<i>1.80</i>
Lower 48 States (excl GOM)	8.54	9.10	9.29	9.50	9.35	9.54	<i>9.62</i>	<i>9.90</i>	<i>10.10</i>	<i>10.31</i>	<i>10.52</i>	<i>10.70</i>	9.11	<i>9.60</i>	<i>10.41</i>
Crude Oil Net Imports (c)	2.88	2.94	3.64	3.13	3.00	2.81	<i>2.74</i>	<i>3.13</i>	<i>3.14</i>	<i>3.28</i>	<i>3.19</i>	<i>2.62</i>	3.15	<i>2.92</i>	<i>3.06</i>
SPR Net Withdrawals	0.00	0.18	0.04	0.26	0.31	0.80	<i>0.87</i>	<i>0.41</i>	<i>0.04</i>	<i>0.09</i>	<i>0.03</i>	<i>0.11</i>	0.12	<i>0.60</i>	<i>0.07</i>
Commercial Inventory Net Withdrawals	-0.19	0.60	0.30	-0.01	0.08	-0.03	<i>-0.03</i>	<i>-0.10</i>	<i>-0.34</i>	<i>0.02</i>	<i>0.28</i>	<i>-0.07</i>	0.18	<i>-0.02</i>	<i>-0.03</i>
Crude Oil Adjustment (d)	0.30	0.59	0.44	0.44	0.71	0.81	<i>0.77</i>	<i>0.16</i>	<i>0.22</i>	<i>0.22</i>	<i>0.23</i>	<i>0.16</i>	0.44	<i>0.61</i>	<i>0.21</i>
Total Crude Oil Input to Refineries	13.81	15.65	15.61	15.49	15.56	16.09	<i>16.16</i>	<i>15.76</i>	<i>15.48</i>	<i>16.15</i>	<i>16.42</i>	<i>15.69</i>	15.15	<i>15.89</i>	<i>15.94</i>
Other Supply															
Refinery Processing Gain	0.85	0.98	0.96	1.04	0.95	1.07	<i>1.06</i>	<i>1.05</i>	<i>1.03</i>	<i>0.98</i>	<i>0.99</i>	<i>0.99</i>	0.96	<i>1.03</i>	<i>1.00</i>
Natural Gas Plant Liquids Production	4.89	5.50	5.56	5.74	5.61	5.92	<i>6.12</i>	<i>6.28</i>	<i>6.29</i>	<i>6.35</i>	<i>6.32</i>	<i>6.42</i>	5.42	<i>5.99</i>	<i>6.34</i>
Renewables and Oxygenate Production (e)	1.04	1.13	1.11	1.24	1.19	1.20	<i>1.19</i>	<i>1.24</i>	<i>1.21</i>	<i>1.22</i>	<i>1.22</i>	<i>1.27</i>	1.13	<i>1.21</i>	<i>1.23</i>
Fuel Ethanol Production	0.90	0.99	0.96	1.06	1.02	1.01	<i>1.01</i>	<i>1.02</i>	<i>1.00</i>	<i>1.00</i>	<i>0.99</i>	<i>1.02</i>	0.98	<i>1.01</i>	<i>1.00</i>
Petroleum Products Adjustment (f)	0.20	0.22	0.22	0.23	0.22	0.23	<i>0.22</i>	<i>0.22</i>	<i>0.21</i>	<i>0.22</i>	<i>0.22</i>	<i>0.22</i>	0.22	<i>0.22</i>	<i>0.22</i>
Product Net Imports (c)	-2.79	-3.07	-3.19	-3.79	-3.74	-3.99	<i>-4.00</i>	<i>-4.03</i>	<i>-4.15</i>	<i>-3.59</i>	<i>-3.97</i>	<i>-3.92</i>	-3.21	<i>-3.94</i>	<i>-3.91</i>
Hydrocarbon Gas Liquids	-1.95	-2.25	-2.15	-2.18	-2.14	-2.31	<i>-2.39</i>	<i>-2.51</i>	<i>-2.55</i>	<i>-2.58</i>	<i>-2.58</i>	<i>-2.60</i>	-2.14	<i>-2.34</i>	<i>-2.57</i>
Unfinished Oils	0.18	0.30	0.25	0.10	0.09	0.25	<i>0.38</i>	<i>0.22</i>	<i>0.18</i>	<i>0.25</i>	<i>0.37</i>	<i>0.21</i>	0.21	<i>0.24</i>	<i>0.26</i>
Other HC/Oxygenates	-0.08	-0.04	-0.03	-0.05	-0.09	-0.10	<i>-0.07</i>	<i>-0.05</i>	<i>-0.06</i>	<i>-0.04</i>	<i>-0.04</i>	<i>-0.04</i>	-0.05	<i>-0.08</i>	<i>-0.04</i>
Motor Gasoline Blend Comp.	0.55	0.79	0.67	0.43	0.40	0.60	<i>0.49</i>	<i>0.23</i>	<i>0.38</i>	<i>0.63</i>	<i>0.35</i>	<i>0.43</i>	0.61	<i>0.43</i>	<i>0.45</i>
Finished Motor Gasoline	-0.64	-0.64	-0.68	-0.88	-0.76	-0.73	<i>-0.68</i>	<i>-0.46</i>	<i>-0.60</i>	<i>-0.53</i>	<i>-0.64</i>	<i>-0.70</i>	-0.71	<i>-0.66</i>	<i>-0.62</i>
Jet Fuel	0.03	0.08	0.08	0.01	-0.04	-0.06	<i>-0.03</i>	<i>-0.04</i>	<i>-0.08</i>	<i>0.09</i>	<i>0.07</i>	<i>0.05</i>	0.05	<i>-0.04</i>	<i>0.03</i>
Distillate Fuel Oil	-0.48	-0.87	-0.91	-0.86	-0.81	-1.15	<i>-1.25</i>	<i>-1.01</i>	<i>-0.90</i>	<i>-1.09</i>	<i>-1.14</i>	<i>-1.02</i>	-0.78	<i>-1.05</i>	<i>-1.04</i>
Residual Fuel Oil	0.07	0.05	0.08	0.15	0.14	0.10	<i>0.09</i>	<i>0.14</i>	<i>0.04</i>	<i>0.08</i>	<i>0.04</i>	<i>0.14</i>	0.09	<i>0.12</i>	<i>0.07</i>
Other Oils (g)	-0.48	-0.49	-0.50	-0.50	-0.54	-0.59	<i>-0.53</i>	<i>-0.56</i>	<i>-0.56</i>	<i>-0.41</i>	<i>-0.41</i>	<i>-0.39</i>	-0.49	<i>-0.56</i>	<i>-0.44</i>
Product Inventory Net Withdrawals	0.55	-0.27	0.03	0.58	0.42	-0.25	<i>-0.43</i>	<i>0.29</i>	<i>0.32</i>	<i>-0.62</i>	<i>-0.30</i>	<i>0.35</i>	0.22	<i>0.01</i>	<i>-0.07</i>
Total Supply	18.54	20.13	20.30	20.53	20.22	20.27	<i>20.32</i>	<i>20.81</i>	<i>20.39</i>	<i>20.71</i>	<i>20.88</i>	<i>21.02</i>	19.88	<i>20.40</i>	<i>20.75</i>
Consumption (million barrels per day)															
Hydrocarbon Gas Liquids	3.43	3.33	3.34	3.66	3.87	3.43	<i>3.46</i>	<i>3.94</i>	<i>4.04</i>	<i>3.54</i>	<i>3.53</i>	<i>3.93</i>	3.44	<i>3.67</i>	<i>3.76</i>
Other HC/Oxygenates	0.11	0.13	0.13	0.16	0.13	0.17	<i>0.16</i>	<i>0.22</i>	<i>0.21</i>	<i>0.21</i>	<i>0.21</i>	<i>0.26</i>	0.13	<i>0.17</i>	<i>0.22</i>
Unfinished Oils	0.08	0.07	-0.05	0.00	0.13	0.04	<i>0.01</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	0.02	<i>0.04</i>	<i>0.00</i>
Motor Gasoline	8.04	9.09	9.14	8.98	8.47	9.00	<i>8.88</i>	<i>8.95</i>	<i>8.59</i>	<i>9.09</i>	<i>9.13</i>	<i>8.96</i>	8.82	<i>8.83</i>	<i>8.94</i>
Fuel Ethanol blended into Motor Gasoline	0.81	0.93	0.94	0.95	0.87	0.93	<i>0.91</i>	<i>0.92</i>	<i>0.88</i>	<i>0.93</i>	<i>0.93</i>	<i>0.94</i>	0.91	<i>0.91</i>	<i>0.92</i>
Jet Fuel	1.12	1.34	1.52	1.50	1.45	1.61	<i>1.62</i>	<i>1.55</i>	<i>1.48</i>	<i>1.64</i>	<i>1.64</i>	<i>1.60</i>	1.37	<i>1.56</i>	<i>1.59</i>
Distillate Fuel Oil	3.99	3.96	3.90	4.03	4.14	3.89	<i>3.82</i>	<i>3.98</i>	<i>4.04</i>	<i>3.90</i>	<i>3.87</i>	<i>3.96</i>	3.97	<i>3.96</i>	<i>3.94</i>
Residual Fuel Oil	0.26	0.25	0.35	0.40	0.38	0.31	<i>0.34</i>	<i>0.34</i>	<i>0.31</i>	<i>0.31</i>	<i>0.32</i>	<i>0.34</i>	0.31	<i>0.34</i>	<i>0.32</i>
Other Oils (g)	1.54	1.95	1.98	1.81	1.65	1.82	<i>2.05</i>	<i>1.82</i>	<i>1.73</i>	<i>2.03</i>	<i>2.18</i>	<i>1.97</i>	1.82	<i>1.83</i>	<i>1.98</i>
Total Consumption	18.58	20.13	20.30	20.54	20.22	20.27	<i>20.32</i>	<i>20.81</i>	<i>20.39</i>	<i>20.71</i>	<i>20.88</i>	<i>21.02</i>	19.89	<i>20.40</i>	<i>20.75</i>
Total Petroleum and Other Liquids Net Imports	0.09	-0.13	0.45	-0.65	-0.74	-1.18	<i>-1.26</i>	<i>-0.90</i>	<i>-1.01</i>	<i>-0.31</i>	<i>-0.79</i>	<i>-1.30</i>	-0.06	<i>-1.02</i>	<i>-0.85</i>
End-of-period Inventories (million barrels)															
Commercial Inventory															
Crude Oil (excluding SPR)	502.5	448.1	420.3	421.2	414.4	417.5	<i>420.0</i>	<i>429.6</i>	<i>460.4</i>	<i>458.8</i>	<i>433.5</i>	<i>440.1</i>	421.2	<i>429.6</i>	<i>440.1</i>
Hydrocarbon Gas Liquids	176.9	205.3	235.5	193.1	142.0	186.7	<i>233.2</i>	<i>189.2</i>	<i>151.7</i>	<i>204.4</i>	<i>246.3</i>	<i>204.6</i>	193.1	<i>189.2</i>	<i>204.6</i>
Unfinished Oils	92.5	92.3	89.5	79.7	87.9	88.8	<i>88.6</i>	<i>82.6</i>	<i>92.1</i>	<i>89.5</i>	<i>89.0</i>	<i>82.2</i>	79.7	<i>82.6</i>	<i>82.2</i>
Other HC/Oxygenates	29.3	27.7	25.7	28.7	34.1	29.4	<i>29.8</i>	<i>30.1</i>	<i>32.1</i>	<i>30.9</i>	<i>30.7</i>	<i>31.0</i>	28.7	<i>30.1</i>	<i>31.0</i>
Total Motor Gasoline	237.8	237.3	227.0	232.2	238.5	221.0	<i>216.3</i>	<i>234.1</i>	<i>233.3</i>	<i>236.1</i>	<i>224.0</i>	<i>238.4</i>	232.2	<i>234.1</i>	<i>238.4</i>
Finished Motor Gasoline	20.3	18.5	18.5	17.8	17.3	17.1	<i>19.7</i>	<i>24.0</i>	<i>21.3</i>	<i>22.9</i>	<i>23.7</i>	<i>26.4</i>	17.8	<i>24.0</i>	<i>26.4</i>
Motor Gasoline Blend Comp.	217.6	218.7	208.5	214.4	221.2	203.8	<i>196.5</i>	<i>210.1</i>	<i>212.0</i>	<i>213.2</i>	<i>200.4</i>	<i>212.0</i>	214.4	<i>210.1</i>	<i>212.0</i>
Jet Fuel	39.1	44.7	42.0	35.8	35.6	39.3	<i>40.1</i>	<i>37.5</i>	<i>37.4</i>	<i>38.6</i>	<i>41.3</i>	<i>38.2</i>	35.8	<i>37.5</i>	<i>38.2</i>
Distillate Fuel Oil	146.1	140.1	132.1	130.0	114.6	111.4	<i>114.1</i>	<i>118.4</i>	<i>108.1</i>	<i>113.3</i>	<i>120.2</i>	<i>122.4</i>	130.0	<i>118.4</i>	<i>122.4</i>
Residual Fuel Oil	30.9	31.5	27.8	25.8	27.9	29.2	<i>28.6</i>	<i>30.5</i>	<i>30.3</i>	<i>31.2</i>	<i>29.8</i>	<i>31.2</i>	25.8	<i>30.5</i>	<i>31.2</i>
Other Oils (g)	55.8	54.3	51.0	52.2	58.5	56.4	<i>51.1</i>	<i>52.5</i>	<i>61.5</i>	<i>59.3</i>	<i>49.9</i>	<i>51.3</i>	52.2	<i>52.5</i>	<i>51.3</i>
Total Commercial Inventory	1310.9	1281.4	1250.9	1198.6	1153.6	1179.7	<i>1221.8</i>	<i>1204.5</i>	<i>1206.9</i>	<i>1262.1</i>	<i>1264.7</i>	<i>1239.3</i>	1198.6	<i>1204.5</i>	<i>1239.3</i>
Crude Oil in SPR	637.8	621.3	617.8	593.7	566.1	493.3	<i>413.2</i>	<i>375.4</i>	<i>371.6</i>	<i>363.8</i>	<i>361.2</i>	<i>350.7</i>	593.7	<i>375.4</i>	<i>350.7</i>

(a) Includes lease condensate.

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

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

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

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

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

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
HGL Production															
Natural Gas Processing Plants															
Ethane	1.88	2.20	2.19	2.32	2.33	2.43	2.52	2.61	2.62	2.66	2.58	2.63	2.15	2.47	2.62
Propane	1.63	1.76	1.77	1.82	1.77	1.85	1.91	1.96	1.98	1.97	1.98	2.02	1.74	1.87	1.98
Butanes	0.86	0.93	0.94	0.96	0.93	0.98	1.02	1.05	1.06	1.05	1.07	1.09	0.92	1.00	1.07
Natural Gasoline (Pentanes Plus)	0.53	0.61	0.66	0.64	0.59	0.67	0.67	0.65	0.64	0.67	0.69	0.67	0.61	0.64	0.67
Refinery and Blender Net Production															
Ethane/Ethylene	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.01
Propane	0.25	0.29	0.28	0.29	0.27	0.29	0.30	0.29	0.29	0.28	0.29	0.28	0.28	0.29	0.28
Propylene (refinery-grade)	0.27	0.31	0.29	0.29	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.29	0.28	0.28
Butanes/Butylenes	-0.09	0.24	0.18	-0.16	-0.07	0.25	0.18	-0.19	-0.08	0.27	0.20	-0.19	0.04	0.04	0.05
Renewable Fuels and Oxygenate Plant Net Production															
Natural Gasoline (Pentanes Plus)	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
HGL Net Imports															
Ethane	-0.31	-0.38	-0.37	-0.41	-0.50	-0.40	-0.36	-0.43	-0.45	-0.45	-0.45	-0.45	-0.37	-0.42	-0.45
Propane/Propylene	-1.08	-1.26	-1.22	-1.24	-1.18	-1.33	-1.38	-1.46	-1.40	-1.37	-1.37	-1.44	-1.20	-1.34	-1.39
Butanes/Butylenes	-0.34	-0.41	-0.38	-0.35	-0.28	-0.41	-0.45	-0.45	-0.47	-0.53	-0.53	-0.48	-0.37	-0.40	-0.50
Natural Gasoline (Pentanes Plus)	-0.22	-0.21	-0.18	-0.18	-0.17	-0.17	-0.19	-0.16	-0.22	-0.23	-0.24	-0.23	-0.20	-0.18	-0.23
HGL Refinery and Blender Net Inputs															
Butanes/Butylenes	0.40	0.29	0.31	0.53	0.44	0.31	0.33	0.49	0.42	0.28	0.31	0.51	0.38	0.39	0.38
Natural Gasoline (Pentanes Plus)	0.14	0.14	0.16	0.23	0.20	0.20	0.19	0.19	0.17	0.19	0.19	0.18	0.17	0.19	0.18
HGL Consumption															
Ethane/Ethylene	1.55	1.86	1.83	1.98	1.98	2.03	2.13	2.16	2.17	2.16	2.14	2.18	1.81	2.08	2.16
Propane	1.11	0.61	0.65	0.95	1.16	0.60	0.55	0.96	1.12	0.62	0.63	0.99	0.83	0.82	0.84
Propylene (refinery-grade)	0.29	0.32	0.30	0.30	0.30	0.29	0.29	0.29	0.30	0.30	0.30	0.29	0.31	0.29	0.30
Butanes/Butylenes	0.22	0.29	0.26	0.20	0.23	0.26	0.22	0.23	0.20	0.24	0.23	0.22	0.24	0.23	0.22
Natural Gasoline (Pentanes Plus)	0.26	0.24	0.30	0.22	0.21	0.24	0.26	0.29	0.25	0.22	0.24	0.25	0.26	0.25	0.24
HGL Inventories (million barrels)															
Ethane	70.4	72.3	69.8	67.4	51.1	51.7	50.9	54.8	54.3	59.2	59.5	61.7	70.0	52.1	58.7
Propane	41.8	56.8	72.2	63.9	36.3	54.1	77.7	61.0	35.6	57.6	80.8	68.0	63.9	61.0	68.0
Propylene (at refineries only)	1.1	1.2	1.3	1.4	1.0	1.2	1.6	1.6	1.5	1.7	1.9	1.8	1.4	1.6	1.8
Butanes/Butylenes	37.7	54.7	69.9	43.9	35.7	58.8	78.4	49.5	39.6	64.2	82.1	53.0	43.9	49.5	53.0
Natural Gasoline (Pentanes Plus)	23.0	22.5	22.5	20.7	19.4	22.7	23.3	22.4	19.8	20.9	21.6	20.7	20.7	22.4	20.7
Refinery and Blender Net Inputs															
Crude Oil	13.81	15.65	15.61	15.49	15.56	16.09	16.16	15.76	15.48	16.15	16.42	15.69	15.15	15.89	15.94
Hydrocarbon Gas Liquids	0.53	0.43	0.47	0.76	0.64	0.50	0.51	0.68	0.60	0.47	0.50	0.69	0.55	0.59	0.56
Other Hydrocarbons/Oxygenates	1.06	1.19	1.20	1.18	1.12	1.20	1.18	1.16	1.11	1.18	1.18	1.17	1.16	1.16	1.16
Unfinished Oils	-0.07	0.24	0.32	0.21	-0.12	0.21	0.37	0.28	0.08	0.28	0.38	0.28	0.18	0.19	0.26
Motor Gasoline Blend Components	0.70	0.92	0.82	0.28	0.33	0.84	0.73	0.30	0.48	0.72	0.59	0.53	0.68	0.55	0.58
Aviation Gasoline Blend Components	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Refinery and Blender Net Inputs	16.03	18.43	18.41	17.92	17.53	18.84	18.95	18.18	17.74	18.80	19.07	18.35	17.71	18.38	18.49
Refinery Processing Gain	0.85	0.98	0.96	1.04	0.95	1.07	1.06	1.05	1.03	0.98	0.99	0.99	0.96	1.03	1.00
Refinery and Blender Net Production															
Hydrocarbon Gas Liquids	0.44	0.85	0.76	0.42	0.49	0.84	0.77	0.39	0.49	0.83	0.77	0.37	0.62	0.62	0.62
Finished Motor Gasoline	8.75	9.83	9.83	9.70	9.22	9.74	9.73	9.63	9.24	9.70	9.84	9.86	9.53	9.58	9.66
Jet Fuel	1.10	1.32	1.41	1.42	1.48	1.71	1.66	1.56	1.56	1.56	1.61	1.52	1.31	1.60	1.56
Distillate Fuel	4.30	4.77	4.72	4.87	4.77	5.00	5.10	5.04	4.83	5.04	5.09	5.01	4.67	4.98	4.99
Residual Fuel	0.20	0.21	0.22	0.23	0.26	0.22	0.24	0.22	0.27	0.24	0.26	0.22	0.21	0.24	0.25
Other Oils (a)	2.10	2.43	2.44	2.33	2.26	2.39	2.52	2.40	2.39	2.41	2.49	2.38	2.32	2.39	2.42
Total Refinery and Blender Net Production	16.88	19.41	19.37	18.96	18.49	19.90	20.01	19.23	18.78	19.78	20.06	19.34	18.66	19.41	19.49
Refinery Distillation Inputs	14.25	16.17	16.23	16.02	16.07	16.61	16.56	16.08	15.79	16.40	16.72	16.02	15.67	16.33	16.23
Refinery Operable Distillation Capacity	18.13	18.13	18.13	18.05	17.94	17.94	17.94	17.94	17.94	17.94	17.94	17.94	18.11	17.94	17.94
Refinery Distillation Utilization Factor	0.79	0.89	0.89	0.89	0.90	0.93	0.92	0.90	0.88	0.91	0.93	0.89	0.87	0.91	0.90

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

- = no data available

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

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

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

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

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 4c. U.S. Regional Motor Gasoline Prices and Inventories
 U.S. Energy Information Administration | Short-Term Energy Outlook - September 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Prices (cents per gallon)															
Refiner Wholesale Price	180	216	232	243	278	376	308	273	274	288	283	270	219	309	279
Gasoline Regular Grade Retail Prices Including Taxes															
PADD 1	252	287	304	327	364	438	400	351	349	362	358	347	294	389	354
PADD 2	247	288	304	315	352	436	394	341	336	355	354	341	290	381	347
PADD 3	227	267	282	298	340	414	357	316	319	333	330	316	270	356	325
PADD 4	247	311	360	351	360	446	435	366	352	372	375	358	319	402	364
PADD 5	312	366	391	410	452	543	501	449	439	442	436	419	372	487	434
U.S. Average	256	297	316	333	371	450	409	360	356	369	366	353	302	398	361
Gasoline All Grades Including Taxes	265	306	325	343	380	460	420	372	369	383	380	367	311	409	375
End-of-period Inventories (million barrels)															
Total Gasoline Inventories															
PADD 1	65.1	69.9	59.0	61.8	56.9	53.6	53.6	58.9	59.2	60.7	56.4	62.7	61.8	58.9	62.7
PADD 2	50.6	50.6	46.8	50.7	56.5	46.7	47.5	50.0	52.9	50.8	50.1	49.4	50.7	50.0	49.4
PADD 3	82.1	81.6	83.0	81.7	87.1	83.9	80.4	86.3	83.7	87.5	81.1	85.6	81.7	86.3	85.6
PADD 4	8.6	6.2	7.6	8.1	8.1	6.4	6.9	8.0	8.0	7.9	7.4	8.3	8.1	8.0	8.3
PADD 5	31.5	29.0	30.6	29.7	29.9	30.3	27.8	30.9	29.5	29.2	29.1	32.3	29.7	30.9	32.3
U.S. Total	237.8	237.3	227.0	232.2	238.5	221.0	216.3	234.1	233.3	236.1	224.0	238.4	232.2	234.1	238.4
Finished Gasoline Inventories															
U.S. Total	20.3	18.5	18.5	17.8	17.3	17.1	19.7	24.0	21.3	22.9	23.7	26.4	17.8	24.0	26.4
Gasoline Blending Components Inventories															
U.S. Total	217.6	218.7	208.5	214.4	221.2	203.8	196.5	210.1	212.0	213.2	200.4	212.0	214.4	210.1	212.0

- = no data available

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

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

Prices are not adjusted for inflation.

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

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

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

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

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

Forecasts: EIA Short-Term Integrated Forecasting System.

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

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

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Supply (billion cubic feet per day)															
Total Marketed Production	97.65	101.12	101.89	104.86	102.77	105.47	<i>106.52</i>	<i>107.76</i>	<i>108.38</i>	<i>109.35</i>	<i>109.44</i>	<i>109.54</i>	101.40	<i>105.65</i>	<i>109.18</i>
Alaska	1.02	0.95	0.90	1.02	1.06	1.00	<i>0.88</i>	<i>0.99</i>	<i>1.00</i>	<i>0.92</i>	<i>0.84</i>	<i>0.98</i>	0.97	<i>0.98</i>	<i>0.94</i>
Federal GOM (a)	2.26	2.25	1.82	2.11	2.04	2.10	<i>2.21</i>	<i>2.17</i>	<i>2.19</i>	<i>2.11</i>	<i>1.97</i>	<i>1.90</i>	2.11	<i>2.13</i>	<i>2.04</i>
Lower 48 States (excl GOM)	94.37	97.92	99.17	101.73	99.67	102.37	<i>103.43</i>	<i>104.60</i>	<i>105.19</i>	<i>106.33</i>	<i>106.63</i>	<i>106.66</i>	98.32	<i>102.53</i>	<i>106.21</i>
Total Dry Gas Production	90.59	93.15	93.86	96.52	94.60	96.87	<i>97.85</i>	<i>98.99</i>	<i>99.65</i>	<i>100.51</i>	<i>100.59</i>	<i>100.67</i>	93.55	<i>97.09</i>	<i>100.36</i>
LNG Gross Imports	0.15	0.02	0.03	0.04	0.15	0.01	<i>0.04</i>	<i>0.06</i>	<i>0.10</i>	<i>0.04</i>	<i>0.04</i>	<i>0.06</i>	0.06	<i>0.06</i>	<i>0.06</i>
LNG Gross Exports	9.27	9.81	9.60	10.32	11.50	10.80	<i>10.01</i>	<i>11.75</i>	<i>12.47</i>	<i>12.53</i>	<i>12.10</i>	<i>12.28</i>	9.76	<i>11.01</i>	<i>12.34</i>
Pipeline Gross Imports	8.68	6.81	7.24	7.82	8.92	7.79	<i>7.32</i>	<i>7.49</i>	<i>8.26</i>	<i>6.85</i>	<i>7.04</i>	<i>7.46</i>	7.63	<i>7.88</i>	<i>7.40</i>
Pipeline Gross Exports	8.31	8.66	8.50	8.40	8.43	8.44	<i>8.78</i>	<i>9.24</i>	<i>9.65</i>	<i>9.10</i>	<i>9.44</i>	<i>9.75</i>	8.47	<i>8.72</i>	<i>9.49</i>
Supplemental Gaseous Fuels	0.17	0.15	0.15	0.17	0.19	0.13	<i>0.16</i>	<i>0.17</i>	<i>0.17</i>	<i>0.17</i>	<i>0.17</i>	<i>0.17</i>	0.16	<i>0.16</i>	<i>0.17</i>
Net Inventory Withdrawals	17.18	-9.12	-7.87	1.03	20.14	-10.23	<i>-8.50</i>	<i>2.75</i>	<i>14.32</i>	<i>-12.84</i>	<i>-8.94</i>	<i>3.96</i>	0.24	<i>0.97</i>	<i>-0.93</i>
Total Supply	99.18	72.53	75.31	86.86	104.07	75.33	<i>78.08</i>	<i>88.48</i>	<i>100.37</i>	<i>73.09</i>	<i>77.35</i>	<i>90.29</i>	83.42	<i>86.43</i>	<i>85.23</i>
Balancing Item (b)	0.26	-0.58	-0.21	-1.23	0.24	0.43	<i>-0.25</i>	<i>0.11</i>	<i>0.33</i>	<i>-1.33</i>	<i>-1.24</i>	<i>-0.13</i>	-0.45	<i>0.13</i>	<i>-0.60</i>
Total Primary Supply	99.44	71.95	75.10	85.62	104.30	75.77	<i>77.83</i>	<i>88.59</i>	<i>100.70</i>	<i>71.76</i>	<i>76.11</i>	<i>90.16</i>	82.97	<i>86.56</i>	<i>84.63</i>
Consumption (billion cubic feet per day)															
Residential	25.67	7.50	3.62	14.43	26.09	7.87	<i>4.05</i>	<i>16.76</i>	<i>25.54</i>	<i>7.92</i>	<i>4.29</i>	<i>16.94</i>	12.75	<i>13.64</i>	<i>13.62</i>
Commercial	14.87	6.23	4.68	10.08	15.62	6.72	<i>5.04</i>	<i>11.46</i>	<i>15.23</i>	<i>6.75</i>	<i>5.22</i>	<i>11.66</i>	8.94	<i>9.69</i>	<i>9.69</i>
Industrial	23.81	21.46	21.14	23.44	25.23	22.15	<i>21.19</i>	<i>22.90</i>	<i>22.16</i>	<i>20.41</i>	<i>21.12</i>	<i>23.96</i>	22.46	<i>22.86</i>	<i>21.91</i>
Electric Power (c)	26.79	29.20	37.94	29.47	28.65	31.12	<i>39.52</i>	<i>29.00</i>	<i>28.84</i>	<i>28.71</i>	<i>37.36</i>	<i>28.98</i>	30.88	<i>32.09</i>	<i>30.99</i>
Lease and Plant Fuel	4.87	5.04	5.08	5.23	5.12	5.26	<i>5.31</i>	<i>5.37</i>	<i>5.40</i>	<i>5.45</i>	<i>5.46</i>	<i>5.46</i>	5.05	<i>5.27</i>	<i>5.44</i>
Pipeline and Distribution Use	3.29	2.38	2.48	2.83	3.45	2.50	<i>2.57</i>	<i>2.96</i>	<i>3.38</i>	<i>2.37</i>	<i>2.52</i>	<i>3.01</i>	2.74	<i>2.87</i>	<i>2.82</i>
Vehicle Use	0.15	0.15	0.15	0.15	0.15	0.15	<i>0.15</i>	<i>0.15</i>	<i>0.15</i>	<i>0.15</i>	<i>0.15</i>	<i>0.15</i>	0.15	<i>0.15</i>	<i>0.15</i>
Total Consumption	99.44	71.95	75.10	85.62	104.30	75.77	<i>77.83</i>	<i>88.59</i>	<i>100.70</i>	<i>71.76</i>	<i>76.11</i>	<i>90.16</i>	82.97	<i>86.56</i>	<i>84.63</i>
End-of-period Inventories (billion cubic feet)															
Working Gas Inventory	1,801	2,585	3,306	3,210	1,401	2,324	<i>3,106</i>	<i>2,853</i>	<i>1,564</i>	<i>2,732</i>	<i>3,555</i>	<i>3,190</i>	3,210	<i>2,853</i>	<i>3,190</i>
East Region (d)	313	515	804	766	242	479	<i>752</i>	<i>649</i>	<i>252</i>	<i>598</i>	<i>895</i>	<i>760</i>	766	<i>649</i>	<i>760</i>
Midwest Region (d)	395	630	966	887	296	558	<i>912</i>	<i>804</i>	<i>352</i>	<i>667</i>	<i>1,008</i>	<i>857</i>	887	<i>804</i>	<i>857</i>
South Central Region (d)	760	993	1,053	1,143	587	889	<i>987</i>	<i>999</i>	<i>711</i>	<i>1,056</i>	<i>1,132</i>	<i>1,101</i>	1,143	<i>999</i>	<i>1,101</i>
Mountain Region (d)	113	175	205	171	90	137	<i>170</i>	<i>146</i>	<i>80</i>	<i>130</i>	<i>198</i>	<i>180</i>	171	<i>146</i>	<i>180</i>
Pacific Region (d)	197	246	248	218	165	239	<i>258</i>	<i>228</i>	<i>142</i>	<i>255</i>	<i>295</i>	<i>265</i>	218	<i>228</i>	<i>265</i>
Alaska	23	27	30	25	21	24	<i>27</i>	<i>27</i>	<i>27</i>	<i>27</i>	<i>27</i>	<i>27</i>	25	<i>27</i>	<i>27</i>

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

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

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

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

- = no data available

LNG: liquefied natural gas.

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

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

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

Forecasts: EIA Short-Term Integrated Forecasting System.

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

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

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Wholesale/Spot															
Henry Hub Spot Price	3.70	3.06	4.53	4.96	4.84	7.77	<i>8.64</i>	<i>9.38</i>	<i>8.45</i>	<i>5.43</i>	<i>5.49</i>	<i>5.60</i>	4.06	7.66	6.24
Residential Retail															
New England	14.66	16.24	20.41	17.61	17.69	21.04	<i>25.50</i>	<i>21.01</i>	<i>20.43</i>	<i>20.83</i>	<i>22.95</i>	<i>18.36</i>	16.12	19.55	20.05
Middle Atlantic	10.43	13.49	19.81	14.29	12.79	15.57	<i>23.12</i>	<i>17.47</i>	<i>16.35</i>	<i>17.17</i>	<i>20.62</i>	<i>14.01</i>	12.55	14.79	16.02
E. N. Central	7.41	12.69	22.36	11.40	9.81	14.81	<i>24.98</i>	<i>15.49</i>	<i>14.00</i>	<i>15.54</i>	<i>21.05</i>	<i>11.72</i>	10.19	12.54	13.90
W. N. Central	7.49	11.63	20.32	12.62	11.39	15.23	<i>24.72</i>	<i>16.07</i>	<i>14.28</i>	<i>15.72</i>	<i>20.91</i>	<i>12.13</i>	10.23	13.49	14.12
S. Atlantic	11.94	18.03	27.56	16.62	13.91	21.04	<i>31.38</i>	<i>20.36</i>	<i>18.00</i>	<i>21.44</i>	<i>26.77</i>	<i>15.88</i>	15.24	17.49	18.49
E. S. Central	9.35	14.78	22.94	14.14	11.78	17.23	<i>27.45</i>	<i>19.43</i>	<i>17.08</i>	<i>20.72</i>	<i>25.45</i>	<i>15.76</i>	11.99	14.32	17.93
W. S. Central	9.23	15.85	23.76	17.82	12.64	19.55	<i>27.05</i>	<i>18.22</i>	<i>15.18</i>	<i>19.01</i>	<i>23.72</i>	<i>14.46</i>	13.22	15.96	16.36
Mountain	7.90	10.64	15.58	10.85	10.33	12.92	<i>18.08</i>	<i>13.68</i>	<i>13.66</i>	<i>14.73</i>	<i>17.25</i>	<i>11.46</i>	9.77	11.97	13.37
Pacific	14.20	15.01	15.90	16.47	17.06	17.62	<i>20.72</i>	<i>20.30</i>	<i>20.84</i>	<i>20.41</i>	<i>19.78</i>	<i>18.28</i>	15.25	18.51	19.85
U.S. Average	9.75	13.87	20.38	13.81	12.32	16.31	<i>24.06</i>	<i>17.58</i>	<i>16.54</i>	<i>17.83</i>	<i>21.51</i>	<i>14.11</i>	12.27	15.40	16.36
Commercial Retail															
New England	10.39	11.13	12.24	12.58	12.63	14.45	<i>15.38</i>	<i>15.65</i>	<i>16.14</i>	<i>15.26</i>	<i>13.51</i>	<i>12.65</i>	11.33	14.20	14.73
Middle Atlantic	7.92	7.99	7.99	10.11	10.33	10.80	<i>11.82</i>	<i>12.91</i>	<i>13.40</i>	<i>12.30</i>	<i>10.76</i>	<i>10.60</i>	8.56	11.38	12.07
E. N. Central	6.11	8.59	11.03	8.67	8.14	10.47	<i>12.92</i>	<i>12.01</i>	<i>12.47</i>	<i>12.53</i>	<i>12.04</i>	<i>9.42</i>	7.60	9.95	11.48
W. N. Central	6.32	7.67	9.94	10.19	10.24	11.70	<i>14.55</i>	<i>12.98</i>	<i>12.88</i>	<i>11.99</i>	<i>11.84</i>	<i>9.61</i>	7.91	11.55	11.66
S. Atlantic	8.69	9.84	10.37	11.04	10.52	12.16	<i>14.34</i>	<i>14.26</i>	<i>14.27</i>	<i>13.86</i>	<i>12.94</i>	<i>11.54</i>	9.76	12.34	13.20
E. S. Central	8.33	9.90	11.95	11.80	10.54	13.01	<i>15.22</i>	<i>14.54</i>	<i>14.21</i>	<i>14.11</i>	<i>13.25</i>	<i>11.50</i>	9.89	12.63	13.24
W. S. Central	6.91	8.57	10.14	10.87	9.99	12.28	<i>13.54</i>	<i>13.12</i>	<i>12.77</i>	<i>12.32</i>	<i>11.24</i>	<i>9.98</i>	8.62	11.75	11.74
Mountain	6.50	7.76	9.25	9.02	8.83	10.07	<i>11.94</i>	<i>11.48</i>	<i>11.73</i>	<i>11.87</i>	<i>11.94</i>	<i>10.26</i>	7.75	10.10	11.31
Pacific	10.46	10.31	11.31	12.12	12.74	13.38	<i>15.36</i>	<i>15.03</i>	<i>14.79</i>	<i>13.63</i>	<i>12.70</i>	<i>11.58</i>	11.09	13.89	13.22
U.S. Average	7.54	8.85	10.12	10.27	9.98	11.62	<i>13.51</i>	<i>13.23</i>	<i>13.36</i>	<i>12.85</i>	<i>11.95</i>	<i>10.52</i>	8.82	11.61	12.24
Industrial Retail															
New England	8.59	8.08	7.85	10.08	11.09	11.97	<i>11.90</i>	<i>13.56</i>	<i>14.19</i>	<i>12.29</i>	<i>9.97</i>	<i>10.59</i>	8.73	12.15	12.14
Middle Atlantic	7.66	7.37	7.90	10.36	10.16	9.06	<i>11.85</i>	<i>13.41</i>	<i>13.86</i>	<i>11.96</i>	<i>10.19</i>	<i>9.98</i>	8.24	11.26	12.18
E. N. Central	5.43	8.14	8.49	7.89	7.72	9.64	<i>11.75</i>	<i>11.74</i>	<i>11.87</i>	<i>9.63</i>	<i>8.31</i>	<i>8.13</i>	6.90	9.73	9.99
W. N. Central	5.13	4.34	5.25	6.95	8.03	8.51	<i>9.80</i>	<i>10.87</i>	<i>11.02</i>	<i>8.22</i>	<i>7.04</i>	<i>7.28</i>	5.48	9.30	8.50
S. Atlantic	5.13	4.76	6.02	7.66	7.57	8.90	<i>10.02</i>	<i>11.15</i>	<i>11.17</i>	<i>7.99</i>	<i>7.23</i>	<i>7.49</i>	5.90	9.29	8.58
E. S. Central	4.72	4.28	5.36	7.21	6.87	9.15	<i>9.64</i>	<i>10.75</i>	<i>10.80</i>	<i>7.69</i>	<i>6.76</i>	<i>7.08</i>	5.39	9.01	8.21
W. S. Central	5.75	3.20	4.38	5.95	5.46	7.47	<i>8.59</i>	<i>9.52</i>	<i>8.96</i>	<i>5.87</i>	<i>5.65</i>	<i>5.71</i>	4.80	7.93	6.52
Mountain	4.98	5.32	6.66	7.27	7.07	8.39	<i>9.79</i>	<i>10.39</i>	<i>10.82</i>	<i>9.88</i>	<i>9.21</i>	<i>8.55</i>	5.99	8.80	9.67
Pacific	8.28	7.24	8.88	9.21	8.81	8.83	<i>10.76</i>	<i>11.95</i>	<i>12.37</i>	<i>10.83</i>	<i>9.48</i>	<i>9.06</i>	8.54	10.18	10.54
U.S. Average	5.73	4.09	5.11	6.86	6.82	8.20	<i>9.19</i>	<i>10.37</i>	<i>10.34</i>	<i>7.17</i>	<i>6.46</i>	<i>6.77</i>	5.50	8.56	7.70

- = no data available

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

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

Prices are not adjusted for inflation.

Regions refer to U.S. Census divisions.

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

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

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

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

Forecasts: EIA Short-Term Integrated Forecasting System.

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

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

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Supply (million short tons)															
Production	140.3	142.7	148.3	146.7	149.0	141.7	154.5	154.9	148.0	141.3	154.3	146.8	578.1	600.1	590.4
Appalachia	40.8	39.5	36.6	38.9	40.2	38.7	39.0	40.3	41.1	39.0	37.4	34.9	155.8	158.2	152.4
Interior	25.0	23.3	22.7	22.5	23.8	21.9	22.6	22.9	21.4	20.0	22.0	21.5	93.5	91.2	84.9
Western	74.5	80.0	89.0	85.3	85.0	81.1	92.8	91.7	85.5	82.3	94.9	90.4	328.8	350.7	353.2
Primary Inventory Withdrawals	-4.5	2.1	2.6	-1.8	-1.1	-2.0	-0.9	-5.4	-2.3	-1.5	1.4	-1.9	-1.7	-9.3	-4.3
Imports	1.1	1.5	1.1	1.7	1.3	1.6	1.6	1.3	1.1	1.2	1.6	1.4	5.4	5.9	5.3
Exports	20.7	22.1	20.7	21.7	20.2	23.0	20.9	22.2	22.8	24.7	23.7	25.5	85.2	86.2	96.6
Metallurgical Coal	10.3	11.7	11.4	11.9	10.5	13.1	11.7	11.6	11.9	13.1	12.4	13.1	45.3	46.9	50.6
Steam Coal	10.4	10.4	9.3	9.7	9.7	9.9	9.1	10.6	10.8	11.5	11.3	12.4	39.9	39.3	46.0
Total Primary Supply	116.2	124.2	131.3	124.9	129.0	118.4	134.4	128.6	124.1	116.4	133.6	120.8	496.6	510.4	494.9
Secondary Inventory Withdrawals	22.3	0.3	30.4	-14.0	8.8	-2.5	21.7	-11.8	-4.9	-10.6	11.2	-13.0	39.0	16.1	-17.3
Waste Coal (a)	2.2	1.7	2.0	2.0	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	7.9	7.5	7.2
Total Supply	140.6	126.2	163.7	112.9	139.6	117.8	158.0	118.7	121.0	107.6	146.6	109.6	543.4	534.1	484.8
Consumption (million short tons)															
Coke Plants	4.4	4.5	4.4	4.4	4.2	3.9	3.7	4.4	4.1	4.2	4.4	4.5	17.6	16.2	17.1
Electric Power Sector (b)	128.0	113.8	157.0	102.7	122.6	107.4	147.5	107.6	110.2	97.7	136.4	98.4	501.4	485.1	442.7
Retail and Other Industry	6.8	6.3	6.5	7.0	6.9	6.8	6.6	6.8	6.8	5.7	5.8	6.6	26.7	27.1	24.9
Residential and Commercial	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.3	0.4	0.2	0.2	0.3	0.8	0.9	1.1
Other Industrial	6.6	6.2	6.3	6.8	6.7	6.7	6.4	6.5	6.4	5.5	5.7	6.3	25.8	26.2	23.9
Total Consumption	139.2	124.6	167.9	114.1	133.7	118.1	157.8	118.7	121.0	107.6	146.6	109.6	545.7	528.3	484.8
Discrepancy (c)	1.4	1.6	-4.1	-1.2	5.9	-0.3	0.1	0.0	0.0	0.0	0.0	0.0	-2.2	5.8	0.0
End-of-period Inventories (million short tons)															
Primary Inventories (d)	28.1	26.1	23.4	25.3	26.4	28.4	29.2	34.6	36.9	38.3	37.0	38.9	25.3	34.6	38.9
Secondary Inventories	115.8	115.5	85.1	99.1	90.3	92.8	71.2	83.0	87.8	98.4	87.2	100.2	99.1	83.0	100.2
Electric Power Sector	111.5	110.9	80.4	94.7	86.2	87.3	65.5	77.6	83.3	93.7	82.3	95.3	94.7	77.6	95.3
Retail and General Industry	2.6	2.6	2.7	2.6	2.4	3.5	3.4	3.3	2.7	2.8	3.0	3.0	2.6	3.3	3.0
Coke Plants	1.5	1.9	1.8	1.7	1.6	1.9	2.0	1.9	1.7	1.8	1.8	1.8	1.7	1.9	1.8
Commercial & Institutional	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1
Coal Market Indicators															
Coal Miner Productivity															
(Tons per hour)	6.08	6.08	6.08	6.08	6.05	6.05	6.05	6.05	5.98	5.98	5.98	5.98	6.08	6.05	5.98
Total Raw Steel Production															
(Million short tons per day)	0.246	0.258	0.267	0.260	0.253	0.253	0.261	0.286	0.298	0.298	0.319	0.337	0.258	0.263	0.313
Cost of Coal to Electric Utilities															
(Dollars per million Btu)	1.91	1.93	2.03	2.05	2.19	2.26	2.31	2.29	2.29	2.28	2.26	2.23	1.98	2.26	2.26

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

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

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

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

- = no data available

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

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

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

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

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 7a. U.S. Electricity Industry Overview

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

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Electricity Supply (billion kilowatthours)															
Electricity Generation	989	985	1,166	975	1,033	1,028	1,189	983	1,014	1,011	1,162	989	4,116	4,232	4,176
Electric Power Sector (a)	952	949	1,127	935	994	991	1,149	946	977	974	1,121	950	3,963	4,080	4,022
Industrial Sector (b)	34	33	36	36	35	33	36	35	34	34	37	36	140	139	141
Commercial Sector (b)	3	3	4	3	3	3	3	3	3	3	4	3	13	13	13
Net Imports	11	11	11	6	7	13	11	9	11	12	14	11	39	40	49
Total Supply	1,000	997	1,177	981	1,040	1,040	1,200	993	1,025	1,023	1,176	1,001	4,155	4,272	4,225
Losses and Unaccounted for (c)	54	66	52	52	61	71	61	51	43	65	53	51	225	244	212
Electricity Consumption (billion kilowatthours unless noted)															
Sales to Ultimate Customers	913	898	1,089	894	944	937	1,104	908	949	925	1,087	914	3,795	3,893	3,876
Residential Sector	379	329	446	324	379	346	445	328	378	334	429	331	1,477	1,498	1,472
Commercial Sector	304	321	377	322	322	335	386	328	324	333	382	328	1,325	1,370	1,367
Industrial Sector	229	247	264	247	242	255	272	251	246	257	275	254	987	1,019	1,031
Transportation Sector	2	2	2	2	2	2	2	2	2	2	2	2	6	6	6
Direct Use (d)	33	32	35	35	34	33	35	34	33	33	36	35	136	135	137
Total Consumption	946	931	1,124	929	979	969	1,139	942	982	958	1,123	949	3,930	4,029	4,013
Average residential electricity usage per customer (kWh)	2,744	2,381	3,232	2,346	2,725	2,487	3,197	2,357	2,693	2,379	3,058	2,357	10,703	10,766	10,487
End-of-period Fuel Inventories Held by Electric Power Sector															
Coal (mmst)	111.5	110.9	80.4	94.7	86.2	87.3	65.5	77.6	83.3	93.7	82.3	95.3	94.7	77.6	95.3
Residual Fuel (mmb)	8.0	7.4	6.9	7.0	5.7	5.8	6.1	6.8	4.8	4.7	2.8	3.5	7.0	6.8	3.5
Distillate Fuel (mmb)	16.0	15.5	15.3	16.0	15.5	15.4	15.3	15.6	15.4	15.3	15.2	15.5	16.0	15.6	15.5
Prices															
Power Generation Fuel Costs (dollars per million Btu)															
Coal	1.91	1.93	2.03	2.05	2.19	2.26	2.31	2.29	2.29	2.28	2.26	2.23	1.98	2.26	2.26
Natural Gas	7.24	3.26	4.36	5.42	5.68	7.38	8.41	9.37	8.72	5.44	5.47	5.73	4.97	7.78	6.27
Residual Fuel Oil	11.28	13.09	14.22	16.10	16.91	26.17	22.56	19.80	19.16	19.00	17.91	17.51	13.66	20.61	18.45
Distillate Fuel Oil	13.54	15.20	16.19	18.03	21.11	30.70	28.50	27.76	25.69	22.95	22.38	22.48	15.50	25.71	23.71
Prices to Ultimate Customers (cents per kilowatthour)															
Residential Sector	13.10	13.84	13.99	13.97	13.98	15.08	15.12	14.82	14.81	15.86	15.47	14.81	13.72	14.75	15.24
Commercial Sector	10.99	11.07	11.59	11.37	11.63	12.34	12.34	12.05	12.36	12.89	12.63	12.00	11.27	12.11	12.48
Industrial Sector	7.09	6.92	7.62	7.38	7.42	8.40	8.47	7.79	7.75	8.25	8.23	7.56	7.26	8.03	7.96
Wholesale Electricity Prices (dollars per megawatthour)															
ERCOT North hub	616.34	39.74	52.31	49.79	42.73	83.19	136.71	87.90	76.18	50.85	65.50	49.75	189.54	87.63	60.57
CAISO SP15 zone	44.74	36.90	72.02	60.47	45.20	60.34	113.56	74.11	65.40	57.74	97.18	48.30	53.53	73.30	67.15
ISO-NE Internal hub	55.26	33.67	52.57	65.75	116.48	73.28	109.01	107.14	168.62	54.35	60.15	87.27	51.81	101.48	92.60
NYISO Hudson Valley zone	44.74	31.85	50.42	57.54	100.10	79.72	118.19	115.66	158.10	62.02	65.52	81.09	46.14	103.42	91.68
PJM Western hub	35.09	33.71	51.32	62.57	58.33	93.00	114.42	108.50	113.79	70.94	76.61	70.88	45.67	93.56	83.05
Midcontinent ISO Illinois hub	44.97	33.82	49.36	57.71	47.88	89.21	104.05	101.93	95.50	65.67	71.24	64.06	46.47	85.77	74.12
SPP ISO South hub	250.31	30.86	48.63	45.72	37.25	72.85	102.72	77.86	73.31	50.98	56.48	47.78	93.88	72.67	57.14
SERC index, Into Southern	41.10	32.93	44.18	51.34	42.45	84.96	91.87	90.18	83.98	59.32	61.80	55.91	42.39	77.37	65.25
FRCC index, Florida Reliability	27.73	32.17	42.76	49.02	41.11	78.70	86.56	79.60	71.59	56.05	56.19	51.83	37.92	71.49	58.92
Northwest index, Mid-Columbia	34.56	51.51	91.61	60.46	39.85	59.39	113.05	76.61	69.25	57.95	100.83	52.49	59.53	72.22	70.13
Southwest index, Palo Verde	41.72	46.57	79.86	53.60	39.02	60.50	113.10	63.71	53.52	52.95	89.84	41.81	55.44	69.08	59.53

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

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

kWh = kilowatthours. Btu = British thermal units.

Prices are not adjusted for inflation.

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

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

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

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

Historical data sources:

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

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

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

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

Forecasts: EIA Short-Term Integrated Forecasting System.

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

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

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Residential Sector															
New England	12.9	10.8	14.0	11.0	13.1	10.5	13.9	10.8	12.7	10.4	12.6	10.7	48.7	48.4	46.4
Middle Atlantic	36.0	30.3	41.9	30.5	36.1	30.0	41.3	30.6	35.7	30.1	38.8	30.7	138.7	138.0	135.3
E. N. Central	50.1	43.1	56.3	43.2	50.9	43.8	53.4	44.3	50.1	42.5	53.1	44.8	192.6	192.4	190.5
W. N. Central	29.9	23.7	31.0	24.0	30.6	24.7	30.3	23.7	30.2	23.6	29.4	23.3	108.6	109.4	106.5
S. Atlantic	95.2	85.1	111.5	83.1	96.0	91.6	112.4	84.6	97.5	88.6	110.5	86.1	374.9	384.5	382.7
E. S. Central	33.5	25.3	35.8	25.9	32.7	27.7	36.7	26.8	33.7	27.0	35.7	27.2	120.5	123.9	123.6
W. S. Central	56.8	50.0	76.2	47.5	55.7	57.9	80.0	48.4	54.0	53.5	75.2	49.6	230.5	242.0	232.4
Mountain	23.7	26.9	35.2	22.3	24.2	26.3	34.7	23.0	24.1	25.5	34.1	23.3	108.1	108.1	107.0
Pacific contiguous	39.0	32.2	43.0	34.8	38.5	32.4	40.9	34.4	38.8	31.6	38.5	33.8	149.0	146.2	142.6
AK and HI	1.3	1.1	1.2	1.3	1.3	1.1	1.2	1.3	1.2	1.1	1.2	1.3	4.9	4.8	4.8
Total	378.5	328.5	445.8	323.7	379.1	346.0	444.7	327.8	378.0	333.9	429.1	330.7	1,476.6	1,497.7	1,471.7
Commercial Sector															
New England	11.7	11.7	13.5	11.5	12.1	11.8	13.8	11.7	12.1	11.9	13.3	11.6	48.5	49.4	49.0
Middle Atlantic	34.6	33.2	39.7	34.3	36.0	34.3	40.4	34.8	36.4	34.5	39.4	34.5	141.9	145.5	144.8
E. N. Central	41.7	42.1	48.9	42.1	43.3	42.9	49.0	42.9	43.5	42.7	49.1	42.7	174.8	178.0	178.0
W. N. Central	24.0	23.7	27.6	24.0	25.1	24.6	27.7	24.3	25.2	24.5	27.6	24.3	99.3	101.7	101.6
S. Atlantic	70.8	77.3	89.6	75.3	75.1	82.5	91.7	76.9	75.4	81.7	91.2	77.1	313.1	326.2	325.5
E. S. Central	20.7	21.5	26.0	20.9	21.0	22.4	26.5	21.2	21.2	22.0	26.0	21.2	89.0	91.1	90.4
W. S. Central	42.4	50.5	58.7	49.5	46.7	51.7	62.1	51.4	47.5	51.1	61.5	51.9	201.0	211.9	212.0
Mountain	21.9	24.8	28.8	23.2	23.2	25.4	29.2	23.7	23.4	25.3	29.1	23.8	98.7	101.5	101.6
Pacific contiguous	35.2	35.3	43.1	39.6	37.7	37.9	44.2	39.9	38.0	37.8	43.1	39.7	153.2	159.6	158.6
AK and HI	1.3	1.3	1.3	1.4	1.3	1.3	1.4	1.4	1.3	1.3	1.4	1.4	5.3	5.4	5.5
Total	304.3	321.5	377.2	321.8	321.5	334.7	385.9	328.2	324.1	332.7	381.8	328.3	1,324.8	1,370.4	1,366.9
Industrial Sector															
New England	3.8	4.0	4.2	3.9	3.9	3.9	4.1	3.8	3.8	3.8	4.1	3.8	15.8	15.7	15.5
Middle Atlantic	17.6	17.9	19.4	18.1	17.5	18.2	20.0	18.6	18.0	18.6	20.0	18.5	73.1	74.3	75.1
E. N. Central	44.5	46.4	48.6	46.0	45.9	47.0	49.9	46.3	46.3	47.1	50.4	47.0	185.5	189.1	190.8
W. N. Central	23.0	24.2	26.0	24.6	24.0	24.8	26.6	24.9	24.7	24.7	26.5	24.9	97.9	100.3	100.8
S. Atlantic	33.4	35.9	38.2	36.1	36.3	37.4	39.4	36.8	37.1	37.7	39.8	37.2	143.7	150.1	151.7
E. S. Central	23.7	24.9	26.1	25.0	24.7	25.8	26.3	25.0	24.6	25.7	26.4	25.1	99.7	101.8	101.8
W. S. Central	44.1	49.7	54.3	51.5	49.8	53.4	57.9	54.0	51.7	55.9	60.8	56.6	199.7	215.1	225.0
Mountain	19.2	21.6	23.2	20.4	19.9	21.7	23.2	20.3	19.8	21.8	23.5	20.7	84.4	85.2	85.8
Pacific contiguous	18.2	20.9	23.1	20.4	19.0	21.0	22.9	19.8	18.6	20.4	22.0	18.9	82.5	82.8	80.0
AK and HI	1.1	1.2	1.2	1.2	1.1	1.2	1.2	1.2	1.1	1.2	1.2	1.2	4.6	4.7	4.7
Total	228.5	246.7	264.4	247.2	242.1	254.6	271.6	250.7	245.7	256.9	274.7	253.9	986.8	1,019.0	1,031.2
Total All Sectors (a)															
New England	28.5	26.6	31.7	26.5	29.2	26.3	31.9	26.5	28.7	26.2	30.2	26.2	113.4	114.0	111.3
Middle Atlantic	89.1	82.3	101.8	83.7	90.5	83.3	102.4	84.7	90.9	83.9	99.0	84.5	356.9	361.0	358.3
E. N. Central	136.4	131.7	154.0	131.3	140.3	133.8	152.3	133.6	140.0	132.4	152.7	134.7	553.4	560.0	559.8
W. N. Central	77.0	71.6	84.6	72.6	79.7	74.1	84.7	73.0	80.1	72.8	83.5	72.5	305.8	311.4	309.0
S. Atlantic	199.7	198.6	239.6	194.9	207.7	211.8	243.8	198.6	210.3	208.3	241.7	200.6	832.7	861.9	860.9
E. S. Central	77.8	71.8	87.8	71.9	78.4	76.0	89.6	72.9	79.4	74.7	88.2	73.5	309.2	316.8	315.8
W. S. Central	143.4	150.2	189.2	148.5	152.3	163.0	200.0	153.8	153.3	160.5	197.6	158.2	631.4	669.1	669.6
Mountain	64.9	73.3	87.3	66.0	67.3	73.4	87.2	67.1	67.3	72.6	86.8	67.8	291.4	294.9	294.5
Pacific contiguous	92.5	88.6	109.3	95.0	95.4	91.5	108.2	94.3	95.6	90.0	103.8	92.6	385.5	389.4	382.0
AK and HI	3.7	3.6	3.7	3.9	3.7	3.6	3.7	3.9	3.7	3.6	3.8	3.9	14.9	14.9	14.9
Total	913.0	898.2	1,089.1	894.3	944.5	936.9	1,103.8	908.3	949.4	925.0	1,087.1	914.4	3,794.5	3,893.4	3,876.1

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

- = no data available

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

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

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

Regions refer to U.S. Census divisions.

See "Census division" in EIA's Energy Glossary (<http://www.eia.doe.gov/glossary/index.html>) for a list of States in each region.**Historical data:** Latest data available from Energy Information Administration databases supporting the following reports: *Electric Power Monthly*, DOE/EIA-0226; and *Electric*

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

Forecasts: EIA Short-Term Integrated Forecasting System.

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

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

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Residential Sector															
New England	21.38	21.34	21.43	21.95	23.93	24.31	25.24	25.81	28.00	28.20	28.75	28.45	21.51	24.81	28.35
Middle Atlantic	15.63	16.51	16.93	16.85	17.12	18.31	18.60	17.83	18.22	18.65	18.47	17.39	16.49	17.98	18.20
E. N. Central	13.39	14.50	14.14	14.48	14.22	15.51	15.28	15.27	14.99	16.27	15.82	15.38	14.10	15.05	15.60
W. N. Central	10.88	12.77	13.29	11.90	11.28	13.27	13.66	12.20	11.60	13.72	13.86	12.09	12.21	12.59	12.80
S. Atlantic	11.66	12.34	12.48	12.48	12.68	13.61	13.46	13.25	13.35	14.32	13.81	13.15	12.24	13.25	13.66
E. S. Central	11.20	12.24	11.99	12.02	11.97	13.08	13.00	12.59	12.66	13.35	12.91	12.40	11.83	12.66	12.83
W. S. Central	11.85	11.70	11.80	12.28	11.83	12.97	13.05	13.39	12.73	13.70	13.34	13.18	11.89	12.82	13.25
Mountain	11.53	12.09	12.33	12.27	12.14	12.86	13.04	12.69	12.46	13.22	13.31	12.84	12.08	12.72	12.99
Pacific	16.75	18.15	19.43	17.55	18.12	20.58	20.67	18.16	18.95	21.72	21.38	18.45	18.01	19.39	20.10
U.S. Average	13.10	13.84	13.99	13.97	13.98	15.08	15.12	14.82	14.81	15.86	15.47	14.81	13.72	14.75	15.24
Commercial Sector															
New England	16.31	15.96	16.78	16.89	18.54	17.56	18.42	18.55	20.31	19.04	19.68	19.27	16.49	18.28	19.59
Middle Atlantic	12.51	13.24	14.31	13.53	14.05	14.93	15.61	14.53	14.95	15.42	15.72	14.07	13.43	14.81	15.06
E. N. Central	10.40	10.70	10.66	10.92	11.08	11.85	11.49	11.69	11.92	12.55	11.85	11.64	10.67	11.53	11.98
W. N. Central	9.10	10.19	10.83	9.61	9.65	10.70	10.18	9.06	9.28	9.96	9.49	8.21	9.97	9.91	9.25
S. Atlantic	9.29	9.18	9.52	9.95	10.30	10.87	10.29	10.67	11.02	11.48	10.63	10.52	9.49	10.53	10.91
E. S. Central	10.98	11.24	11.27	11.26	11.69	12.20	12.31	12.07	12.44	12.80	12.65	12.06	11.19	12.08	12.50
W. S. Central	10.37	8.89	8.55	8.65	8.65	9.60	8.48	8.77	8.77	9.43	8.35	8.70	9.04	8.86	8.79
Mountain	9.11	9.76	10.20	9.59	9.56	10.32	10.64	9.87	9.82	10.53	10.82	9.93	9.70	10.13	10.31
Pacific	14.52	15.99	18.08	16.12	16.09	17.77	19.99	17.70	17.90	19.57	21.42	18.56	16.27	17.97	19.42
U.S. Average	10.99	11.07	11.59	11.37	11.63	12.34	12.34	12.05	12.36	12.89	12.63	12.00	11.27	12.11	12.48
Industrial Sector															
New England	13.50	12.99	13.71	14.13	15.14	15.21	15.25	15.10	15.90	15.79	15.63	15.29	13.58	15.18	15.65
Middle Atlantic	6.52	6.59	7.11	7.30	7.87	8.28	7.74	7.54	8.12	7.90	7.26	7.10	6.89	7.85	7.59
E. N. Central	6.97	6.97	7.38	7.70	7.72	8.55	8.22	8.12	8.14	8.45	8.07	7.95	7.26	8.16	8.15
W. N. Central	6.97	7.30	8.00	7.06	7.16	7.98	8.38	7.36	7.47	8.04	8.40	7.36	7.35	7.74	7.83
S. Atlantic	6.24	6.31	7.04	6.89	6.85	8.08	7.57	7.20	7.20	7.84	7.29	6.93	6.64	7.43	7.32
E. S. Central	5.75	5.86	6.27	6.26	6.35	7.36	7.23	6.63	6.65	7.20	7.04	6.42	6.04	6.90	6.83
W. S. Central	7.22	5.46	6.00	6.13	6.20	7.26	7.46	6.71	6.49	6.87	6.87	6.22	6.17	6.93	6.62
Mountain	6.27	6.63	7.39	6.54	6.59	7.27	7.81	6.70	6.70	7.29	7.82	6.67	6.74	7.12	7.15
Pacific	9.69	10.71	12.62	11.06	10.34	11.97	13.43	11.51	10.77	12.30	13.76	11.71	11.10	11.89	12.21
U.S. Average	7.09	6.92	7.62	7.38	7.42	8.40	8.47	7.79	7.75	8.25	8.23	7.56	7.26	8.03	7.96
All Sectors (a)															
New England	18.20	17.67	18.40	18.54	20.48	19.88	20.95	20.99	23.07	22.16	22.89	22.39	18.21	20.59	22.65
Middle Atlantic	12.57	12.98	14.00	13.37	14.07	14.67	15.27	14.18	14.87	14.90	15.07	13.74	13.26	14.57	14.67
E. N. Central	10.38	10.62	10.90	10.96	11.11	11.89	11.74	11.64	11.76	12.28	11.98	11.59	10.72	11.60	11.90
W. N. Central	9.16	10.07	10.86	9.50	9.53	10.65	10.86	9.50	9.60	10.52	10.68	9.16	9.92	10.15	10.01
S. Atlantic	9.91	10.01	10.50	10.46	10.79	11.56	11.31	11.12	11.43	12.02	11.53	10.98	10.23	11.20	11.50
E. S. Central	9.48	9.72	10.08	9.80	10.12	10.88	11.10	10.40	10.74	11.07	11.08	10.26	9.78	10.64	10.80
W. S. Central	9.99	8.69	9.13	8.93	9.01	10.03	10.01	9.50	9.39	9.96	9.80	9.22	9.17	9.67	9.61
Mountain	9.16	9.69	10.31	9.55	9.61	10.32	10.84	9.87	9.85	10.50	10.98	9.93	9.73	10.21	10.36
Pacific	14.50	15.52	17.45	15.55	15.75	17.42	18.84	16.55	16.92	18.66	19.76	17.10	15.83	17.20	18.15
U.S. Average	10.88	10.94	11.61	11.21	11.49	12.28	12.50	11.87	12.14	12.67	12.64	11.78	11.18	12.06	12.32

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

- = no data available

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

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

Prices are not adjusted for inflation.

Regions refer to U.S. Census divisions.

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

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

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

Forecasts: EIA Short-Term Integrated Forecasting System.

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

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

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
United States															
Natural Gas	319.3	345.7	453.9	354.7	337.9	365.1	468.3	346.0	338.0	335.7	440.8	344.2	1,473.6	1,517.3	1,458.6
Coal	230.0	203.8	280.9	178.1	217.5	189.1	265.4	187.1	194.9	170.7	244.3	170.4	892.8	859.2	780.3
Nuclear	198.4	186.6	202.8	190.4	195.6	184.3	203.0	190.7	194.0	187.8	207.3	197.9	778.2	773.6	787.0
Renewable Energy Sources:	197.9	207.3	183.3	206.6	235.5	247.1	207.0	216.7	243.3	274.9	223.8	232.6	795.2	906.4	974.6
Conventional Hydropower	68.7	65.8	60.7	63.8	76.5	70.8	64.0	58.1	70.3	80.6	65.9	60.7	259.0	269.4	277.6
Wind	97.0	96.1	76.8	108.8	119.5	121.7	88.4	118.6	127.0	127.9	91.8	123.2	378.6	448.3	470.0
Solar (a)	21.3	34.7	34.6	23.3	28.9	44.3	43.4	29.4	35.5	56.2	54.8	38.5	113.9	145.9	184.9
Biomass	7.2	6.8	7.2	6.7	6.7	6.5	6.8	6.4	6.6	6.3	6.7	6.3	27.9	26.5	26.1
Geothermal	3.8	3.9	4.0	4.0	3.9	3.8	4.4	4.2	3.8	3.8	4.5	3.9	15.7	16.3	16.1
Pumped Storage Hydropower	-1.1	-1.0	-1.8	-1.2	-1.2	-1.3	-1.8	-1.4	-1.2	-1.5	-1.7	-1.3	-5.1	-5.7	-5.6
Petroleum (b)	5.2	3.5	4.7	4.4	6.6	4.1	4.4	3.9	5.5	3.7	4.4	4.1	17.8	19.0	17.7
Other Gases	0.7	0.8	0.9	0.7	0.8	0.9	0.9	0.8	0.8	0.7	0.9	0.8	3.2	3.4	3.2
Other Nonrenewable Fuels (c)	1.8	1.8	1.8	1.8	1.6	1.6	1.7	1.8	1.5	1.6	1.6	1.7	7.2	6.7	6.4
Total Generation	952.2	948.5	1,126.6	935.5	994.2	990.9	1,149.1	945.6	976.9	973.6	1,121.4	950.3	3,962.8	4,079.8	4,022.2
New England (ISO-NE)															
Natural Gas	12.2	11.0	15.7	12.6	11.8	12.4	18.3	12.0	12.2	12.0	15.2	12.0	51.5	54.6	51.4
Coal	0.5	0.0	0.0	0.0	0.3	0.0	0.2	0.3	0.3	0.2	0.2	0.2	0.6	0.7	0.8
Nuclear	7.1	7.1	7.3	5.6	7.1	5.6	7.3	7.3	7.1	5.6	7.3	6.2	27.1	27.2	26.2
Conventional hydropower	1.7	1.5	1.5	1.5	1.7	1.4	1.0	1.7	2.0	2.2	1.2	1.8	6.3	5.9	7.2
Nonhydro renewables (d)	2.8	2.9	2.6	2.8	3.1	3.2	2.8	2.8	3.1	3.3	2.8	2.9	11.2	11.9	12.0
Other energy sources (e)	0.4	0.3	0.3	0.4	1.4	0.4	0.3	0.4	1.0	0.3	0.3	0.3	1.5	2.4	1.9
Total generation	24.7	22.9	27.6	23.1	25.4	23.0	29.9	24.5	25.8	23.6	26.9	23.3	98.2	102.8	99.6
Net energy for load (f)	29.4	27.0	32.5	27.6	30.2	26.0	33.8	28.6	30.2	28.0	32.5	28.9	116.4	118.5	119.6
New York (NYISO)															
Natural Gas	12.9	14.1	19.7	15.2	14.0	15.5	19.8	15.4	14.3	16.7	19.4	14.0	61.9	64.7	64.4
Coal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nuclear	9.3	7.7	7.2	7.0	6.4	7.0	6.5	6.9	6.7	6.5	7.0	7.0	31.1	26.8	27.1
Conventional hydropower	6.9	6.8	6.9	7.2	7.1	6.6	6.7	6.9	7.2	7.3	7.3	7.5	27.9	27.3	29.4
Nonhydro renewables (d)	1.8	1.8	1.6	1.9	2.2	2.1	1.7	2.2	2.5	2.7	2.1	2.8	7.1	8.2	10.1
Other energy sources (e)	0.6	0.2	0.4	0.1	1.4	0.1	0.2	0.1	0.7	0.1	0.3	0.1	1.3	1.8	1.2
Total generation	31.5	30.6	35.8	31.4	31.0	31.4	35.0	31.5	31.4	33.3	36.1	31.4	129.3	128.9	132.1
Net energy for load (f)	36.6	34.7	42.8	34.9	37.6	34.0	43.8	35.5	36.6	35.5	41.8	35.4	149.0	150.9	149.4
Mid-Atlantic (PJM)															
Natural Gas	72.7	70.8	88.9	78.5	76.9	74.4	90.6	72.0	77.6	76.3	92.5	78.3	310.9	313.9	324.7
Coal	50.5	39.9	55.4	29.5	48.6	35.4	46.0	29.6	40.7	31.5	41.4	26.4	175.4	159.6	139.9
Nuclear	68.3	64.6	70.5	68.3	69.0	65.1	71.0	66.8	67.9	67.1	72.1	68.7	271.7	271.9	275.8
Conventional hydropower	2.6	2.3	2.2	2.2	2.6	2.2	1.5	2.1	2.6	2.6	1.7	2.1	9.3	8.4	9.1
Nonhydro renewables (d)	11.0	10.7	9.2	11.5	13.2	12.9	9.8	11.6	14.2	13.8	11.0	12.9	42.4	47.5	52.0
Other energy sources (e)	0.9	0.6	0.4	0.6	0.6	0.4	0.4	0.5	0.6	0.3	0.4	0.6	2.5	1.9	1.9
Total generation	206.0	188.9	226.7	190.6	211.0	190.4	219.2	182.6	203.6	191.7	219.0	189.0	812.1	803.1	803.3
Net energy for load (f)	194.5	177.6	215.3	182.9	200.9	180.1	214.4	185.6	199.7	182.3	209.8	185.7	770.2	781.0	777.5
Southeast (SERC)															
Natural Gas	57.6	57.2	73.2	64.3	64.1	67.5	77.2	62.0	64.6	58.4	73.3	63.1	252.3	270.8	259.4
Coal	36.3	33.7	44.3	23.3	32.3	32.8	44.1	28.6	30.4	28.4	44.2	28.2	137.7	137.8	131.2
Nuclear	53.8	52.2	54.1	52.0	51.4	51.1	56.2	51.9	52.6	54.0	58.2	59.1	212.2	210.6	223.9
Conventional hydropower	11.6	10.4	10.9	11.0	11.9	9.8	8.7	9.8	12.6	10.1	9.2	10.2	43.9	40.2	42.1
Nonhydro renewables (d)	3.9	5.7	5.4	4.1	5.0	7.0	6.4	5.0	5.7	7.9	7.1	5.6	19.1	23.4	26.3
Other energy sources (e)	0.0	-0.2	-0.5	-0.2	-0.2	-0.3	-0.4	-0.3	-0.2	-0.4	-0.4	-0.3	-0.9	-1.2	-1.3
Total generation	163.2	159.0	187.3	154.6	164.6	167.9	192.2	157.1	165.8	158.3	191.6	165.8	664.2	681.7	681.5
Net energy for load (f)	161.3	154.7	183.9	154.5	166.5	168.4	185.2	151.8	165.2	162.0	187.2	159.5	654.4	671.9	673.9
Florida (FRCC)															
Natural Gas	34.5	43.8	52.5	40.9	38.3	46.7	51.9	43.6	38.1	45.2	53.6	43.2	171.8	180.5	180.0
Coal	4.7	5.3	5.6	2.8	3.5	4.2	4.6	3.0	2.7	3.9	3.8	2.4	18.3	15.4	12.9
Nuclear	7.8	7.2	7.2	5.8	7.3	7.9	8.0	7.1	7.0	6.9	7.5	7.7	28.1	30.3	29.2
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)	2.4	3.1	2.9	2.6	2.9	3.7	3.7	2.9	3.7	5.3	4.7	3.7	11.0	13.3	17.4
Other energy sources (e)	0.8	0.7	0.7	0.6	0.7	0.6	0.8	0.7	0.7	0.6	0.8	0.7	2.8	2.8	2.9
Total generation	50.3	60.2	68.9	52.8	52.8	63.1	69.1	57.4	52.4	62.0	70.5	57.8	232.2	242.4	242.6
Net energy for load (f)	52.4	63.8	72.3	55.6	54.1	66.2	71.8	53.3	50.2	60.1	68.0	53.3	244.1	245.4	231.5

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

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

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

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

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

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

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

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

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

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

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

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

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Midwest (MISO)															
Natural Gas	35.4	41.1	50.2	43.1	41.8	47.3	54.6	41.4	41.0	47.1	54.1	44.0	169.7	185.1	186.1
Coal	69.7	60.1	83.2	54.7	64.5	54.0	82.2	58.9	58.4	51.8	70.8	51.2	267.7	259.5	232.1
Nuclear	23.6	22.6	25.2	24.4	23.8	19.6	23.7	23.6	22.3	21.0	24.3	20.8	95.7	90.7	88.5
Conventional hydropower	2.8	2.7	2.5	2.7	3.1	2.9	2.5	2.2	2.5	2.9	2.4	2.2	10.7	10.6	10.2
Nonhydro renewables (d)	24.1	23.1	18.5	27.3	31.8	28.7	19.5	29.2	34.1	30.5	21.0	30.7	93.1	109.3	116.2
Other energy sources (e)	1.8	1.3	1.7	1.7	1.3	1.6	1.5	1.2	1.5	1.4	1.5	1.4	6.4	5.7	5.7
Total generation	157.4	150.9	181.2	153.8	166.4	154.1	184.0	156.5	159.8	154.7	174.0	150.3	643.3	660.9	638.8
Net energy for load (f)	159.0	154.0	180.7	153.5	165.1	158.8	181.9	158.6	161.7	159.7	181.0	159.6	647.3	664.4	662.0
Central (Southwest Power Pool)															
Natural Gas	12.4	14.3	18.8	10.9	11.1	14.0	20.0	11.0	10.5	12.0	17.2	9.6	56.3	56.2	49.3
Coal	21.8	19.8	31.3	19.2	22.1	20.5	30.0	19.3	21.5	16.6	27.2	17.8	92.0	91.8	83.1
Nuclear	4.1	2.8	4.2	4.3	4.3	4.3	3.8	2.5	4.3	4.3	4.4	4.4	15.5	15.0	17.3
Conventional hydropower	4.2	3.9	3.6	3.9	4.6	4.1	4.0	3.1	3.9	4.7	4.2	3.5	15.5	15.9	16.3
Nonhydro renewables (d)	22.9	23.8	20.5	26.4	28.8	29.8	24.4	29.4	30.6	31.4	25.4	30.4	93.6	112.5	117.8
Other energy sources (e)	0.3	0.1	0.1	0.2	0.2	0.3	0.1	0.2	0.2	0.3	0.1	0.2	0.7	0.8	0.9
Total generation	65.7	64.7	78.5	64.7	71.2	73.0	82.3	65.6	71.0	69.3	78.6	65.8	273.6	292.1	284.7
Net energy for load (f)	65.5	65.5	78.5	62.0	68.0	69.5	80.9	61.6	66.1	65.2	76.4	61.1	271.6	279.9	268.8
Texas (ERCOT)															
Natural Gas	32.8	39.7	57.3	34.5	34.2	43.2	61.3	33.7	28.7	29.5	47.8	29.6	164.2	172.4	135.5
Coal	16.3	18.5	22.7	17.0	17.7	16.8	20.6	16.1	15.4	16.6	21.5	15.6	74.5	71.2	69.0
Nuclear	10.5	9.8	11.0	8.9	11.0	9.9	10.6	10.9	10.7	9.0	11.0	10.1	40.2	42.4	40.8
Conventional hydropower	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.6	0.6	0.6
Nonhydro renewables (d)	25.2	27.8	23.8	29.4	31.2	39.4	32.1	34.3	36.6	46.3	36.8	37.6	106.3	137.0	157.3
Other energy sources (e)	0.2	0.3	0.4	0.4	0.3	0.4	0.4	0.5	0.4	0.4	0.4	0.5	1.4	1.7	1.7
Total generation	85.2	96.2	115.3	90.4	94.6	109.9	125.1	95.5	92.0	101.9	117.6	93.4	387.1	425.1	404.9
Net energy for load (f)	85.2	96.2	115.3	90.4	94.6	109.9	125.1	95.5	92.0	101.9	117.6	93.4	387.1	425.1	404.9
Northwest															
Natural Gas	20.9	20.1	28.2	21.0	19.6	15.4	28.1	22.0	25.2	11.3	23.8	18.3	90.2	85.0	78.5
Coal	22.5	19.1	26.6	22.2	21.6	18.1	25.4	23.4	19.2	16.1	24.1	21.3	90.5	88.4	80.7
Nuclear	2.5	1.2	2.5	2.3	2.5	2.3	2.5	2.4	2.4	1.2	2.4	2.4	8.5	9.7	8.4
Conventional hydropower	33.8	31.0	25.7	30.4	39.3	36.0	32.4	28.3	33.5	40.3	30.3	27.8	121.0	136.0	131.8
Nonhydro renewables (d)	15.9	17.0	15.2	17.4	19.1	20.5	16.3	18.8	20.1	21.7	17.5	20.2	65.5	74.6	79.5
Other energy sources (e)	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.7	0.6	0.4
Total generation	95.8	88.7	98.5	93.5	102.2	92.5	104.8	94.9	100.5	90.8	98.1	90.0	376.4	394.3	379.3
Net energy for load (f)	89.9	86.1	97.8	89.7	88.0	86.7	102.2	89.5	91.9	86.6	95.7	88.2	363.5	366.5	362.4
Southwest															
Natural Gas	10.7	15.2	19.4	11.5	9.6	12.9	20.9	10.9	12.3	13.9	20.0	10.9	56.8	54.3	57.1
Coal	5.5	5.6	8.3	7.4	6.1	6.3	8.9	5.6	4.5	4.1	7.7	5.0	26.8	26.9	21.4
Nuclear	8.5	7.1	8.6	7.5	8.2	7.5	8.6	7.4	8.4	7.5	8.6	7.5	31.6	31.7	31.9
Conventional hydropower	2.0	2.3	1.9	1.5	1.9	2.0	2.1	1.7	2.1	2.5	2.4	1.9	7.7	7.7	8.9
Nonhydro renewables (d)	3.1	3.9	3.2	3.7	4.6	5.7	4.3	5.0	4.4	6.0	4.5	5.4	14.0	19.6	20.3
Other energy sources (e)	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.2	0.2	0.2
Total generation	29.8	34.2	41.5	31.6	30.4	34.4	45.0	30.7	31.8	34.1	43.3	30.8	137.1	140.5	139.9
Net energy for load (f)	20.5	26.3	33.3	22.5	21.2	26.9	33.0	21.8	21.4	26.2	33.1	22.1	102.6	102.9	102.8
California															
Natural Gas	16.7	17.9	29.4	21.6	15.8	15.4	25.1	21.3	12.6	12.8	23.3	20.5	85.6	77.6	69.2
Coal	1.8	1.4	3.0	1.4	0.5	0.7	3.0	2.0	1.4	1.2	3.0	1.9	7.6	6.2	7.5
Nuclear	2.9	4.2	5.0	4.3	4.6	4.1	4.6	4.0	4.6	4.7	4.6	4.1	16.5	17.3	18.0
Conventional hydropower	2.4	4.2	4.9	2.8	3.6	5.2	4.5	1.7	3.1	7.3	6.7	3.3	14.4	15.0	20.4
Nonhydro renewables (d)	15.5	21.2	19.2	15.2	16.7	22.8	21.6	16.7	17.7	24.8	24.5	19.1	71.1	77.7	86.0
Other energy sources (e)	-0.1	-0.1	0.0	-0.1	0.0	-0.2	0.0	-0.1	0.0	-0.2	0.0	-0.1	-0.2	-0.3	-0.3
Total generation	39.3	48.9	61.5	45.3	41.2	48.0	58.8	45.6	39.3	50.6	62.1	48.9	195.0	193.6	200.8
Net energy for load (f)	55.6	62.6	77.5	59.5	56.0	61.2	75.8	59.9	58.3	62.6	74.6	59.3	255.1	252.9	254.8

(a) Large-scale solar generation from power plants with more than 1 megawatt of capacity. Excludes generation from small-scale solar photovoltaic systems.
 (b) Residual fuel oil, distillate fuel oil, petroleum coke, and other petroleum liquids.
 (c) Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, nonrenewable waste, and miscellaneous technologies.
 (d) Wind, large-scale solar, biomass, and geothermal
 (e) Pumped storage hydroelectric, petroleum, other gases, batteries, and other nonrenewable fuels. See notes (b) and (c).
 (f) Regional generation from generating units operated by electric power sector, plus energy receipts from minus energy deliveries to U.S. balancing authorities outside region.

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

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

Table 8a. U.S. Renewable Energy Consumption (Quadrillion Btu)

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

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Electric Power Sector															
Geothermal	0.034	0.035	0.035	0.035	0.034	0.033	0.038	0.036	0.034	0.033	0.040	0.034	0.138	0.143	0.141
Hydroelectric Power (a)	0.603	0.577	0.533	0.560	0.671	0.633	0.570	0.517	0.626	0.718	0.587	0.541	2.272	2.392	2.472
Solar (b)	0.189	0.309	0.308	0.207	0.257	0.394	0.386	0.262	0.316	0.500	0.488	0.342	1.014	1.299	1.647
Waste Biomass (c)	0.060	0.059	0.059	0.058	0.056	0.053	0.058	0.057	0.057	0.056	0.056	0.055	0.236	0.223	0.224
Wood Biomass	0.051	0.046	0.054	0.048	0.052	0.047	0.049	0.044	0.047	0.043	0.049	0.044	0.199	0.192	0.184
Wind	0.863	0.856	0.684	0.969	1.064	1.084	0.788	1.056	1.131	1.139	0.817	1.097	3.372	3.992	4.185
Subtotal	1.800	1.881	1.673	1.876	2.135	2.245	1.889	1.973	2.211	2.490	2.038	2.114	7.231	8.241	8.852
Industrial Sector															
Biofuel Losses and Co-products (d)	0.179	0.199	0.196	0.216	0.203	0.202	0.203	0.208	0.198	0.201	0.202	0.208	0.789	0.816	0.810
Geothermal	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.004	0.004	0.004
Hydroelectric Power (a)	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.008	0.008	0.008
Solar (b)	0.007	0.011	0.011	0.007	0.008	0.011	0.012	0.008	0.009	0.012	0.013	0.009	0.036	0.039	0.042
Waste Biomass (c)	0.042	0.040	0.037	0.042	0.042	0.040	0.039	0.042	0.041	0.040	0.040	0.042	0.160	0.163	0.163
Wood Biomass	0.333	0.339	0.343	0.328	0.315	0.324	0.348	0.358	0.348	0.346	0.358	0.361	1.342	1.345	1.413
Subtotal (e)	0.568	0.596	0.595	0.602	0.576	0.587	0.610	0.624	0.604	0.608	0.621	0.628	2.361	2.397	2.462
Commercial Sector															
Geothermal	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.024	0.025	0.025
Solar (b)	0.028	0.042	0.042	0.028	0.033	0.049	0.049	0.034	0.039	0.058	0.058	0.041	0.140	0.165	0.196
Waste Biomass (c)	0.009	0.008	0.009	0.009	0.010	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.035	0.036	0.037
Wood Biomass	0.020	0.020	0.021	0.021	0.020	0.021	0.021	0.021	0.020	0.021	0.021	0.021	0.083	0.083	0.083
Subtotal (e)	0.070	0.085	0.086	0.072	0.077	0.092	0.093	0.078	0.083	0.102	0.103	0.085	0.313	0.340	0.372
Residential Sector															
Geothermal	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.040	0.040	0.040
Solar (f)	0.065	0.099	0.097	0.067	0.079	0.119	0.121	0.084	0.095	0.147	0.149	0.104	0.329	0.403	0.495
Wood Biomass	0.114	0.116	0.117	0.117	0.119	0.119	0.117	0.117	0.119	0.119	0.117	0.117	0.464	0.472	0.472
Subtotal	0.189	0.225	0.224	0.194	0.208	0.248	0.248	0.211	0.224	0.275	0.276	0.231	0.832	0.915	1.006
Transportation Sector															
Biodiesel, Renewable Diesel, and Other (g) ...	0.080	0.095	0.089	0.108	0.094	0.117	0.114	0.138	0.132	0.137	0.134	0.158	0.372	0.462	0.561
Ethanol (g)	0.242	0.281	0.285	0.289	0.259	0.281	0.278	0.282	0.262	0.282	0.285	0.286	1.098	1.099	1.114
Subtotal	0.322	0.376	0.374	0.398	0.353	0.398	0.396	0.420	0.393	0.419	0.419	0.444	1.470	1.558	1.675
All Sectors Total															
Biodiesel, Renewable Diesel, and Other (g) ...	0.080	0.095	0.089	0.108	0.094	0.117	0.114	0.138	0.132	0.137	0.134	0.158	0.372	0.462	0.561
Biofuel Losses and Co-products (d)	0.179	0.199	0.196	0.216	0.203	0.202	0.203	0.208	0.198	0.201	0.202	0.208	0.789	0.816	0.810
Ethanol (f)	0.253	0.293	0.298	0.302	0.271	0.293	0.290	0.294	0.274	0.294	0.297	0.299	1.147	1.148	1.164
Geothermal	0.050	0.052	0.052	0.052	0.051	0.052	0.056	0.054	0.051	0.050	0.057	0.052	0.206	0.212	0.209
Hydroelectric Power (a)	0.605	0.580	0.535	0.562	0.674	0.636	0.572	0.520	0.629	0.721	0.590	0.543	2.283	2.403	2.483
Solar (b)(f)	0.290	0.461	0.458	0.310	0.378	0.573	0.567	0.388	0.459	0.717	0.708	0.496	1.519	1.907	2.380
Waste Biomass (c)	0.110	0.107	0.106	0.109	0.107	0.103	0.106	0.108	0.107	0.105	0.105	0.106	0.431	0.424	0.423
Wood Biomass	0.519	0.520	0.535	0.513	0.507	0.511	0.535	0.539	0.535	0.529	0.546	0.543	2.087	2.093	2.152
Wind	0.863	0.856	0.684	0.969	1.064	1.084	0.788	1.056	1.131	1.139	0.817	1.097	3.372	3.992	4.185
Total Consumption	2.950	3.162	2.953	3.142	3.349	3.561	3.236	3.306	3.516	3.894	3.457	3.502	12.207	13.452	14.368

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

- = no data available

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

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

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

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

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 8b. U.S. Renewable Electricity Generation and Capacity
 U.S. Energy Information Administration | Short-Term Energy Outlook - September 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Renewable Energy Electric Generating Capacity (megawatts, end of period)															
Electric Power Sector (a)															
Biomass	6,161	5,997	5,980	5,977	5,931	5,936	5,933	5,956	5,935	5,937	5,879	5,879	5,977	5,956	5,879
Waste	3,700	3,680	3,677	3,674	3,629	3,634	3,631	3,653	3,633	3,635	3,576	3,576	3,674	3,653	3,576
Wood	2,461	2,318	2,303	2,303	2,303	2,303	2,303	2,303	2,303	2,303	2,303	2,303	2,303	2,303	2,303
Conventional Hydroelectric	78,736	78,796	78,798	78,798	78,808	78,812	78,857	78,880	78,880	78,889	78,916	78,926	78,798	78,880	78,926
Geothermal	2,483	2,483	2,483	2,483	2,483	2,517	2,517	2,542	2,542	2,542	2,542	2,542	2,483	2,542	2,542
Large-Scale Solar (b)	50,368	52,359	55,609	60,671	63,126	66,564	71,236	80,173	83,680	89,317	91,859	104,555	60,671	80,173	104,555
Wind	121,201	124,742	126,696	132,243	134,937	137,777	139,172	143,371	143,521	144,312	144,672	147,740	132,243	143,371	147,740
Other Sectors (c)															
Biomass	6,206	6,210	6,214	6,214	6,144	6,156	6,148	6,148	6,148	6,140	6,140	6,140	6,214	6,148	6,140
Waste	827	830	829	829	821	821	821	821	821	821	821	821	829	821	821
Wood	5,380	5,380	5,385	5,385	5,322	5,334	5,327	5,327	5,327	5,318	5,318	5,318	5,385	5,327	5,318
Conventional Hydroelectric	291	291	288	288	288	291	291	291	291	291	291	291	288	291	291
Large-Scale Solar (b)	473	475	511	529	553	565	565	589	589	637	637	637	529	589	637
Small-Scale Solar (d)	28,846	30,325	31,515	32,972	34,720	36,197	38,095	40,124	42,266	44,532	46,928	49,462	32,972	40,124	49,462
Residential Sector	18,023	19,102	20,039	21,022	22,260	23,446	24,808	26,280	27,843	29,506	31,275	33,156	21,022	26,280	33,156
Commercial Sector	8,734	9,086	9,300	9,728	10,220	10,496	10,971	11,466	11,984	12,524	13,087	13,675	9,728	11,466	13,675
Industrial Sector	2,089	2,137	2,176	2,223	2,240	2,256	2,316	2,377	2,439	2,502	2,566	2,631	2,223	2,377	2,631
Wind	121	121	121	121	122	122	122	122	122	122	122	122	121	122	122
Renewable Electricity Generation (billion kilowatthours)															
Electric Power Sector (a)															
Biomass	7.2	6.8	7.2	6.7	6.7	6.5	6.8	6.4	6.6	6.3	6.7	6.3	27.9	26.5	26.1
Waste	4.0	3.9	3.8	3.8	3.5	3.6	3.8	3.7	3.7	3.7	3.7	3.6	15.5	14.6	14.6
Wood	3.2	2.8	3.4	2.9	3.2	3.0	3.1	2.7	3.0	2.7	3.1	2.7	12.4	11.9	11.4
Conventional Hydroelectric	68.7	65.8	60.7	63.8	76.5	70.8	64.0	58.1	70.3	80.6	65.9	60.7	259.0	269.4	277.6
Geothermal	3.8	3.9	4.0	4.0	3.9	3.8	4.4	4.2	3.8	3.8	4.5	3.9	15.7	16.3	16.1
Large-Scale Solar (b)	21.3	34.7	34.6	23.3	28.9	44.3	43.4	29.4	35.5	56.2	54.8	38.5	113.9	145.9	184.9
Wind	97.0	96.1	76.8	108.8	119.5	121.7	88.4	118.6	127.0	127.9	91.8	123.2	378.6	448.3	470.0
Other Sectors (c)															
Biomass	6.9	6.8	7.1	6.8	6.7	6.8	7.1	6.8	6.7	6.8	7.1	6.8	27.6	27.4	27.4
Waste	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	2.8	2.8	2.8
Wood	6.2	6.1	6.4	6.1	5.9	6.1	6.4	6.1	5.9	6.1	6.4	6.1	24.8	24.5	24.5
Conventional Hydroelectric	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	1.2	1.2	1.2
Large-Scale Solar (b)	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.8	1.0	1.1
Small-Scale Solar (d)	9.8	14.7	14.5	10.0	12.0	17.7	17.9	12.5	14.4	21.8	22.2	15.5	49.0	60.0	73.9
Residential Sector	5.9	9.1	8.9	6.1	7.6	11.2	11.4	8.0	9.2	14.2	14.5	10.2	30.1	38.1	48.2
Commercial Sector	3.1	4.5	4.5	3.0	3.6	5.2	5.3	3.7	4.2	6.2	6.3	4.4	15.1	17.7	21.1
Industrial Sector	0.8	1.1	1.1	0.8	0.8	1.2	1.2	0.9	0.9	1.3	1.4	0.9	3.8	4.1	4.6
Wind	0.3	0.3	0.2	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.1	0.3	0.3

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

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

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

(d) Solar photovoltaic systems smaller than one megawatt.

- = no data available

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

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

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

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

Forecasts: EIA Short-Term Integrated Forecasting System.

Table 9a. U.S. Macroeconomic Indicators and CO2 Emissions
U.S. Energy Information Administration | Short-Term Energy Outlook - September 2022

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Macroeconomic															
Real Gross Domestic Product (billion chained 2012 dollars - SAAR)	19,056	19,368	19,479	19,806	19,728	19,682	<i>19,708</i>	<i>19,766</i>	<i>19,856</i>	<i>19,969</i>	<i>20,090</i>	<i>20,199</i>	19,427	<i>19,721</i>	<i>20,029</i>
Real Personal Consumption Expend. (billion chained 2012 dollars - SAAR)	13,283	13,666	13,732	13,818	13,881	13,917	<i>13,967</i>	<i>14,030</i>	<i>14,118</i>	<i>14,219</i>	<i>14,313</i>	<i>14,402</i>	13,625	<i>13,949</i>	<i>14,263</i>
Real Private Fixed Investment (billion chained 2012 dollars - SAAR)	3,564	3,593	3,585	3,609	3,674	3,638	<i>3,598</i>	<i>3,579</i>	<i>3,585</i>	<i>3,601</i>	<i>3,618</i>	<i>3,640</i>	3,588	<i>3,622</i>	<i>3,611</i>
Business Inventory Change (billion chained 2012 dollars - SAAR)	-94	-174	-60	249	238	118	<i>103</i>	<i>92</i>	<i>103</i>	<i>103</i>	<i>108</i>	<i>99</i>	-20	<i>138</i>	<i>103</i>
Real Government Expenditures (billion chained 2012 dollars - SAAR)	3,391	3,374	3,382	3,359	3,334	3,318	<i>3,315</i>	<i>3,327</i>	<i>3,354</i>	<i>3,363</i>	<i>3,375</i>	<i>3,388</i>	3,376	<i>3,324</i>	<i>3,370</i>
Real Exports of Goods & Services (billion chained 2012 dollars - SAAR)	2,262	2,304	2,273	2,391	2,361	2,461	<i>2,493</i>	<i>2,523</i>	<i>2,544</i>	<i>2,568</i>	<i>2,600</i>	<i>2,636</i>	2,308	<i>2,460</i>	<i>2,587</i>
Real Imports of Goods & Services (billion chained 2012 dollars - SAAR)	3,488	3,549	3,590	3,741	3,906	3,936	<i>3,947</i>	<i>3,965</i>	<i>4,034</i>	<i>4,075</i>	<i>4,114</i>	<i>4,162</i>	3,592	<i>3,938</i>	<i>4,096</i>
Real Disposable Personal Income (billion chained 2012 dollars - SAAR)	17,219	15,807	15,641	15,462	15,152	15,134	<i>15,171</i>	<i>15,303</i>	<i>15,411</i>	<i>15,640</i>	<i>15,865</i>	<i>16,069</i>	16,032	<i>15,190</i>	<i>15,746</i>
Non-Farm Employment (millions)	143.7	145.2	146.9	148.6	150.4	151.6	<i>152.8</i>	<i>153.3</i>	<i>153.6</i>	<i>153.9</i>	<i>154.1</i>	<i>154.2</i>	146.1	<i>152.0</i>	<i>153.9</i>
Civilian Unemployment Rate (percent)	6.2	5.9	5.1	4.2	3.8	3.6	<i>3.5</i>	<i>3.6</i>	<i>3.8</i>	<i>3.9</i>	<i>4.0</i>	<i>4.1</i>	5.4	<i>3.6</i>	<i>4.0</i>
Housing Starts (millions - SAAR)	1.58	1.59	1.57	1.68	1.72	1.66	<i>1.46</i>	<i>1.46</i>	<i>1.39</i>	<i>1.40</i>	<i>1.40</i>	<i>1.40</i>	1.61	<i>1.58</i>	<i>1.40</i>
Industrial Production Indices (Index, 2017=100)															
Total Industrial Production	98.1	99.7	100.5	101.7	102.9	104.2	<i>104.6</i>	<i>104.6</i>	<i>104.8</i>	<i>104.9</i>	<i>105.3</i>	<i>105.4</i>	100.0	<i>104.1</i>	<i>105.1</i>
Manufacturing	96.9	98.3	99.2	100.6	101.6	102.6	<i>102.4</i>	<i>102.1</i>	<i>102.0</i>	<i>102.4</i>	<i>103.0</i>	<i>103.3</i>	98.8	<i>102.2</i>	<i>102.7</i>
Food	104.5	103.3	102.0	103.5	105.5	105.1	<i>104.7</i>	<i>105.1</i>	<i>105.2</i>	<i>105.6</i>	<i>106.0</i>	<i>106.5</i>	103.3	<i>105.1</i>	<i>105.8</i>
Paper	95.0	96.0	96.0	95.2	96.4	97.3	<i>96.4</i>	<i>96.3</i>	<i>96.2</i>	<i>96.3</i>	<i>97.0</i>	<i>97.3</i>	95.5	<i>96.6</i>	<i>96.7</i>
Petroleum and Coal Products	86.0	92.3	93.5	96.0	94.2	94.5	<i>94.2</i>	<i>95.0</i>	<i>95.2</i>	<i>95.3</i>	<i>95.5</i>	<i>95.5</i>	92.0	<i>94.5</i>	<i>95.4</i>
Chemicals	94.3	101.1	101.2	102.6	102.4	103.4	<i>103.8</i>	<i>103.4</i>	<i>103.6</i>	<i>104.1</i>	<i>105.3</i>	<i>105.6</i>	99.8	<i>103.2</i>	<i>104.6</i>
Nonmetallic Mineral Products	97.8	96.0	97.3	99.1	102.8	103.0	<i>103.3</i>	<i>102.2</i>	<i>101.8</i>	<i>101.7</i>	<i>102.2</i>	<i>102.9</i>	97.5	<i>102.8</i>	<i>102.2</i>
Primary Metals	93.0	96.6	98.3	98.7	95.7	97.6	<i>96.4</i>	<i>96.5</i>	<i>98.0</i>	<i>99.4</i>	<i>102.0</i>	<i>102.2</i>	96.6	<i>96.6</i>	<i>100.4</i>
Coal-weighted Manufacturing (a)	91.1	94.9	95.5	96.6	96.2	97.0	<i>96.5</i>	<i>96.3</i>	<i>96.8</i>	<i>97.4</i>	<i>98.7</i>	<i>98.9</i>	94.5	<i>96.5</i>	<i>97.9</i>
Distillate-weighted Manufacturing (a)	100.9	102.2	102.7	104.2	105.7	106.2	<i>106.0</i>	<i>105.5</i>	<i>105.5</i>	<i>105.8</i>	<i>106.5</i>	<i>106.9</i>	102.5	<i>105.8</i>	<i>106.2</i>
Electricity-weighted Manufacturing (a)	93.1	96.4	96.5	97.6	98.0	98.9	<i>98.7</i>	<i>98.4</i>	<i>98.8</i>	<i>99.5</i>	<i>100.7</i>	<i>100.9</i>	95.9	<i>98.5</i>	<i>100.0</i>
Natural Gas-weighted Manufacturing (a)	88.8	94.6	94.1	95.2	95.3	95.8	<i>95.6</i>	<i>95.3</i>	<i>95.5</i>	<i>96.1</i>	<i>97.3</i>	<i>97.4</i>	93.1	<i>95.5</i>	<i>96.6</i>
Price Indexes															
Consumer Price Index (all urban consumers) (index, 1982=1984=1.00)	2.64	2.69	2.73	2.78	2.85	2.92	<i>2.96</i>	<i>2.99</i>	<i>3.01</i>	<i>3.02</i>	<i>3.04</i>	<i>3.06</i>	2.71	<i>2.93</i>	<i>3.03</i>
Producer Price Index: All Commodities (index, 1982=1.00)	2.10	2.24	2.33	2.42	2.53	2.74	<i>2.67</i>	<i>2.65</i>	<i>2.59</i>	<i>2.52</i>	<i>2.51</i>	<i>2.51</i>	2.27	<i>2.65</i>	<i>2.53</i>
Producer Price Index: Petroleum (index, 1982=1.00)	2.00	2.36	2.55	2.72	3.16	4.21	<i>3.30</i>	<i>2.99</i>	<i>2.94</i>	<i>2.91</i>	<i>2.87</i>	<i>2.81</i>	2.41	<i>3.42</i>	<i>2.88</i>
GDP Implicit Price Deflator (index, 2012=100)	115.8	117.5	119.3	121.3	123.7	126.4	<i>127.8</i>	<i>129.3</i>	<i>130.3</i>	<i>131.1</i>	<i>131.9</i>	<i>132.8</i>	118.5	<i>126.8</i>	<i>131.5</i>
Miscellaneous															
Vehicle Miles Traveled (b) (million miles/day)	7,928	9,125	9,368	8,934	8,373	9,160	<i>9,258</i>	<i>9,114</i>	<i>8,604</i>	<i>9,445</i>	<i>9,656</i>	<i>9,251</i>	8,843	<i>8,979</i>	<i>9,242</i>
Air Travel Capacity (Available ton-miles/day, thousands)	537	597	658	667	656	691	<i>728</i>	<i>692</i>	<i>698</i>	<i>724</i>	<i>724</i>	<i>705</i>	615	<i>692</i>	<i>713</i>
Aircraft Utilization (Revenue ton-miles/day, thousands)	245	340	372	376	356	417	<i>401</i>	<i>371</i>	<i>361</i>	<i>406</i>	<i>410</i>	<i>386</i>	334	<i>386</i>	<i>391</i>
Airline Ticket Price Index (index, 1982=1984=100)	198.4	243.3	218.5	210.0	225.6	327.1	<i>303.8</i>	<i>303.4</i>	<i>267.9</i>	<i>302.9</i>	<i>277.0</i>	<i>279.6</i>	217.5	<i>290.0</i>	<i>281.8</i>
Raw Steel Production (million short tons per day)	0.246	0.258	0.267	0.260	0.253	0.253	<i>0.261</i>	<i>0.286</i>	<i>0.298</i>	<i>0.298</i>	<i>0.319</i>	<i>0.337</i>	0.258	<i>0.263</i>	<i>0.313</i>
Carbon Dioxide (CO2) Emissions (million metric tons)															
Petroleum	517	559	570	578	562	559	<i>566</i>	<i>579</i>	<i>560</i>	<i>572</i>	<i>580</i>	<i>582</i>	2,224	<i>2,265</i>	<i>2,293</i>
Natural Gas	485	353	373	426	508	368	<i>386</i>	<i>440</i>	<i>491</i>	<i>352</i>	<i>378</i>	<i>448</i>	1,637	<i>1,704</i>	<i>1,669</i>
Coal	256	229	307	209	245	224	<i>287</i>	<i>218</i>	<i>222</i>	<i>198</i>	<i>268</i>	<i>201</i>	1,001	<i>973</i>	<i>890</i>
Total Energy (c)	1,260	1,144	1,252	1,216	1,318	1,154	<i>1,241</i>	<i>1,239</i>	<i>1,275</i>	<i>1,125</i>	<i>1,229</i>	<i>1,234</i>	4,872	<i>4,953</i>	<i>4,863</i>

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

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

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

- = no data available

SAAR = Seasonally-adjusted annual rate

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

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

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

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

Forecasts: EIA Short-Term Integrated Forecasting System. U.S. macroeconomic forecasts are based on the S&P Global model of the U.S. Economy.

Table 9b. U.S. Regional Macroeconomic Data

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

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Real Gross State Product (Billion \$2012)															
New England	979	1,002	1,008	1,027	1,026	1,023	1,023	1,025	1,028	1,033	1,038	1,042	1,004	1,024	1,035
Middle Atlantic	2,718	2,756	2,774	2,814	2,802	2,793	2,796	2,806	2,817	2,830	2,844	2,859	2,766	2,800	2,838
E. N. Central	2,486	2,515	2,520	2,554	2,545	2,534	2,532	2,539	2,549	2,562	2,578	2,591	2,519	2,537	2,570
W. N. Central	1,199	1,213	1,215	1,221	1,215	1,211	1,212	1,215	1,221	1,228	1,235	1,242	1,212	1,213	1,231
S. Atlantic	3,382	3,436	3,461	3,518	3,507	3,500	3,506	3,515	3,532	3,552	3,575	3,594	3,450	3,507	3,563
E. S. Central	836	843	847	862	858	854	856	858	861	866	871	875	847	857	869
W. S. Central	2,321	2,362	2,378	2,432	2,417	2,421	2,434	2,444	2,459	2,474	2,490	2,506	2,373	2,429	2,482
Mountain	1,274	1,297	1,303	1,324	1,316	1,315	1,318	1,322	1,331	1,341	1,351	1,361	1,299	1,318	1,346
Pacific	3,693	3,774	3,800	3,884	3,871	3,860	3,862	3,871	3,887	3,910	3,934	3,955	3,788	3,866	3,922
Industrial Output, Manufacturing (Index, Year 2017=100)															
New England	95.2	96.7	97.4	98.4	99.3	100.2	99.6	99.2	99.2	99.6	100.2	100.4	96.9	99.6	99.9
Middle Atlantic	93.0	94.2	94.7	95.8	96.6	97.4	97.4	97.1	97.0	97.1	97.6	97.7	94.4	97.1	97.4
E. N. Central	95.4	95.9	96.6	98.3	98.9	99.5	99.1	98.7	98.7	99.1	99.7	99.9	96.5	99.0	99.3
W. N. Central	98.3	99.3	100.0	100.7	102.0	102.6	102.5	102.0	101.8	102.3	103.0	103.4	99.6	102.3	102.6
S. Atlantic	99.3	100.4	101.3	102.6	103.4	104.7	104.5	104.1	103.8	104.1	104.6	104.9	100.9	104.2	104.3
E. S. Central	97.7	98.6	99.2	100.5	100.8	101.4	101.3	101.0	100.8	101.2	101.9	102.1	99.0	101.1	101.5
W. S. Central	98.5	100.0	100.6	102.1	103.4	105.1	105.3	105.0	104.9	105.5	106.2	106.5	100.3	104.7	105.8
Mountain	106.5	108.5	109.4	111.1	112.6	114.0	113.7	113.3	113.1	113.5	114.2	114.6	108.9	113.4	113.9
Pacific	94.1	95.7	96.0	97.0	97.7	98.8	98.8	98.7	99.0	99.4	100.1	100.4	95.7	98.5	99.7
Real Personal Income (Billion \$2012)															
New England	998	948	942	929	928	925	928	930	936	942	947	952	955	928	944
Middle Atlantic	2,616	2,449	2,437	2,395	2,382	2,378	2,384	2,394	2,411	2,426	2,439	2,452	2,474	2,385	2,432
E. N. Central	2,746	2,524	2,493	2,472	2,458	2,445	2,446	2,453	2,469	2,484	2,499	2,513	2,559	2,451	2,491
W. N. Central	1,275	1,194	1,175	1,163	1,160	1,163	1,167	1,171	1,177	1,182	1,188	1,194	1,202	1,165	1,185
S. Atlantic	3,723	3,443	3,428	3,437	3,417	3,418	3,426	3,440	3,462	3,486	3,512	3,534	3,508	3,425	3,499
E. S. Central	1,025	927	924	921	914	912	912	914	920	926	931	935	949	913	928
W. S. Central	2,237	2,076	2,069	2,077	2,063	2,069	2,078	2,088	2,104	2,119	2,134	2,149	2,115	2,074	2,126
Mountain	1,381	1,280	1,277	1,284	1,277	1,276	1,280	1,287	1,293	1,303	1,314	1,323	1,306	1,280	1,308
Pacific	3,269	3,086	3,085	3,037	3,019	3,023	3,026	3,089	3,053	3,073	3,092	3,107	3,119	3,039	3,081
Households (Thousands)															
New England	6,056	6,061	6,058	6,067	6,073	6,077	6,077	6,084	6,093	6,103	6,111	6,119	6,067	6,084	6,119
Middle Atlantic	16,415	16,405	16,390	16,407	16,417	16,425	16,425	16,442	16,469	16,495	16,519	16,540	16,407	16,442	16,540
E. N. Central	19,076	19,090	19,095	19,133	19,159	19,168	19,166	19,183	19,211	19,241	19,269	19,295	19,133	19,183	19,295
W. N. Central	8,715	8,729	8,736	8,760	8,778	8,795	8,807	8,822	8,841	8,862	8,881	8,899	8,760	8,822	8,899
S. Atlantic	26,280	26,358	26,403	26,521	26,620	26,709	26,777	26,860	26,956	27,049	27,137	27,225	26,521	26,860	27,225
E. S. Central	7,813	7,830	7,839	7,866	7,888	7,906	7,920	7,935	7,955	7,975	7,993	8,011	7,866	7,935	8,011
W. S. Central	15,331	15,379	15,414	15,487	15,551	15,608	15,655	15,706	15,764	15,821	15,877	15,931	15,487	15,706	15,931
Mountain	9,611	9,653	9,688	9,741	9,786	9,825	9,859	9,895	9,937	9,982	10,022	10,063	9,741	9,895	10,063
Pacific	19,000	18,992	18,979	19,011	19,040	19,059	19,072	19,091	19,120	19,150	19,176	19,203	19,011	19,091	19,203
Total Non-farm Employment (Millions)															
New England	7.1	7.1	7.2	7.3	7.4	7.4	7.5	7.5	7.5	7.5	7.5	7.5	7.2	7.4	7.5
Middle Atlantic	18.5	18.7	18.9	19.2	19.4	19.6	19.7	19.8	19.9	19.9	19.9	19.9	18.8	19.6	19.9
E. N. Central	21.1	21.2	21.5	21.6	21.8	21.9	22.1	22.1	22.2	22.2	22.2	22.2	21.4	22.0	22.2
W. N. Central	10.4	10.4	10.5	10.5	10.6	10.7	10.8	10.8	10.8	10.8	10.9	10.9	10.5	10.7	10.9
S. Atlantic	28.2	28.5	28.9	29.2	29.5	29.8	30.0	30.1	30.2	30.2	30.3	30.3	28.7	29.8	30.2
E. S. Central	8.1	8.1	8.2	8.3	8.4	8.4	8.5	8.5	8.5	8.5	8.5	8.5	8.2	8.4	8.5
W. S. Central	17.2	17.4	17.6	17.8	18.1	18.3	18.4	18.5	18.5	18.6	18.6	18.6	17.5	18.3	18.6
Mountain	10.8	11.0	11.2	11.3	11.4	11.5	11.6	11.6	11.6	11.7	11.7	11.7	11.1	11.5	11.7
Pacific	22.2	22.7	23.1	23.3	23.6	23.9	24.1	24.2	24.2	24.3	24.3	24.3	22.8	23.9	24.3

- = no data available

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

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

Regions refer to U.S. Census divisions.

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

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

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

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

Table 9c. U.S. Regional Weather Data

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

	2021				2022				2023				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2021	2022	2023
Heating Degree Days															
New England	3,013	778	85	1,922	3,139	785	118	2,132	3,080	848	136	2,126	5,798	6,174	6,190
Middle Atlantic	2,822	667	56	1,725	2,938	669	82	1,962	2,857	681	85	1,962	5,271	5,650	5,584
E. N. Central	3,085	708	69	1,887	3,270	754	117	2,245	3,149	742	126	2,251	5,749	6,385	6,268
W. N. Central	3,227	719	88	2,027	3,485	793	135	2,443	3,249	716	169	2,473	6,061	6,856	6,606
South Atlantic	1,346	212	10	798	1,341	189	13	951	1,382	195	14	957	2,366	2,493	2,548
E. S. Central	1,788	314	19	1,036	1,821	247	18	1,297	1,812	263	22	1,318	3,157	3,384	3,415
W. S. Central	1,295	121	1	495	1,344	56	4	783	1,165	89	5	804	1,913	2,187	2,063
Mountain	2,309	664	110	1,634	2,296	738	121	1,834	2,229	707	156	1,869	4,717	4,990	4,961
Pacific	1,562	482	77	1,206	1,399	609	76	1,237	1,557	576	95	1,227	3,326	3,321	3,455
U.S. Average	2,107	472	51	1,306	2,148	492	67	1,524	2,106	487	78	1,532	3,936	4,231	4,202
Heating Degree Days, Prior 10-year Average															
New England	3,133	855	107	2,100	3,100	852	107	2,104	3,151	858	106	2,109	6,195	6,164	6,225
Middle Atlantic	2,912	677	71	1,911	2,887	684	71	1,908	2,944	692	71	1,911	5,572	5,550	5,618
E. N. Central	3,157	731	104	2,170	3,133	727	97	2,162	3,215	742	95	2,170	6,161	6,119	6,222
W. N. Central	3,248	728	133	2,368	3,219	726	125	2,357	3,318	755	123	2,366	6,477	6,427	6,561
South Atlantic	1,395	181	11	916	1,380	187	11	905	1,401	190	10	901	2,503	2,483	2,502
E. S. Central	1,771	231	16	1,249	1,763	243	15	1,228	1,809	250	14	1,226	3,267	3,248	3,299
W. S. Central	1,140	86	3	786	1,145	93	3	754	1,189	95	3	761	2,015	1,994	2,048
Mountain	2,188	704	135	1,850	2,181	685	132	1,817	2,201	701	133	1,823	4,877	4,816	4,857
Pacific	1,461	553	81	1,147	1,455	522	79	1,136	1,439	523	78	1,143	3,242	3,192	3,183
U.S. Average	2,112	483	65	1,487	2,096	479	62	1,473	2,133	486	62	1,475	4,147	4,110	4,155
Cooling Degree Days															
New England	0	144	457	6	0	80	533	2	0	87	413	2	607	615	502
Middle Atlantic	0	183	628	23	0	154	654	5	0	156	541	5	834	813	702
E. N. Central	2	250	629	30	1	256	534	7	0	209	527	6	911	798	743
W. N. Central	8	311	746	23	3	304	698	10	3	255	647	9	1,089	1,015	913
South Atlantic	153	615	1,171	285	156	713	1,181	234	125	643	1,147	232	2,224	2,284	2,147
E. S. Central	40	435	1,017	127	28	602	1,082	67	27	488	1,016	60	1,621	1,778	1,593
W. S. Central	90	768	1,471	315	56	1,095	1,612	207	88	836	1,472	195	2,644	2,971	2,592
Mountain	10	528	966	69	17	471	947	74	17	413	907	71	1,573	1,509	1,409
Pacific	24	255	715	59	31	217	668	62	25	169	577	62	1,053	978	832
U.S. Average	50	411	904	128	47	466	910	95	43	392	842	93	1,493	1,518	1,370
Cooling Degree Days, Prior 10-year Average															
New England	0	80	474	1	0	87	472	2	0	88	476	2	555	561	566
Middle Atlantic	0	163	610	6	0	162	608	8	0	160	611	8	779	779	779
E. N. Central	3	234	572	7	3	238	571	9	1	234	559	10	816	821	804
W. N. Central	7	294	686	10	7	299	681	11	4	292	670	12	997	999	978
South Atlantic	143	679	1,194	260	147	668	1,188	269	144	675	1,191	273	2,276	2,272	2,284
E. S. Central	42	532	1,065	74	44	518	1,057	84	36	521	1,061	87	1,713	1,703	1,704
W. S. Central	114	881	1,568	210	113	853	1,536	224	101	861	1,543	226	2,772	2,726	2,731
Mountain	24	441	949	85	23	459	946	84	23	456	944	83	1,499	1,511	1,506
Pacific	31	193	648	86	31	208	666	85	32	214	667	84	959	991	997
U.S. Average	52	413	892	104	53	412	889	109	50	415	890	110	1,461	1,463	1,466

- = no data available

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

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

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

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

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

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

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