



Short-Term Energy Outlook (STEO)

Forecast highlights

- This edition of the *Short-Term Energy Outlook* is the first to include forecasts for 2019.
- Benchmark North Sea Brent crude oil spot prices averaged \$64 per barrel (b) in December, an almost \$2/b increase from the November average and the highest monthly average since November 2014.
- Brent crude oil prices averaged \$54/b in 2017 and are forecast to average \$60/b in 2018 and \$61/b in 2019. West Texas Intermediate (WTI) crude oil spot prices are forecast to average \$4/b less than Brent prices in both 2018 and 2019. EIA's forecast for the average WTI price for December 2018 of \$58/b should be considered in the context of NYMEX contract values for December 2018 delivery. NYMEX contract values traded during the five-day period ending January 4 suggest that a range of \$40/b to \$85/b encompasses the market expectation for WTI prices in December 2018 at the 95% confidence level.
- U.S. regular gasoline retail prices averaged \$2.48 per gallon (gal) in December, down almost 9 cents/gal from the average in November but 22 cents/gal higher than at the same time last year. U.S. regular gasoline retail prices averaged \$2.42/gal in 2017 and are forecast to average \$2.57/gal in 2018 and \$2.58/gal in 2019.
- U.S. crude oil production averaged an estimated 9.3 million barrels per day (b/d) in 2017 and is estimated to have averaged 9.9 million b/d in December. U.S. crude oil production is forecast to average 10.3 million b/d in 2018, [which would mark the highest annual average production in U.S. history](#), surpassing the previous record of 9.6 million b/d set in 1970. EIA forecasts production to increase to an average of 10.8 million b/d in 2019 and to surpass 11 million b/d in November 2019.
- Dry natural gas production is forecast to average 80.4 billion cubic feet per day (Bcf/d) in 2018, a 6.9 Bcf/d increase from the 2017 level, which would be the highest year-over-year increase on record. Forecast dry natural gas production increases by an average of 2.6 Bcf/d in 2019.
- Henry Hub natural gas spot prices are forecast to average \$2.88 per million British thermal units (MMBtu) in 2018 and \$2.92/MMBtu in 2019, compared with the 2017 average of \$2.99/MMBtu. EIA's forecast for the average Henry Hub price for December 2018 of \$3.04/MMBtu should be considered in the context of NYMEX contract values for December 2018 delivery. NYMEX contract values traded during the five-day period ending January 4

suggest that a range of \$1.83/MMBtu to \$4.89/MMBtu encompasses the market expectation for Henry Hub prices in December 2018 at the 95% confidence level.

- Coal production increased by 45 million short tons (MMst) (6%) in 2017 in response to high demand for U.S. coal exports. Coal production is forecast to decline by 14 MMst (2%) in 2018 and by 18 MMst (2%) in 2019, as export demand is expected to slow and natural gas prices are expected to stay below \$3/MMBtu during much of the forecast period, which contributes to less coal use for electricity generation.
- EIA expects the share of U.S. total utility-scale electricity generation from natural gas to rise from 32% in 2017 to 33% in 2018 and to 34% in 2019, as a result of low natural gas prices. Coal's forecast generation share falls from 30% in 2017 to slightly lower than 30% in 2018 and 28% in 2019. The nuclear share of generation was 20% in 2017 and is forecast to average 20% in 2018 and 19% in 2019. Nonhydropower renewables provided almost 10% of electricity generation in 2017, and its 2018 share is expected to be similar before increasing to almost 11% in 2019. The generation share of hydropower was more than 7% in 2017 and is forecast to be slightly lower than 7% in both 2018 and 2019.
- After declining by 1.0% in 2017, energy-related carbon dioxide (CO₂) emissions are forecast to increase by 1.7% in 2018 and by 0.2% in 2019. Energy-related CO₂ emissions are sensitive to changes in weather, economic growth, and energy prices.

Global Liquid Fuels

EIA estimates that global petroleum and other liquid fuels inventory draws averaged 0.4 million barrels per day (b/d) in 2017, marking the first year of global inventory draws since 2013. EIA expects global inventories to increase by 0.2 million b/d in 2018 and by 0.3 million b/d in 2019.

The Brent crude oil spot price averaged \$54/b in 2017, an increase of \$10/b from 2016 levels. Daily Brent spot prices ended 2017 near \$67/b, which was the highest price level since December 2014. The price increase in 2017 is consistent with the global inventory draws experienced during the year. EIA expects that the modest inventory builds forecast for 2018 and 2019 will contribute to Brent crude oil prices declining from current levels to an average of \$60/b in the first quarter of 2018. Brent prices are then expected to remain relatively flat near \$60/b for the remainder of the forecast period. Forecast Brent spot prices average \$60/b in 2018 and \$61/b in 2019.

Global Petroleum and Other Liquid Fuels Consumption. Global consumption of petroleum and other liquid fuels grew by 1.4 million b/d in 2017, reaching an average of 98.4 million b/d for the year. Although the rate of consumption growth slowed in 2017 compared with 2016, EIA expects that consumption growth will average 1.7 million b/d in 2018 and almost 1.7 million b/d in 2019, driven by the countries outside of the Organization for Economic Cooperation and Development (OECD). Non-OECD consumption growth would account for 1.2 million b/d and 1.3 million b/d of the global growth in 2018 and 2019, respectively. The non-OECD petroleum and other liquid fuels consumption growth is driven by a forecast of higher growth in non-OECD oil-

weighted Gross Domestic Product (GDP). Growth in non-OECD oil-weighted GDP is expected to be 4.3% in 2018 and 4.4% in 2019, up from 3.9% in 2017.

EIA expects India and China to be the largest contributors to growth in non-OECD petroleum and other liquid fuels consumption in 2018 and 2019. China's consumption is expected to increase by 0.4 million b/d in 2018, followed by a 0.3 million b/d increase in 2019. Consumption growth in China reflects expectations of increased use of gasoline, jet fuel, and, to a lesser extent, hydrocarbon gas liquids (HGL). India, which saw slower-than-expected liquid fuels consumption growth of less than 0.1 million b/d in 2017, partly because of monetary and fiscal policy changes, is expected to experience stronger growth in 2018 and 2019, with consumption forecast to grow by about 0.3 million b/d in each year.

In addition to growth in China and India, EIA expects petroleum and other liquid fuels consumption growth in the Middle East to rise in 2018 and 2019, with increases of 0.1 million b/d in 2018 and 0.2 million b/d in 2019. Saudi Arabia continues to see increasing domestic petroleum consumption despite the expansion of natural gas use for electric power generation. EIA expects that Saudi Arabia's direct burn of crude oil for electric power generation will remain at roughly the 2017 level throughout the forecast period.

OECD petroleum and other liquid fuels consumption increased by 0.4 million b/d in 2017, and EIA expects it will grow by 0.5 million b/d in 2018 and by 0.3 million b/d in 2019. The main driver of OECD consumption growth is the United States. In Asia and Oceania, declining consumption in Japan in 2018 and 2019 is partially offset by modest growth in other areas. Europe is expected to see modest consumption growth in 2018 followed by a small decline in 2019.

Non-OPEC Petroleum and Other Liquid Fuels Supply. EIA estimates that petroleum and other liquid fuels production increased by 0.7 million b/d in 2017 in countries outside of the Organization of the Petroleum Exporting Countries (OPEC). Combined production growth of 1.0 million b/d in the United States and Canada more than offset a decrease of 0.3 million b/d among the rest of the non-OPEC producers.

EIA expects non-OPEC petroleum and other liquid fuels production to rise by 2.0 million b/d in 2018 and by 1.3 million b/d in 2019. The forecast production growth is centered in the Americas, as U.S. production growth is forecast to average 1.5 million b/d in 2018 and 1.0 million b/d in 2019. Canada and Brazil are expected to contribute combined growth of 0.4 million b/d in both 2018 and 2019.

Canada's petroleum and other liquid fuels production grows by 0.3 million b/d in 2018 and by 0.2 million b/d in 2019 in EIA's forecast. In Canada, oil sands projects continue to drive production growth during the forecast period, with the new phases of the Horizon oil sands project adding production starting in November 2017. In addition, the Fort Hills project, which is planned to come online in late 2018 is also expected to contribute another 0.2 million b/d to Canada's output in 2019. In addition to production increases from oil sands, the recently-started Hebron offshore field is also expected to add 0.1 million b/d of production in 2019.

Brazil's petroleum and other liquid fuels production is expected to grow by 0.1 million b/d in 2018 and by 0.2 million b/d in 2019, accounting for the third-highest source of non-OPEC production growth after the United States and Canada. Development of pre-salt resources and recent regulatory changes in the Brazilian oil industry are the main drivers of the growth. Continued implementation of reforms, including those to local content rules, could result in higher production growth during the forecast period. The oil-rich Santos Basin, particularly the Lula field, is expected to add enough oil production in the next two years to offset declines in Brazil's more mature onshore and offshore areas. Production at Lula began in November 2017.

Other sources of growth for non-OPEC petroleum and other liquid fuels production in 2018 and 2019 include Kazakhstan, where EIA forecasts production to continue to increase at the Kashagan field.

Norway is expected to post a production increase of 0.1 million b/d in 2018 before production decreases modestly in 2019, as steep crude oil production decline rates offset the expected startup of the Martin Linge and Johan Sverdrup fields, along with a number of smaller fields.

Russia's petroleum and other liquid fuels production is expected to fall by about 0.1 million b/d in 2018 and remain at that level in 2019. Russia's output is expected to decrease from a number of oil fields, which will be partly offset by increases in new field production, including the Erginskoye field in Western Siberia. Erginskoye is expected to begin production in 2019 and to reach peak production of 0.1 million b/d beyond the end of the current forecast period.

Non-OPEC unplanned supply outages in December 2017 were 0.6 million b/d, an increase of 0.3 million b/d compared with the November level. The increase mainly reflected a 0.3 million b/d disruption in the United Kingdom, where the Forties pipeline was shut on December 11. The pipeline closure required fields that rely on the Forties pipeline for takeaway transportation to shut in production. The fields included the Buzzard, United Kingdom's largest oilfield. Ineos, the pipeline's operator, reportedly restarted flows at a reduced rate in late December.

During 2017, non-OPEC unplanned supply outages averaged about 0.5 million b/d, roughly 0.1 million b/d higher than the 2016 average. The increase mainly reflected outages in Canada at the Syncrude Mildred Lake facility during the spring and summer of 2017, along with production shut-ins in the U.S. Gulf of Mexico as a result of hurricanes.

OPEC Petroleum and Other Liquid Fuels Supply. OPEC crude oil production averaged 32.5 million b/d in 2017, a decrease of 0.2 million b/d from 2016. The decline was mainly a result of the [November 2016 OPEC production agreement](#) that aimed to limit OPEC crude oil output to 32.5 million b/d. Saudi Arabia and a number of Persian Gulf producers reduced crude oil production in support of the agreement. Other countries saw supplies decline because of political factors, as was the case in Venezuela. OPEC and non-OPEC participants agreed on November 30, 2017, to extend the production cuts through the end of 2018 in an effort to reduce global oil inventories. OPEC crude oil production is forecast to increase by 0.2 million b/d in 2018, partially reflecting EIA's expectation of Libya maintaining relatively high production

levels achieved near the end of 2017. EIA expects that OPEC crude oil output will rise by an additional 0.3 million b/d in 2019 as crude oil production slowly returns to pre-agreement levels.

In the fourth quarter of 2017, the average compliance rate among OPEC members was near 100%. However, the high compliance rate in the latest data includes a sizeable drop in Venezuela's production level of more than 0.2 million b/d in 2017. As of December 2017, Venezuela's crude oil production was about 1.8 million b/d, the lowest level since February 2003, when most of Venezuela's oil production was shut in during an oil workers' strike. At the time, political opposition to then-president Hugo Chavez organized the industrial action to force a new presidential election, resulting in the shuttering of all but 0.6 million b/d of crude oil production.

EIA expects Venezuela's production to continue to fall through the forecast period as the financial situation of the state-owned Petróleos de Venezuela (PdVSA) becomes more precarious. According to trade press reporting and tanker tracking data, importing diluent for blending with its heavy oil is becoming increasingly difficult for Venezuela. Financial sanctions are also making it difficult to conduct financial transactions, with a number of banks refusing dealings with PdVSA. As a result, Venezuela's oil exports have decreased significantly over the past six months, further limiting Venezuela's access to much-needed cash.

OPEC noncrude oil liquids production averaged 6.8 million b/d in 2017 and is forecast to increase by 0.1 million b/d in 2018 and by 0.2 million b/d in 2019, led by increases in Iran and Qatar.

OPEC unplanned crude oil supply disruptions averaged 1.1 million b/d in December 2017, slightly less than during November. The decline in outages partly reflected increased production in Nigeria. Nigeria's production has also recovered somewhat in 2017 from frequent attacks targeting the oil infrastructure, and the country's December output was 1.8 million b/d, the highest crude oil production level since February 2016. Libya's outages increased in December, as a result of outages at the Waha and AGOCO operated fields during the month, including the late December sabotage of the pipeline that transports Waha field crude oil to the Es Sider terminal. Overall, Libya's restoration of production has reached almost 1.0 million b/d in crude oil output. However, the recent disruptions may signal a possible risk that production in the coming months could be lower than currently expected.

OPEC surplus crude oil production capacity, which averaged 2.1 million b/d in 2017, is expected to fall to 1.8 million b/d in 2018 and to 1.3 million b/d in 2019. Surplus capacity is typically an indicator of market conditions, and surplus capacity lower than 2.5 million b/d indicates a relatively tight oil market. However, ample global oil inventories make the forecast of low surplus capacity less significant.

OECD Petroleum Inventories. EIA estimates that OECD commercial crude oil and other liquid fuels inventories were 2.91 billion barrels at the end of 2017, equivalent to roughly 62 days of consumption. OECD inventories are forecast to rise to 2.96 billion barrels at the end of 2018 and then to 3.05 billion barrels at the end of 2019.

Crude Oil Prices. Brent crude oil averaged \$54/barrel (b) in 2017, an increase of \$10/b from 2016 levels. Prices increased fairly steadily through the second half of the year, with year-end prices higher than the annual average. Daily Brent spot prices ended 2017 near \$67/b, which was the highest level since December 2014. The monthly average spot price of Brent crude oil increased by \$2/b in December to \$64/b, marking only the fourth time that monthly Brent crude oil prices averaged more than \$60/b in the past 36 months.

Most of the upward price movement in recent months reflects continuing draws in global oil inventory levels. EIA estimates that global petroleum and other liquid fuels inventories fell by an average of 0.4 million b/d in 2017, which was the first year of annual average draws since 2013. In addition, oil prices were supported by OPEC's November 30, 2017, announcement to extend its crude oil supply reduction agreement through the end of 2018. Also, Brent prices increased in December because of a disruption to the North Sea's Forties crude oil pipeline system early in the month. The Forties pipeline system is one of the primary distribution networks for Brent crude oil delivery in the North Sea, and its outage curtailed available supply in the near term. Trade press reports indicate the Forties pipeline system restarted operations in late December 2017.

EIA forecasts the Brent crude oil spot price will average \$60/b in 2018 and \$61/b in 2019. After falling in 2017, EIA expects global oil inventories to rise by 0.2 million b/d in 2018 and by 0.3 million b/d in 2019. EIA forecasts the expectation of inventory builds in 2018 and 2019 will contribute to crude oil prices declining from current levels to an average of \$60/b during the first quarter of 2018. Prices are then expected to remain relatively flat through 2019.

Daily and monthly average crude oil prices could vary significantly from annual average forecasts, because global economic developments and geopolitical events in the coming months have the potential to push oil prices higher or lower than the current STEO price forecast. Uncertainty remains regarding the duration of, and adherence to, the current OPEC production cuts, which could influence prices in either direction. Also, the U.S. tight oil sector continues to be dynamic, and quickly evolving trends in this sector could affect both current crude oil prices and expectations for future prices.

Average West Texas Intermediate (WTI) crude oil prices are forecast to be \$4/b lower than Brent prices in 2018 and in 2019, falling from the \$6/b average price difference seen in the fourth quarter of 2017. The falling price discount of WTI to Brent in the forecast is based on the assumption that [current constraints on the capacity to transport crude oil](#) from the Cushing, Oklahoma, storage hub to the U.S. Gulf Coast will gradually lessen.

EIA estimates that the price difference between Brent and WTI reflects the competition of the two crude oils in global export markets. Thus, there are two components of the price difference, the cost of delivering WTI crude oil from its pricing point at Cushing to the U.S. Gulf Coast for export and the additional transportation costs U.S. crude oil exports incur on their way to Asia compared with costs to deliver Brent from the North Sea to Asia.

EIA estimates that, without pipeline constraints, moving crude oil from Cushing to the U.S. Gulf Coast typically costs about \$3.50/b. EIA estimates that it costs approximately \$0.50/b more to transport WTI from the United States to Asia than it costs to ship Brent from the North Sea to Asia. Although more infrastructure to export crude oil has been built recently, U.S. exporters must still [use smaller, less-economic vessels](#) or [complex shipping arrangements](#), which add to costs.

The current values of futures and options contracts suggest uncertainty in the oil price outlook. WTI futures contracts for April 2018 delivery that were traded during the five-day period ending January 4 averaged \$61/b, and implied volatility averaged 19%. These levels established the lower and upper limits of the 95% confidence interval for the market's expectations of monthly average WTI prices in April 2018 at \$52/b and \$71/b, respectively. The 95% confidence interval for market expectations widens slightly over time, with lower and upper limits of \$40/b and \$85/b for prices in December 2018. In January 2017, the WTI futures price for April 2017 delivery averaged \$55/b, and implied volatility averaged 29%, with the corresponding lower and upper limits of the 95% confidence interval at \$43/b and \$71/b.

U.S. Liquid Fuels

Consumption. Total U.S. petroleum and other liquid fuels consumption is forecast in the STEO to average 20.3 million barrels per day (b/d) in 2018, an increase of 470,000 b/d (2.4%) from the 2017 level. Consumption is forecast to grow by 340,000 b/d (1.7%) in 2019. The growth in both years is led primarily by higher consumption of hydrocarbon gas liquids (HGL) and distillate fuel with modest contributions of growth in motor gasoline and jet fuel.

EIA forecasts HGL consumption growth to be the strongest among the liquid fuels. HGL consumption is expected to increase by 300,000 b/d (11.7%) in 2018 and by 260,000 b/d (9.1%) in 2019, with increased ethane consumption accounting for about three quarters of this growth. Seven (six new and one restarted) [ethylene-producing petrochemical plants](#) that use ethane as their feedstock are planned to begin operating in the United States by the end of 2019.

Distillate consumption averaged more than 3.9 million b/d during 2017, an increase of 50,000 b/d from 2016 levels. Distillate fuel consumption growth is forecast to accelerate in 2018, with expected annual average growth of 100,000 b/d (2.5%), resulting in average consumption of more than 4.0 million b/d, followed by growth of 10,000 b/d (0.4%) in 2019. U.S. economic activity and industrial output are projected to grow strongly in both 2018 and 2019, contributing to higher distillate use.

Motor gasoline consumption remained nearly flat from 2016 to 2017 at an average of slightly more than 9.3 million b/d. Motor gasoline consumption is forecast to increase by 30,000 b/d (0.3%) in 2018. If EIA's projected growth is realized, it would be the highest level of annual average gasoline consumption on record, slightly surpassing the previous record set in 2016. Gasoline consumption growth in 2019 is forecast to accelerate slightly, increasing by 50,000 b/d (0.6%) from 2018 levels. Moderate growth in disposable personal income and declining

unemployment rates, tempered by increases in motor gasoline prices, contribute to modest increases in forecast vehicle miles traveled throughout 2019.

Jet fuel consumption increased sharply in 2017, growing by 70,000 b/d compared with 2016, averaging almost 1.7 million b/d. However, year-over-year growth in jet fuel consumption is expected to slow in 2018, with growth of 20,000 b/d (1.4%) in 2018 and less than 10,000 b/d (0.4%) in 2019. Growth in the demand for air travel from rising disposable income is offset somewhat by rising jet fuel prices.

Supply. EIA forecasts total U.S. crude oil production to average 10.3 million b/d in 2018, up 1.0 million b/d from 2017. If achieved, forecast 2018 production would be the highest annual average on record, surpassing the previous record of 9.6 million b/d set in 1970. In 2019, crude oil production is forecast to rise to an average of 10.8 million b/d.

Increased production from tight rock formations within the Permian region in Texas and New Mexico accounts for 0.8 million b/d of the expected 1.2 million b/d of crude oil production growth from December 2017 to December 2019. EIA expects most of the remaining 0.3 million b/d of growth to come from the Federal Gulf of Mexico, as seven new projects are expected to come online by the end of 2019.

The Permian region is expected to produce 3.6 million b/d of crude oil by the end of 2019, which is roughly a 0.9 million b/d increase from estimated December 2017 levels and would represent about 32% of total U.S. crude oil production in 2019. The Permian region is the geographic area that predominately spans the Permian Basin of western Texas and southeastern New Mexico and covers 53 million acres. Within the Permian Basin are smaller sub-basins, including the Midland Basin and the Delaware Basin, all of which contain historically prolific non-tight formations as well as many prolific tight formations such as the Wolfcamp, Spraberry, and Bonespring. With the large geographic area of the Permian region and stacked plays, operators can continue to develop multiple tight oil layers and increase production, even with sustained prices lower than \$50/b. Increases in proppant intensity, lateral lengths, changes to slick-water completions, and drilling in sweet spots have driven increased initial production (IP) rates and rig activity in the Permian, allowing it to remain one of the most economic regions for oil production. The Permian region rig count is projected to grow from about 398 at the end of 2017 to 490 at the end of 2019.

Production from the Eagle Ford region is expected to be between 1.2 million b/d and 1.3 million b/d in 2018 and 2019, slightly higher than the 2017 level. Compared with the Permian, the Eagle Ford region has a significantly smaller geographic area (16 million acres), fewer prolific stacked formations, and fewer opportunities to drill. However, similar to the Permian, Eagle Ford wells have high IP rates and fast decline rates, requiring the continuous drilling of new wells to maintain production levels. Historically, rig counts have been very responsive to price changes in the Eagle Ford region. Consequently, they have been declining since May 2017 because of oil prices dropping below \$50/b in mid-2017. With EIA's forecast WTI price averaging \$55/b in 2018

and \$57/b in 2019, Eagle Ford rigs are expected to grow from 80 at the end of 2017 to 95 at the end of 2019.

The Bakken region is expected to produce an average of 1.2 million b/d in 2018 and 1.3 million b/d in 2019, up from 1.1 million b/d in 2017. The Bakken region predominately spans the Williston Basin that contains the Bakken and Three Forks formations. Although the Bakken region is geographically large (23 million acres), it contains fewer identified prolific formations than the Permian region. In addition, operators in this region are affected by winter weather and have greater transportation constraints in moving oil to refineries and markets. Rig counts in this region are expected to grow from 49 at the end of 2017 to 69 at the end of 2019.

Gulf of Mexico production is forecast to average 1.7 million b/d in 2018, which would be relatively unchanged from 2017 levels, and then increase to 1.8 million b/d in 2019. The anticipated start of production in 2019 from the Appomattox project in the Rydberg field and the Mars projects in the Kaikias field, along with other projects that will begin operations in 2018 and 2019, are expected to contribute to increases in production from the Gulf of Mexico.

Crude oil production in Alaska is expected to remain flat at 0.5 million b/d in both 2018 and 2019. Ongoing exploration and developmental drilling in the North Slope and the anticipated start of production from 1H News project in November 2017 and the Greater Moose's Tooth project in 2018 are expected to keep production in Alaska from declining as it has been in recent years.

Growth in crude oil production, especially in the Permian Basin, is expected to result in increased associated natural gas production and natural gas processing. EIA forecasts [HGL production at natural gas processing plants](#) will increase by 0.5 million b/d in 2018 and by 0.4 million b/d in 2019. EIA expects higher ethane recovery rates in 2018 and 2019, following [planned increases in demand for petrochemical plant feedstock](#) in the United States and abroad.

Product Prices. EIA expects the retail price of regular gasoline to average \$2.51 per gallon (gal) during the first quarter of 2018, 19 cents/gal higher than at the same time last year, primarily reflecting higher crude oil prices. EIA expects that the U.S. monthly retail price of regular gasoline will increase from an average of \$2.54/gal in January to a 2018 peak of \$2.63/gal in August before falling to \$2.47/gal in December 2018. The U.S. regular gasoline retail price, which averaged \$2.42/gal in 2017, is forecast to average \$2.57/gal in 2018 and \$2.58 /gal in 2019.

Regional annual average forecast prices for 2018 range from a low of \$2.29/gal in the Gulf Coast—[Petroleum Administration for Defense District \(PADD\) 3](#)—to a high of \$3.03/gal in the West Coast (PADD 5).

Refinery wholesale gasoline margins (the difference between the wholesale price of gasoline and the price of Brent crude oil) averaged 25 cents/gal in December. This level was lower than the 32 cents/gal average in December 2016, but it was 8 cents/gal higher than the five-year average for December. Refinery wholesale gasoline margins averaged 41 cents/gal in 2017,

which was relatively unchanged from the 2016 level but 8 cents/gal higher than the previous five-year average. Refinery wholesale gasoline margins are expected to average 37 cents/gal in 2018 and 34 cents/gal in 2019.

The diesel fuel retail price averaged \$2.65/gal in 2017, which was 34 cents/gal higher than the average in 2016. The diesel price is forecast to average \$2.95/gal in 2018 and \$3.01/gal in 2019, driven higher primarily by higher crude oil prices and growing global diesel demand. Rising diesel consumption is expected to contribute to gradually increasing diesel refinery margins. Diesel refinery margins based on Brent crude oil are expected to average 47 cents/gal in 2018 and 46 cents/gal in 2019, compared with an average of 40 cents/gal in 2017.

Natural Gas

Natural Gas Consumption. Total U.S. natural gas consumption averaged 74.0 billion cubic feet per day (Bcf/d) in 2017, a 1% decrease from 2016. Natural gas consumption is forecast to increase by 3.5 Bcf/d in 2018 and by 2.2 Bcf/d in 2019. The 2017 decrease in total natural gas consumption mainly reflects warm winter temperatures and lower electric power sector use. In 2017, U.S. heating degree days (HDD) were 2% lower than in 2016, and U.S. cooling degree days (CDD) in 2017 were 8% lower than in 2016. Electric power sector use of natural gas decreased by 1.6 Bcf/d (6%) in 2017. The decline reflects competition from increasing renewable energy use (particularly hydropower), competitive coal prices, and overall lower electricity generation levels.

Based on forecasts by the National Oceanic and Atmospheric Administration (NOAA), EIA projects 2018 HDD will be 11% higher than 2017 levels. The difference is driven temperatures during first quarters of 2017 and 2018. The first quarter of 2017 was unseasonably warm, and the first quarter of 2018 is projected to be relatively close to the 10-year average. On an annual basis, EIA expects combined residential and commercial natural gas consumption to increase by 1.3 Bcf/d in 2018 compared with 2017 levels and remain mostly unchanged in 2019.

Industrial sector consumption of natural gas increased by 1.6% from 2016 to 2017. In 2018, industrial consumption is expected to rise by 1.2%, averaging 21.7 Bcf/d in 2018. Industrial consumption is expected to increase by 2.6% in 2019. Most of the increase in the 2019 forecast is attributable to new chemical plants expected to come online. A low natural gas price environment in recent years has made it economical to increase the use of natural gas as feedstock in ammonia for nitrogenous fertilizer and methanol.

Natural Gas Production and Trade. Dry natural gas production averaged 73.6 Bcf/d in 2017, up 1.0% from the 2016 level and reversing the 2016 production decline. The strongest growth in dry natural gas production occurred late in the year, as improved economics related to

expanded pipeline capacity contributed to a 3.8% increase in production between the third and fourth quarters of 2017. The rate of production growth is expected to moderate in 2018.

EIA expects dry natural gas production to rise by 6.9 Bcf/d (9.3%) in 2018 and by 2.6 Bcf/d (3.2%) in 2019. If achieved, the forecast 6.9 Bcf/d increase in 2018 would be the highest on record. Growth is expected to be concentrated in Appalachia's Marcellus and Utica regions, along with the Permian Basin region. Much of the expected increase in natural gas production is the result of increasing pipeline takeaway capacity out of the Appalachia producing region to end-use markets. The greater pipeline connectivity contributes to higher wellhead natural gas prices for producers and is expected to encourage production growth.

EIA projects liquefied natural gas (LNG) gross exports will average 3.0 Bcf/d in 2018, up from 1.9 Bcf/d in 2017. In 2018, U.S. liquefaction capacity will continue to expand. EIA expects the Cove Point terminal in Maryland to ramp up to full capacity. At the Elba Island facility in Georgia, 6 of the 10 small modular trains, each with a capacity of 0.03 Bcf/d, are expected to enter service. The first liquefaction train (capacity 0.7 Bcf/d) at Freeport LNG in Texas is also expected to come online by the end of 2018. EIA projects gross LNG exports to average 4.8 Bcf/d in 2019, when the four remaining modular trains at Elba Island come online and the remaining two trains at Freeport LNG enter service. Two trains in Corpus Christi, Texas, and three trains at Cameron LNG in Louisiana are also expected to enter service in 2019. EIA forecasts exports will ramp up in the second half of 2019 to an average of 5.5 Bcf/d, up from 4.1 Bcf/d in the first half of 2019. In both 2018 and 2019 the new liquefaction facilities will require a ramp up period, and they are forecast to operate below nameplate capacity for a period of time, lowering the overall LNG export capacity utilization rate.

Natural gas pipeline exports to Mexico through October increased by 0.4 Bcf/d in 2017 compared with the same period in 2016, and EIA expects growth to continue over the forecast period with ongoing Mexican energy market reform. A relatively low natural gas export price, rising demand from Mexico's power sector, and increased pipeline capacity in both in the United States and Mexico have led to increased exports. U.S. gross pipeline exports are expected to increase by 0.6 Bcf/d in 2018 and by 0.8 Bcf/d in 2019 to an average of 8.0 Bcf/d.

Total U.S. natural gas imports averaged 8.2 Bcf/d in 2017, and they are expected to average 7.9 Bcf/d in 2018 and 8.2 Bcf/d in 2019. A low natural gas price environment in Western Canada could contribute to increased seasonal imports for some regional U.S. markets.

In 2017, the United States was a net exporter of natural gas for the first time on an annual basis since 1957,¹ with net exports averaging 0.4 Bcf/d. Overall, net natural gas exports are forecast to average 2.3 Bcf/d in 2018 and 4.6 Bcf/d in 2019.

¹ This sentence was updated on January 11, 2018, to add "since 1957." It was originally published on January 9, 2018, as: "In 2017, the United States was a net exporter of natural gas for the first time on an annual basis, with net exports averaging 0.4 Bcf/d"

Natural Gas Inventories. As of December 29, 2017, working natural gas inventories were 3,126 Bcf, 6% lower than both the five-year average and year-ago levels. Inventory draws in recent weeks have been larger than normal for this time of year, despite a rare winter injection of 2 Bcf during the week ending December 2, the first December injection since 2012. Based on an assumption of relatively normal temperatures in the first quarter of 2018, along with a forecast of growing natural production, EIA forecasts inventories to be 1,623 Bcf at the end of March, which would be 6% lower than the five-year average for that time of year. Inventories are expected to build slightly above the five-year average pace from the end of March through October, bringing inventories to a projected 3,861 Bcf at the end of October 2018, which is slightly higher than the previous five-year average for the end of October. In 2019, inventories are expected to be about 6% lower on average than 2018 levels.

Natural Gas Prices. Henry Hub spot prices averaged \$2.99 per million British thermal units (MMBtu) in 2017, up 47 cents/MMBtu from a 17-year low in 2016. Henry Hub natural gas spot prices are forecast to average \$2.88/MMBtu in 2018 and \$2.92/MMBtu in 2019. Prices are expected to decline slightly from 2017 levels based on strong expected production growth, which EIA forecasts will meet growing domestic consumption and exports.

Natural gas futures contracts for April 2018 delivery that were traded during the five-day period ending January 4 averaged \$2.75/MMBtu. Current options and futures prices indicate that market participants place the lower and upper bounds for the 95% confidence interval for April 2018 contracts at \$2.01/MMBtu and \$3.75/MMBtu, respectively. Last year at this time, the natural gas futures contracts for April 2017 delivery averaged \$3.38/MMBtu, and the corresponding lower and upper limits of the 95% confidence interval were \$2.39/MMBtu and \$4.77/MMBtu, respectively.

Coal

Coal Supply. EIA estimates that coal production increased by 45 million short tons (MMst) (6%) in 2017 to 773 MMst, as demand for U.S. coal exports increased. In 2018, total U.S. coal production is expected to decrease by 14 MMst (2%). Production in the Western region is forecast to decrease by 5 MMst, and production in the Appalachia region is forecast to decrease by 25 MMst. The expected production decline in the Appalachia region and the Western region is primarily a result of the projected declines in coals exports. Declines in these regions are expected to be partially offset by a 15 MMst increase in Interior region production. In 2019, total coal production is expected to decline by 18 MMst (2%), and declines in Appalachian region production and Western region production again partially offset by increases in Interior region production.

Coal Consumption. Coal consumption in the electric power sector is estimated to have declined by 12 MMst (2%) in 2017, as several coal power plants retired. Consumption in the electric power sector is forecast to decrease by 10 MMst (1%) in 2018 and by 27 MMst (4%) in 2019. The decrease in power sector consumption reflects lower natural gas prices and coal power plant retirements.

Coal Trade. Coal exports through the first 10 months of 2017 were 70% higher than in the same period last year, and the 78 MMst exported through October is 18 MMst (29%) more than coal exports for all of 2016. EIA estimates total coal exports for 2017 were 95 MMst, with steam coal exports at 41 MMst. EIA expects that metallurgical coal exports will be more than 50 MMst in both 2018 and 2019, but steam exports will decline by 34% in 2018 and by 15% in 2019. Total coal exports are expected to be 80 MMst in 2018 and 75 MMst in 2019.

Atlantic and Gulf Coast electric power generators are forecast to generally maintain their current levels of coal imports, which are primarily from Latin America. Total U.S. imports are estimated to have been 8 MMst in 2017 and are forecast to be 9 MMst in both 2018 and 2019.

Coal Prices. EIA estimates the delivered coal price averaged \$2.10 per million British thermal units (MMBtu) in 2017, which was 1 cent/MMBtu lower than the 2016 price. Coal prices are forecast to increase to \$2.21/MMBtu in 2018 and to remain at that level in 2019.

Electricity

Electricity Consumption. EIA expects annual retail sales of electricity to the residential sector in 2018 to be 2.9% higher than sales in 2017 primarily as a result of increased electricity consumption in the first quarter of 2018. Forecast annual electricity sales to the commercial sector are up 0.6% this year from the 2017 level. Industrial sector electricity sales are expected to grow by 0.4% in 2018. Forecast total U.S. consumption of electricity grows by 1.3% in 2018 and by 0.5% in 2019.

The weather last winter was mild throughout much of the United States. According to the National Oceanic and Atmospheric Administration (NOAA), total U.S. heating degree days (HDD) in the winter of 2016–17 were the third lowest on record. NOAA forecasts U.S. HDD for the winter of 2017–18 will be about 10% higher than last winter, but still 2% lower than the average of the previous 10 winters.

Expected colder winter temperatures, especially in the Midwest and Eastern states, drive EIA's forecast that the average U.S. residential customer will consume 4% more electricity this winter compared with the same period last year. Forecast average residential electricity sales between October 2017 and March 2018 range from 3,700 kilowatthours (kWh) per customer in the New England census division (4% higher than last winter) to 7,000 kWh per customer in the East South Central census division (8% higher).

Electricity Generation. The amount of electricity generation from natural gas-fired power plants fell between 2016 and 2017, however natural gas remained the primary fuel for power generation for the second year in a row. Natural gas supplied an estimated 32% of total U.S. electricity generation in 2017, down from a share of 34% in 2016, in response to higher prices for the fuel. The U.S. average price for natural gas delivered to electric generators was \$3.33/million British thermal units (MMBtu) in 2017, up 16% from the average price in 2016.

As reported on the [EIA-860M survey](#), power plant operators are scheduled to bring 20 gigawatts (GW) of new natural-gas fired generating capacity online in 2018. This addition would be the largest increase in natural gas capacity since 2004. Most of this new capacity uses combined-cycle technology, which can be efficiently run for long periods of operation. Almost 6 GW of the capacity additions are being built in Pennsylvania, and more than 2 GW are being built in Texas.

EIA expects the price of natural gas for electricity generation in 2018 will be slightly lower than in 2017. The share of total generation produced by natural gas-fired power plants increases to 33% in 2018 as a result of new additions of natural gas generating capacity and an expected reduction in hydroelectric generation. Forecast natural gas prices for electric generators falls to \$3.26 in 2019, contributing to EIA's forecast that natural gas will fuel 34% of total generation next year.

In the Western states, EIA expects increased generation from natural gas to partially offset an expected reduction in hydroelectric generation during 2018. Last year, natural gas and hydropower each supplied between 26% and 27% of total generation in the West census region. The share provided by hydropower in the Western states is forecast to fall to 23% in 2018, and the share provided by natural gas is forecast to rise to 29%.

Coal supplied about 30% of total U.S. electricity generation in 2016 and 2017. EIA expects U.S. electricity generation from coal-fired power plants will fall to slightly below 30% in 2018. Power plant operators have reported on the EIA-860M survey that they plan to retire 13 GW of coal-fired capacity in 2018, primarily in the latter half of the year. EIA expects that these retirements and the forecast lower natural gas prices will reduce coal's share of total U.S. generation to 28% in 2019.

EIA expects utility-scale generation from renewable energy sources other than hydropower to continue growing in 2018, albeit at a slower pace than in 2017. Nonhydro renewable energy sources, which supplied an annual average of 9.6% of total U.S. electricity generation in 2017, are forecast to supply more than 10% of annual average total U.S. generation in 2019 for the first time on record.

Nuclear generation contributed 20% of total generation in 2017 and is expected to supply a similar share this year. The scheduled retirement of reactors next year at the Three Mile Island and Pilgrim Nuclear power plants before the end of 2019 contribute to EIA's forecast that the generation share from nuclear will fall to 19% in 2019.

Electricity Retail Prices. The U.S. retail electricity price for the residential sector averaged 12.8 cents/kWh in October 2017 (the latest historical data available), which was 3% higher than the average price in October 2016. EIA expects annual average residential electricity prices will increase by a further 2% in 2018 and 3% in 2019.

Renewables and Carbon Dioxide Emissions

Electricity Renewables Generation and Capacity. After increasing by 13% in 2017, EIA expects total generation from renewables in all sectors (including utility- and small-scale generators) to decrease by 3% in 2018 and then to increase by 7% in 2019. Forecast electricity generation from hydropower decreases by 12% in 2018 and increases by 2% in 2019. This change in hydropower generation drives the decrease in overall renewable generation growth in 2018. Generation from renewable energy other than hydropower in the electric power sector is forecast to grow by 3% in 2018 and by 9% in 2019.

EIA estimates that total U.S. small-scale solar capacity was 16 gigawatts (GW) at the end of 2017. EIA expects that capacity to be 19 GW at the end of 2018 and 23 GW at the end of 2019.

EIA estimates that U.S. large-scale solar capacity totaled 27 GW at the end of 2017 and forecasts by the end of 2018 that capacity will rise to 30 GW. States leading in large-scale solar capacity additions are California, Florida, North Carolina, and Texas. Forecast large-scale solar generation averages 1.5% of total U.S. electricity generation in 2018. By the end of 2019, large-scale solar capacity is forecast to be 42 GW. In 2019 the average generation share is about 1.7% of total generation.

EIA estimates that U.S. large-scale wind capacity totaled 88 GW at the end of 2017, and by the end of 2018 that capacity is expected to rise to 96 GW. Forecast wind generation accounts for 6.4% of total generation in 2018. Wind capacity rises to 104 GW in 2019, and its generation share is 6.9%. If the forecast levels of both wind and hydro generation are met in 2019, it would be the first time that wind generation surpasses hydropower as the leading source of renewable electricity generation.

Liquid Biofuels. In November 2017, the U.S. Environmental Protection Agency (EPA) finalized a rule setting Renewable Fuel Standard (RFS) volumes for 2018 and biomass-based diesel volumes for 2019. EIA used these final volumes to develop the current STEO forecast for 2018 and 2019. EIA expects that the largest effect of the current RFS targets, along with recent duties placed on biodiesel imports, will be on biomass-based diesel production and net imports, which help to meet the RFS targets for use of biomass-based diesel, advanced biofuel, and total renewable fuel. Biodiesel production averaged an estimated 105,000 barrels per day (b/d) in 2017, and it is forecast to increase to an average of 117,000 b/d in 2018 and to 128,000 b/d in 2019. In large part because of recent duties imposed on foreign biodiesel imports from Argentina and Indonesia, net imports of biomass-based diesel are expected to fall from an estimated 41,000 b/d in 2017 to 32,000 b/d in 2018 and then rise to 35,000 b/d in 2019.

Ethanol production averaged an estimated 1.0 million b/d in 2017 and is forecast to average roughly the same in both 2018 and 2019. Ethanol consumption averaged about 940,000 b/d in 2017 and is forecast to be 960,000 b/d in 2018 and 970,000 b/d in 2019. This level of consumption results in the ethanol share of the total gasoline pool increasing from an average of 10.2% in 2017 to an average of 10.3% in 2018 and 2019. This increase in the ethanol share

assumes that recent marginal growth in higher-level ethanol blends continue during the forecast period.

Energy-Related Carbon Dioxide Emissions. EIA estimates that energy-related emissions of carbon dioxide decreased by 1.0% in 2017 and forecasts these levels to increase by 1.7% in 2018 and by 0.2% in 2019. These forecasts are sensitive to assumptions about weather, economic growth, and fuel prices.

U.S. Economic Assumptions

Recent Economic Indicators. Real gross domestic product (GDP) increased at an annual rate of 3.1% in the second quarter of 2017 and 3.2% in the third quarter of 2017, according to [recent estimates released by the Bureau of Economic Analysis](#). The acceleration in real GDP in the third quarter reflected an acceleration in private inventory investment, a downturn in imports, and smaller decreases in state and local government spending and in residential fixed investment that were partly offset by decelerations in personal consumption expenditures, in nonresidential fixed investment, and in exports.

Production, Income, and Employment. EIA used the December 2017 version of the IHS Markit macroeconomic model with EIA's energy price forecasts as model inputs to develop the economic forecasts in the STEO.

Real GDP is forecast to increase by 2.4% in both 2018 and 2019 compared with the 2.3% increase in 2017. Real disposable income is forecast to grow by 2.4% in 2018 and by 3.3% in 2019 compared with a 1.3% increase in 2017. Total industrial production is forecast to increase by 3.1% in 2018 and by 2.7% in 2019, compared with a 1.9% increase in 2017. Forecast growth in nonfarm employment averages 1.4% in 2018 and 1.2% in 2019, compared with growth of 1.5% in 2017.

Expenditures. Private real fixed investment is forecast to grow by 3.4% in 2018 and by 4.4% in 2019, compared with 3.9% growth in 2017. Real consumption expenditures are forecast to grow by 2.4% in 2018 and by 2.2% in 2019, compared with a 2.7% increase in 2017.

Exports are forecast to grow by 4.3% in 2018 and by 4.2% in 2019, compared with 3.1% growth in 2017. Imports are forecast to grow by 3.6% in 2018 and by 3.3% in 2019, compared with 3.4% growth in 2017. Total government expenditures are forecast to increase by 0.4% in 2018 and by 0.5% in 2019, compared with a 0.1% decline in 2017.

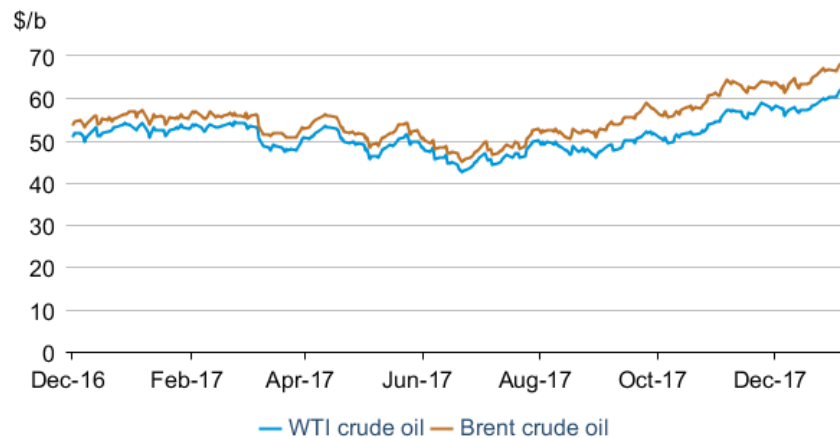
Petroleum and natural gas markets review

Crude oil

Prices: The front-month futures price for North Sea Brent crude oil settled at \$68.07 per barrel (b) on January 4, an increase of \$4.34/b since December 1. Front-month futures prices for West Texas Intermediate (WTI) crude oil for delivery at Cushing, Oklahoma, increased \$3.65/b during

the same period, settling at \$62.01/b on January 4 (**Figure 1**). December Brent and WTI monthly average spot prices were \$1.66/b and \$1.24/b higher than the November average spot prices.

Figure 1. Crude oil front-month futures prices



 CME Group and Intercontinental Exchange, as compiled by Bloomberg L.P.

Crude oil prices reached the highest levels in more than three years during the first week in January. The rise in Brent crude oil futures prices likely reflected global oil inventory draws that were estimated to be 0.3 million barrels per day (b/d) during the fourth quarter of 2017. Prices were likely also supported by the shutdown of the Forties Pipeline in the North Sea on December 11 because of a crack in the pipeline, which remained closed through December 30. A brief pipeline outage in Libya may have also affected waterborne crude oil supplies and contributed upward price pressure.

With respect to crude oil demand, U.S. crude oil [refinery inputs](#) reached a record high for the month of December during the week ending December 29, 2017, of 17.6 million b/d. Global economic growth and leading economic indicators of manufacturing activity continue to show expansion, which could also support crude oil and petroleum product demand in the coming months.

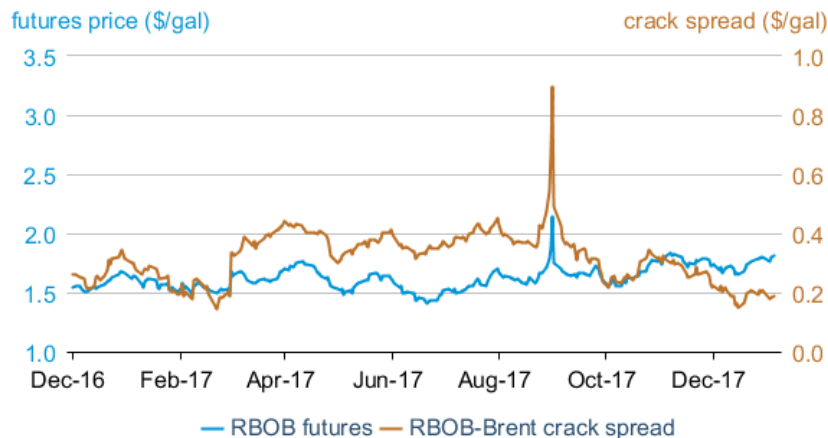
Petroleum products

Gasoline prices: The front-month futures price of reformulated blendstock for oxygenate blending (RBOB, the petroleum component of gasoline used in many parts of the country) rose by 7 cents per gallon (gal) from December 1 to settle at \$1.81/gal on January 4 (**Figure 2**). The RBOB–Brent crack spread (the difference between the price of RBOB and the price of Brent crude oil) fell by 4 cents/gal to settle at 19 cents/gal over the same period. EIA compares RBOB prices to Brent prices because [EIA research indicates that U.S. gasoline prices usually move with Brent prices](#), the international crude oil benchmark.

Total motor gasoline stocks generally rise towards the end of the year, as gasoline consumption begins to decline to its seasonal low. In 2017, [total motor gasoline stocks](#) rose by 12.3 million barrels from December 1 to December 29, more than double than in 2016, if confirmed by the

Petroleum Supply Monthly (PSM). STEO estimates U.S. gasoline consumption in December 2017 was 0.32 million barrels per (b/d) lower than in the previous year. [Finished gasoline exports](#) as of the four weeks ending December 29, 2017, are estimated to be 0.1 million b/d lower than the record high export level set in December 2016, according to the PSM.

Figure 2. Historical RBOB front-month futures prices and crack spread

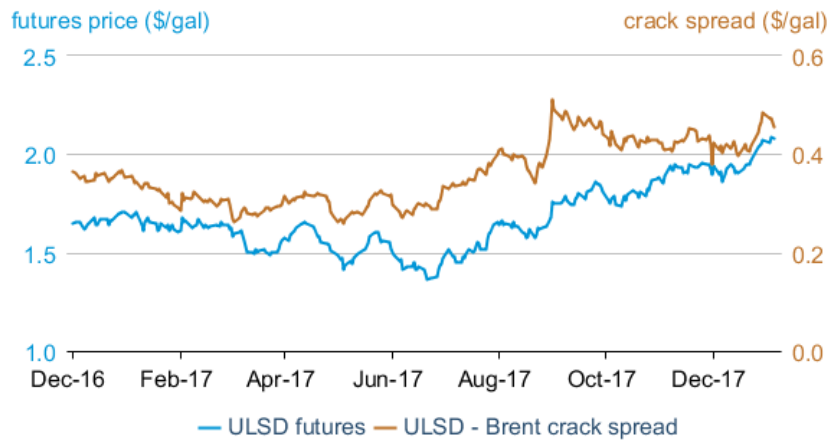


 CME Group, as compiled by Bloomberg L.P., RBOB=reformulated blendstock for oxygenate blending

Ultra-low sulfur diesel prices: The ultra-low sulfur diesel (ULSD) front-month futures price rose by 14 cents/gal from December 1 to settle at \$2.08/gal on January 4. On January 3, the ULSD price reached the highest point since February 2015. The ULSD–Brent crack spread (the difference between the price of ULSD and the price of Brent crude oil) increased 3 cents/gal over the same period, settling at 46 cent/gal (**Figure 3**).

Distillate prices rose as [colder-than-normal temperatures](#) settled in much of the United States, including in the U.S. East Coast—[Petroleum Administration for Defense District \(PADD\) 1](#)—where distillate fuel is used for heating. Distillate stocks remained low in December, with some regional variations. Total [U.S. distillate stocks](#) as of December 29, 2017, were below the five-year average for December, when compared with the monthly data in the PSM. However, [distillate stocks in the U.S. Central Atlantic \(PADD 1B\)](#), which includes the New York Harbor delivery point of the ULSD futures contract, were at the five-year average, while [distillate stocks in the U.S. Midwest \(PADD 2\)](#) set a new five-year low.

Figure 3. Historical ULSD front-month futures price and crack spread

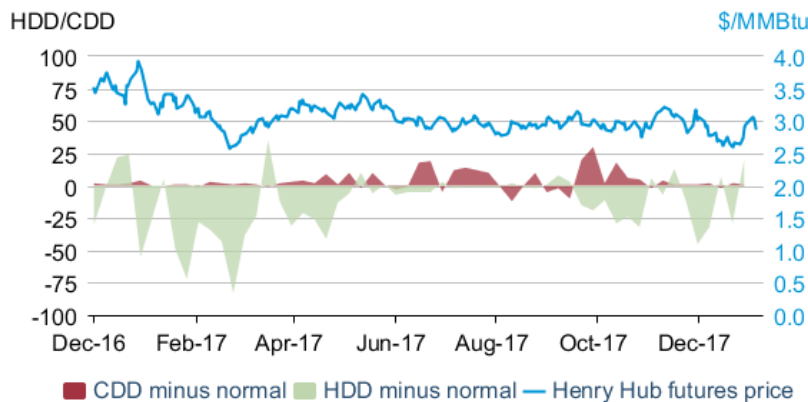


eia CME Group, as compiled by Bloomberg L.P., ULSD=ultra-low sulfur diesel

Natural Gas

The front-month natural gas futures contract for delivery at Henry Hub settled at \$2.88/million British thermal units (MMBtu) on January 4, a decrease of 18 cents/MMBtu from December 1 (**Figure 4**). U.S. dry natural gas production continued to reach record levels, with year-over-year increases estimated at nearly 7 billion cubic feet per day (Bcf/d) in December. The rising production, along with temperatures that averaged 9% warmer than normal for the first three weeks of December, contributed to front-month futures prices on December 21 falling to the lowest level since February 2017. Much colder-than-normal temperatures at the end of December and the beginning of January resulted in estimates of [record-high natural gas demand](#) and helped to reverse the price decline. The Henry Hub natural gas spot price averaged \$2.81/MMBtu in December, 20 cents/MMBtu lower than November.

Figure 4. Natural gas front month futures prices and actual minus historical average HDD and CDD



eia CME Group and National Oceanic and Atmospheric Administration, as compiled by Bloomberg L.P.

Notable forecast changes

- This edition of the *Short-Term Energy Outlook* is the first to include forecasts for 2019.
- For more information, see the [detailed table of forecast changes](#)

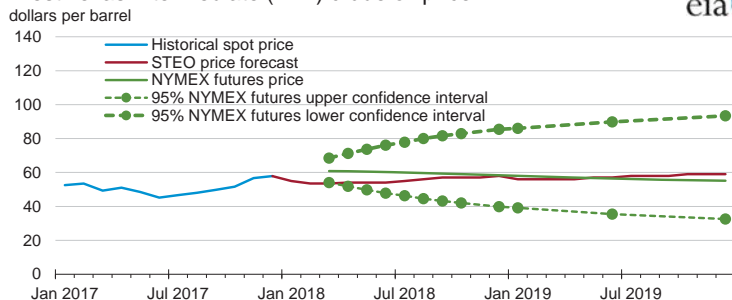
This report was prepared by the U.S. Energy Information Administration (EIA), the statistical and analytical agency within the U.S. Department of Energy. By law, EIA's data, analyses, and forecasts are independent of approval by any other officer or employee of the United States Government. The views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



Short-Term Energy Outlook

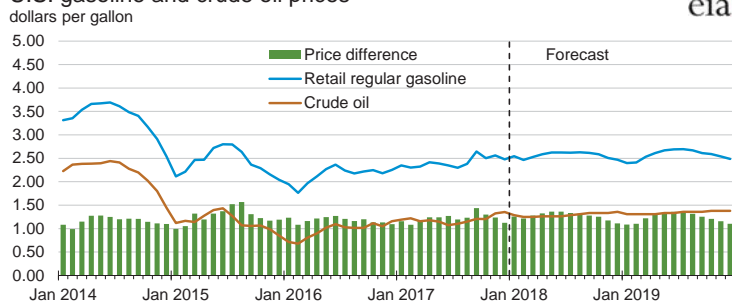
Chart Gallery for January 2018

West Texas Intermediate (WTI) crude oil price



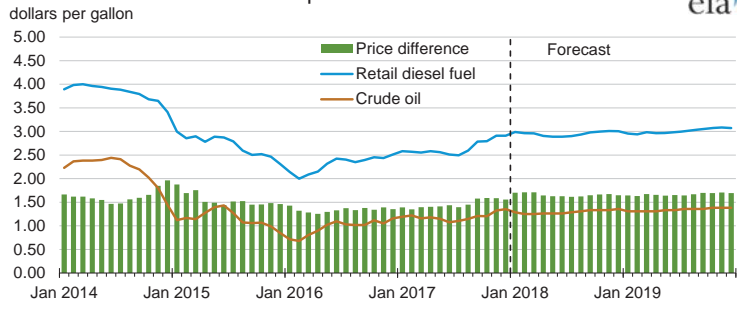
Note: Confidence interval derived from options market information for the 5 trading days ending Jan 4, 2018. Intervals not calculated for months with sparse trading in near-the-money options contracts.
Source: Short-Term Energy Outlook, January 2018, and CME Group.

U.S. gasoline and crude oil prices



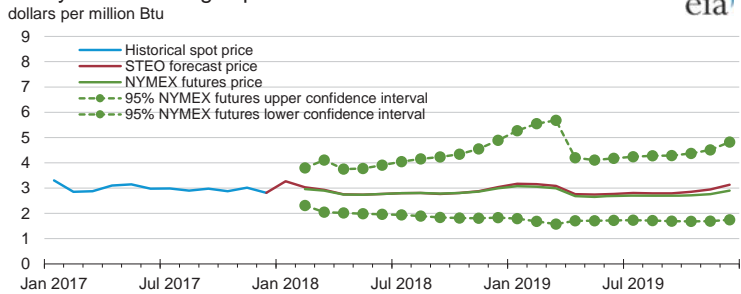
Crude oil price is composite refiner acquisition cost. Retail prices include state and federal taxes.
Source: Short-Term Energy Outlook, January 2018.

U.S. diesel fuel and crude oil prices



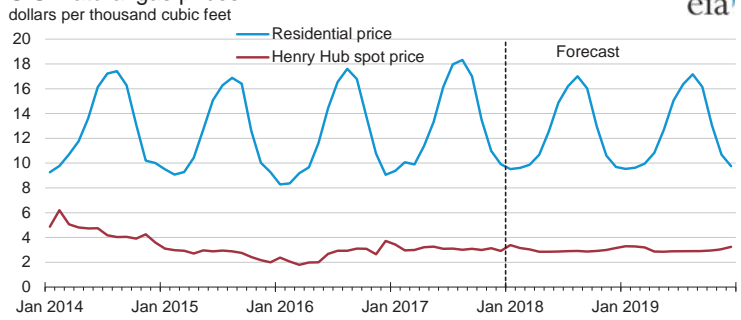
Crude oil price is composite refiner acquisition cost. Retail prices include state and federal taxes.
 Source: Short-Term Energy Outlook, January 2018.

Henry Hub natural gas price



Note: Confidence interval derived from options market information for the 5 trading days ending Jan 4, 2018. Intervals not calculated for months with sparse trading in near-the-money options contracts.
 Source: Short-Term Energy Outlook, January 2018, and CME Group.

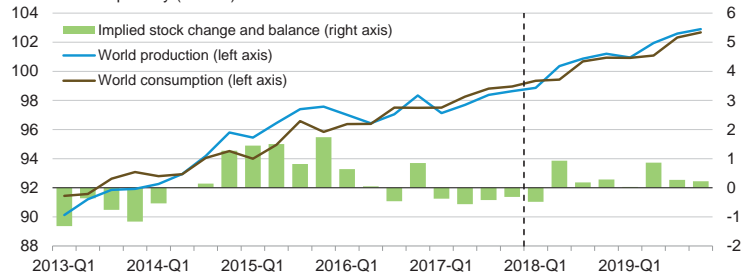
U.S. natural gas prices



Source: Short-Term Energy Outlook, January 2018, and Thomson Reuters.

World liquid fuels production and consumption balance

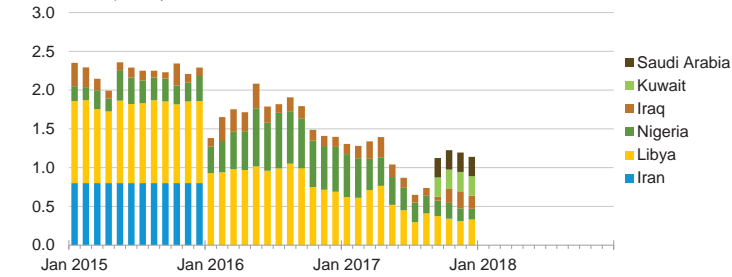
million barrels per day (MMb/d)



Source: Short-Term Energy Outlook, January 2018.

Estimated historical unplanned OPEC crude oil production outages

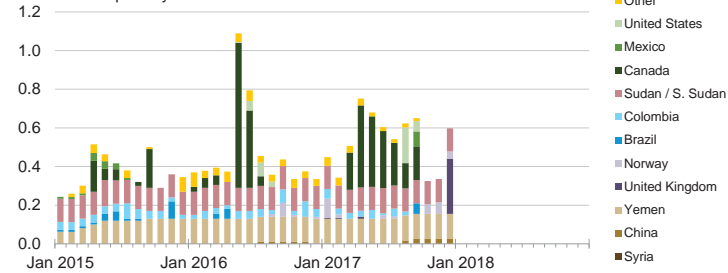
million barrels per day



Source: Short-Term Energy Outlook, January 2018.

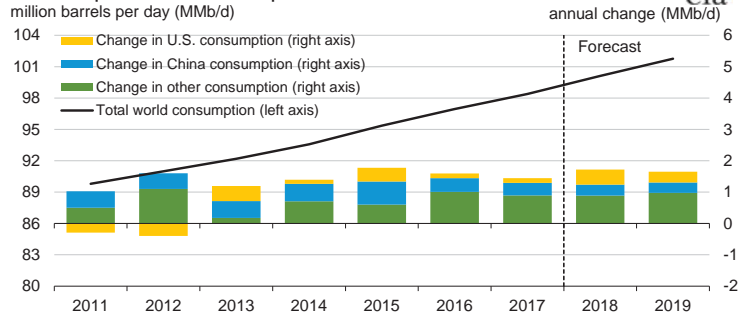
Estimated historical unplanned non-OPEC liquid fuels production outages

million barrels per day



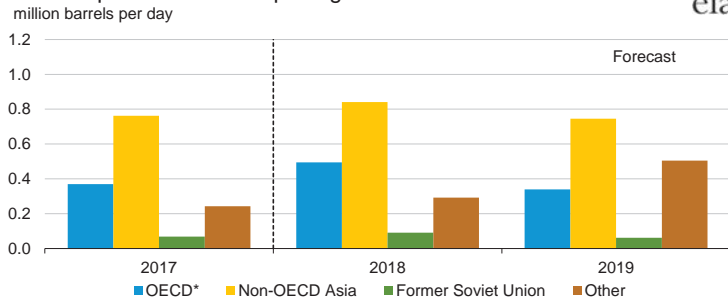
Source: Short-Term Energy Outlook, January 2018.

World liquid fuels consumption



Source: Short-Term Energy Outlook, January 2018.

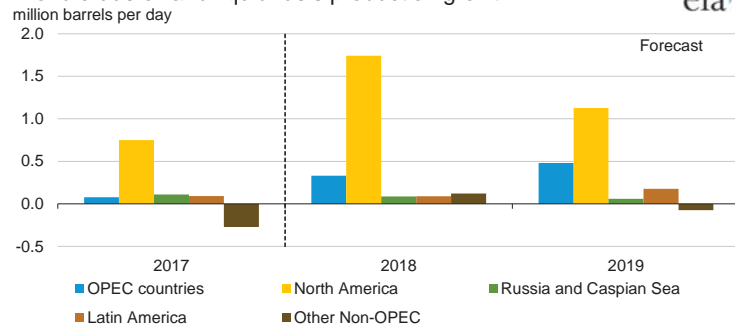
World liquid fuels consumption growth



* Countries belonging to the Organization for Economic Cooperation and Development

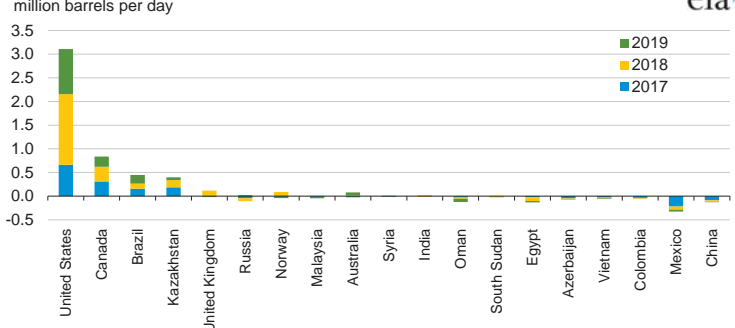
Source: Short-Term Energy Outlook, January 2018.

World crude oil and liquid fuels production growth



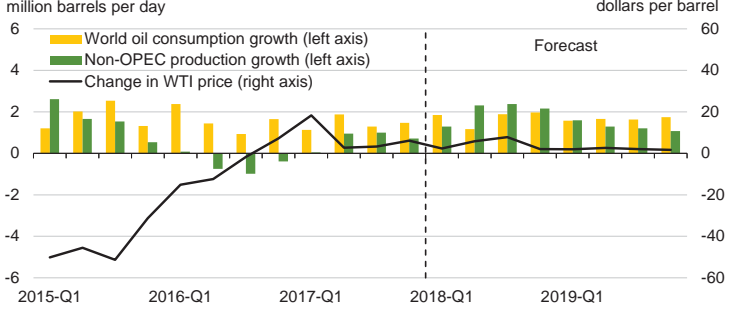
Source: Short-Term Energy Outlook, January 2018.

Non-OPEC crude oil and liquid fuels production growth



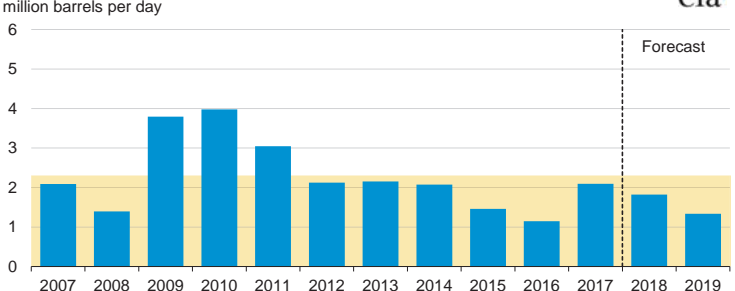
Source: Short-Term Energy Outlook, January 2018.

World consumption and non-OPEC production growth



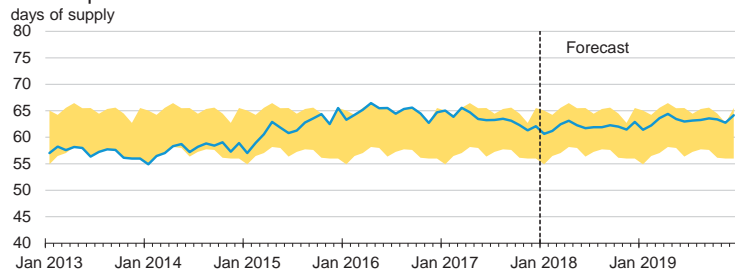
Source: Short-Term Energy Outlook, January 2018.

OPEC surplus crude oil production capacity



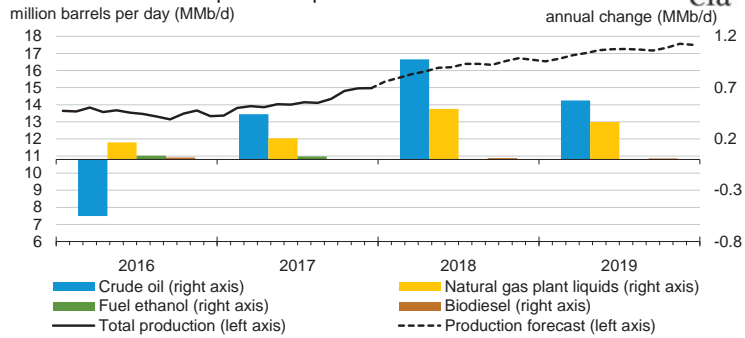
Source: Short-Term Energy Outlook, January 2018.

OECD commercial stocks of crude oil and other liquids



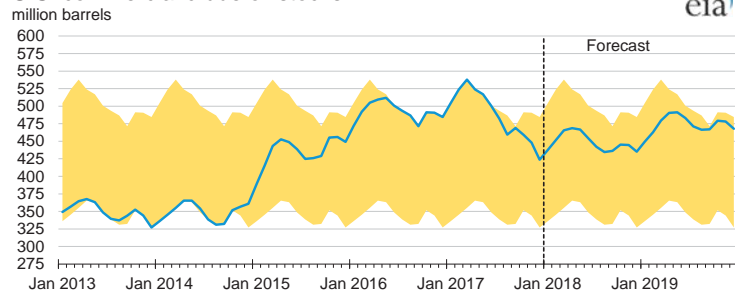
Note: Colored band around days of supply of crude oil and other liquids stocks represents the range between the minimum and maximum from Jan. 2013 - Dec. 2017.
 Source: Short-Term Energy Outlook, January 2018.

U.S. crude oil and liquid fuels production



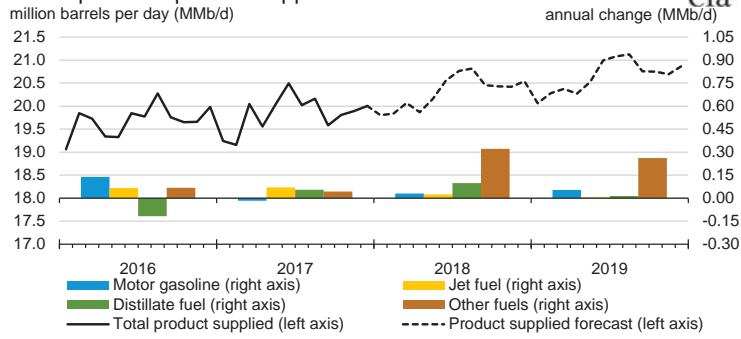
Source: Short-Term Energy Outlook, January 2018.

U.S. commercial crude oil stocks



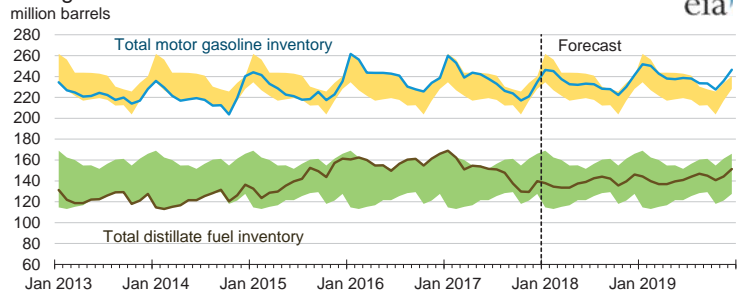
Note: Colored band around storage levels represents the range between the minimum and maximum from Jan. 2013 - Dec. 2017.
 Source: Short-Term Energy Outlook, January 2018.

U.S. liquid fuels product supplied



Source: Short-Term Energy Outlook, January 2018.

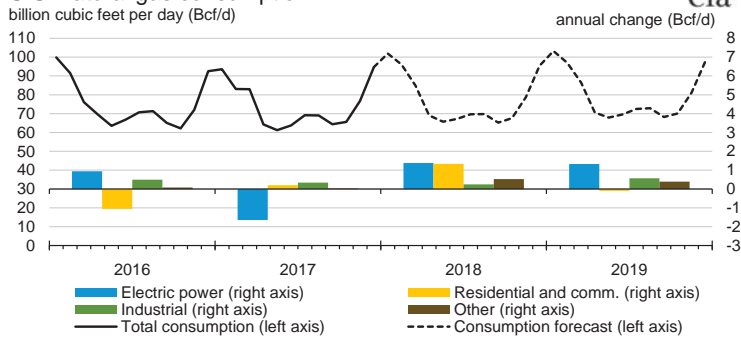
U.S. gasoline and distillate inventories



Note: Colored bands around storage levels represent the range between the minimum and maximum from Jan. 2013 - Dec. 2017.

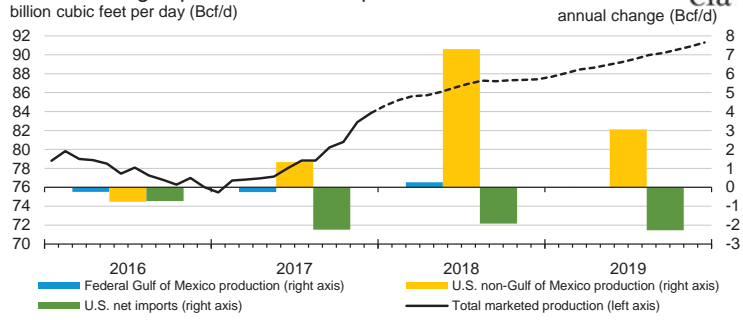
Source: Short-Term Energy Outlook, January 2018.

U.S. natural gas consumption



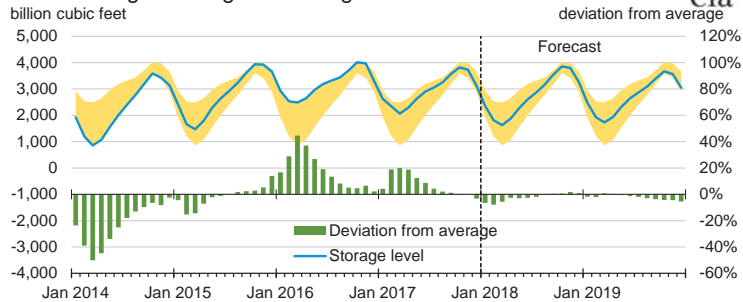
Source: Short-Term Energy Outlook, January 2018.

U.S. natural gas production and imports



Source: Short-Term Energy Outlook, January 2018.

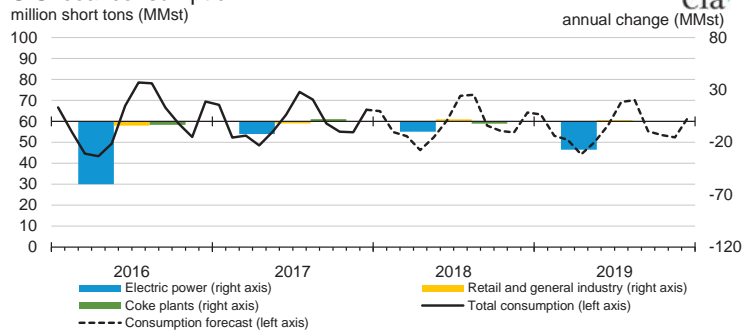
U.S. working natural gas in storage



Note: Colored band around storage levels represents the range between the minimum and maximum from Jan. 2013 - Dec. 2017.

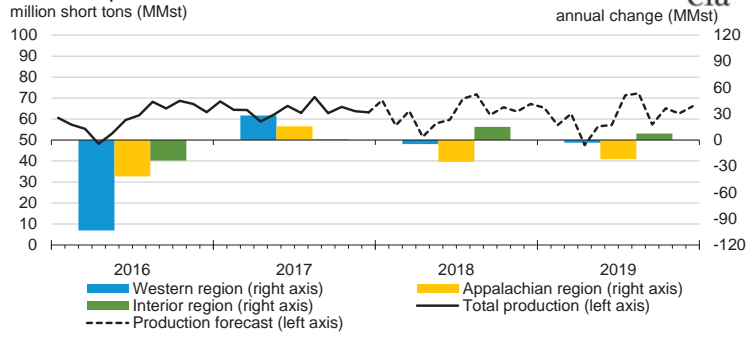
Source: Short-Term Energy Outlook, January 2018.

U.S. coal consumption



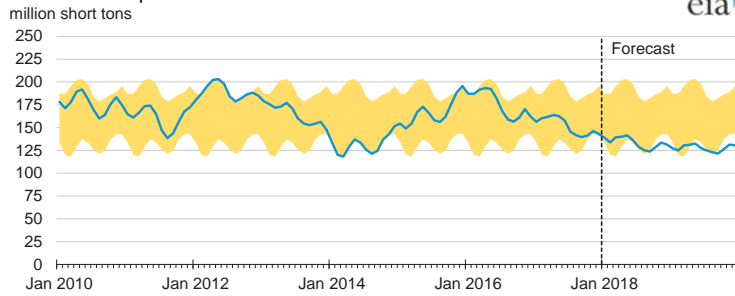
Source: Short-Term Energy Outlook, January 2018.

U.S. coal production



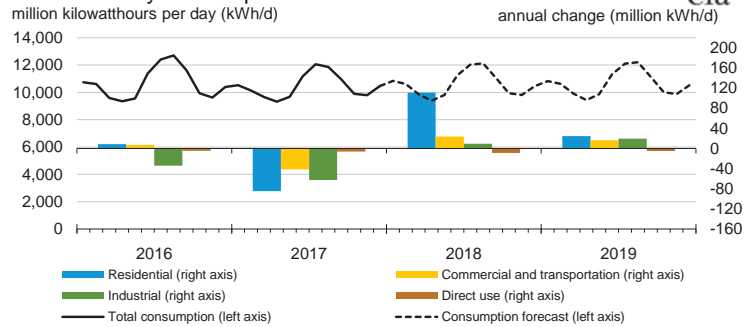
Source: Short-Term Energy Outlook, January 2018.

U.S. electric power coal stocks



Source: Short-Term Energy Outlook, January 2018.

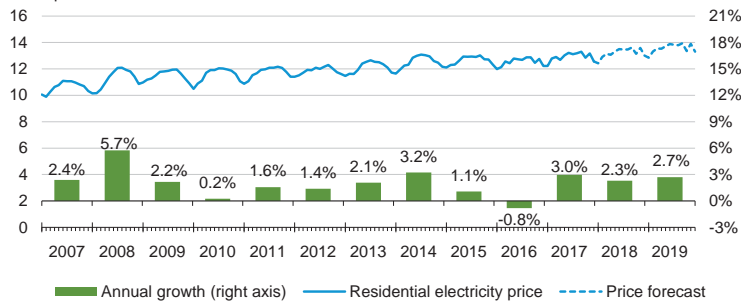
U.S. electricity consumption



Source: Short-Term Energy Outlook, January 2018.

U.S. residential electricity price

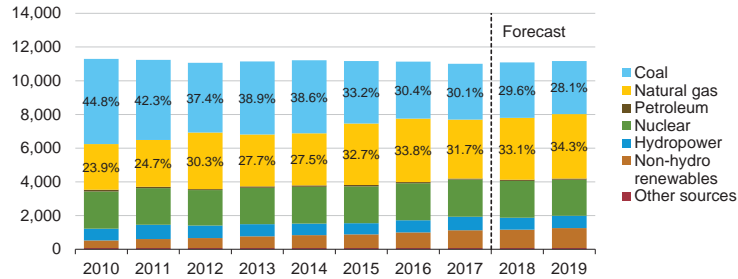
cents per kilowatthour



Source: Short-Term Energy Outlook, January 2018.

U.S. electricity generation by fuel, all sectors

thousand megawatthours per day

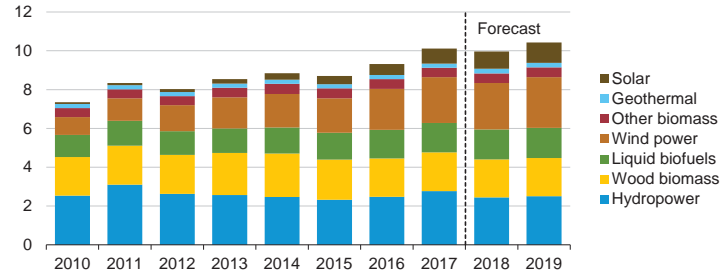


Note: Labels show percentage share of total generation provided by coal and natural gas.

Source: Short-Term Energy Outlook, January 2018.

U.S. renewable energy supply

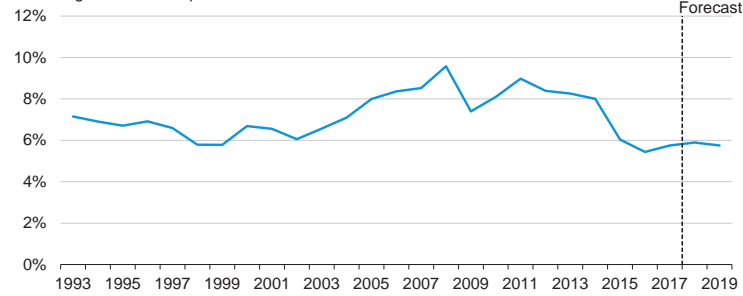
quadrillion British thermal units (Btu)



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

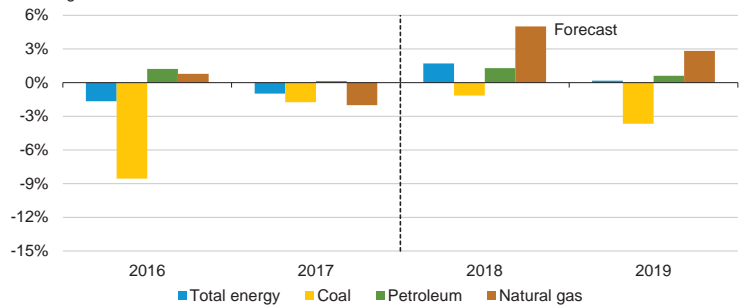
Source: Short-Term Energy Outlook, January 2018.

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



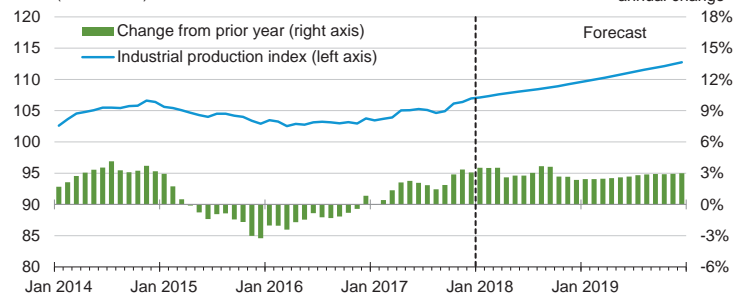
Source: Short-Term Energy Outlook, January 2018.

U.S. energy-related carbon dioxide emissions annual growth



Source: Short-Term Energy Outlook, January 2018.

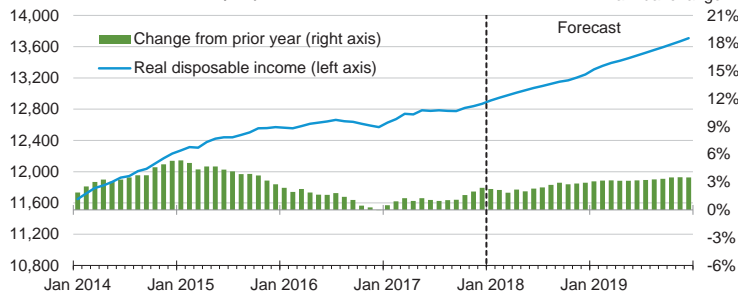
U.S. total industrial production index index (2007 = 100)



Source: Short-Term Energy Outlook, January 2018.

U.S. disposable income

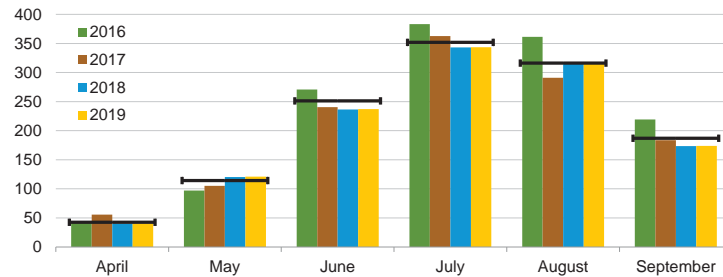
billion 2009 dollars, seasonally adjusted



Source: Short-Term Energy Outlook, January 2018.

U.S. summer cooling degree days

population-weighted

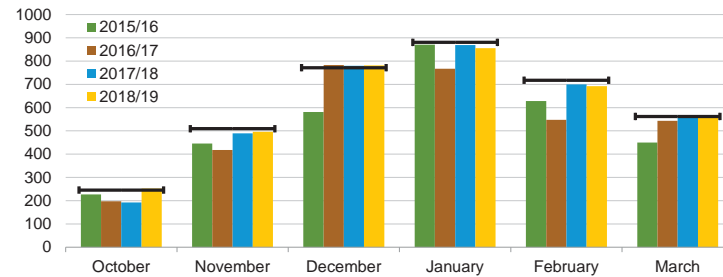


Note: EIA calculations based on from the National Oceanic and Atmospheric Administration data. Horizontal lines indicate each month's prior 10-year average (2008-2017). Projections reflect NOAA's 14-16 month outlook.

Source: Short-Term Energy Outlook, January 2018.

U.S. winter heating degree days

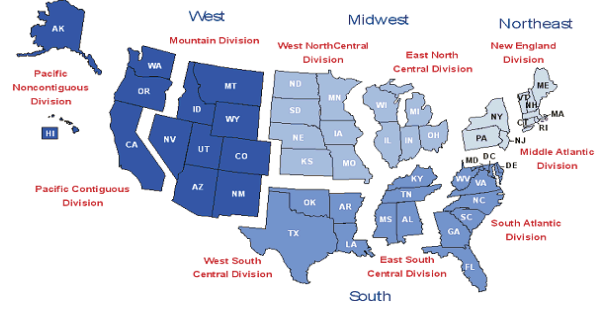
population-weighted



Note: EIA calculations based on National Oceanic and Atmospheric Administration (NOAA) data. Horizontal lines indicate each month's prior 10-year average (Oct 2007 - Mar 2017). Projections reflect NOAA's 14-16 month outlook.

Source: Short-Term Energy Outlook, January 2018.

U.S. census regions and divisions



Source: Short-Term Energy Outlook, January 2018.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

Fuel / Region	Winter of							Forecast	
	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	% Change
Natural Gas									
Northeast									
Consumption (Mcf**)	80.7	66.5	76.1	84.1	84.7	67.8	72.5	77.1	6.3
Price (\$/mcf)	12.66	12.21	11.71	11.53	10.82	10.19	10.74	11.17	4.0
Expenditures (\$)	1,022	812	891	969	916	691	778	861	10.5
Midwest									
Consumption (Mcf)	80.3	65.4	77.6	88.1	83.1	67.7	68.9	77.0	11.8
Price (\$/mcf)	9.23	8.99	8.36	8.69	8.56	7.58	8.31	8.52	2.5
Expenditures (\$)	740	587	648	766	711	513	573	656	14.5
South									
Consumption (Mcf)	49.3	40.8	46.5	52.1	50.5	40.7	38.6	45.0	16.8
Price (\$/mcf)	11.02	11.45	10.71	10.77	10.82	10.80	12.29	12.16	-1.1
Expenditures (\$)	543	468	498	561	546	440	474	547	15.5
West									
Consumption (Mcf)	49.4	49.1	48.6	46.4	41.5	45.9	46.9	45.7	-2.4
Price (\$/mcf)	9.67	9.35	9.13	9.96	10.72	9.93	10.69	10.47	-2.0
Expenditures (\$)	478	459	444	462	444	456	501	479	-4.4
U.S. Average									
Consumption (Mcf)	65.0	55.7	62.5	68.0	64.8	55.8	56.9	61.3	7.8
Price (\$/mcf)	10.46	10.25	9.72	9.97	9.91	9.30	10.12	10.20	0.9
Expenditures (\$)	680	571	607	678	642	519	575	626	8.8
Heating Oil									
U.S. Average									
Consumption (gallons)	580.8	471.2	545.6	607.3	608.1	481.6	517.3	553.4	7.0
Price (\$/gallon)	3.38	3.73	3.87	3.88	3.04	2.06	2.41	2.84	17.7
Expenditures (\$)	1,966	1,757	2,114	2,353	1,849	993	1,247	1,570	25.9
Electricity									
Northeast									
Consumption (kWh***)	7,076	6,437	6,863	7,223	7,253	6,496	6,710	6,911	3.0
Price (\$/kwh)	0.154	0.154	0.152	0.163	0.168	0.164	0.165	0.168	2.0
Expenditures (\$)	1,091	993	1,046	1,177	1,219	1,066	1,105	1,162	5.1
Midwest									
Consumption (kWh)	8,733	7,898	8,589	9,169	8,857	8,031	8,096	8,551	5.6
Price (\$/kwh)	0.105	0.111	0.112	0.112	0.118	0.122	0.123	0.125	1.5
Expenditures (\$)	915	875	958	1,031	1,045	978	1,000	1,071	7.2
South									
Consumption (kWh)	8,221	7,467	7,974	8,382	8,281	7,461	7,315	7,830	7.0
Price (\$/kwh)	0.104	0.107	0.107	0.109	0.111	0.110	0.112	0.114	1.7
Expenditures (\$)	855	798	851	913	919	824	817	890	8.9
West									
Consumption (kWh)	7,217	7,192	7,151	6,983	6,602	6,957	7,031	6,946	-1.2
Price (\$/kwh)	0.112	0.115	0.119	0.123	0.127	0.130	0.132	0.139	5.2
Expenditures (\$)	809	825	848	861	836	903	926	963	4.0
U.S. Average									
Consumption (kWh)	7,843	7,252	7,671	7,981	7,801	7,243	7,228	7,573	4.8
Price (\$/kwh)	0.113	0.116	0.117	0.120	0.123	0.124	0.125	0.128	2.2
Expenditures (\$)	884	842	895	955	960	896	906	970	7.1

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

U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

Fuel / Region	Winter of							Forecast	
	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	% Change
Propane									
Northeast									
Consumption (gallons)	717.6	595.7	676.0	745.4	751.5	607.5	650.3	686.9	5.6
Price* (\$/gallon)	3.24	3.34	3.00	3.56	3.00	2.71	3.06	3.27	6.9
Expenditures (\$)	2,322	1,991	2,031	2,654	2,254	1,646	1,990	2,246	12.9
Midwest									
Consumption (gallons)	792.0	644.4	766.4	868.7	813.2	667.6	679.1	759.3	11.8
Price* (\$/gallon)	2.11	2.23	1.74	2.61	1.91	1.47	1.73	1.93	11.6
Expenditures (\$)	1,674	1,437	1,334	2,267	1,553	981	1,175	1,466	24.7
Number of households by primary space heating fuel (thousands)									
Northeast									
Natural gas	11,118	11,236	11,345	11,522	11,694	11,786	11,913	12,011	0.8
Heating oil	5,858	5,701	5,458	5,241	5,092	4,913	4,767	4,620	-3.1
Propane	744	761	813	845	855	888	899	901	0.2
Electricity	2,776	2,894	3,011	3,036	3,090	3,243	3,356	3,421	1.9
Wood	512	548	582	585	569	515	442	388	-12.1
Other/None	315	324	377	436	437	430	445	468	5.1
Midwest									
Natural gas	17,977	18,019	18,054	18,072	18,190	18,204	18,151	18,022	-0.7
Heating oil	419	393	360	336	319	301	283	263	-7.1
Propane	2,073	2,037	2,063	2,088	2,083	2,074	2,061	2,050	-0.5
Electricity	4,922	5,119	5,333	5,422	5,509	5,726	5,926	6,111	3.1
Wood	618	631	640	632	616	584	566	553	-2.3
Other/None	289	282	319	353	350	352	363	375	3.3
South									
Natural gas	13,657	13,636	13,681	13,793	13,907	13,954	14,029	14,013	-0.1
Heating oil	853	790	738	698	681	653	624	595	-4.6
Propane	2,098	2,024	1,982	1,943	1,923	1,900	1,875	1,831	-2.3
Electricity	26,555	27,283	27,857	28,230	28,817	29,521	30,111	30,619	1.7
Wood	599	609	612	616	592	547	545	569	4.4
Other/None	309	304	367	419	407	414	423	429	1.5
West									
Natural gas	15,020	15,021	15,009	15,059	15,213	15,317	15,432	15,456	0.2
Heating oil	279	261	247	234	225	220	212	202	-4.9
Propane	914	885	909	930	914	926	921	901	-2.3
Electricity	8,126	8,439	8,671	8,754	8,919	9,214	9,460	9,689	2.4
Wood	725	736	728	744	748	717	714	718	0.7
Other/None	850	829	903	1,015	1,074	1,082	1,097	1,156	5.4
U.S. Totals									
Natural gas	57,771	57,912	58,088	58,446	59,004	59,262	59,525	59,502	0.0
Heating oil	7,408	7,145	6,803	6,509	6,317	6,087	5,885	5,679	-3.5
Propane	5,829	5,707	5,766	5,806	5,776	5,787	5,756	5,683	-1.3
Electricity	42,380	43,734	44,873	45,442	46,335	47,704	48,854	49,841	2.0
Wood	2,454	2,524	2,563	2,576	2,526	2,362	2,266	2,229	-1.7
Other/None	1,763	1,739	1,965	2,222	2,269	2,278	2,328	2,428	4.3
Heating degree days									
Northeast	5,338	4,219	4,965	5,596	5,647	4,322	4,700	5,049	7.4
Midwest	5,774	4,485	5,545	6,452	6,002	4,688	4,792	5,494	14.6
South	2,629	2,020	2,428	2,784	2,689	2,013	1,882	2,314	23.0
West	3,259	3,231	3,183	2,991	2,568	2,958	3,047	2,946	-3.3
U.S. Average	3,939	3,225	3,721	4,110	3,881	3,203	3,257	3,599	10.5

Note: Winter covers the period October 1 through March 31. Fuel prices are nominal prices. Fuel consumption per household is based only on households that use that fuel as the primary space-heating fuel. Included in fuel consumption is consumption for water heating, appliances, and lighting (electricity). Per-household consumption based on an average of EIA 2005 and 2009 Residential Energy Consumption Surveys corrected for actual and projected heating degree days. Number of households using heating oil includes kerosene.

* Prices exclude taxes

** thousand cubic feet

*** kilowatthour

Table 1. U.S. Energy Markets Summary

U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Energy Supply															
Crude Oil Production (a) (million barrels per day)	8.99	9.10	9.29	9.80	<i>10.04</i>	<i>10.24</i>	<i>10.30</i>	<i>10.51</i>	<i>10.71</i>	<i>10.83</i>	<i>10.80</i>	<i>11.04</i>	9.30	<i>10.27</i>	<i>10.85</i>
Dry Natural Gas Production (billion cubic feet per day)	71.28	72.09	73.99	76.84	<i>79.29</i>	<i>80.13</i>	<i>81.04</i>	<i>81.19</i>	<i>81.80</i>	<i>82.55</i>	<i>83.42</i>	<i>84.30</i>	73.57	<i>80.42</i>	<i>83.02</i>
Coal Production (million short tons)	197	187	196	193	<i>190</i>	<i>169</i>	<i>203</i>	<i>196</i>	<i>185</i>	<i>161</i>	<i>201</i>	<i>194</i>	773	<i>759</i>	<i>741</i>
Energy Consumption															
Liquid Fuels (million barrels per day)	19.49	20.03	19.92	19.90	<i>19.91</i>	<i>20.19</i>	<i>20.68</i>	<i>20.46</i>	<i>20.24</i>	<i>20.60</i>	<i>20.99</i>	<i>20.77</i>	19.84	<i>20.31</i>	<i>20.65</i>
Natural Gas (billion cubic feet per day)	86.64	63.05	67.53	79.08	<i>94.21</i>	<i>67.27</i>	<i>68.26</i>	<i>80.61</i>	<i>95.55</i>	<i>69.33</i>	<i>71.23</i>		74.04	<i>77.53</i>	<i>79.72</i>
Coal (b) (million short tons)	173	167	203	175	<i>173</i>	<i>159</i>	<i>203</i>	<i>174</i>	<i>168</i>	<i>152</i>	<i>195</i>	<i>168</i>	719	<i>709</i>	<i>683</i>
Electricity (billion kilowatt hours per day)	10.11	10.05	11.64	10.06	<i>10.43</i>	<i>10.15</i>	<i>11.74</i>	<i>10.08</i>	<i>10.45</i>	<i>10.21</i>	<i>11.82</i>	<i>10.14</i>	10.47	<i>10.60</i>	<i>10.66</i>
Renewables (c) (quadrillion Btu)	2.76	2.96	2.54	2.60	<i>2.64</i>	<i>2.83</i>	<i>2.61</i>	<i>2.64</i>	<i>2.74</i>	<i>2.96</i>	<i>2.73</i>	<i>2.77</i>	10.85	<i>10.72</i>	<i>11.20</i>
Total Energy Consumption (d) (quadrillion Btu)	25.08	23.24	24.40	24.36	<i>25.45</i>	<i>23.10</i>	<i>24.39</i>	<i>24.75</i>	<i>25.63</i>	<i>23.38</i>	<i>24.69</i>	<i>25.04</i>	97.08	<i>97.69</i>	<i>98.74</i>
Energy Prices															
Crude Oil West Texas Intermediate Spot (dollars per barrel)	51.64	48.15	48.16	55.27	<i>54.01</i>	<i>54.00</i>	<i>55.97</i>	<i>57.31</i>	<i>56.00</i>	<i>56.66</i>	<i>58.00</i>	<i>59.00</i>	50.79	<i>55.33</i>	<i>57.43</i>
Natural Gas Henry Hub Spot (dollars per million Btu)	3.01	3.08	2.95	2.90	<i>3.08</i>	<i>2.75</i>	<i>2.79</i>	<i>2.91</i>	<i>3.14</i>	<i>2.76</i>	<i>2.80</i>	<i>2.98</i>	2.99	<i>2.88</i>	<i>2.92</i>
Coal (dollars per million Btu)	2.08	2.12	2.07	2.15	<i>2.20</i>	<i>2.20</i>	<i>2.22</i>	<i>2.21</i>	<i>2.22</i>	<i>2.20</i>	<i>2.22</i>	<i>2.20</i>	2.10	<i>2.21</i>	<i>2.21</i>
Macroeconomic															
Real Gross Domestic Product (billion chained 2009 dollars - SAAR)	16,903	17,031	17,170	17,278	<i>17,364</i>	<i>17,457</i>	<i>17,550</i>	<i>17,656</i>	<i>17,763</i>	<i>17,870</i>	<i>17,977</i>	<i>18,081</i>	17,096	<i>17,507</i>	<i>17,923</i>
Percent change from prior year	2.0	2.2	2.3	2.5	<i>2.7</i>	<i>2.5</i>	<i>2.2</i>	<i>2.2</i>	<i>2.3</i>	<i>2.4</i>	<i>2.4</i>	<i>2.4</i>	2.3	<i>2.4</i>	<i>2.4</i>
GDP Implicit Price Deflator (Index, 2009=100)	112.8	113.0	113.6	114.3	<i>115.0</i>	<i>115.6</i>	<i>116.2</i>	<i>116.8</i>	<i>117.5</i>	<i>118.2</i>	<i>118.8</i>	<i>119.4</i>	113.4	<i>115.9</i>	<i>118.5</i>
Percent change from prior year	2.0	1.6	1.8	1.9	<i>2.0</i>	<i>2.2</i>	<i>2.3</i>	<i>2.2</i>	<i>2.2</i>	<i>2.3</i>	<i>2.2</i>	<i>2.2</i>	1.8	<i>2.2</i>	<i>2.2</i>
Real Disposable Personal Income (billion chained 2009 dollars - SAAR)	12,680	12,766	12,781	12,842	<i>12,945</i>	<i>13,042</i>	<i>13,125</i>	<i>13,206</i>	<i>13,353</i>	<i>13,454</i>	<i>13,557</i>	<i>13,669</i>	12,767	<i>13,080</i>	<i>13,508</i>
Percent change from prior year	0.9	1.1	1.0	2.0	<i>2.1</i>	<i>2.2</i>	<i>2.7</i>	<i>2.8</i>	<i>3.1</i>	<i>3.2</i>	<i>3.3</i>	<i>3.5</i>	1.3	<i>2.4</i>	<i>3.3</i>
Manufacturing Production Index (Index, 2012=100)	103.7	104.5	104.1	106.0	<i>106.7</i>	<i>107.3</i>	<i>107.7</i>	<i>108.4</i>	<i>109.1</i>	<i>109.9</i>	<i>110.5</i>	<i>111.2</i>	104.6	<i>107.5</i>	<i>110.2</i>
Percent change from prior year	0.8	1.8	1.4	2.8	<i>2.9</i>	<i>2.7</i>	<i>3.5</i>	<i>2.3</i>	<i>2.3</i>	<i>2.4</i>	<i>2.7</i>	<i>2.6</i>	1.7	<i>2.8</i>	<i>2.5</i>
Weather															
U.S. Heating Degree-Days	1,858	428	65	1,462	<i>2,137</i>	<i>493</i>	<i>79</i>	<i>1,529</i>	<i>2,115</i>	<i>492</i>	<i>79</i>	<i>1,527</i>	3,813	<i>4,238</i>	<i>4,213</i>
U.S. Cooling Degree-Days	70	402	837	116	<i>43</i>	<i>397</i>	<i>834</i>	<i>91</i>	<i>43</i>	<i>398</i>	<i>836</i>	<i>91</i>	1,425	<i>1,366</i>	<i>1,368</i>

- = no data available

Prices are not adjusted for inflation.

(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. Consequently, the historical data may not precisely match those published in the MER or the Annual Energy Review (AER).

Notes: 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; *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.

Projections: EIA Regional Short-Term Energy Model. U.S. macroeconomic projections are based on the IHS Markit model of the U.S. Economy.

Weather projections from National Oceanic and Atmospheric Administration.

Table 2. Energy Prices

U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Crude Oil (dollars per barrel)															
West Texas Intermediate Spot Average	51.64	48.15	48.16	55.27	<i>54.01</i>	<i>54.00</i>	<i>55.97</i>	<i>57.31</i>	<i>56.00</i>	<i>56.66</i>	<i>58.00</i>	<i>59.00</i>	50.79	55.33	57.43
Brent Spot Average	53.57	49.59	52.09	61.42	<i>59.68</i>	<i>58.00</i>	<i>59.97</i>	<i>61.31</i>	<i>60.00</i>	<i>60.66</i>	<i>62.00</i>	<i>63.00</i>	54.15	59.74	61.43
U.S. Imported Average	47.94	46.12	47.47	51.95	<i>50.53</i>	<i>50.50</i>	<i>52.48</i>	<i>53.84</i>	<i>52.50</i>	<i>53.17</i>	<i>54.50</i>	<i>55.50</i>	48.26	51.76	53.87
U.S. Refiner Average Acquisition Cost	49.91	47.66	48.32	54.43	<i>53.02</i>	<i>53.00</i>	<i>54.97</i>	<i>56.35</i>	<i>55.00</i>	<i>55.68</i>	<i>57.00</i>	<i>58.00</i>	50.08	54.34	56.43
U.S. Liquid Fuels (cents per gallon)															
Refiner Prices for Resale															
Gasoline	163	165	172	179	<i>174</i>	<i>183</i>	<i>184</i>	<i>174</i>	<i>170</i>	<i>188</i>	<i>187</i>	<i>175</i>	170	179	180
Diesel Fuel	162	155	169	191	<i>192</i>	<i>184</i>	<i>190</i>	<i>193</i>	<i>187</i>	<i>189</i>	<i>195</i>	<i>197</i>	169	190	192
Heating Oil	154	144	154	184	<i>191</i>	<i>175</i>	<i>180</i>	<i>187</i>	<i>185</i>	<i>180</i>	<i>185</i>	<i>190</i>	160	186	186
Refiner Prices to End Users															
Jet Fuel	158	150	162	184	<i>188</i>	<i>177</i>	<i>183</i>	<i>187</i>	<i>185</i>	<i>184</i>	<i>190</i>	<i>193</i>	164	184	188
No. 6 Residual Fuel Oil (a)	128	120	124	135	<i>134</i>	<i>130</i>	<i>134</i>	<i>139</i>	<i>137</i>	<i>136</i>	<i>140</i>	<i>143</i>	127	134	139
Retail Prices Including Taxes															
Gasoline Regular Grade (b)	233	238	244	251	<i>251</i>	<i>261</i>	<i>262</i>	<i>252</i>	<i>245</i>	<i>266</i>	<i>266</i>	<i>254</i>	242	257	258
Gasoline All Grades (b)	244	250	255	263	<i>263</i>	<i>272</i>	<i>273</i>	<i>264</i>	<i>257</i>	<i>277</i>	<i>278</i>	<i>266</i>	253	268	270
On-highway Diesel Fuel	257	255	263	287	<i>297</i>	<i>289</i>	<i>294</i>	<i>300</i>	<i>296</i>	<i>297</i>	<i>303</i>	<i>308</i>	265	295	301
Heating Oil	247	238	234	275	<i>290</i>	<i>272</i>	<i>273</i>	<i>284</i>	<i>286</i>	<i>275</i>	<i>278</i>	<i>288</i>	254	284	284
Natural Gas															
Henry Hub Spot (dollars per thousand cubic feet)	3.12	3.19	3.06	3.01	<i>3.19</i>	<i>2.86</i>	<i>2.90</i>	<i>3.02</i>	<i>3.25</i>	<i>2.86</i>	<i>2.90</i>	<i>3.09</i>	3.10	2.99	3.03
Henry Hub Spot (dollars per million Btu)	3.01	3.08	2.95	2.90	<i>3.08</i>	<i>2.75</i>	<i>2.79</i>	<i>2.91</i>	<i>3.14</i>	<i>2.76</i>	<i>2.80</i>	<i>2.98</i>	2.99	2.88	2.92
U.S. Retail Prices (dollars per thousand cubic feet)															
Industrial Sector	4.50	4.12	3.89	4.11	<i>4.51</i>	<i>3.80</i>	<i>3.79</i>	<i>4.14</i>	<i>4.58</i>	<i>3.84</i>	<i>3.82</i>	<i>4.21</i>	4.17	4.08	4.13
Commercial Sector	7.71	8.32	8.71	7.75	<i>7.70</i>	<i>8.07</i>	<i>8.44</i>	<i>7.71</i>	<i>7.68</i>	<i>8.18</i>	<i>8.48</i>	<i>7.75</i>	7.94	7.84	7.87
Residential Sector	9.73	13.00	17.74	10.76	<i>9.64</i>	<i>12.06</i>	<i>16.39</i>	<i>10.49</i>	<i>9.67</i>	<i>12.24</i>	<i>16.54</i>	<i>10.55</i>	11.12	10.70	10.77
U.S. Electricity															
Power Generation Fuel Costs (dollars per million Btu)															
Coal	2.08	2.12	2.07	2.15	<i>2.20</i>	<i>2.20</i>	<i>2.22</i>	<i>2.21</i>	<i>2.22</i>	<i>2.20</i>	<i>2.22</i>	<i>2.20</i>	2.10	2.21	2.21
Natural Gas	3.68	3.38	3.19	3.18	<i>3.69</i>	<i>3.03</i>	<i>3.10</i>	<i>3.40</i>	<i>3.74</i>	<i>2.99</i>	<i>3.03</i>	<i>3.40</i>	3.33	3.28	3.26
Residual Fuel Oil (c)	11.16	10.60	10.03	10.99	<i>11.59</i>	<i>11.84</i>	<i>11.43</i>	<i>11.55</i>	<i>11.46</i>	<i>12.04</i>	<i>11.82</i>	<i>11.84</i>	10.68	11.59	11.76
Distillate Fuel Oil	12.74	12.23	13.13	15.23	<i>15.76</i>	<i>13.68</i>	<i>14.02</i>	<i>16.17</i>	<i>16.22</i>	<i>13.97</i>	<i>14.15</i>	<i>16.17</i>	13.38	15.06	15.21
Retail Prices (cents per kilowatthour)															
Industrial Sector	6.64	6.88	7.26	6.95	<i>6.89</i>	<i>7.05</i>	<i>7.50</i>	<i>7.12</i>	<i>6.94</i>	<i>7.13</i>	<i>7.59</i>	<i>7.20</i>	6.94	7.15	7.22
Commercial Sector	10.39	10.68	11.03	10.57	<i>10.56</i>	<i>10.90</i>	<i>11.32</i>	<i>10.85</i>	<i>10.73</i>	<i>10.93</i>	<i>11.29</i>	<i>10.89</i>	10.68	10.92	10.97
Residential Sector	12.60	13.00	13.20	12.83	<i>12.79</i>	<i>13.31</i>	<i>13.51</i>	<i>13.23</i>	<i>13.21</i>	<i>13.72</i>	<i>13.85</i>	<i>13.49</i>	12.92	13.22	13.58

- = no data available

Prices are not adjusted for inflation.

(a) Average for all sulfur contents.

(b) Average self-service cash price.

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

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

Prices exclude taxes unless otherwise noted.

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

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

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

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

Projections: EIA Regional Short-Term Energy Model.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Supply (million barrels per day) (a)															
OECD	27.12	26.92	27.09	27.83	<i>28.51</i>	<i>29.15</i>	<i>29.33</i>	<i>29.91</i>	<i>29.99</i>	<i>30.37</i>	<i>30.37</i>	<i>30.81</i>	27.24	29.23	30.39
U.S. (50 States)	15.00	15.32	15.48	16.25	<i>16.41</i>	<i>16.95</i>	<i>17.20</i>	<i>17.46</i>	<i>17.53</i>	<i>17.99</i>	<i>18.04</i>	<i>18.28</i>	15.52	17.01	17.96
Canada	5.05	4.71	5.00	4.85	<i>5.01</i>	<i>5.18</i>	<i>5.28</i>	<i>5.38</i>	<i>5.40</i>	<i>5.40</i>	<i>5.44</i>	<i>5.48</i>	4.90	5.21	5.43
Mexico	2.36	2.34	2.19	2.19	<i>2.22</i>	<i>2.21</i>	<i>2.20</i>	<i>2.19</i>	<i>2.18</i>	<i>2.17</i>	<i>2.16</i>	<i>2.14</i>	2.27	2.20	2.16
Other OECD	4.70	4.55	4.42	4.53	<i>4.87</i>	<i>4.82</i>	<i>4.65</i>	<i>4.87</i>	<i>4.81</i>	<i>4.74</i>	<i>4.74</i>	<i>4.90</i>	4.55	4.80	4.83
Non-OECD	70.02	70.78	71.30	70.81	<i>70.36</i>	<i>71.21</i>	<i>71.54</i>	<i>71.31</i>	<i>70.96</i>	<i>71.59</i>	<i>72.22</i>	<i>72.09</i>	70.73	71.11	71.72
OPEC	38.84	39.32	39.68	39.40	<i>39.29</i>	<i>39.67</i>	<i>39.80</i>	<i>39.81</i>	<i>39.77</i>	<i>39.97</i>	<i>40.32</i>	<i>40.43</i>	39.31	39.64	40.12
Crude Oil Portion	32.08	32.32	32.89	32.58	<i>32.38</i>	<i>32.73</i>	<i>32.81</i>	<i>32.79</i>	<i>32.69</i>	<i>32.82</i>	<i>33.11</i>	<i>33.16</i>	32.47	32.68	32.95
Other Liquids (b)	6.77	7.00	6.79	6.82	<i>6.90</i>	<i>6.94</i>	<i>6.98</i>	<i>7.08</i>	<i>7.02</i>	<i>7.15</i>	<i>7.21</i>	<i>7.27</i>	6.85	6.96	7.18
Eurasia	14.43	14.31	14.23	14.34	<i>14.47</i>	<i>14.45</i>	<i>14.37</i>	<i>14.39</i>	<i>14.47</i>	<i>14.43</i>	<i>14.46</i>	<i>14.51</i>	14.33	14.42	14.47
China	4.82	4.82	4.73	4.76	<i>4.71</i>	<i>4.74</i>	<i>4.74</i>	<i>4.78</i>	<i>4.72</i>	<i>4.74</i>	<i>4.73</i>	<i>4.77</i>	4.78	4.75	4.74
Other Non-OECD	11.93	12.34	12.65	12.31	<i>11.89</i>	<i>12.35</i>	<i>12.63</i>	<i>12.32</i>	<i>12.00</i>	<i>12.45</i>	<i>12.71</i>	<i>12.39</i>	12.31	12.30	12.39
Total World Supply	97.14	97.70	98.39	98.64	<i>98.87</i>	<i>100.36</i>	<i>100.87</i>	<i>101.21</i>	<i>100.95</i>	<i>101.95</i>	<i>102.59</i>	<i>102.90</i>	97.97	100.34	102.11
Non-OPEC Supply	58.29	58.38	58.70	59.24	<i>59.58</i>	<i>60.69</i>	<i>61.07</i>	<i>61.40</i>	<i>61.18</i>	<i>61.98</i>	<i>62.28</i>	<i>62.47</i>	58.66	60.69	61.98
Consumption (million barrels per day) (c)															
OECD	46.78	46.91	47.43	47.33	<i>47.45</i>	<i>46.83</i>	<i>48.04</i>	<i>48.10</i>	<i>47.82</i>	<i>47.19</i>	<i>48.33</i>	<i>48.44</i>	47.11	47.61	47.95
U.S. (50 States)	19.49	20.03	19.92	19.90	<i>19.90</i>	<i>20.18</i>	<i>20.70</i>	<i>20.48</i>	<i>20.24</i>	<i>20.58</i>	<i>21.01</i>	<i>20.79</i>	19.84	20.32	20.66
U.S. Territories	0.15	0.15	0.13	0.09	<i>0.09</i>	<i>0.10</i>	<i>0.12</i>	<i>0.13</i>	<i>0.15</i>	<i>0.15</i>	<i>0.15</i>	<i>0.15</i>	0.13	0.11	0.15
Canada	2.35	2.34	2.50	2.44	<i>2.37</i>	<i>2.31</i>	<i>2.42</i>	<i>2.41</i>	<i>2.37</i>	<i>2.31</i>	<i>2.42</i>	<i>2.41</i>	2.41	2.38	2.38
Europe	13.93	14.32	14.73	14.24	<i>14.21</i>	<i>14.26</i>	<i>14.68</i>	<i>14.41</i>	<i>14.20</i>	<i>14.17</i>	<i>14.63</i>	<i>14.44</i>	14.31	14.39	14.36
Japan	4.33	3.64	3.69	4.05	<i>4.24</i>	<i>3.47</i>	<i>3.58</i>	<i>3.96</i>	<i>4.19</i>	<i>3.42</i>	<i>3.53</i>	<i>3.91</i>	3.93	3.81	3.76
Other OECD	6.52	6.44	6.46	6.62	<i>6.64</i>	<i>6.51</i>	<i>6.55</i>	<i>6.71</i>	<i>6.68</i>	<i>6.55</i>	<i>6.59</i>	<i>6.75</i>	6.51	6.60	6.64
Non-OECD	50.73	51.35	51.38	51.63	<i>51.91</i>	<i>52.60</i>	<i>52.65</i>	<i>52.83</i>	<i>53.10</i>	<i>53.90</i>	<i>54.00</i>	<i>54.23</i>	51.28	52.50	53.81
Eurasia	4.76	4.75	5.02	4.89	<i>4.80</i>	<i>4.84</i>	<i>5.11</i>	<i>4.99</i>	<i>4.85</i>	<i>4.90</i>	<i>5.17</i>	<i>5.05</i>	4.86	4.94	4.99
Europe	0.70	0.71	0.73	0.73	<i>0.71</i>	<i>0.72</i>	<i>0.74</i>	<i>0.74</i>	<i>0.72</i>	<i>0.72</i>	<i>0.74</i>	<i>0.74</i>	0.72	0.73	0.73
China	13.43	13.22	12.90	13.29	<i>13.74</i>	<i>13.54</i>	<i>13.25</i>	<i>13.72</i>	<i>13.99</i>	<i>13.86</i>	<i>13.60</i>	<i>14.11</i>	13.21	13.56	13.89
Other Asia	12.99	13.31	12.97	13.44	<i>13.65</i>	<i>13.82</i>	<i>13.45</i>	<i>13.76</i>	<i>14.06</i>	<i>14.24</i>	<i>13.85</i>	<i>14.18</i>	13.18	13.67	14.08
Other Non-OECD	18.85	19.36	19.77	19.27	<i>19.01</i>	<i>19.68</i>	<i>20.10</i>	<i>19.63</i>	<i>19.48</i>	<i>20.18</i>	<i>20.63</i>	<i>20.15</i>	19.32	19.61	20.11
Total World Consumption	97.51	98.26	98.81	98.96	<i>99.36</i>	<i>99.43</i>	<i>100.69</i>	<i>100.93</i>	<i>100.92</i>	<i>101.09</i>	<i>102.32</i>	<i>102.67</i>	98.39	100.11	101.76
Total Crude Oil and Other Liquids Inventory Net Withdrawals (million barrels per day)															
U.S. (50 States)	0.00	0.22	0.34	0.93	<i>-0.24</i>	<i>-0.44</i>	<i>-0.09</i>	<i>0.44</i>	<i>-0.25</i>	<i>-0.51</i>	<i>-0.08</i>	<i>0.34</i>	0.38	-0.08	-0.12
Other OECD	-0.49	0.04	0.16	-0.21	<i>0.25</i>	<i>-0.16</i>	<i>-0.03</i>	<i>-0.25</i>	<i>0.08</i>	<i>-0.12</i>	<i>-0.07</i>	<i>-0.19</i>	-0.12	-0.05	-0.07
Other Stock Draws and Balance	0.86	0.31	-0.07	-0.40	<i>0.47</i>	<i>-0.32</i>	<i>-0.06</i>	<i>-0.48</i>	<i>0.15</i>	<i>-0.24</i>	<i>-0.13</i>	<i>-0.37</i>	0.17	-0.10	-0.15
Total Stock Draw	0.37	0.57	0.42	0.32	<i>0.48</i>	<i>-0.93</i>	<i>-0.18</i>	<i>-0.28</i>	<i>-0.03</i>	<i>-0.86</i>	<i>-0.27</i>	<i>-0.22</i>	0.42	-0.23	-0.35
End-of-period Commercial Crude Oil and Other Liquids Inventories															
U.S. Commercial Inventory	1,338	1,330	1,305	1,229	<i>1,251</i>	<i>1,294</i>	<i>1,304</i>	<i>1,267</i>	<i>1,294</i>	<i>1,344</i>	<i>1,355</i>	<i>1,325</i>	1,229	1,267	1,325
OECD Commercial Inventory	3,011	2,999	2,964	2,908	<i>2,907</i>	<i>2,965</i>	<i>2,978</i>	<i>2,964</i>	<i>2,983</i>	<i>3,044</i>	<i>3,061</i>	<i>3,049</i>	2,908	2,964	3,049

- = 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, 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, Ecuador, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, Venezuela.

(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 *Retroleum 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.

Notes: 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.

Projections: EIA Regional Short-Term Energy Model.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
North America	22.41	22.37	22.67	23.29	<i>23.64</i>	<i>24.34</i>	<i>24.68</i>	<i>25.04</i>	<i>25.11</i>	<i>25.56</i>	<i>25.64</i>	<i>25.91</i>	22.69	<i>24.43</i>	<i>25.56</i>
Canada	5.05	4.71	5.00	4.85	<i>5.01</i>	<i>5.18</i>	<i>5.28</i>	<i>5.38</i>	<i>5.40</i>	<i>5.40</i>	<i>5.44</i>	<i>5.48</i>	4.90	<i>5.21</i>	<i>5.43</i>
Mexico	2.36	2.34	2.19	2.19	<i>2.22</i>	<i>2.21</i>	<i>2.20</i>	<i>2.19</i>	<i>2.18</i>	<i>2.17</i>	<i>2.16</i>	<i>2.14</i>	2.27	<i>2.20</i>	<i>2.16</i>
United States	15.00	15.32	15.48	16.25	<i>16.41</i>	<i>16.95</i>	<i>17.20</i>	<i>17.46</i>	<i>17.53</i>	<i>17.99</i>	<i>18.04</i>	<i>18.28</i>	15.52	<i>17.01</i>	<i>17.96</i>
Central and South America	4.91	5.40	5.76	5.40	<i>5.01</i>	<i>5.50</i>	<i>5.81</i>	<i>5.53</i>	<i>5.17</i>	<i>5.68</i>	<i>5.98</i>	<i>5.71</i>	5.37	<i>5.46</i>	<i>5.64</i>
Argentina	0.67	0.67	0.69	0.69	<i>0.66</i>	<i>0.66</i>	<i>0.69</i>	<i>0.68</i>	<i>0.66</i>	<i>0.65</i>	<i>0.68</i>	<i>0.68</i>	0.68	<i>0.67</i>	<i>0.67</i>
Brazil	2.95	3.44	3.76	3.43	<i>3.06</i>	<i>3.54</i>	<i>3.85</i>	<i>3.56</i>	<i>3.23</i>	<i>3.73</i>	<i>4.03</i>	<i>3.75</i>	3.40	<i>3.51</i>	<i>3.69</i>
Colombia	0.87	0.88	0.88	0.86	<i>0.86</i>	<i>0.88</i>	<i>0.85</i>	<i>0.86</i>	<i>0.86</i>	<i>0.87</i>	<i>0.85</i>	<i>0.85</i>	0.87	<i>0.86</i>	<i>0.86</i>
Other Central and S. America	0.42	0.42	0.42	0.41	<i>0.42</i>	<i>0.42</i>	<i>0.42</i>	<i>0.42</i>	<i>0.43</i>	<i>0.42</i>	<i>0.43</i>	<i>0.43</i>	0.42	<i>0.42</i>	<i>0.43</i>
Europe	4.22	4.05	3.91	4.01	<i>4.34</i>	<i>4.28</i>	<i>4.09</i>	<i>4.30</i>	<i>4.28</i>	<i>4.19</i>	<i>4.10</i>	<i>4.26</i>	4.05	<i>4.25</i>	<i>4.21</i>
Norway	2.09	2.01	1.90	1.95	<i>2.13</i>	<i>2.05</i>	<i>2.02</i>	<i>2.10</i>	<i>2.09</i>	<i>2.02</i>	<i>2.01</i>	<i>2.08</i>	1.99	<i>2.08</i>	<i>2.05</i>
United Kingdom	1.10	1.07	1.00	1.04	<i>1.20</i>	<i>1.23</i>	<i>1.07</i>	<i>1.19</i>	<i>1.18</i>	<i>1.18</i>	<i>1.10</i>	<i>1.17</i>	1.05	<i>1.17</i>	<i>1.16</i>
Eurasia	14.43	14.31	14.23	14.34	<i>14.47</i>	<i>14.45</i>	<i>14.37</i>	<i>14.39</i>	<i>14.47</i>	<i>14.43</i>	<i>14.46</i>	<i>14.51</i>	14.33	<i>14.42</i>	<i>14.47</i>
Azerbaijan	0.79	0.80	0.79	0.81	<i>0.81</i>	<i>0.80</i>	<i>0.78</i>	<i>0.77</i>	<i>0.78</i>	<i>0.78</i>	<i>0.77</i>	<i>0.76</i>	0.80	<i>0.79</i>	<i>0.77</i>
Kazakhstan	1.87	1.87	1.86	1.93	<i>2.03</i>	<i>2.02</i>	<i>2.03</i>	<i>2.08</i>	<i>2.11</i>	<i>2.04</i>	<i>2.09</i>	<i>2.14</i>	1.88	<i>2.04</i>	<i>2.10</i>
Russia	11.32	11.18	11.14	11.13	<i>11.18</i>	<i>11.17</i>	<i>11.10</i>	<i>11.09</i>	<i>11.13</i>	<i>11.16</i>	<i>11.16</i>	<i>11.17</i>	11.19	<i>11.13</i>	<i>11.16</i>
Turkmenistan	0.28	0.28	0.29	0.29	<i>0.29</i>	<i>0.29</i>	<i>0.29</i>	<i>0.28</i>	<i>0.28</i>	<i>0.28</i>	<i>0.28</i>	<i>0.28</i>	0.28	<i>0.29</i>	<i>0.28</i>
Other Eurasia	0.16	0.17	0.16	0.18	<i>0.18</i>	<i>0.18</i>	<i>0.18</i>	<i>0.17</i>	<i>0.17</i>	<i>0.17</i>	<i>0.17</i>	<i>0.16</i>	0.17	<i>0.17</i>	<i>0.17</i>
Middle East	1.07	1.07	1.07	1.11	<i>1.11</i>	<i>1.09</i>	<i>1.07</i>	<i>1.05</i>	<i>1.05</i>	<i>1.03</i>	<i>1.02</i>	<i>1.00</i>	1.08	<i>1.08</i>	<i>1.03</i>
Oman	0.98	0.98	0.98	1.01	<i>0.99</i>	<i>0.97</i>	<i>0.95</i>	<i>0.94</i>	<i>0.92</i>	<i>0.90</i>	<i>0.88</i>	<i>0.87</i>	0.99	<i>0.96</i>	<i>0.89</i>
Asia and Oceania	9.35	9.29	9.19	9.25	<i>9.24</i>	<i>9.26</i>	<i>9.27</i>	<i>9.31</i>	<i>9.28</i>	<i>9.29</i>	<i>9.28</i>	<i>9.29</i>	9.27	<i>9.27</i>	<i>9.28</i>
Australia	0.35	0.36	0.37	0.36	<i>0.36</i>	<i>0.37</i>	<i>0.38</i>	<i>0.39</i>	<i>0.42</i>	<i>0.43</i>	<i>0.45</i>	<i>0.46</i>	0.36	<i>0.38</i>	<i>0.44</i>
China	4.82	4.82	4.73	4.76	<i>4.71</i>	<i>4.74</i>	<i>4.74</i>	<i>4.78</i>	<i>4.72</i>	<i>4.74</i>	<i>4.73</i>	<i>4.77</i>	4.78	<i>4.75</i>	<i>4.74</i>
India	1.01	1.00	1.00	0.99	<i>1.00</i>	<i>0.99</i>	<i>0.99</i>	<i>0.99</i>	<i>1.00</i>	<i>0.99</i>	<i>0.99</i>	<i>0.99</i>	1.00	<i>0.99</i>	<i>0.99</i>
Indonesia	0.92	0.91	0.90	0.89	<i>0.89</i>	<i>0.89</i>	<i>0.88</i>	<i>0.89</i>	<i>0.88</i>	<i>0.87</i>	<i>0.86</i>	<i>0.85</i>	0.90	<i>0.89</i>	<i>0.87</i>
Malaysia	0.74	0.72	0.71	0.73	<i>0.74</i>	<i>0.74</i>	<i>0.73</i>	<i>0.72</i>	<i>0.72</i>	<i>0.71</i>	<i>0.70</i>	<i>0.69</i>	0.72	<i>0.73</i>	<i>0.70</i>
Vietnam	0.29	0.29	0.28	0.28	<i>0.28</i>	<i>0.28</i>	<i>0.28</i>	<i>0.27</i>	<i>0.27</i>	<i>0.26</i>	<i>0.26</i>	<i>0.25</i>	0.28	<i>0.28</i>	<i>0.26</i>
Africa	1.89	1.89	1.87	1.83	<i>1.78</i>	<i>1.78</i>	<i>1.78</i>	<i>1.78</i>	<i>1.80</i>	<i>1.80</i>	<i>1.80</i>	<i>1.80</i>	1.87	<i>1.78</i>	<i>1.80</i>
Egypt	0.68	0.68	0.67	0.63	<i>0.59</i>	<i>0.59</i>	<i>0.59</i>	<i>0.59</i>	<i>0.56</i>	<i>0.56</i>	<i>0.56</i>	<i>0.56</i>	0.67	<i>0.59</i>	<i>0.56</i>
South Sudan	0.15	0.15	0.15	0.15	<i>0.12</i>	<i>0.12</i>	<i>0.12</i>	<i>0.12</i>	<i>0.12</i>	<i>0.12</i>	<i>0.12</i>	<i>0.12</i>	0.15	<i>0.12</i>	<i>0.12</i>
Total non-OPEC liquids	58.29	58.38	58.70	59.24	<i>59.58</i>	<i>60.69</i>	<i>61.07</i>	<i>61.40</i>	<i>61.18</i>	<i>61.98</i>	<i>62.28</i>	<i>62.47</i>	58.66	<i>60.69</i>	<i>61.98</i>
OPEC non-crude liquids	6.77	7.00	6.79	6.82	<i>6.90</i>	<i>6.94</i>	<i>6.98</i>	<i>7.02</i>	<i>7.08</i>	<i>7.15</i>	<i>7.21</i>	<i>7.27</i>	6.85	<i>6.96</i>	<i>7.18</i>
Non-OPEC + OPEC non-crude	65.06	65.38	65.49	66.06	<i>66.49</i>	<i>67.63</i>	<i>68.06</i>	<i>68.43</i>	<i>68.26</i>	<i>69.13</i>	<i>69.49</i>	<i>69.74</i>	65.50	<i>67.66</i>	<i>69.16</i>
Unplanned non-OPEC Production Outages	0.43	0.68	0.60	0.42	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	0.53	<i>n/a</i>	<i>n/a</i>

- = no data available

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

Notes: 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.

Projections: EIA Regional Short-Term Energy Model.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Crude Oil															
Algeria	1.04	1.03	1.03	1.00	-	-	-	-	-	-	-	-	1.03	-	-
Angola	1.64	1.66	1.66	1.63	-	-	-	-	-	-	-	-	1.65	-	-
Ecuador	0.53	0.53	0.54	0.54	-	-	-	-	-	-	-	-	0.54	-	-
Equatorial Guinea	0.14	0.14	0.13	0.13	-	-	-	-	-	-	-	-	0.13	-	-
Gabon	0.19	0.20	0.20	0.20	-	-	-	-	-	-	-	-	0.20	-	-
Iran	3.80	3.81	3.83	3.84	-	-	-	-	-	-	-	-	3.82	-	-
Iraq	4.46	4.44	4.50	4.36	-	-	-	-	-	-	-	-	4.44	-	-
Kuwait	2.74	2.71	2.72	2.72	-	-	-	-	-	-	-	-	2.72	-	-
Libya	0.65	0.72	0.94	0.97	-	-	-	-	-	-	-	-	0.82	-	-
Nigeria	1.38	1.49	1.68	1.72	-	-	-	-	-	-	-	-	1.57	-	-
Qatar	0.62	0.61	0.61	0.60	-	-	-	-	-	-	-	-	0.61	-	-
Saudi Arabia	9.98	10.09	10.18	10.11	-	-	-	-	-	-	-	-	10.09	-	-
United Arab Emirates	2.92	2.90	2.92	2.90	-	-	-	-	-	-	-	-	2.91	-	-
Venezuela	1.99	1.97	1.95	1.85	-	-	-	-	-	-	-	-	1.94	-	-
OPEC Total	32.08	32.32	32.89	32.58	32.38	32.73	32.81	32.79	32.69	32.82	33.11	33.16	32.47	32.68	32.95
Other Liquids (a)	6.77	7.00	6.79	6.82	6.90	6.94	6.98	7.02	7.08	7.15	7.21	7.27	6.85	6.96	7.18
Total OPEC Supply	38.84	39.32	39.68	39.40	39.29	39.67	39.80	39.81	39.77	39.97	40.32	40.43	39.31	39.64	40.12
Crude Oil Production Capacity															
Africa	5.04	5.24	5.65	5.66	5.61	5.57	5.55	5.54	5.51	5.53	5.56	5.63	5.40	5.56	5.56
Middle East	26.70	26.69	26.71	26.64	26.60	26.69	26.69	26.67	26.45	26.55	26.67	26.71	26.69	26.67	26.60
South America	2.53	2.51	2.49	2.39	2.34	2.29	2.26	2.21	2.18	2.15	2.11	2.08	2.48	2.27	2.13
OPEC Total	34.27	34.44	34.85	34.69	34.54	34.55	34.50	34.43	34.14	34.22	34.35	34.43	34.56	34.50	34.28
Surplus Crude Oil Production Capacity															
Africa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.01
Middle East	2.19	2.13	1.95	2.11	2.16	1.82	1.69	1.64	1.43	1.38	1.24	1.27	2.09	1.82	1.33
South America	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
OPEC Total	2.19	2.13	1.95	2.11	2.16	1.82	1.69	1.64	1.45	1.40	1.24	1.27	2.09	1.82	1.34
Unplanned OPEC Production Outages	1.81	1.60	1.17	1.19	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	1.44	<i>n/a</i>	<i>n/a</i>

- = no data available

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

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

Notes: 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.

Projections: EIA Regional Short-Term Energy Model.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

	2017				2018				2019				2017	2018	2019
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
North America	23.81	24.36	24.33	24.34	<i>24.26</i>	<i>24.49</i>	<i>25.09</i>	<i>24.87</i>	<i>24.58</i>	<i>24.88</i>	<i>25.39</i>	<i>25.16</i>	24.21	<i>24.68</i>	<i>25.00</i>
Canada	2.35	2.34	2.50	2.44	<i>2.37</i>	<i>2.31</i>	<i>2.42</i>	<i>2.41</i>	<i>2.37</i>	<i>2.31</i>	<i>2.42</i>	<i>2.41</i>	2.41	<i>2.38</i>	<i>2.38</i>
Mexico	1.96	1.98	1.90	1.99	<i>1.97</i>	<i>1.99</i>	<i>1.96</i>	<i>1.97</i>	<i>1.95</i>	<i>1.97</i>	<i>1.94</i>	<i>1.95</i>	1.95	<i>1.97</i>	<i>1.95</i>
United States	19.49	20.03	19.92	19.90	<i>19.90</i>	<i>20.18</i>	<i>20.70</i>	<i>20.48</i>	<i>20.24</i>	<i>20.58</i>	<i>21.01</i>	<i>20.79</i>	19.84	<i>20.32</i>	<i>20.66</i>
Central and South America	7.04	7.02	7.10	7.01	<i>6.88</i>	<i>7.03</i>	<i>7.15</i>	<i>7.14</i>	<i>7.06</i>	<i>7.21</i>	<i>7.32</i>	<i>7.30</i>	7.04	<i>7.05</i>	<i>7.22</i>
Brazil	3.07	3.00	3.07	3.08	<i>3.03</i>	<i>3.08</i>	<i>3.16</i>	<i>3.17</i>	<i>3.15</i>	<i>3.21</i>	<i>3.29</i>	<i>3.30</i>	3.06	<i>3.11</i>	<i>3.24</i>
Europe	14.63	15.02	15.46	14.96	<i>14.92</i>	<i>14.98</i>	<i>15.41</i>	<i>15.15</i>	<i>14.91</i>	<i>14.89</i>	<i>15.37</i>	<i>15.18</i>	15.02	<i>15.12</i>	<i>15.09</i>
Eurasia	4.76	4.75	5.02	4.89	<i>4.80</i>	<i>4.84</i>	<i>5.11</i>	<i>4.99</i>	<i>4.85</i>	<i>4.90</i>	<i>5.17</i>	<i>5.05</i>	4.86	<i>4.94</i>	<i>4.99</i>
Russia	3.61	3.62	3.82	3.69	<i>3.61</i>	<i>3.68</i>	<i>3.89</i>	<i>3.76</i>	<i>3.66</i>	<i>3.73</i>	<i>3.94</i>	<i>3.81</i>	3.68	<i>3.73</i>	<i>3.78</i>
Middle East	8.17	8.70	9.12	8.54	<i>8.30</i>	<i>8.86</i>	<i>9.28</i>	<i>8.68</i>	<i>8.51</i>	<i>9.09</i>	<i>9.53</i>	<i>8.93</i>	8.63	<i>8.78</i>	<i>9.02</i>
Asia and Oceania	34.78	34.10	33.56	34.87	<i>35.73</i>	<i>34.78</i>	<i>34.28</i>	<i>35.63</i>	<i>36.39</i>	<i>35.52</i>	<i>35.04</i>	<i>36.44</i>	34.32	<i>35.10</i>	<i>35.85</i>
China	13.43	13.22	12.90	13.29	<i>13.74</i>	<i>13.54</i>	<i>13.25</i>	<i>13.72</i>	<i>13.99</i>	<i>13.86</i>	<i>13.60</i>	<i>14.11</i>	13.21	<i>13.56</i>	<i>13.89</i>
Japan	4.33	3.64	3.69	4.05	<i>4.24</i>	<i>3.47</i>	<i>3.58</i>	<i>3.96</i>	<i>4.19</i>	<i>3.42</i>	<i>3.53</i>	<i>3.91</i>	3.93	<i>3.81</i>	<i>3.76</i>
India	4.40	4.64	4.36	4.83	<i>4.85</i>	<i>4.93</i>	<i>4.63</i>	<i>4.92</i>	<i>5.12</i>	<i>5.20</i>	<i>4.87</i>	<i>5.18</i>	4.56	<i>4.83</i>	<i>5.09</i>
Africa	4.31	4.30	4.22	4.32	<i>4.45</i>	<i>4.43</i>	<i>4.35</i>	<i>4.46</i>	<i>4.60</i>	<i>4.58</i>	<i>4.49</i>	<i>4.61</i>	4.29	<i>4.42</i>	<i>4.57</i>
Total OECD Liquid Fuels Consumption	46.78	46.91	47.43	47.33	<i>47.45</i>	<i>46.83</i>	<i>48.04</i>	<i>48.10</i>	<i>47.82</i>	<i>47.19</i>	<i>48.33</i>	<i>48.44</i>	47.11	<i>47.61</i>	<i>47.95</i>
Total non-OECD Liquid Fuels Consumption	50.73	51.35	51.38	51.63	<i>51.91</i>	<i>52.60</i>	<i>52.65</i>	<i>52.83</i>	<i>53.10</i>	<i>53.90</i>	<i>54.00</i>	<i>54.23</i>	51.28	<i>52.50</i>	<i>53.81</i>
Total World Liquid Fuels Consumption	97.51	98.26	98.81	98.96	<i>99.36</i>	<i>99.43</i>	<i>100.69</i>	<i>100.93</i>	<i>100.92</i>	<i>101.09</i>	<i>102.32</i>	<i>102.67</i>	98.39	<i>100.11</i>	<i>101.76</i>
Oil-weighted Real Gross Domestic Product (a)															
World Index, 2015 Q1 = 100	105.6	106.4	107.3	108.2	<i>109.3</i>	<i>110.1</i>	<i>110.9</i>	<i>111.8</i>	<i>112.8</i>	<i>113.6</i>	<i>114.4</i>	<i>115.3</i>	106.9	<i>110.5</i>	<i>114.0</i>
Percent change from prior year	3.6	2.9	3.1	3.1	<i>3.5</i>	<i>3.4</i>	<i>3.3</i>	<i>3.3</i>	<i>3.2</i>	<i>3.2</i>	<i>3.2</i>	<i>3.1</i>	3.2	<i>3.4</i>	<i>3.2</i>
OECD Index, 2015 Q1 = 100	103.8	104.4	105.0	105.8	<i>106.6</i>	<i>107.1</i>	<i>107.5</i>	<i>108.2</i>	<i>108.8</i>	<i>109.2</i>	<i>109.6</i>	<i>110.0</i>	104.8	<i>107.4</i>	<i>109.4</i>
Percent change from prior year	3.0	2.1	2.3	2.3	<i>2.7</i>	<i>2.6</i>	<i>2.4</i>	<i>2.3</i>	<i>2.1</i>	<i>1.9</i>	<i>1.9</i>	<i>1.7</i>	2.4	<i>2.5</i>	<i>1.9</i>
Non-OECD Index, 2015 Q1 = 100	107.3	108.4	109.4	110.6	<i>111.8</i>	<i>113.0</i>	<i>114.1</i>	<i>115.3</i>	<i>116.7</i>	<i>117.9</i>	<i>119.1</i>	<i>120.4</i>	108.9	<i>113.6</i>	<i>118.6</i>
Percent change from prior year	4.2	3.6	3.8	3.9	<i>4.2</i>	<i>4.2</i>	<i>4.3</i>	<i>4.3</i>	<i>4.4</i>	<i>4.4</i>	<i>4.4</i>	<i>4.4</i>	3.9	<i>4.3</i>	<i>4.4</i>
Real U.S. Dollar Exchange Rate (a)															
Index, January 2015 = 100	104.91	103.35	101.51	101.49	<i>101.09</i>	<i>100.81</i>	<i>100.62</i>	<i>100.35</i>	<i>100.00</i>	<i>99.79</i>	<i>99.65</i>	<i>99.42</i>	102.81	<i>100.72</i>	<i>99.72</i>
Percent change from prior year	-0.2	0.6	-1.0	-3.2	<i>-3.6</i>	<i>-2.5</i>	<i>-0.9</i>	<i>-1.1</i>	<i>-1.1</i>	<i>-1.0</i>	<i>-1.0</i>	<i>-0.9</i>	-1.0	<i>-2.0</i>	<i>-1.0</i>

- = 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, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States.

(a) Weighted geometric mean of real indices for various countries with weights equal to each country's share of world oil consumption in the base period. Exchange rate is measured in foreign currency per U.S. dollar. GDP and exchange rate data are from Oxford Economics, and oil consumption data are from EIA.

Notes: 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.

Projections: EIA Regional Short-Term Energy Model.

Table 4a. U.S. Petroleum and Other Liquids Supply, Consumption, and Inventories
 U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Supply (million barrels per day)															
Crude Oil Supply															
Domestic Production (a)	8.99	9.10	9.29	9.80	<i>10.04</i>	<i>10.24</i>	<i>10.30</i>	<i>10.51</i>	<i>10.71</i>	<i>10.83</i>	<i>10.80</i>	<i>11.04</i>	9.30	<i>10.27</i>	<i>10.85</i>
Alaska	0.52	0.50	0.45	0.50	<i>0.51</i>	<i>0.48</i>	<i>0.43</i>	<i>0.49</i>	<i>0.51</i>	<i>0.49</i>	<i>0.44</i>	<i>0.49</i>	0.49	<i>0.48</i>	<i>0.48</i>
Federal Gulf of Mexico (b)	1.73	1.62	1.68	1.57	<i>1.70</i>	<i>1.74</i>	<i>1.65</i>	<i>1.76</i>	<i>1.84</i>	<i>1.85</i>	<i>1.73</i>	<i>1.84</i>	1.65	<i>1.71</i>	<i>1.82</i>
Lower 48 States (excl GOM)	6.74	6.98	7.15	7.73	<i>7.83</i>	<i>8.02</i>	<i>8.21</i>	<i>8.26</i>	<i>8.36</i>	<i>8.50</i>	<i>8.62</i>	<i>8.72</i>	7.15	<i>8.08</i>	<i>8.55</i>
Crude Oil Net Imports (c)	7.24	7.24	6.63	6.17	<i>6.57</i>	<i>6.68</i>	<i>6.33</i>	<i>5.67</i>	<i>5.76</i>	<i>6.19</i>	<i>5.80</i>	<i>5.12</i>	6.82	<i>6.31</i>	<i>5.72</i>
SPR Net Withdrawals	0.04	0.14	0.06	0.11	<i>0.01</i>	<i>0.02</i>	<i>0.02</i>	<i>0.04</i>	<i>0.04</i>	<i>0.04</i>	<i>0.04</i>	<i>0.02</i>	0.09	<i>0.02</i>	<i>0.04</i>
Commercial Inventory Net Withdrawals	-0.59	0.41	0.34	0.49	<i>-0.47</i>	<i>0.12</i>	<i>0.20</i>	<i>0.01</i>	<i>-0.49</i>	<i>-0.04</i>	<i>0.18</i>	<i>-0.01</i>	0.17	<i>-0.03</i>	<i>-0.09</i>
Crude Oil Adjustment (d)	0.23	0.24	0.28	0.14	<i>0.19</i>	<i>0.19</i>	<i>0.21</i>	<i>0.15</i>	<i>0.19</i>	<i>0.19</i>	<i>0.21</i>	<i>0.15</i>	0.22	<i>0.19</i>	<i>0.19</i>
Total Crude Oil Input to Refineries	15.91	17.13	16.60	16.72	<i>16.34</i>	<i>17.25</i>	<i>17.06</i>	<i>16.38</i>	<i>16.22</i>	<i>17.21</i>	<i>17.03</i>	<i>16.33</i>	16.59	<i>16.76</i>	<i>16.70</i>
Other Supply															
Refinery Processing Gain	1.09	1.13	1.07	1.11	<i>1.07</i>	<i>1.12</i>	<i>1.13</i>	<i>1.10</i>	<i>1.07</i>	<i>1.11</i>	<i>1.12</i>	<i>1.10</i>	1.10	<i>1.11</i>	<i>1.10</i>
Natural Gas Plant Liquids Production	3.54	3.70	3.72	3.90	<i>3.92</i>	<i>4.16</i>	<i>4.34</i>	<i>4.41</i>	<i>4.36</i>	<i>4.59</i>	<i>4.65</i>	<i>4.67</i>	3.71	<i>4.21</i>	<i>4.57</i>
Renewables and Oxygenate Production (e)	1.17	1.16	1.19	1.21	<i>1.14</i>	<i>1.18</i>	<i>1.20</i>	<i>1.20</i>	<i>1.14</i>	<i>1.19</i>	<i>1.21</i>	<i>1.21</i>	1.18	<i>1.18</i>	<i>1.19</i>
Fuel Ethanol Production	1.04	1.01	1.02	1.05	<i>1.02</i>	<i>1.04</i>	<i>1.04</i>	<i>1.04</i>	<i>1.01</i>	<i>1.04</i>	<i>1.04</i>	<i>1.04</i>	1.03	<i>1.03</i>	<i>1.03</i>
Petroleum Products Adjustment (f)	0.21	0.22	0.21	0.23	<i>0.23</i>	<i>0.25</i>	<i>0.24</i>	<i>0.24</i>	<i>0.24</i>	<i>0.26</i>	<i>0.25</i>	<i>0.25</i>	0.22	<i>0.24</i>	<i>0.25</i>
Product Net Imports (c)	-2.96	-2.99	-2.80	-3.60	<i>-3.02</i>	<i>-3.18</i>	<i>-2.98</i>	<i>-3.26</i>	<i>-2.99</i>	<i>-3.26</i>	<i>-2.99</i>	<i>-3.13</i>	-3.09	<i>-3.11</i>	<i>-3.09</i>
Hydrocarbon Gas Liquids	-1.20	-1.18	-1.16	-1.30	<i>-1.28</i>	<i>-1.33</i>	<i>-1.33</i>	<i>-1.54</i>	<i>-1.31</i>	<i>-1.47</i>	<i>-1.46</i>	<i>-1.61</i>	-1.21	<i>-1.37</i>	<i>-1.46</i>
Unfinished Oils	0.37	0.34	0.38	0.31	<i>0.31</i>	<i>0.40</i>	<i>0.43</i>	<i>0.32</i>	<i>0.37</i>	<i>0.40</i>	<i>0.43</i>	<i>0.32</i>	0.35	<i>0.36</i>	<i>0.38</i>
Other HC/Oxygenates	-0.13	-0.09	-0.09	-0.09	<i>-0.11</i>	<i>-0.09</i>	<i>-0.08</i>	<i>-0.08</i>	<i>-0.09</i>	<i>-0.07</i>	<i>-0.06</i>	<i>-0.07</i>	-0.10	<i>-0.09</i>	<i>-0.08</i>
Motor Gasoline Blend Comp.	0.43	0.68	0.64	0.30	<i>0.46</i>	<i>0.67</i>	<i>0.49</i>	<i>0.43</i>	<i>0.47</i>	<i>0.66</i>	<i>0.48</i>	<i>0.45</i>	0.51	<i>0.51</i>	<i>0.52</i>
Finished Motor Gasoline	-0.66	-0.62	-0.63	-0.87	<i>-0.82</i>	<i>-0.69</i>	<i>-0.50</i>	<i>-0.74</i>	<i>-0.84</i>	<i>-0.67</i>	<i>-0.46</i>	<i>-0.69</i>	-0.70	<i>-0.69</i>	<i>-0.66</i>
Jet Fuel	-0.04	-0.07	-0.01	0.03	<i>-0.02</i>	<i>0.03</i>	<i>0.06</i>	<i>0.08</i>	<i>0.00</i>	<i>0.05</i>	<i>0.08</i>	<i>0.11</i>	-0.02	<i>0.04</i>	<i>0.06</i>
Distillate Fuel Oil	-1.01	-1.36	-1.32	-1.21	<i>-0.96</i>	<i>-1.36</i>	<i>-1.36</i>	<i>-1.05</i>	<i>-1.01</i>	<i>-1.38</i>	<i>-1.33</i>	<i>-0.99</i>	-1.23	<i>-1.19</i>	<i>-1.18</i>
Residual Fuel Oil	-0.10	-0.11	-0.12	-0.12	<i>-0.03</i>	<i>-0.13</i>	<i>-0.10</i>	<i>-0.11</i>	<i>-0.07</i>	<i>-0.14</i>	<i>-0.10</i>	<i>-0.11</i>	-0.11	<i>-0.09</i>	<i>-0.10</i>
Other Oils (g)	-0.61	-0.60	-0.50	-0.64	<i>-0.57</i>	<i>-0.67</i>	<i>-0.59</i>	<i>-0.57</i>	<i>-0.53</i>	<i>-0.65</i>	<i>-0.56</i>	<i>-0.53</i>	-0.59	<i>-0.60</i>	<i>-0.57</i>
Product Inventory Net Withdrawals	0.56	-0.33	-0.07	0.33	<i>0.22</i>	<i>-0.59</i>	<i>-0.31</i>	<i>0.39</i>	<i>0.19</i>	<i>-0.51</i>	<i>-0.29</i>	<i>0.33</i>	0.12	<i>-0.07</i>	<i>-0.07</i>
Total Supply	19.52	20.03	19.92	19.90	<i>19.91</i>	<i>20.19</i>	<i>20.68</i>	<i>20.46</i>	<i>20.24</i>	<i>20.60</i>	<i>20.99</i>	<i>20.77</i>	19.84	<i>20.31</i>	<i>20.65</i>
Consumption (million barrels per day)															
Hydrocarbon Gas Liquids	2.79	2.45	2.33	2.73	<i>2.96</i>	<i>2.61</i>	<i>2.82</i>	<i>3.11</i>	<i>3.30</i>	<i>2.96</i>	<i>3.03</i>	<i>3.27</i>	2.58	<i>2.88</i>	<i>3.14</i>
Unfinished Oils	0.02	0.02	-0.01	0.00	<i>0.00</i>	<i>-0.03</i>	<i>-0.03</i>	<i>0.01</i>	<i>0.00</i>	<i>-0.03</i>	<i>-0.03</i>	<i>0.01</i>	0.01	<i>-0.01</i>	<i>-0.01</i>
Motor Gasoline	8.95	9.54	9.56	9.16	<i>8.94</i>	<i>9.54</i>	<i>9.60</i>	<i>9.24</i>	<i>8.97</i>	<i>9.58</i>	<i>9.66</i>	<i>9.33</i>	9.30	<i>9.33</i>	<i>9.39</i>
Fuel Ethanol blended into Motor Gasoline	0.90	0.96	0.96	0.96	<i>0.91</i>	<i>0.98</i>	<i>0.98</i>	<i>0.95</i>	<i>0.92</i>	<i>0.99</i>	<i>0.99</i>	<i>0.96</i>	0.94	<i>0.96</i>	<i>0.97</i>
Jet Fuel	1.60	1.68	1.71	1.74	<i>1.59</i>	<i>1.73</i>	<i>1.77</i>	<i>1.75</i>	<i>1.60</i>	<i>1.73</i>	<i>1.77</i>	<i>1.76</i>	1.68	<i>1.71</i>	<i>1.72</i>
Distillate Fuel Oil	3.95	3.91	3.87	4.00	<i>4.14</i>	<i>3.95</i>	<i>3.96</i>	<i>4.08</i>	<i>4.10</i>	<i>3.97</i>	<i>3.99</i>	<i>4.11</i>	3.93	<i>4.03</i>	<i>4.04</i>
Residual Fuel Oil	0.37	0.37	0.30	0.36	<i>0.37</i>	<i>0.31</i>	<i>0.33</i>	<i>0.30</i>	<i>0.36</i>	<i>0.31</i>	<i>0.33</i>	<i>0.30</i>	0.35	<i>0.33</i>	<i>0.32</i>
Other Oils (g)	1.83	2.06	2.15	1.92	<i>1.91</i>	<i>2.07</i>	<i>2.24</i>	<i>1.99</i>	<i>1.92</i>	<i>2.07</i>	<i>2.24</i>	<i>2.00</i>	1.99	<i>2.05</i>	<i>2.06</i>
Total Consumption	19.49	20.03	19.92	19.90	<i>19.91</i>	<i>20.19</i>	<i>20.68</i>	<i>20.46</i>	<i>20.24</i>	<i>20.60</i>	<i>20.99</i>	<i>20.77</i>	19.84	<i>20.31</i>	<i>20.65</i>
Total Petroleum and Other Liquids Net Imports	4.28	4.25	3.83	2.58	<i>3.54</i>	<i>3.50</i>	<i>3.35</i>	<i>2.40</i>	<i>2.77</i>	<i>2.93</i>	<i>2.81</i>	<i>2.00</i>	3.73	<i>3.20</i>	<i>2.62</i>
End-of-period Inventories (million barrels)															
Commercial Inventory															
Crude Oil (excluding SPR)	537.9	500.4	469.1	423.8	<i>465.6</i>	<i>454.6</i>	<i>436.2</i>	<i>435.1</i>	<i>479.5</i>	<i>483.1</i>	<i>467.0</i>	<i>467.8</i>	423.8	<i>435.1</i>	<i>467.8</i>
Hydrocarbon Gas Liquids	148.1	190.6	229.7	197.1	<i>161.3</i>	<i>214.8</i>	<i>253.3</i>	<i>205.3</i>	<i>175.9</i>	<i>225.1</i>	<i>261.0</i>	<i>216.4</i>	197.1	<i>205.3</i>	<i>216.4</i>
Unfinished Oils	89.3	88.7	89.2	83.6	<i>90.7</i>	<i>89.0</i>	<i>86.4</i>	<i>79.9</i>	<i>90.2</i>	<i>88.3</i>	<i>86.7</i>	<i>80.0</i>	83.6	<i>79.9</i>	<i>80.0</i>
Other HC/Oxygenates	32.6	29.3	28.3	29.4	<i>31.1</i>	<i>30.1</i>	<i>29.4</i>	<i>30.0</i>	<i>31.8</i>	<i>30.8</i>	<i>30.0</i>	<i>30.7</i>	29.4	<i>30.0</i>	<i>30.7</i>
Total Motor Gasoline	239.0	237.9	223.8	234.6	<i>237.5</i>	<i>233.2</i>	<i>227.9</i>	<i>241.5</i>	<i>242.6</i>	<i>238.6</i>	<i>233.4</i>	<i>246.5</i>	234.6	<i>241.5</i>	<i>246.5</i>
Finished Motor Gasoline	21.7	22.5	21.8	25.3	<i>24.7</i>	<i>23.4</i>	<i>24.0</i>	<i>27.2</i>	<i>24.9</i>	<i>23.8</i>	<i>24.5</i>	<i>25.4</i>	25.3	<i>27.2</i>	<i>25.4</i>
Motor Gasoline Blend Comp.	217.2	215.5	202.0	209.2	<i>212.8</i>	<i>209.8</i>	<i>203.9</i>	<i>214.2</i>	<i>217.8</i>	<i>214.8</i>	<i>208.9</i>	<i>221.1</i>	209.2	<i>214.2</i>	<i>221.1</i>
Jet Fuel	42.3	41.0	43.3	40.7	<i>40.3</i>	<i>41.7</i>	<i>43.0</i>	<i>40.7</i>	<i>40.8</i>	<i>42.4</i>	<i>44.0</i>	<i>41.9</i>	40.7	<i>40.7</i>	<i>41.9</i>
Distillate Fuel Oil	151.1	151.6	137.5	139.8	<i>133.6</i>	<i>139.0</i>	<i>142.2</i>	<i>146.1</i>	<i>137.0</i>	<i>140.9</i>	<i>144.9</i>	<i>151.4</i>	139.8	<i>146.1</i>	<i>151.4</i>
Residual Fuel Oil	40.8	35.2	35.9	30.4	<i>35.7</i>	<i>37.8</i>	<i>37.3</i>	<i>37.8</i>	<i>40.0</i>	<i>40.6</i>	<i>39.3</i>	<i>39.4</i>	30.4	<i>37.8</i>	<i>39.4</i>
Other Oils (g)	56.6	55.2	47.9	49.7	<i>55.4</i>	<i>53.6</i>	<i>47.9</i>	<i>50.5</i>	<i>56.2</i>	<i>54.4</i>	<i>48.7</i>	<i>51.3</i>	49.7	<i>50.5</i>	<i>51.3</i>
Total Commercial Inventory	1,338	1,330	1,305	1,229	<i>1,251</i>	<i>1,294</i>	<i>1,304</i>	<i>1,267</i>	<i>1,294</i>	<i>1,344</i>	<i>1,355</i>	<i>1,325</i>	1,229	<i>1,267</i>	<i>1,325</i>
Crude Oil in SPR	692	679	674	664	<i>663</i>	<i>661</i>	<i>659</i>	<i>655</i>	<i>651</i>	<i>647</i>	<i>643</i>	<i>641</i>	664	<i>655</i>	<i>641</i>

- = no data available

(a) Includes lease condensate.

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

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

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

(e) Renewables and oxygenate production includes pentanes plus, oxygenates (excluding fuel ethanol), and renewable fuels.

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

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

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

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 - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
HGL Production															
Natural Gas Processing Plants															
Ethane	1.33	1.39	1.34	1.48	1.51	1.62	1.73	1.83	1.83	1.93	1.93	1.95	1.39	1.67	1.91
Propane	1.16	1.21	1.23	1.31	1.27	1.33	1.35	1.36	1.34	1.39	1.42	1.43	1.23	1.33	1.40
Butanes	0.63	0.65	0.67	0.65	0.69	0.72	0.74	0.73	0.74	0.76	0.77	0.77	0.65	0.72	0.75
Natural Gasoline (Pentanes Plus)	0.41	0.45	0.48	0.45	0.45	0.49	0.52	0.49	0.47	0.51	0.54	0.52	0.45	0.49	0.51
Refinery and Blender Net Production															
Ethane/Ethylene	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Propane	0.29	0.32	0.30	0.32	0.31	0.33	0.33	0.31	0.31	0.33	0.33	0.32	0.31	0.32	0.32
Propylene (refinery-grade)	0.27	0.29	0.27	0.29	0.28	0.29	0.28	0.28	0.28	0.29	0.28	0.28	0.28	0.28	0.28
Butanes/Butylenes	-0.09	0.27	0.16	-0.17	-0.07	0.26	0.18	-0.19	-0.07	0.26	0.18	-0.18	0.04	0.05	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	-0.15	-0.16	-0.20	-0.19	-0.29	-0.28	-0.29	-0.30	-0.31	-0.30	-0.31	-0.32	-0.18	-0.29	-0.31
Propane/Propylene	-0.79	-0.71	-0.68	-0.82	-0.68	-0.71	-0.71	-0.88	-0.66	-0.81	-0.80	-0.91	-0.75	-0.75	-0.79
Butanes/Butylenes	-0.09	-0.12	-0.11	-0.12	-0.11	-0.13	-0.13	-0.15	-0.11	-0.12	-0.12	-0.14	-0.11	-0.13	-0.12
Natural Gasoline (Pentanes Plus)	-0.18	-0.18	-0.16	-0.17	-0.19	-0.21	-0.21	-0.22	-0.22	-0.23	-0.23	-0.24	-0.17	-0.20	-0.23
HGL Refinery and Blender Net Inputs															
Butanes/Butylenes	0.43	0.30	0.33	0.48	0.41	0.32	0.34	0.50	0.41	0.32	0.34	0.50	0.38	0.39	0.39
Natural Gasoline (Pentanes Plus)	0.16	0.18	0.18	0.16	0.17	0.17	0.19	0.17	0.17	0.18	0.19	0.17	0.17	0.18	0.18
HGL Consumption															
Ethane/Ethylene	1.19	1.23	1.13	1.23	1.25	1.32	1.47	1.54	1.55	1.61	1.63	1.65	1.19	1.40	1.61
Propane	1.05	0.60	0.67	0.90	1.14	0.64	0.71	0.96	1.13	0.66	0.72	0.97	0.80	0.86	0.87
Propylene (refinery-grade)	0.34	0.31	0.28	0.31	0.31	0.31	0.30	0.29	0.31	0.31	0.30	0.29	0.31	0.30	0.30
Butanes/Butylenes	0.12	0.23	0.18	0.17	0.20	0.27	0.27	0.23	0.24	0.31	0.31	0.28	0.17	0.24	0.29
Natural Gasoline (Pentanes Plus)	0.10	0.08	0.08	0.12	0.07	0.07	0.07	0.08	0.06	0.07	0.07	0.08	0.09	0.07	0.07
HGL Inventories (million barrels)															
Ethane	49.65	51.89	51.77	59.49	56.79	59.48	57.78	57.54	53.91	55.89	55.11	54.88	53.23	57.90	54.95
Propane	40.23	57.06	71.59	62.18	39.41	64.33	86.49	69.41	54.56	76.04	94.93	81.65	62.18	69.41	81.65
Propylene (refinery-grade)	3.75	4.01	5.21	4.76	4.00	4.61	4.62	4.82	3.60	3.91	4.01	4.64	4.76	4.82	4.64
Butanes/Butylenes	31.68	57.24	76.10	49.03	38.96	63.05	79.38	48.89	38.82	62.91	79.24	48.75	49.03	48.89	48.75
Natural Gasoline (Pentanes Plus)	21.49	20.55	23.40	21.65	21.51	23.44	25.54	25.89	24.94	26.22	27.95	27.85	21.65	25.89	27.85
Refinery and Blender Net Inputs															
Crude Oil	15.91	17.13	16.60	16.72	16.34	17.25	17.06	16.38	16.22	17.21	17.03	16.33	16.59	16.76	16.70
Hydrocarbon Gas Liquids	0.58	0.48	0.51	0.64	0.58	0.49	0.54	0.67	0.59	0.50	0.54	0.67	0.55	0.57	0.57
Other Hydrocarbons/Oxygenates	1.16	1.24	1.22	1.23	1.17	1.27	1.29	1.27	1.18	1.30	1.32	1.30	1.21	1.25	1.28
Unfinished Oils	0.25	0.33	0.38	0.36	0.23	0.45	0.48	0.39	0.25	0.45	0.48	0.38	0.33	0.39	0.39
Motor Gasoline Blend Components	0.39	0.65	0.67	0.35	0.53	0.82	0.67	0.47	0.58	0.85	0.70	0.50	0.52	0.62	0.66
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	18.30	19.83	19.38	19.31	18.85	20.28	20.04	19.18	18.82	20.31	20.07	19.19	19.21	19.59	19.60
Refinery Processing Gain															
.....	1.09	1.13	1.07	1.11	1.07	1.12	1.13	1.10	1.07	1.11	1.12	1.10	1.10	1.11	1.10
Refinery and Blender Net Production															
Hydrocarbon Gas Liquids	0.48	0.89	0.73	0.43	0.52	0.89	0.79	0.41	0.52	0.89	0.79	0.42	0.64	0.65	0.65
Finished Motor Gasoline	9.57	10.10	10.04	10.15	9.84	10.32	10.20	10.15	9.90	10.38	10.25	10.19	9.97	10.13	10.18
Jet Fuel	1.63	1.74	1.75	1.68	1.61	1.72	1.72	1.64	1.59	1.70	1.71	1.63	1.70	1.67	1.66
Distillate Fuel	4.75	5.18	4.94	5.15	4.95	5.29	5.27	5.08	4.93	5.30	5.28	5.09	5.01	5.15	5.15
Residual Fuel	0.46	0.41	0.43	0.42	0.46	0.47	0.42	0.41	0.45	0.46	0.41	0.41	0.43	0.44	0.43
Other Oils (a)	2.50	2.64	2.56	2.58	2.55	2.72	2.77	2.59	2.51	2.70	2.74	2.56	2.57	2.66	2.63
Total Refinery and Blender Net Production	19.40	20.97	20.46	20.41	19.92	21.40	21.17	20.29	19.89	21.43	21.19	20.29	20.31	20.70	20.70
Refinery Distillation Inputs															
.....	16.23	17.42	16.90	16.98	16.57	17.38	17.29	16.64	16.46	17.35	17.26	16.59	16.89	16.97	16.92
Refinery Operable Distillation Capacity															
.....	18.62	18.58	18.55	18.50	18.50	18.54	18.54	18.54	18.55	18.55	18.58	18.59	18.56	18.53	18.57
Refinery Distillation Utilization Factor															
.....	0.87	0.94	0.91	0.92	0.90	0.94	0.93	0.90	0.89	0.94	0.93	0.89	0.91	0.92	0.91

- = no data available

(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.

Notes: 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.

Projections: EIA Regional Short-Term Energy Model.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Prices (cents per gallon)															
Refiner Wholesale Price	163	165	172	179	<i>174</i>	<i>183</i>	<i>184</i>	<i>174</i>	<i>170</i>	<i>188</i>	<i>187</i>	<i>175</i>	170	<i>179</i>	<i>180</i>
Gasoline Regular Grade Retail Prices Including Taxes															
PADD 1	231	233	241	249	<i>252</i>	<i>257</i>	<i>258</i>	<i>253</i>	<i>248</i>	<i>263</i>	<i>263</i>	<i>256</i>	239	<i>255</i>	<i>257</i>
PADD 2	223	228	232	242	<i>242</i>	<i>253</i>	<i>255</i>	<i>243</i>	<i>235</i>	<i>259</i>	<i>259</i>	<i>245</i>	231	<i>248</i>	<i>250</i>
PADD 3	210	216	222	225	<i>224</i>	<i>233</i>	<i>233</i>	<i>224</i>	<i>219</i>	<i>238</i>	<i>236</i>	<i>225</i>	218	<i>229</i>	<i>230</i>
PADD 4	227	239	245	252	<i>240</i>	<i>250</i>	<i>259</i>	<i>248</i>	<i>229</i>	<i>254</i>	<i>264</i>	<i>250</i>	241	<i>250</i>	<i>250</i>
PADD 5	276	289	290	299	<i>294</i>	<i>311</i>	<i>310</i>	<i>294</i>	<i>284</i>	<i>313</i>	<i>312</i>	<i>293</i>	288	<i>303</i>	<i>301</i>
U.S. Average	233	238	244	251	<i>251</i>	<i>261</i>	<i>262</i>	<i>252</i>	<i>245</i>	<i>266</i>	<i>266</i>	<i>254</i>	242	<i>257</i>	<i>258</i>
Gasoline All Grades Including Taxes	244	250	255	263	<i>263</i>	<i>272</i>	<i>273</i>	<i>264</i>	<i>257</i>	<i>277</i>	<i>278</i>	<i>266</i>	253	<i>268</i>	<i>270</i>
End-of-period Inventories (million barrels)															
Total Gasoline Inventories															
PADD 1	65.3	67.2	58.8	58.7	<i>64.8</i>	<i>65.9</i>	<i>62.4</i>	<i>65.4</i>	<i>67.1</i>	<i>67.6</i>	<i>63.9</i>	<i>67.2</i>	58.7	<i>65.4</i>	<i>67.2</i>
PADD 2	57.0	53.6	50.4	51.2	<i>53.3</i>	<i>50.8</i>	<i>49.6</i>	<i>52.0</i>	<i>54.3</i>	<i>52.0</i>	<i>50.8</i>	<i>53.3</i>	51.2	<i>52.0</i>	<i>53.3</i>
PADD 3	79.1	82.4	78.5	84.4	<i>81.4</i>	<i>80.6</i>	<i>80.5</i>	<i>84.8</i>	<i>83.4</i>	<i>83.0</i>	<i>83.1</i>	<i>86.5</i>	84.4	<i>84.8</i>	<i>86.5</i>
PADD 4	7.9	7.0	6.9	7.3	<i>7.3</i>	<i>7.4</i>	<i>7.3</i>	<i>7.9</i>	<i>7.6</i>	<i>7.6</i>	<i>7.5</i>	<i>8.0</i>	7.3	<i>7.9</i>	<i>8.0</i>
PADD 5	29.7	27.7	29.2	33.0	<i>30.7</i>	<i>28.4</i>	<i>28.0</i>	<i>31.4</i>	<i>30.2</i>	<i>28.3</i>	<i>28.2</i>	<i>31.6</i>	33.0	<i>31.4</i>	<i>31.6</i>
U.S. Total	239.0	237.9	223.8	234.6	<i>237.5</i>	<i>233.2</i>	<i>227.9</i>	<i>241.5</i>	<i>242.6</i>	<i>238.6</i>	<i>233.4</i>	<i>246.5</i>	234.6	<i>241.5</i>	<i>246.5</i>
Finished Gasoline Inventories															
U.S. Total	21.7	22.5	21.8	25.3	<i>24.7</i>	<i>23.4</i>	<i>24.0</i>	<i>27.2</i>	<i>24.9</i>	<i>23.8</i>	<i>24.5</i>	<i>25.4</i>	25.3	<i>27.2</i>	<i>25.4</i>
Gasoline Blending Components Inventories															
U.S. Total	217.2	215.5	202.0	209.2	<i>212.8</i>	<i>209.8</i>	<i>203.9</i>	<i>214.2</i>	<i>217.8</i>	<i>214.8</i>	<i>208.9</i>	<i>221.1</i>	209.2	<i>214.2</i>	<i>221.1</i>

- = no data available

Prices are not adjusted for inflation.

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

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.

Projections: EIA Regional Short-Term Energy Model.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Supply (billion cubic feet per day)															
Total Marketed Production	76.32	77.36	79.28	82.51	<i>85.16</i>	<i>86.10</i>	<i>87.13</i>	<i>87.35</i>	<i>88.06</i>	<i>88.93</i>	<i>89.91</i>	<i>90.91</i>	78.88	<i>86.44</i>	<i>89.46</i>
Alaska	1.01	0.97	0.82	0.96	<i>1.00</i>	<i>0.85</i>	<i>0.77</i>	<i>0.93</i>	<i>1.01</i>	<i>0.86</i>	<i>0.78</i>	<i>0.93</i>	0.94	<i>0.89</i>	<i>0.89</i>
Federal GOM (a)	3.26	2.99	2.91	2.99	<i>3.45</i>	<i>3.33</i>	<i>3.21</i>	<i>3.22</i>	<i>3.45</i>	<i>3.28</i>	<i>3.16</i>	<i>3.17</i>	3.04	<i>3.30</i>	<i>3.27</i>
Lower 48 States (excl GOM)	72.05	73.40	75.54	78.55	<i>80.70</i>	<i>81.92</i>	<i>83.15</i>	<i>83.20</i>	<i>83.60</i>	<i>84.79</i>	<i>85.97</i>	<i>86.81</i>	74.90	<i>82.25</i>	<i>85.30</i>
Total Dry Gas Production	71.28	72.09	73.99	76.84	<i>79.29</i>	<i>80.13</i>	<i>81.04</i>	<i>81.19</i>	<i>81.80</i>	<i>82.55</i>	<i>83.42</i>	<i>84.30</i>	73.57	<i>80.42</i>	<i>83.02</i>
LNG Gross Imports	0.29	0.18	0.17	0.17	<i>0.29</i>	<i>0.16</i>	<i>0.18</i>	<i>0.22</i>	<i>0.29</i>	<i>0.16</i>	<i>0.18</i>	<i>0.25</i>	0.20	<i>0.21</i>	<i>0.22</i>
LNG Gross Exports	1.63	1.80	1.67	2.65	<i>2.93</i>	<i>2.86</i>	<i>2.86</i>	<i>3.48</i>	<i>4.00</i>	<i>4.22</i>	<i>5.14</i>	<i>5.89</i>	1.94	<i>3.03</i>	<i>4.82</i>
Pipeline Gross Imports	8.89	7.76	7.74	7.51	<i>8.28</i>	<i>7.84</i>	<i>7.35</i>	<i>7.34</i>	<i>8.58</i>	<i>7.91</i>	<i>7.79</i>	<i>7.83</i>	7.97	<i>7.70</i>	<i>8.02</i>
Pipeline Gross Exports	7.24	6.49	6.41	6.42	<i>7.96</i>	<i>6.88</i>	<i>6.95</i>	<i>7.03</i>	<i>8.83</i>	<i>7.69</i>	<i>7.80</i>	<i>7.75</i>	6.64	<i>7.20</i>	<i>8.02</i>
Supplemental Gaseous Fuels	0.16	0.13	0.16	0.15	<i>0.16</i>	<i>0.17</i>	<i>0.17</i>	<i>0.17</i>	<i>0.17</i>	<i>0.17</i>	<i>0.17</i>	<i>0.17</i>	0.15	<i>0.17</i>	<i>0.17</i>
Net Inventory Withdrawals	13.72	-9.02	-7.19	4.89	<i>16.63</i>	<i>-10.82</i>	<i>-10.20</i>	<i>3.17</i>	<i>16.90</i>	<i>-9.98</i>	<i>-8.24</i>	<i>3.83</i>	0.55	<i>-0.37</i>	<i>0.57</i>
Total Supply	85.47	62.84	66.79	80.49	<i>93.75</i>	<i>67.74</i>	<i>68.74</i>	<i>81.58</i>	<i>94.90</i>	<i>68.90</i>	<i>70.37</i>	<i>82.74</i>	73.87	<i>77.89</i>	<i>79.17</i>
Balancing Item (b)	1.17	0.21	0.73	-1.41	<i>0.46</i>	<i>-0.46</i>	<i>-0.48</i>	<i>-0.96</i>	<i>0.66</i>	<i>0.43</i>	<i>0.85</i>	<i>0.25</i>	0.17	<i>-0.37</i>	<i>0.55</i>
Total Primary Supply	86.64	63.05	67.53	79.08	<i>94.21</i>	<i>67.27</i>	<i>68.26</i>	<i>80.61</i>	<i>95.55</i>	<i>69.33</i>	<i>71.23</i>	<i>82.99</i>	74.04	<i>77.53</i>	<i>79.72</i>
Consumption (billion cubic feet per day)															
Residential	22.17	6.65	3.55	15.62	<i>25.24</i>	<i>7.15</i>	<i>3.49</i>	<i>15.74</i>	<i>25.01</i>	<i>7.10</i>	<i>3.48</i>	<i>15.83</i>	11.96	<i>12.85</i>	<i>12.80</i>
Commercial	13.50	5.83	4.56	10.61	<i>14.88</i>	<i>6.10</i>	<i>4.59</i>	<i>10.70</i>	<i>14.73</i>	<i>6.10</i>	<i>4.58</i>	<i>10.69</i>	8.61	<i>9.04</i>	<i>9.00</i>
Industrial	22.96	20.45	20.34	22.03	<i>23.21</i>	<i>20.85</i>	<i>20.49</i>	<i>22.24</i>	<i>23.70</i>	<i>21.45</i>	<i>21.14</i>	<i>22.74</i>	21.44	<i>21.69</i>	<i>22.25</i>
Electric Power (c)	21.43	24.08	32.82	24.11	<i>23.66</i>	<i>26.52</i>	<i>32.97</i>	<i>24.83</i>	<i>24.58</i>	<i>27.69</i>	<i>34.85</i>	<i>26.16</i>	25.64	<i>27.01</i>	<i>28.34</i>
Lease and Plant Fuel	4.26	4.32	4.43	4.61	<i>4.75</i>	<i>4.81</i>	<i>4.86</i>	<i>4.88</i>	<i>4.92</i>	<i>4.96</i>	<i>5.02</i>	<i>5.08</i>	4.40	<i>4.83</i>	<i>4.99</i>
Pipeline and Distribution Use	2.20	1.60	1.71	1.98	<i>2.36</i>	<i>1.72</i>	<i>1.74</i>	<i>2.09</i>	<i>2.49</i>	<i>1.90</i>	<i>2.03</i>	<i>2.38</i>	1.87	<i>1.98</i>	<i>2.20</i>
Vehicle Use	0.12	0.12	0.12	0.12	<i>0.12</i>	<i>0.12</i>	<i>0.12</i>	<i>0.12</i>	<i>0.13</i>	<i>0.13</i>	<i>0.13</i>	<i>0.13</i>	0.12	<i>0.12</i>	<i>0.13</i>
Total Consumption	86.64	63.05	67.53	79.08	<i>94.21</i>	<i>67.27</i>	<i>68.26</i>	<i>80.61</i>	<i>95.55</i>	<i>69.33</i>	<i>71.23</i>	<i>82.99</i>	74.04	<i>77.53</i>	<i>79.72</i>
End-of-period Inventories (billion cubic feet)															
Working Gas Inventory	2,063	2,908	3,568	3,120	<i>1,623</i>	<i>2,607</i>	<i>3,545</i>	<i>3,254</i>	<i>1,733</i>	<i>2,641</i>	<i>3,399</i>	<i>3,047</i>	3,120	<i>3,254</i>	<i>3,047</i>
East Region (d)	260	563	866	730	<i>244</i>	<i>544</i>	<i>849</i>	<i>737</i>	<i>247</i>	<i>539</i>	<i>804</i>	<i>700</i>	730	<i>737</i>	<i>700</i>
Midwest Region (d)	478	702	994	861	<i>331</i>	<i>605</i>	<i>984</i>	<i>860</i>	<i>322</i>	<i>581</i>	<i>933</i>	<i>826</i>	861	<i>860</i>	<i>826</i>
South Central Region (d)	938	1,139	1,137	1,049	<i>747</i>	<i>999</i>	<i>1,154</i>	<i>1,151</i>	<i>793</i>	<i>1,009</i>	<i>1,082</i>	<i>1,027</i>	1,049	<i>1,151</i>	<i>1,027</i>
Mountain Region (d)	142	184	218	180	<i>91</i>	<i>139</i>	<i>198</i>	<i>187</i>	<i>134</i>	<i>171</i>	<i>207</i>	<i>171</i>	180	<i>187</i>	<i>171</i>
Pacific Region (d)	219	288	314	263	<i>173</i>	<i>284</i>	<i>323</i>	<i>284</i>	<i>201</i>	<i>305</i>	<i>338</i>	<i>286</i>	263	<i>284</i>	<i>286</i>
Alaska	27	32	39	36	<i>36</i>	<i>36</i>	<i>36</i>	<i>36</i>	<i>36</i>	<i>36</i>	<i>36</i>	<i>36</i>	36	<i>36</i>	<i>36</i>

- = no data available

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

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

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

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

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

LNG: liquefied natural gas.

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

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

Projections: EIA Regional Short-Term Energy Model.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Wholesale/Spot															
Henry Hub Spot Price	3.12	3.19	3.06	3.01	<i>3.19</i>	<i>2.86</i>	<i>2.90</i>	<i>3.02</i>	<i>3.25</i>	<i>2.86</i>	<i>2.90</i>	<i>3.09</i>	3.10	2.99	3.03
Residential Retail															
New England	12.85	14.08	18.12	13.86	<i>12.92</i>	<i>13.76</i>	<i>16.69</i>	<i>13.31</i>	<i>12.93</i>	<i>13.85</i>	<i>16.70</i>	<i>13.31</i>	13.68	13.41	13.44
Middle Atlantic	9.92	12.18	17.11	11.60	<i>9.93</i>	<i>11.78</i>	<i>16.22</i>	<i>10.93</i>	<i>10.02</i>	<i>11.87</i>	<i>16.21</i>	<i>10.80</i>	11.24	10.91	10.95
E. N. Central	7.77	11.52	17.80	8.77	<i>7.92</i>	<i>10.77</i>	<i>16.45</i>	<i>8.79</i>	<i>7.91</i>	<i>10.79</i>	<i>16.42</i>	<i>8.77</i>	9.23	9.08	9.08
W. N. Central	8.32	11.85	18.78	9.54	<i>8.68</i>	<i>11.51</i>	<i>17.36</i>	<i>9.44</i>	<i>8.67</i>	<i>11.66</i>	<i>17.56</i>	<i>9.72</i>	9.81	9.82	9.94
S. Atlantic	12.28	20.04	26.87	14.65	<i>11.64</i>	<i>16.17</i>	<i>21.97</i>	<i>12.59</i>	<i>11.23</i>	<i>16.15</i>	<i>21.96</i>	<i>12.50</i>	15.19	13.21	12.95
E. S. Central	10.53	15.83	20.82	12.66	<i>9.84</i>	<i>14.21</i>	<i>20.02</i>	<i>12.62</i>	<i>10.22</i>	<i>14.64</i>	<i>20.54</i>	<i>12.89</i>	12.57	11.74	12.12
W. S. Central	10.33	16.49	22.10	13.56	<i>9.68</i>	<i>14.22</i>	<i>19.61</i>	<i>12.10</i>	<i>9.46</i>	<i>14.23</i>	<i>19.61</i>	<i>11.98</i>	13.32	12.01	11.77
Mountain	8.21	10.17	13.91	8.86	<i>8.73</i>	<i>10.01</i>	<i>13.44</i>	<i>8.94</i>	<i>8.78</i>	<i>10.18</i>	<i>13.61</i>	<i>9.04</i>	9.18	9.38	9.48
Pacific	12.02	12.64	12.90	11.15	<i>11.90</i>	<i>12.03</i>	<i>12.51</i>	<i>11.29</i>	<i>12.29</i>	<i>12.59</i>	<i>13.03</i>	<i>11.77</i>	11.97	11.80	12.27
U.S. Average	9.73	13.00	17.74	10.76	<i>9.64</i>	<i>12.06</i>	<i>16.39</i>	<i>10.49</i>	<i>9.67</i>	<i>12.24</i>	<i>16.54</i>	<i>10.55</i>	11.12	10.70	10.77
Commercial Retail															
New England	9.55	9.97	10.61	9.67	<i>10.11</i>	<i>10.20</i>	<i>10.15</i>	<i>9.63</i>	<i>9.92</i>	<i>10.15</i>	<i>10.08</i>	<i>9.94</i>	9.76	10.01	9.98
Middle Atlantic	7.66	7.42	6.90	7.53	<i>7.74</i>	<i>7.59</i>	<i>6.93</i>	<i>7.45</i>	<i>7.64</i>	<i>7.56</i>	<i>6.91</i>	<i>7.43</i>	7.49	7.53	7.47
E. N. Central	6.63	7.87	9.02	6.68	<i>6.61</i>	<i>7.62</i>	<i>8.91</i>	<i>6.92</i>	<i>6.64</i>	<i>7.65</i>	<i>8.90</i>	<i>6.91</i>	7.02	7.02	7.04
W. N. Central	6.96	7.79	9.08	7.08	<i>7.35</i>	<i>7.80</i>	<i>8.81</i>	<i>7.19</i>	<i>7.46</i>	<i>7.88</i>	<i>8.85</i>	<i>7.26</i>	7.29	7.48	7.57
S. Atlantic	8.88	9.97	9.62	9.03	<i>8.66</i>	<i>9.16</i>	<i>9.66</i>	<i>8.76</i>	<i>8.63</i>	<i>9.43</i>	<i>9.70</i>	<i>8.68</i>	9.21	8.90	8.91
E. S. Central	9.05	10.28	10.76	9.42	<i>8.66</i>	<i>9.51</i>	<i>9.95</i>	<i>8.86</i>	<i>8.44</i>	<i>9.47</i>	<i>9.93</i>	<i>8.90</i>	9.58	8.99	8.90
W. S. Central	7.63	8.20	8.86	7.96	<i>7.23</i>	<i>7.40</i>	<i>7.95</i>	<i>7.50</i>	<i>7.19</i>	<i>7.64</i>	<i>7.88</i>	<i>7.49</i>	8.03	7.44	7.46
Mountain	6.88	7.37	8.27	7.01	<i>7.36</i>	<i>7.63</i>	<i>8.34</i>	<i>7.23</i>	<i>7.41</i>	<i>7.67</i>	<i>8.36</i>	<i>7.26</i>	7.16	7.47	7.51
Pacific	9.09	9.06	9.08	8.59	<i>8.48</i>	<i>8.14</i>	<i>8.54</i>	<i>8.34</i>	<i>8.49</i>	<i>8.60</i>	<i>8.90</i>	<i>8.56</i>	8.93	8.38	8.60
U.S. Average	7.71	8.32	8.71	7.75	<i>7.70</i>	<i>8.07</i>	<i>8.44</i>	<i>7.71</i>	<i>7.68</i>	<i>8.18</i>	<i>8.48</i>	<i>7.75</i>	7.94	7.84	7.87
Industrial Retail															
New England	7.81	7.04	6.39	7.65	<i>8.51</i>	<i>7.65</i>	<i>6.98</i>	<i>8.10</i>	<i>8.40</i>	<i>7.57</i>	<i>6.93</i>	<i>8.01</i>	7.35	7.95	7.86
Middle Atlantic	7.69	7.59	7.62	6.03	<i>7.27</i>	<i>7.04</i>	<i>7.16</i>	<i>7.52</i>	<i>7.91</i>	<i>7.27</i>	<i>7.24</i>	<i>7.57</i>	7.23	7.27	7.63
E. N. Central	5.86	5.96	5.59	5.43	<i>6.24</i>	<i>5.94</i>	<i>5.87</i>	<i>5.76</i>	<i>6.40</i>	<i>6.03</i>	<i>5.89</i>	<i>5.85</i>	5.71	6.01	6.12
W. N. Central	5.00	4.28	4.24	4.88	<i>5.43</i>	<i>4.59</i>	<i>4.39</i>	<i>4.94</i>	<i>5.53</i>	<i>4.68</i>	<i>4.46</i>	<i>5.06</i>	4.64	4.89	4.98
S. Atlantic	5.35	5.01	4.88	5.09	<i>5.33</i>	<i>4.70</i>	<i>4.71</i>	<i>5.10</i>	<i>5.41</i>	<i>4.79</i>	<i>4.70</i>	<i>5.12</i>	5.09	4.98	5.03
E. S. Central	5.06	4.59	4.40	4.69	<i>4.86</i>	<i>4.30</i>	<i>4.29</i>	<i>4.72</i>	<i>4.97</i>	<i>4.35</i>	<i>4.29</i>	<i>4.72</i>	4.70	4.56	4.60
W. S. Central	3.42	3.42	3.30	3.28	<i>3.41</i>	<i>3.05</i>	<i>3.17</i>	<i>3.24</i>	<i>3.49</i>	<i>3.07</i>	<i>3.20</i>	<i>3.32</i>	3.35	3.22	3.27
Mountain	5.31	5.36	5.61	5.91	<i>5.99</i>	<i>5.72</i>	<i>5.98</i>	<i>5.93</i>	<i>6.02</i>	<i>5.66</i>	<i>5.87</i>	<i>5.88</i>	5.56	5.91	5.88
Pacific	7.31	6.71	6.32	6.34	<i>6.81</i>	<i>6.25</i>	<i>6.33</i>	<i>6.48</i>	<i>6.93</i>	<i>6.37</i>	<i>6.43</i>	<i>6.50</i>	6.70	6.49	6.58
U.S. Average	4.50	4.12	3.89	4.11	<i>4.51</i>	<i>3.80</i>	<i>3.79</i>	<i>4.14</i>	<i>4.58</i>	<i>3.84</i>	<i>3.82</i>	<i>4.21</i>	4.17	4.08	4.13

- = no data available

Prices are not adjusted for inflation.

Notes: 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 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.

Projections: EIA Regional Short-Term Energy Model.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Supply (million short tons)															
Production	197.0	187.1	196.2	192.7	189.7	169.2	203.5	196.4	185.1	161.2	201.0	193.8	773.0	758.7	741.2
Appalachia	50.7	51.2	46.3	47.9	47.6	43.1	40.7	40.1	40.2	36.4	36.1	36.9	196.1	171.4	149.6
Interior	38.5	36.4	34.9	35.0	39.2	35.3	42.7	42.7	44.7	35.4	43.3	43.9	144.8	159.9	167.3
Western	107.8	99.4	115.0	109.8	102.9	90.9	120.1	113.6	100.3	89.4	121.6	113.0	432.1	427.4	424.3
Primary Inventory Withdrawals	0.1	1.8	1.4	0.9	-2.8	2.2	1.1	-0.4	-3.6	1.7	1.4	-2.8	4.2	0.2	-3.3
Imports	1.9	2.2	2.3	1.9	1.4	2.3	2.9	2.6	1.4	2.3	2.9	2.6	8.3	9.2	9.3
Exports	22.3	21.8	24.6	26.4	21.8	19.7	19.6	19.0	18.9	18.0	18.9	19.0	95.1	80.1	74.7
Metallurgical Coal	12.2	13.5	14.8	14.0	13.5	13.5	13.4	13.0	13.4	12.9	13.1	12.7	54.5	53.4	52.0
Steam Coal	10.1	8.3	9.8	12.4	8.3	6.2	6.2	6.0	5.5	5.1	5.8	6.3	40.7	26.7	22.7
Total Primary Supply	176.8	169.2	175.3	169.1	166.5	154.0	187.9	179.6	164.1	147.2	186.5	174.7	690.4	688.0	672.4
Secondary Inventory Withdrawals	1.0	3.7	18.2	-2.9	3.9	2.7	12.5	-7.7	1.1	2.8	5.8	-9.1	20.0	11.4	0.6
Waste Coal (a)	2.4	1.7	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	9.2	9.6	9.6
Total Supply	180.2	174.7	196.0	168.7	172.7	159.0	202.8	174.3	167.7	152.3	194.6	167.9	719.5	708.9	682.6
Consumption (million short tons)															
Coke Plants	4.2	4.3	4.7	5.4	3.9	3.4	4.2	5.1	3.6	3.3	4.1	5.2	18.7	16.6	16.1
Electric Power Sector (b)	160.3	154.1	190.7	161.3	159.7	146.9	189.8	160.1	154.6	140.1	181.5	153.3	666.4	656.5	629.5
Retail and Other Industry	8.8	8.3	7.9	8.7	9.2	8.7	8.8	9.1	9.5	9.0	9.1	9.4	33.8	35.8	36.9
Residential and Commercial	0.4	0.2	0.1	0.2	0.3	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.9	0.7	0.6
Other Industrial	8.4	8.1	7.8	8.5	8.9	8.6	8.7	8.9	9.3	8.9	9.0	9.2	32.9	35.1	36.4
Total Consumption	173.4	166.7	203.4	175.4	172.7	159.0	202.8	174.3	167.7	152.3	194.6	167.9	718.9	708.9	682.6
Discrepancy (c)	6.8	7.9	-7.4	-6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0
End-of-period Inventories (million short tons)															
Primary Inventories (d)	25.2	23.4	22.0	21.1	23.8	21.6	20.5	20.9	24.5	22.8	21.4	24.2	21.1	20.9	24.2
Secondary Inventories	166.6	163.0	144.8	147.7	143.8	141.2	128.7	136.3	135.2	132.4	126.6	135.7	147.7	136.3	135.7
Electric Power Sector	161.7	157.7	139.5	142.9	139.3	136.4	123.7	131.4	130.6	127.5	121.4	130.5	142.9	131.4	130.5
Retail and General Industry	3.2	3.3	3.3	2.9	3.0	3.0	3.1	3.1	3.2	3.2	3.4	3.4	2.9	3.1	3.4
Coke Plants	1.4	1.6	1.7	1.8	1.3	1.6	1.7	1.7	1.2	1.5	1.6	1.6	1.8	1.7	1.6
Coal Market Indicators															
Coal Miner Productivity (Tons per hour)	6.19	6.19	6.19	6.19	6.10	6.10	6.10	6.10	6.02	6.02	6.02	6.02	6.19	6.10	6.02
Total Raw Steel Production (Million short tons per day)	0.248	0.247	0.250	0.245	0.281	0.263	0.238	0.203	0.264	0.263	0.244	0.211	0.248	0.246	0.245
Cost of Coal to Electric Utilities (Dollars per million Btu)	2.08	2.12	2.07	2.15	2.20	2.20	2.22	2.21	2.22	2.20	2.22	2.20	2.10	2.21	2.21

- = no data available

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

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

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

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

Notes: 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*, DOE/EIA-0226.

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

Projections: EIA Regional Short-Term Energy Model.

Table 7a. U.S. Electricity Industry Overview

U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Electricity Supply (billion kilowatthours per day)															
Electricity Generation	10.58	10.68	12.15	10.60	<i>10.79</i>	<i>10.75</i>	<i>12.23</i>	<i>10.57</i>	<i>10.83</i>	<i>10.84</i>	<i>12.33</i>	<i>10.65</i>	11.01	<i>11.09</i>	<i>11.16</i>
Electric Power Sector (a)	10.14	10.26	11.72	10.19	<i>10.37</i>	<i>10.34</i>	<i>11.79</i>	<i>10.17</i>	<i>10.42</i>	<i>10.43</i>	<i>11.90</i>	<i>10.25</i>	10.58	<i>10.67</i>	<i>10.75</i>
Comm. and Indus. Sectors (b)	0.43	0.42	0.44	0.42	<i>0.42</i>	<i>0.41</i>	<i>0.43</i>	<i>0.40</i>	<i>0.41</i>	<i>0.41</i>	<i>0.43</i>	<i>0.40</i>	0.43	<i>0.42</i>	<i>0.41</i>
Net Imports	0.13	0.14	0.19	0.17	<i>0.21</i>	<i>0.21</i>	<i>0.22</i>	<i>0.18</i>	<i>0.19</i>	<i>0.19</i>	<i>0.21</i>	<i>0.17</i>	0.16	<i>0.20</i>	<i>0.19</i>
Total Supply	10.71	10.83	12.34	10.77	<i>11.00</i>	<i>10.96</i>	<i>12.45</i>	<i>10.75</i>	<i>11.02</i>	<i>11.03</i>	<i>12.54</i>	<i>10.82</i>	11.17	<i>11.29</i>	<i>11.35</i>
Losses and Unaccounted for (c)	0.60	0.78	0.70	0.71	<i>0.56</i>	<i>0.81</i>	<i>0.71</i>	<i>0.67</i>	<i>0.57</i>	<i>0.82</i>	<i>0.72</i>	<i>0.68</i>	0.70	<i>0.69</i>	<i>0.70</i>
Electricity Consumption (billion kilowatthours per day unless noted)															
Retail Sales	9.73	9.68	11.25	9.69	<i>10.06</i>	<i>9.79</i>	<i>11.36</i>	<i>9.72</i>	<i>10.09</i>	<i>9.85</i>	<i>11.44</i>	<i>9.79</i>	10.09	<i>10.24</i>	<i>10.30</i>
Residential Sector	3.70	3.42	4.45	3.50	<i>3.98</i>	<i>3.50</i>	<i>4.51</i>	<i>3.52</i>	<i>3.99</i>	<i>3.53</i>	<i>4.55</i>	<i>3.55</i>	3.77	<i>3.88</i>	<i>3.91</i>
Commercial Sector	3.50	3.62	4.06	3.59	<i>3.55</i>	<i>3.64</i>	<i>4.08</i>	<i>3.59</i>	<i>3.56</i>	<i>3.67</i>	<i>4.10</i>	<i>3.60</i>	3.69	<i>3.72</i>	<i>3.73</i>
Industrial Sector	2.50	2.62	2.72	2.58	<i>2.51</i>	<i>2.62</i>	<i>2.74</i>	<i>2.59</i>	<i>2.52</i>	<i>2.64</i>	<i>2.77</i>	<i>2.62</i>	2.61	<i>2.62</i>	<i>2.64</i>
Transportation Sector	0.02	0.02	0.02	0.02	<i>0.02</i>	<i>0.02</i>	<i>0.02</i>	<i>0.02</i>	<i>0.02</i>	<i>0.02</i>	<i>0.02</i>	<i>0.02</i>	0.02	<i>0.02</i>	<i>0.02</i>
Direct Use (d)	0.38	0.37	0.38	0.37	<i>0.37</i>	<i>0.36</i>	<i>0.38</i>	<i>0.35</i>	<i>0.36</i>	<i>0.36</i>	<i>0.38</i>	<i>0.35</i>	0.38	<i>0.37</i>	<i>0.36</i>
Total Consumption	10.11	10.05	11.64	10.06	<i>10.43</i>	<i>10.15</i>	<i>11.74</i>	<i>10.08</i>	<i>10.45</i>	<i>10.21</i>	<i>11.82</i>	<i>10.14</i>	10.47	<i>10.60</i>	<i>10.66</i>
Average residential electricity usage per customer (kWh)	2,527	2,360	3,104	2,445	<i>2,683</i>	<i>2,387</i>	<i>3,109</i>	<i>2,426</i>	<i>2,653</i>	<i>2,374</i>	<i>3,097</i>	<i>2,417</i>	10,436	<i>10,606</i>	<i>10,540</i>
Prices															
Power Generation Fuel Costs (dollars per million Btu)															
Coal	2.08	2.12	2.07	2.15	<i>2.20</i>	<i>2.20</i>	<i>2.22</i>	<i>2.21</i>	<i>2.22</i>	<i>2.20</i>	<i>2.22</i>	<i>2.20</i>	2.10	<i>2.21</i>	<i>2.21</i>
Natural Gas	3.68	3.38	3.19	3.18	<i>3.69</i>	<i>3.03</i>	<i>3.10</i>	<i>3.40</i>	<i>3.74</i>	<i>2.99</i>	<i>3.03</i>	<i>3.40</i>	3.33	<i>3.28</i>	<i>3.26</i>
Residual Fuel Oil	11.16	10.60	10.03	10.99	<i>11.59</i>	<i>11.84</i>	<i>11.43</i>	<i>11.55</i>	<i>11.46</i>	<i>12.04</i>	<i>11.82</i>	<i>11.84</i>	10.68	<i>11.59</i>	<i>11.76</i>
Distillate Fuel Oil	12.74	12.23	13.13	15.23	<i>15.76</i>	<i>13.68</i>	<i>14.02</i>	<i>16.17</i>	<i>16.22</i>	<i>13.97</i>	<i>14.15</i>	<i>16.17</i>	13.38	<i>15.06</i>	<i>15.21</i>
Retail Prices (cents per kilowatthour)															
Residential Sector	12.60	13.00	13.20	12.83	<i>12.79</i>	<i>13.31</i>	<i>13.51</i>	<i>13.23</i>	<i>13.21</i>	<i>13.72</i>	<i>13.85</i>	<i>13.49</i>	12.92	<i>13.22</i>	<i>13.58</i>
Commercial Sector	10.39	10.68	11.03	10.57	<i>10.56</i>	<i>10.90</i>	<i>11.32</i>	<i>10.85</i>	<i>10.73</i>	<i>10.93</i>	<i>11.29</i>	<i>10.89</i>	10.68	<i>10.92</i>	<i>10.97</i>
Industrial Sector	6.64	6.88	7.26	6.95	<i>6.89</i>	<i>7.05</i>	<i>7.50</i>	<i>7.12</i>	<i>6.94</i>	<i>7.13</i>	<i>7.59</i>	<i>7.20</i>	6.94	<i>7.15</i>	<i>7.22</i>

- = no data available. kWh = kilowatthours. Btu = British thermal units.

Prices are not adjusted for inflation.

(a) Generation supplied by electricity-only and combined-heat-and-power (CHP) plants operated by electric utilities and independent power producers.

(b) Generation supplied by CHP and electricity-only plants 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*.

Notes: 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: *Electric Power Monthly*, DOE/EIA-0226; and *Electric Power Annual*, DOE/EIA-0348.

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

Projections: EIA Regional Short-Term Energy Model.

Table 7b. U.S. Regional Electricity Retail Sales (Million Kilowatthours per Day)

U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Residential Sector															
New England	135	112	136	118	141	113	140	118	138	113	140	118	125	128	127
Middle Atlantic	368	307	403	328	391	312	409	324	386	312	409	325	352	359	358
E. N. Central	507	435	545	472	544	442	560	466	538	442	561	467	490	503	502
W. N. Central	298	246	303	266	322	253	315	268	321	256	321	273	278	289	293
S. Atlantic	891	891	1,131	888	989	910	1,132	890	993	917	1,141	897	951	980	987
E. S. Central	305	277	368	282	351	290	380	285	350	291	382	286	308	327	327
W. S. Central	501	536	760	518	548	565	795	531	554	574	808	541	579	610	620
Mountain	245	259	347	232	249	259	350	235	253	263	355	238	271	273	278
Pacific contiguous	439	346	447	383	434	348	422	393	440	350	424	395	404	399	402
AK and HI	14	12	12	13	14	12	12	13	14	12	12	13	13	13	13
Total	3,704	3,421	4,450	3,501	3,983	3,504	4,515	3,523	3,987	3,528	4,554	3,553	3,771	3,882	3,906
Commercial Sector															
New England	140	136	152	140	139	133	148	136	135	130	144	131	142	139	135
Middle Atlantic	423	404	462	413	426	404	462	411	423	402	460	409	425	426	423
E. N. Central	489	486	537	486	498	488	542	485	498	488	542	484	499	503	503
W. N. Central	272	270	302	271	277	272	306	272	278	274	309	274	279	282	284
S. Atlantic	785	853	941	814	796	855	940	812	798	856	942	813	849	851	852
E. S. Central	225	241	275	235	227	241	277	234	228	244	280	235	244	245	247
W. S. Central	471	522	598	517	490	543	618	527	504	560	637	540	527	545	560
Mountain	246	265	301	249	249	265	304	250	251	267	306	251	265	267	269
Pacific contiguous	431	431	480	448	433	429	468	446	432	430	468	447	448	444	444
AK and HI	16	16	16	16	16	16	16	16	16	15	16	16	16	16	16
Total	3,498	3,622	4,063	3,587	3,551	3,644	4,081	3,589	3,563	3,667	4,104	3,599	3,694	3,718	3,734
Industrial Sector															
New England	44	44	48	47	43	43	46	45	41	42	45	44	46	44	43
Middle Atlantic	192	194	204	195	193	195	207	196	194	197	209	198	196	198	199
E. N. Central	495	504	522	508	494	502	526	508	494	503	527	510	507	507	509
W. N. Central	228	240	253	243	231	244	259	247	237	250	266	254	241	245	252
S. Atlantic	362	386	390	369	357	379	387	364	352	376	384	361	377	372	368
E. S. Central	267	275	281	266	262	271	279	262	259	269	278	261	272	269	267
W. S. Central	480	502	510	497	487	509	522	506	498	521	535	519	497	506	518
Mountain	210	228	245	214	212	231	249	216	215	234	253	220	224	227	231
Pacific contiguous	211	230	253	233	213	230	255	234	214	232	256	235	232	233	235
AK and HI	13	14	14	14	13	14	14	14	13	14	14	14	14	14	14
Total	2,503	2,616	2,719	2,584	2,506	2,618	2,744	2,592	2,519	2,637	2,767	2,615	2,606	2,616	2,635
Total All Sectors (a)															
New England	320	294	336	306	325	290	336	300	317	286	331	294	314	313	307
Middle Atlantic	994	915	1,079	947	1,020	920	1,088	941	1,014	920	1,088	942	984	992	991
E. N. Central	1,493	1,427	1,605	1,467	1,538	1,433	1,629	1,460	1,532	1,435	1,632	1,462	1,498	1,515	1,515
W. N. Central	798	755	857	780	830	768	880	787	837	781	896	801	798	816	829
S. Atlantic	2,042	2,134	2,465	2,074	2,145	2,148	2,463	2,069	2,147	2,152	2,470	2,074	2,180	2,207	2,211
E. S. Central	798	793	924	783	840	802	937	782	838	803	940	782	825	840	841
W. S. Central	1,452	1,559	1,868	1,532	1,526	1,618	1,935	1,565	1,557	1,655	1,980	1,600	1,604	1,662	1,699
Mountain	701	752	893	694	711	756	904	701	720	765	915	709	760	768	778
Pacific contiguous	1,084	1,010	1,184	1,067	1,083	1,010	1,147	1,076	1,089	1,013	1,151	1,080	1,086	1,079	1,083
AK and HI	43	41	43	43	43	41	43	43	43	41	43	43	43	42	42
Total	9,726	9,679	11,253	9,692	10,061	9,786	11,361	9,724	10,092	9,852	11,445	9,787	10,091	10,235	10,296

- = no data available

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

Notes: 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 Power Annual*, DOE/EIA-0348.

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

Projections: EIA Regional Short-Term Energy Model.

Table 7c. U.S. Regional Retail Electricity Prices (Cents per Kilowatt-hour)
 U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Residential Sector															
New England	19.06	19.49	19.50	19.61	19.93	20.36	20.16	20.45	20.91	21.29	21.05	21.26	19.41	20.21	21.11
Middle Atlantic	15.55	16.27	16.43	15.85	15.66	16.51	16.75	16.30	16.11	16.99	17.16	16.63	16.03	16.30	16.72
E. N. Central	12.90	13.58	13.26	13.29	13.23	14.12	13.85	13.95	13.85	14.69	14.30	14.39	13.25	13.77	14.29
W. N. Central	10.94	12.66	13.17	11.46	11.04	12.98	13.56	11.85	11.41	13.31	13.81	12.10	12.05	12.34	12.65
S. Atlantic	11.69	12.01	12.26	11.89	11.91	12.34	12.64	12.29	12.28	12.66	12.90	12.48	11.98	12.31	12.59
E. S. Central	11.08	11.44	11.32	11.29	11.13	11.87	11.89	11.73	11.51	12.10	11.94	11.99	11.28	11.65	11.87
W. S. Central	10.55	10.93	10.87	10.70	10.45	10.86	10.88	10.84	10.65	11.12	11.07	10.93	10.78	10.77	10.96
Mountain	11.28	12.16	12.31	11.72	11.49	12.42	12.64	12.08	11.84	12.77	12.94	12.32	11.92	12.21	12.52
Pacific	14.52	14.70	16.50	15.02	15.26	15.28	16.70	15.23	15.79	16.09	17.59	15.60	15.23	15.64	16.29
U.S. Average	12.60	13.00	13.20	12.83	12.79	13.31	13.51	13.23	13.21	13.72	13.85	13.49	12.92	13.22	13.58
Commercial Sector															
New England	15.11	15.06	15.72	15.22	15.41	15.35	16.04	15.62	15.37	14.86	15.53	15.35	15.29	15.62	15.28
Middle Atlantic	12.07	12.75	13.35	12.17	12.09	12.77	13.40	12.26	12.07	12.74	13.41	12.38	12.61	12.65	12.67
E. N. Central	10.02	10.24	10.05	10.08	10.21	10.54	10.41	10.35	10.40	10.66	10.45	10.50	10.10	10.38	10.50
W. N. Central	9.11	10.11	10.58	9.36	9.29	10.38	10.93	9.69	9.49	10.61	11.14	9.95	9.82	10.10	10.32
S. Atlantic	9.44	9.38	9.55	9.54	9.72	9.66	9.86	9.84	10.12	9.84	9.90	9.90	9.48	9.77	9.93
E. S. Central	10.58	10.56	10.62	10.58	10.91	11.09	11.27	11.03	10.88	10.99	11.04	11.12	10.59	11.09	11.01
W. S. Central	8.37	8.40	8.38	8.14	8.15	8.21	8.27	8.14	7.83	7.84	7.95	8.02	8.33	8.20	7.92
Mountain	9.14	9.93	10.04	9.58	9.39	10.19	10.29	9.83	9.42	10.22	10.33	9.91	9.69	9.95	10.00
Pacific	12.53	13.56	15.36	13.72	13.05	14.18	16.28	14.38	13.82	14.71	16.64	14.47	13.84	14.52	14.95
U.S. Average	10.39	10.68	11.03	10.57	10.56	10.90	11.32	10.85	10.73	10.93	11.29	10.89	10.68	10.92	10.97
Industrial Sector															
New England	12.46	12.25	12.60	12.32	12.69	12.47	12.87	12.59	13.14	12.76	13.07	12.71	12.41	12.66	12.92
Middle Atlantic	6.94	6.94	6.88	6.93	7.02	6.92	6.94	7.01	6.87	6.80	6.89	6.97	6.92	6.97	6.88
E. N. Central	7.03	7.04	7.01	7.03	7.21	7.21	7.27	7.22	7.27	7.29	7.33	7.29	7.03	7.23	7.29
W. N. Central	6.89	7.33	8.06	6.91	7.09	7.56	8.34	7.10	7.22	7.68	8.46	7.19	7.31	7.54	7.66
S. Atlantic	6.32	6.39	6.79	6.51	6.57	6.56	7.08	6.70	6.57	6.60	7.13	6.76	6.51	6.73	6.77
E. S. Central	5.90	5.95	6.17	6.05	6.12	6.12	6.47	6.23	6.25	6.26	6.59	6.35	6.02	6.24	6.36
W. S. Central	5.29	5.56	5.72	5.61	5.56	5.67	5.97	5.73	5.51	5.71	6.05	5.85	5.55	5.74	5.79
Mountain	6.08	6.54	7.12	6.04	6.11	6.62	7.25	6.16	6.29	6.81	7.46	6.34	6.47	6.57	6.76
Pacific	8.23	9.34	10.72	10.31	8.97	9.79	10.98	10.51	9.11	9.88	11.04	10.56	9.71	10.11	10.20
U.S. Average	6.64	6.88	7.26	6.95	6.89	7.05	7.50	7.12	6.94	7.13	7.59	7.20	6.94	7.15	7.22
All Sectors (a)															
New England	16.37	16.29	16.77	16.42	16.98	16.84	17.30	17.02	17.47	17.05	17.51	17.30	16.47	17.04	17.34
Middle Atlantic	12.35	12.68	13.26	12.36	12.48	12.78	13.42	12.55	12.60	12.90	13.55	12.69	12.68	12.83	12.95
E. N. Central	10.00	10.13	10.15	10.07	10.31	10.48	10.58	10.41	10.59	10.72	10.76	10.62	10.09	10.45	10.67
W. N. Central	9.15	10.06	10.75	9.32	9.36	10.34	11.11	9.61	9.58	10.56	11.30	9.81	9.84	10.12	10.33
S. Atlantic	9.86	9.93	10.36	10.00	10.20	10.24	10.70	10.34	10.53	10.47	10.85	10.47	10.05	10.38	10.59
E. S. Central	9.20	9.27	9.55	9.31	9.51	9.69	10.09	9.68	9.71	9.81	10.09	9.85	9.34	9.76	9.87
W. S. Central	8.10	8.36	8.67	8.20	8.15	8.34	8.72	8.28	8.10	8.31	8.71	8.30	8.35	8.39	8.38
Mountain	8.97	9.67	10.12	9.22	9.15	9.86	10.36	9.45	9.34	10.05	10.55	9.61	9.54	9.75	9.94
Pacific	12.48	12.98	14.79	13.43	13.13	13.54	15.24	13.83	13.68	14.07	15.73	14.02	13.47	13.97	14.40
U.S. Average	10.26	10.47	10.98	10.43	10.53	10.73	11.27	10.71	10.76	10.91	11.41	10.85	10.55	10.83	11.00

- = no data available

Prices are not adjusted for inflation.

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

Notes: 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 Energy Information Administration databases supporting the following reports: *Electric Power Monthly*, DOE/EIA-0226; and *Electric Power Annual*, DOE/EIA-0348.

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

Projections: EIA Regional Short-Term Energy Model.

Table 7d. U.S. Regional Electricity Generation, All Sectors (Thousand megawatthours per day)

U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
United States															
Coal	3,242	3,096	3,764	3,167	<i>3,268</i>	<i>2,958</i>	<i>3,763</i>	<i>3,155</i>	<i>3,159</i>	<i>2,806</i>	<i>3,577</i>	<i>3,006</i>	3,318	<i>3,287</i>	<i>3,138</i>
Natural Gas	2,965	3,288	4,359	3,347	<i>3,293</i>	<i>3,589</i>	<i>4,385</i>	<i>3,421</i>	<i>3,376</i>	<i>3,727</i>	<i>4,604</i>	<i>3,582</i>	3,493	<i>3,674</i>	<i>3,825</i>
Petroleum (a)	61	54	56	55	<i>89</i>	<i>63</i>	<i>70</i>	<i>62</i>	<i>77</i>	<i>64</i>	<i>70</i>	<i>63</i>	56	<i>71</i>	<i>68</i>
Other Gases	40	39	40	35	<i>42</i>	<i>40</i>	<i>41</i>	<i>36</i>	<i>42</i>	<i>41</i>	<i>42</i>	<i>36</i>	38	<i>40</i>	<i>40</i>
Nuclear	2,247	2,034	2,302	2,239	<i>2,223</i>	<i>2,097</i>	<i>2,280</i>	<i>2,138</i>	<i>2,200</i>	<i>2,070</i>	<i>2,240</i>	<i>2,084</i>	2,206	<i>2,185</i>	<i>2,148</i>
Renewable Energy Sources:	2,004	2,155	1,616	1,741	<i>1,856</i>	<i>1,981</i>	<i>1,666</i>	<i>1,736</i>	<i>1,953</i>	<i>2,103</i>	<i>1,772</i>	<i>1,855</i>	1,877	<i>1,809</i>	<i>1,920</i>
Conventional Hydropower	918	1,010	717	637	<i>752</i>	<i>791</i>	<i>703</i>	<i>633</i>	<i>768</i>	<i>808</i>	<i>723</i>	<i>654</i>	819	<i>720</i>	<i>738</i>
Wind	764	747	503	762	<i>756</i>	<i>768</i>	<i>538</i>	<i>762</i>	<i>826</i>	<i>841</i>	<i>586</i>	<i>823</i>	693	<i>705</i>	<i>769</i>
Wood Biomass	118	115	122	118	<i>118</i>	<i>110</i>	<i>120</i>	<i>112</i>	<i>116</i>	<i>110</i>	<i>121</i>	<i>113</i>	118	<i>115</i>	<i>115</i>
Waste Biomass	58	56	56	58	<i>58</i>	<i>59</i>	<i>60</i>	<i>61</i>	<i>59</i>	<i>60</i>	<i>61</i>	<i>61</i>	57	<i>60</i>	<i>60</i>
Geothermal	45	43	44	43	<i>47</i>	<i>46</i>	<i>47</i>	<i>47</i>	<i>48</i>	<i>47</i>	<i>47</i>	<i>48</i>	44	<i>47</i>	<i>47</i>
Solar	101	184	174	123	<i>125</i>	<i>207</i>	<i>197</i>	<i>120</i>	<i>136</i>	<i>238</i>	<i>234</i>	<i>156</i>	146	<i>162</i>	<i>191</i>
Pumped Storage Hydropower	-16	-16	-22	-16	<i>-14</i>	<i>-12</i>	<i>-17</i>	<i>-14</i>	<i>-13</i>	<i>-12</i>	<i>-16</i>	<i>-14</i>	-17	<i>-14</i>	<i>-14</i>
Other Nonrenewable Fuels (b)	35	35	37	35	<i>35</i>	<i>36</i>	<i>38</i>	<i>36</i>	<i>35</i>	<i>36</i>	<i>39</i>	<i>36</i>	36	<i>36</i>	<i>36</i>
Total Generation	10,577	10,684	12,152	10,603	<i>10,790</i>	<i>10,753</i>	<i>12,226</i>	<i>10,569</i>	<i>10,829</i>	<i>10,835</i>	<i>12,327</i>	<i>10,648</i>	11,007	<i>11,087</i>	<i>11,163</i>
Northeast Census Region															
Coal	154	134	136	133	<i>146</i>	<i>109</i>	<i>150</i>	<i>136</i>	<i>136</i>	<i>99</i>	<i>135</i>	<i>143</i>	139	<i>135</i>	<i>129</i>
Natural Gas	487	482	637	542	<i>499</i>	<i>509</i>	<i>658</i>	<i>554</i>	<i>529</i>	<i>537</i>	<i>698</i>	<i>582</i>	537	<i>555</i>	<i>587</i>
Petroleum (a)	4	2	3	3	<i>25</i>	<i>3</i>	<i>4</i>	<i>4</i>	<i>13</i>	<i>3</i>	<i>4</i>	<i>4</i>	3	<i>9</i>	<i>6</i>
Other Gases	2	2	2	2	<i>2</i>	<i>2</i>	<i>2</i>	<i>2</i>	<i>2</i>	<i>2</i>	<i>2</i>	<i>2</i>	2	<i>2</i>	<i>2</i>
Nuclear	539	476	549	530	<i>522</i>	<i>493</i>	<i>536</i>	<i>503</i>	<i>512</i>	<i>478</i>	<i>509</i>	<i>461</i>	523	<i>514</i>	<i>490</i>
Hydropower (c)	102	107	99	96	<i>83</i>	<i>89</i>	<i>91</i>	<i>94</i>	<i>83</i>	<i>89</i>	<i>92</i>	<i>96</i>	101	<i>89</i>	<i>90</i>
Other Renewables (d)	72	76	68	79	<i>81</i>	<i>72</i>	<i>65</i>	<i>76</i>	<i>81</i>	<i>73</i>	<i>66</i>	<i>79</i>	74	<i>73</i>	<i>75</i>
Other Nonrenewable Fuels (b)	11	11	12	12	<i>11</i>	<i>11</i>	<i>12</i>	<i>12</i>	<i>11</i>	<i>11</i>	<i>12</i>	<i>12</i>	11	<i>11</i>	<i>11</i>
Total Generation	1,371	1,290	1,505	1,397	<i>1,369</i>	<i>1,288</i>	<i>1,517</i>	<i>1,380</i>	<i>1,366</i>	<i>1,291</i>	<i>1,519</i>	<i>1,378</i>	1,391	<i>1,389</i>	<i>1,389</i>
South Census Region															
Coal	1,330	1,412	1,681	1,346	<i>1,340</i>	<i>1,294</i>	<i>1,659</i>	<i>1,343</i>	<i>1,306</i>	<i>1,207</i>	<i>1,548</i>	<i>1,243</i>	1,443	<i>1,410</i>	<i>1,326</i>
Natural Gas	1,757	2,088	2,565	1,908	<i>1,924</i>	<i>2,220</i>	<i>2,598</i>	<i>1,926</i>	<i>1,941</i>	<i>2,298</i>	<i>2,725</i>	<i>2,023</i>	2,081	<i>2,168</i>	<i>2,248</i>
Petroleum (a)	26	22	23	19	<i>29</i>	<i>27</i>	<i>29</i>	<i>23</i>	<i>30</i>	<i>27</i>	<i>29</i>	<i>23</i>	22	<i>27</i>	<i>27</i>
Other Gases	15	15	15	13	<i>16</i>	<i>15</i>	<i>15</i>	<i>14</i>	<i>16</i>	<i>16</i>	<i>16</i>	<i>14</i>	15	<i>15</i>	<i>15</i>
Nuclear	979	888	1,003	1,010	<i>996</i>	<i>939</i>	<i>1,021</i>	<i>958</i>	<i>995</i>	<i>938</i>	<i>1,020</i>	<i>957</i>	970	<i>978</i>	<i>978</i>
Hydropower (c)	128	138	99	71	<i>106</i>	<i>116</i>	<i>95</i>	<i>72</i>	<i>107</i>	<i>117</i>	<i>97</i>	<i>73</i>	109	<i>97</i>	<i>98</i>
Other Renewables (d)	401	402	323	397	<i>410</i>	<i>444</i>	<i>357</i>	<i>419</i>	<i>461</i>	<i>508</i>	<i>411</i>	<i>472</i>	380	<i>407</i>	<i>463</i>
Other Nonrenewable Fuels (b)	15	15	16	15	<i>15</i>	<i>16</i>	<i>17</i>	<i>15</i>	<i>15</i>	<i>16</i>	<i>17</i>	<i>15</i>	15	<i>15</i>	<i>16</i>
Total Generation	4,650	4,980	5,725	4,779	<i>4,835</i>	<i>5,071</i>	<i>5,792</i>	<i>4,769</i>	<i>4,870</i>	<i>5,126</i>	<i>5,862</i>	<i>4,820</i>	5,036	<i>5,119</i>	<i>5,171</i>
Midwest Census Region															
Coal	1,288	1,177	1,395	1,204	<i>1,313</i>	<i>1,168</i>	<i>1,432</i>	<i>1,180</i>	<i>1,247</i>	<i>1,122</i>	<i>1,388</i>	<i>1,137</i>	1,266	<i>1,274</i>	<i>1,224</i>
Natural Gas	290	272	406	324	<i>335</i>	<i>332</i>	<i>426</i>	<i>355</i>	<i>392</i>	<i>382</i>	<i>481</i>	<i>392</i>	324	<i>362</i>	<i>412</i>
Petroleum (a)	8	7	7	9	<i>11</i>	<i>11</i>	<i>12</i>	<i>10</i>	<i>11</i>	<i>11</i>	<i>12</i>	<i>10</i>	8	<i>11</i>	<i>11</i>
Other Gases	17	16	17	13	<i>18</i>	<i>16</i>	<i>17</i>	<i>14</i>	<i>18</i>	<i>17</i>	<i>18</i>	<i>14</i>	16	<i>16</i>	<i>17</i>
Nuclear	555	543	579	530	<i>542</i>	<i>511</i>	<i>556</i>	<i>521</i>	<i>530</i>	<i>500</i>	<i>544</i>	<i>510</i>	552	<i>532</i>	<i>521</i>
Hydropower (c)	52	58	37	37	<i>42</i>	<i>49</i>	<i>34</i>	<i>37</i>	<i>43</i>	<i>49</i>	<i>34</i>	<i>38</i>	46	<i>40</i>	<i>41</i>
Other Renewables (d)	313	303	199	333	<i>325</i>	<i>296</i>	<i>201</i>	<i>324</i>	<i>342</i>	<i>312</i>	<i>211</i>	<i>352</i>	287	<i>286</i>	<i>304</i>
Other Nonrenewable Fuels (b)	3	4	4	4	<i>4</i>	<i>4</i>	<i>4</i>	<i>4</i>	<i>4</i>	<i>4</i>	<i>4</i>	<i>4</i>	4	<i>4</i>	<i>4</i>
Total Generation	2,526	2,380	2,645	2,455	<i>2,591</i>	<i>2,387</i>	<i>2,682</i>	<i>2,445</i>	<i>2,588</i>	<i>2,396</i>	<i>2,693</i>	<i>2,457</i>	2,502	<i>2,526</i>	<i>2,533</i>
West Census Region															
Coal	470	373	551	483	<i>468</i>	<i>387</i>	<i>522</i>	<i>496</i>	<i>469</i>	<i>378</i>	<i>506</i>	<i>483</i>	470	<i>468</i>	<i>459</i>
Natural Gas	431	446	751	573	<i>534</i>	<i>528</i>	<i>703</i>	<i>587</i>	<i>515</i>	<i>510</i>	<i>700</i>	<i>585</i>	551	<i>588</i>	<i>578</i>
Petroleum (a)	23	22	23	24	<i>24</i>	<i>23</i>	<i>24</i>	<i>25</i>	<i>24</i>	<i>24</i>	<i>25</i>	<i>25</i>	23	<i>24</i>	<i>24</i>
Other Gases	6	6	6	6	<i>6</i>	<i>6</i>	<i>6</i>	<i>6</i>	<i>6</i>	<i>6</i>	<i>6</i>	<i>6</i>	6	<i>6</i>	<i>6</i>
Nuclear	175	127	171	169	<i>163</i>	<i>154</i>	<i>167</i>	<i>157</i>	<i>163</i>	<i>154</i>	<i>167</i>	<i>157</i>	160	<i>161</i>	<i>160</i>
Hydropower (c)	619	692	460	417	<i>507</i>	<i>525</i>	<i>467</i>	<i>416</i>	<i>522</i>	<i>541</i>	<i>484</i>	<i>433</i>	546	<i>479</i>	<i>495</i>
Other Renewables (d)	301	363	309	295	<i>288</i>	<i>378</i>	<i>339</i>	<i>283</i>	<i>302</i>	<i>403</i>	<i>360</i>	<i>298</i>	317	<i>322</i>	<i>341</i>
Other Nonrenewable Fuels (b)	5	5	6	5	<i>5</i>	<i>5</i>	<i>6</i>	<i>5</i>	<i>5</i>	<i>5</i>	<i>6</i>	<i>5</i>	5	<i>5</i>	<i>5</i>
Total Generation	2,031	2,035	2,277	1,972	<i>1,996</i>	<i>2,006</i>	<i>2,235</i>	<i>1,975</i>	<i>2,005</i>	<i>2,022</i>	<i>2,254</i>	<i>1,992</i>	2,079	<i>2,053</i>	<i>2,069</i>

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

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

(c) Conventional hydroelectric and pumped storage generation.

(d) Wind, biomass, geothermal, and solar generation.

Notes: Data reflect generation supplied by electricity-only and combined-heat-and-power (CHP) plants operated by electric utilities, independent power producers, and the commercial and industrial sectors. 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. Energy Information Administration *Electric Power Monthly* and *Electric Power Annual*.

Projections: EIA Regional Short-Term Energy Model.

Table 7e. U.S. Regional Fuel Consumption for Electricity Generation, All Sectors

U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Fuel Consumption for Electricity Generation, All Sectors															
United States															
Coal (thousand st/d)	1,777	1,690	2,069	1,751	1,772	1,614	2,063	1,739	1,716	1,538	1,972	1,665	1,823	1,798	1,723
Natural Gas (million cf/d)	21,934	24,634	33,338	24,748	24,446	27,377	33,851	25,684	25,440	28,610	35,805	27,074	26,191	27,860	29,255
Petroleum (thousand b/d)	107	100	105	101	163	113	124	112	140	114	125	114	103	128	123
Residual Fuel Oil	26	27	28	27	54	26	30	27	40	26	29	27	27	34	31
Distillate Fuel Oil	28	24	23	27	44	25	24	25	32	24	24	25	25	30	26
Petroleum Coke (a)	49	45	48	43	58	58	65	56	61	60	67	57	46	59	61
Other Petroleum Liquids (b)	4	4	7	4	7	4	5	5	7	4	5	5	5	5	5
Northeast Census Region															
Coal (thousand st/d)	75	63	67	65	70	52	73	66	65	47	66	70	67	65	62
Natural Gas (million cf/d)	3,772	3,666	5,065	4,101	3,818	3,962	5,215	4,254	4,090	4,182	5,575	4,474	4,154	4,316	4,584
Petroleum (thousand b/d)	7	4	7	6	47	4	7	6	24	4	7	7	6	16	11
South Census Region															
Coal (thousand st/d)	715	759	902	729	703	691	892	725	687	648	839	678	777	753	714
Natural Gas (million cf/d)	12,476	15,424	19,083	13,888	13,918	16,595	19,605	14,097	14,203	17,307	20,699	14,964	15,232	16,064	16,806
Petroleum (thousand b/d)	47	42	43	36	55	49	54	43	55	49	54	44	42	50	51
Midwest Census Region															
Coal (thousand st/d)	717	655	788	682	734	656	807	667	698	631	783	643	711	716	689
Natural Gas (million cf/d)	2,489	2,165	3,566	2,497	2,716	2,770	3,679	2,917	3,262	3,184	4,194	3,214	2,682	3,023	3,466
Petroleum (thousand b/d)	15	16	16	20	21	20	22	20	21	20	22	20	17	21	21
West Census Region															
Coal (thousand st/d)	269	213	313	275	265	216	292	281	265	211	283	274	267	263	258
Natural Gas (million cf/d)	3,197	3,379	5,625	4,262	3,994	4,050	5,353	4,416	3,886	3,938	5,337	4,422	4,123	4,457	4,400
Petroleum (thousand b/d)	39	37	39	39	40	40	41	42	41	40	42	42	39	41	41
End-of-period U.S. Fuel Inventories Held by Electric Power Sector															
Coal (million short tons)	161.7	157.7	139.5	142.9	139.3	136.4	123.7	131.4	130.6	127.5	121.4	130.5	142.9	131.4	130.5
Residual Fuel Oil (mmb)	12.5	11.9	11.4	11.7	11.7	11.6	11.5	12.0	12.0	11.9	11.8	12.3	11.7	12.0	12.3
Distillate Fuel Oil (mmb)	17.0	16.6	16.4	16.7	16.9	16.9	16.9	17.3	17.4	17.3	17.3	17.6	16.7	17.3	17.6
Petroleum Coke (mmb)	4.3	4.3	4.9	5.2	5.1	5.0	4.9	4.8	4.8	4.7	4.7	4.6	5.2	4.8	4.6

(a) Petroleum coke consumption converted from short tons to barrels by multiplying by five.

(b) Other petroleum liquids include jet fuel, kerosene, and waste oil.

Notes: Data reflect generation supplied by electricity-only and combined-heat-and-power (CHP) plants operated by electric utilities, independent power producers, and the commercial and industrial sectors. Data include fuel consumed only for generation of electricity. Values do not include consumption by CHP plants for useful thermal output.

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

Physical Units: st/d = short tons per day; b/d = barrels per day; cf/d = cubic feet per day; mmb = million barrels.

Historical data: Latest data available from U.S. Energy Information Administration *Electric Power Monthly* and *Electric Power Annual*.

Projections: EIA Regional Short-Term Energy Model.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Electric Power Sector															
Geothermal	0.037	0.037	0.038	0.037	<i>0.039</i>	<i>0.039</i>	<i>0.040</i>	<i>0.040</i>	<i>0.040</i>	<i>0.040</i>	<i>0.040</i>	<i>0.041</i>	0.148	<i>0.159</i>	<i>0.161</i>
Hydroelectric Power (a)	0.759	0.844	0.605	0.543	<i>0.627</i>	<i>0.666</i>	<i>0.599</i>	<i>0.540</i>	<i>0.640</i>	<i>0.681</i>	<i>0.616</i>	<i>0.557</i>	2.751	<i>2.433</i>	<i>2.494</i>
Solar (b)	0.083	0.154	0.147	0.104	<i>0.103</i>	<i>0.173</i>	<i>0.167</i>	<i>0.101</i>	<i>0.112</i>	<i>0.199</i>	<i>0.198</i>	<i>0.131</i>	0.489	<i>0.544</i>	<i>0.640</i>
Waste Biomass (c)	0.070	0.066	0.068	0.069	<i>0.068</i>	<i>0.072</i>	<i>0.074</i>	<i>0.073</i>	<i>0.070</i>	<i>0.073</i>	<i>0.075</i>	<i>0.074</i>	0.274	<i>0.287</i>	<i>0.292</i>
Wood Biomass	0.061	0.059	0.064	0.064	<i>0.059</i>	<i>0.052</i>	<i>0.062</i>	<i>0.055</i>	<i>0.056</i>	<i>0.051</i>	<i>0.063</i>	<i>0.056</i>	0.248	<i>0.229</i>	<i>0.227</i>
Wind	0.640	0.633	0.431	0.653	<i>0.633</i>	<i>0.650</i>	<i>0.460</i>	<i>0.652</i>	<i>0.692</i>	<i>0.713</i>	<i>0.502</i>	<i>0.705</i>	2.357	<i>2.396</i>	<i>2.612</i>
Subtotal	1.651	1.793	1.353	1.470	<i>1.530</i>	<i>1.653</i>	<i>1.403</i>	<i>1.462</i>	<i>1.611</i>	<i>1.756</i>	<i>1.494</i>	<i>1.564</i>	6.267	<i>6.047</i>	<i>6.425</i>
Industrial Sector															
Biofuel Losses and Co-products (d)	0.203	0.199	0.204	0.208	<i>0.199</i>	<i>0.205</i>	<i>0.208</i>	<i>0.207</i>	<i>0.198</i>	<i>0.205</i>	<i>0.208</i>	<i>0.207</i>	0.814	<i>0.819</i>	<i>0.818</i>
Geothermal	0.001	0.001	0.001	0.001	<i>0.001</i>	<i>0.001</i>	<i>0.001</i>	<i>0.001</i>	<i>0.001</i>	<i>0.001</i>	<i>0.001</i>	<i>0.001</i>	0.004	<i>0.004</i>	<i>0.004</i>
Hydroelectric Power (a)	0.003	0.004	0.003	0.003	<i>0.003</i>	<i>0.004</i>	<i>0.003</i>	<i>0.003</i>	<i>0.003</i>	<i>0.004</i>	<i>0.003</i>	<i>0.003</i>	0.012	<i>0.013</i>	<i>0.013</i>
Solar (b)	0.005	0.007	0.007	0.005	<i>0.006</i>	<i>0.008</i>	<i>0.008</i>	<i>0.006</i>	<i>0.007</i>	<i>0.010</i>	<i>0.010</i>	<i>0.007</i>	0.024	<i>0.028</i>	<i>0.033</i>
Waste Biomass (c)	0.044	0.040	0.038	0.045	<i>0.041</i>	<i>0.040</i>	<i>0.039</i>	<i>0.044</i>	<i>0.041</i>	<i>0.040</i>	<i>0.040</i>	<i>0.044</i>	0.167	<i>0.165</i>	<i>0.164</i>
Wood Biomass	0.328	0.319	0.332	0.317	<i>0.307</i>	<i>0.303</i>	<i>0.314</i>	<i>0.313</i>	<i>0.306</i>	<i>0.303</i>	<i>0.315</i>	<i>0.315</i>	1.295	<i>1.238</i>	<i>1.239</i>
Subtotal	0.583	0.567	0.583	0.578	<i>0.557</i>	<i>0.557</i>	<i>0.570</i>	<i>0.573</i>	<i>0.554</i>	<i>0.557</i>	<i>0.571</i>	<i>0.574</i>	2.311	<i>2.257</i>	<i>2.257</i>
Commercial Sector															
Geothermal	0.005	0.005	0.005	0.005	<i>0.005</i>	<i>0.005</i>	<i>0.005</i>	<i>0.005</i>	<i>0.005</i>	<i>0.005</i>	<i>0.005</i>	<i>0.005</i>	0.020	<i>0.020</i>	<i>0.020</i>
Solar (b)	0.015	0.023	0.023	0.017	<i>0.020</i>	<i>0.028</i>	<i>0.029</i>	<i>0.021</i>	<i>0.024</i>	<i>0.034</i>	<i>0.035</i>	<i>0.025</i>	0.078	<i>0.098</i>	<i>0.117</i>
Waste Biomass (c)	0.011	0.011	0.011	0.012	<i>0.011</i>	<i>0.011</i>	<i>0.011</i>	<i>0.012</i>	<i>0.011</i>	<i>0.011</i>	<i>0.011</i>	<i>0.012</i>	0.046	<i>0.045</i>	<i>0.045</i>
Wood Biomass	0.020	0.020	0.020	0.018	<i>0.020</i>	<i>0.020</i>	<i>0.021</i>	<i>0.018</i>	<i>0.020</i>	<i>0.020</i>	<i>0.021</i>	<i>0.018</i>	0.079	<i>0.079</i>	<i>0.079</i>
Subtotal	0.058	0.067	0.067	0.059	<i>0.063</i>	<i>0.073</i>	<i>0.073</i>	<i>0.063</i>	<i>0.067</i>	<i>0.078</i>	<i>0.079</i>	<i>0.067</i>	0.252	<i>0.272</i>	<i>0.291</i>
Residential Sector															
Geothermal	0.010	0.010	0.010	0.012	<i>0.013</i>	<i>0.013</i>	<i>0.013</i>	<i>0.013</i>	<i>0.013</i>	<i>0.013</i>	<i>0.013</i>	<i>0.013</i>	0.041	<i>0.052</i>	<i>0.053</i>
Solar (e)	0.037	0.057	0.058	0.041	<i>0.043</i>	<i>0.066</i>	<i>0.068</i>	<i>0.048</i>	<i>0.050</i>	<i>0.075</i>	<i>0.077</i>	<i>0.055</i>	0.193	<i>0.225</i>	<i>0.257</i>
Wood Biomass	0.094	0.095	0.096	0.099	<i>0.103</i>	<i>0.103</i>	<i>0.104</i>	<i>0.104</i>	<i>0.105</i>	<i>0.105</i>	<i>0.105</i>	<i>0.105</i>	0.384	<i>0.413</i>	<i>0.420</i>
Subtotal	0.140	0.162	0.164	0.153	<i>0.159</i>	<i>0.181</i>	<i>0.185</i>	<i>0.165</i>	<i>0.168</i>	<i>0.193</i>	<i>0.195</i>	<i>0.173</i>	0.619	<i>0.690</i>	<i>0.730</i>
Transportation Sector															
Biomass-based Diesel (f)	0.054	0.079	0.080	0.087	<i>0.054</i>	<i>0.071</i>	<i>0.082</i>	<i>0.085</i>	<i>0.059</i>	<i>0.078</i>	<i>0.090</i>	<i>0.093</i>	0.300	<i>0.291</i>	<i>0.319</i>
Ethanol (f)	0.270	0.290	0.293	0.293	<i>0.274</i>	<i>0.297</i>	<i>0.301</i>	<i>0.292</i>	<i>0.277</i>	<i>0.300</i>	<i>0.304</i>	<i>0.295</i>	1.146	<i>1.165</i>	<i>1.177</i>
Subtotal	0.324	0.369	0.373	0.387	<i>0.328</i>	<i>0.368</i>	<i>0.383</i>	<i>0.377</i>	<i>0.336</i>	<i>0.378</i>	<i>0.394</i>	<i>0.388</i>	1.453	<i>1.456</i>	<i>1.495</i>
All Sectors Total															
Biomass-based Diesel (f)	0.054	0.079	0.080	0.087	<i>0.054</i>	<i>0.071</i>	<i>0.082</i>	<i>0.085</i>	<i>0.059</i>	<i>0.078</i>	<i>0.090</i>	<i>0.093</i>	0.300	<i>0.291</i>	<i>0.319</i>
Biofuel Losses and Co-products (d)	0.203	0.199	0.204	0.208	<i>0.199</i>	<i>0.205</i>	<i>0.208</i>	<i>0.207</i>	<i>0.198</i>	<i>0.205</i>	<i>0.208</i>	<i>0.207</i>	0.814	<i>0.819</i>	<i>0.818</i>
Ethanol (f)	0.281	0.301	0.304	0.306	<i>0.285</i>	<i>0.309</i>	<i>0.313</i>	<i>0.304</i>	<i>0.288</i>	<i>0.312</i>	<i>0.316</i>	<i>0.307</i>	1.193	<i>1.210</i>	<i>1.223</i>
Geothermal	0.053	0.052	0.053	0.056	<i>0.058</i>	<i>0.058</i>	<i>0.059</i>	<i>0.059</i>	<i>0.059</i>	<i>0.059</i>	<i>0.060</i>	<i>0.060</i>	0.214	<i>0.234</i>	<i>0.238</i>
Hydroelectric Power (a)	0.763	0.849	0.609	0.546	<i>0.631</i>	<i>0.671</i>	<i>0.603</i>	<i>0.543</i>	<i>0.644</i>	<i>0.685</i>	<i>0.620</i>	<i>0.560</i>	2.766	<i>2.448</i>	<i>2.509</i>
Solar (b)(e)	0.138	0.239	0.234	0.163	<i>0.171</i>	<i>0.276</i>	<i>0.272</i>	<i>0.176</i>	<i>0.192</i>	<i>0.318</i>	<i>0.320</i>	<i>0.218</i>	0.775	<i>0.895</i>	<i>1.047</i>
Waste Biomass (c)	0.126	0.117	0.117	0.126	<i>0.121</i>	<i>0.122</i>	<i>0.125</i>	<i>0.129</i>	<i>0.122</i>	<i>0.124</i>	<i>0.126</i>	<i>0.129</i>	0.486	<i>0.497</i>	<i>0.501</i>
Wood Biomass	0.504	0.493	0.512	0.495	<i>0.490</i>	<i>0.478</i>	<i>0.501</i>	<i>0.491</i>	<i>0.488</i>	<i>0.480</i>	<i>0.503</i>	<i>0.494</i>	2.004	<i>1.959</i>	<i>1.966</i>
Wind	0.640	0.633	0.431	0.653	<i>0.633</i>	<i>0.650</i>	<i>0.460</i>	<i>0.652</i>	<i>0.692</i>	<i>0.713</i>	<i>0.502</i>	<i>0.705</i>	2.357	<i>2.396</i>	<i>2.612</i>
Total Consumption	2.757	2.957	2.541	2.598	<i>2.636</i>	<i>2.832</i>	<i>2.614</i>	<i>2.640</i>	<i>2.735</i>	<i>2.963</i>	<i>2.734</i>	<i>2.766</i>	10.852	<i>10.722</i>	<i>11.199</i>

- = no data available

(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) distributed solar photovoltaic systems.

(c) Municipal solid waste from biogenic sources, landfill gas, sludge waste, agricultural byproducts, and other biomass.

(d) Losses and co-products from the production of fuel ethanol and biomass-based diesel

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

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

Notes: 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 Monthly*, DOE/EIA-0109.

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

Projections: EIA Regional Short-Term Energy Model.

Table 8b. U.S. Renewable Electricity Generation and Capacity
 U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Renewable Energy Electric Generating Capacity (megawatts, end of period)															
Electric Power Sector (a)															
Biomass	7,334	7,373	7,426	7,424	7,481	7,574	7,574	7,610	7,677	7,677	7,719	7,719	7,424	7,610	7,719
Waste	4,205	4,244	4,247	4,246	4,302	4,302	4,302	4,339	4,340	4,340	4,340	4,340	4,246	4,339	4,340
Wood	3,128	3,128	3,178	3,178	3,178	3,272	3,272	3,272	3,337	3,337	3,379	3,379	3,178	3,272	3,379
Conventional Hydroelectric	79,561	79,568	79,663	79,701	79,729	79,763	79,884	80,052	80,056	80,058	79,959	79,971	79,701	80,052	79,971
Geothermal	2,457	2,457	2,457	2,494	2,494	2,494	2,494	2,500	2,508	2,508	2,508	2,543	2,494	2,500	2,543
Large-Scale Solar (b)	22,517	23,524	24,008	26,819	27,639	28,350	28,700	30,456	32,123	33,897	35,172	41,868	26,819	30,456	41,868
Wind	82,898	83,361	84,081	87,911	88,180	88,807	89,770	96,058	96,641	97,289	97,789	104,089	87,911	96,058	104,089
Other Sectors (c)															
Biomass	6,707	6,726	6,727	6,727	6,727	6,728	6,728	6,730	6,742	6,717	6,717	6,731	6,727	6,730	6,731
Waste	884	888	889	889	889	889	889	891	903	903	903	917	889	891	917
Wood	5,823	5,838	5,838	5,838	5,838	5,839	5,839	5,839	5,839	5,815	5,815	5,815	5,838	5,839	5,815
Conventional Hydroelectric	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357
Large-Scale Solar (b)	322	338	338	340	340	340	340	340	339	339	339	339	340	340	339
Small-Scale Solar (d)	13,728	14,549	15,333	16,247	17,044	17,815	18,634	19,486	20,278	21,123	22,017	22,949	16,247	19,486	22,949
Residential Sector	8,130	8,619	9,097	9,562	10,028	10,498	10,972	11,448	11,923	12,406	12,892	13,380	9,562	11,448	13,380
Commercial Sector	4,292	4,561	4,799	5,188	5,456	5,698	5,979	6,288	6,543	6,839	7,177	7,545	5,188	6,288	7,545
Industrial Sector	1,305	1,369	1,436	1,497	1,560	1,619	1,683	1,751	1,812	1,878	1,949	2,024	1,497	1,751	2,024
Wind	93	91	91	97	100	100	100	100	100	100	100	100	97	100	100
Renewable Electricity Generation (thousand megawatthours per day)															
Electric Power Sector (a)															
Biomass	90	86	90	91	89	85	93	87	88	86	94	89	89	89	89
Waste	49	47	47	48	49	50	52	51	50	51	52	51	48	50	51
Wood	41	39	43	43	40	35	41	37	38	34	42	37	41	38	38
Conventional Hydroelectric	913	1,005	713	633	748	786	699	630	763	802	719	650	815	715	733
Geothermal	45	43	44	43	47	46	47	47	48	47	47	48	44	47	47
Large-Scale Solar (b)	100	182	172	121	123	204	194	118	133	235	231	153	144	160	188
Wind	763	746	503	761	755	767	537	761	825	841	585	822	693	704	768
Other Sectors (c)															
Biomass	87	84	88	86	87	84	88	86	87	84	88	86	86	86	86
Waste	78	75	79	76	78	75	79	76	78	75	79	76	77	77	77
Wood	9	9	9	10	9	9	9	10	9	9	9	10	9	9	9
Conventional Hydroelectric	5	5	4	4	5	5	4	4	5	5	4	4	4	4	4
Large-Scale Solar (b)	1	2	2	2	2	3	3	2	3	3	3	3	2	2	3
Small-Scale Solar (d)	51	79	80	56	64	96	97	68	77	114	115	81	66	82	97
Residential Sector	29	46	46	32	36	55	56	39	44	66	66	46	38	47	56
Commercial Sector	17	25	25	18	21	31	31	22	26	37	38	26	21	26	32
Industrial Sector	5	8	8	6	7	10	10	7	8	11	11	8	7	8	10
Wind	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1

-- = no data available

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

(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 one 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 one megawatt).

(d) Solar photovoltaic systems smaller than one megawatt, as measured in alternating current.

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.

Projections: EIA-860M database, EIA-826 Solar PV database, and EIA Regional Short-Term Energy Model.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Macroeconomic															
Real Gross Domestic Product (billion chained 2009 dollars - SAAR)	16,903	17,031	17,170	17,278	<i>17,364</i>	<i>17,457</i>	<i>17,550</i>	<i>17,656</i>	<i>17,763</i>	<i>17,870</i>	<i>17,977</i>	<i>18,081</i>	17,096	<i>17,507</i>	<i>17,923</i>
Real Personal Consumption Expend. (billion chained 2009 dollars - SAAR)	11,758	11,853	11,921	12,000	<i>12,077</i>	<i>12,135</i>	<i>12,192</i>	<i>12,255</i>	<i>12,323</i>	<i>12,393</i>	<i>12,463</i>	<i>12,537</i>	11,883	<i>12,165</i>	<i>12,429</i>
Real Fixed Investment (billion chained 2009 dollars - SAAR)	2,876	2,898	2,916	2,959	<i>2,976</i>	<i>2,990</i>	<i>3,022</i>	<i>3,059</i>	<i>3,095</i>	<i>3,128</i>	<i>3,163</i>	<i>3,193</i>	2,912	<i>3,012</i>	<i>3,145</i>
Business Inventory Change (billion chained 2009 dollars - SAAR)	0	5	42	43	<i>42</i>	<i>58</i>	<i>61</i>	<i>59</i>	<i>61</i>	<i>63</i>	<i>66</i>	<i>69</i>	23	<i>55</i>	<i>65</i>
Real Government Expenditures (billion chained 2009 dollars - SAAR)	2,897	2,895	2,898	2,902	<i>2,903</i>	<i>2,907</i>	<i>2,911</i>	<i>2,916</i>	<i>2,920</i>	<i>2,921</i>	<i>2,925</i>	<i>2,926</i>	2,898	<i>2,909</i>	<i>2,923</i>
Real Exports of Goods & Services (billion chained 2009 dollars - SAAR)	2,162	2,181	2,193	2,209	<i>2,246</i>	<i>2,272</i>	<i>2,289</i>	<i>2,312</i>	<i>2,335</i>	<i>2,364</i>	<i>2,389</i>	<i>2,414</i>	2,186	<i>2,280</i>	<i>2,376</i>
Real Imports of Goods & Services (billion chained 2009 dollars - SAAR)	2,785	2,795	2,787	2,823	<i>2,867</i>	<i>2,890</i>	<i>2,911</i>	<i>2,929</i>	<i>2,953</i>	<i>2,981</i>	<i>3,011</i>	<i>3,038</i>	2,797	<i>2,899</i>	<i>2,996</i>
Real Disposable Personal Income (billion chained 2009 dollars - SAAR)	12,680	12,766	12,781	12,842	<i>12,945</i>	<i>13,042</i>	<i>13,125</i>	<i>13,206</i>	<i>13,353</i>	<i>13,454</i>	<i>13,557</i>	<i>13,669</i>	12,767	<i>13,080</i>	<i>13,508</i>
Non-Farm Employment (millions)	145.7	146.2	146.7	147.2	<i>147.7</i>	<i>148.2</i>	<i>148.7</i>	<i>149.2</i>	<i>149.8</i>	<i>150.2</i>	<i>150.5</i>	<i>150.7</i>	146.4	<i>148.5</i>	<i>150.3</i>
Civilian Unemployment Rate (percent)	4.7	4.4	4.3	4.1	<i>4.0</i>	<i>4.0</i>	<i>4.0</i>	<i>4.0</i>	<i>3.9</i>	<i>3.9</i>	<i>3.9</i>	<i>3.9</i>	4.4	<i>4.0</i>	<i>3.9</i>
Housing Starts (millions - SAAR)	1.24	1.17	1.16	1.26	<i>1.21</i>	<i>1.23</i>	<i>1.26</i>	<i>1.30</i>	<i>1.33</i>	<i>1.36</i>	<i>1.40</i>	<i>1.42</i>	1.21	<i>1.25</i>	<i>1.38</i>
Industrial Production Indices (Index, 2012=100)															
Total Industrial Production	103.7	105.1	104.9	106.5	<i>107.3</i>	<i>108.0</i>	<i>108.5</i>	<i>109.2</i>	<i>110.0</i>	<i>110.8</i>	<i>111.6</i>	<i>112.4</i>	105.1	<i>108.3</i>	<i>111.2</i>
Manufacturing	103.7	104.5	104.1	106.0	<i>106.7</i>	<i>107.3</i>	<i>107.7</i>	<i>108.4</i>	<i>109.1</i>	<i>109.9</i>	<i>110.5</i>	<i>111.2</i>	104.6	<i>107.5</i>	<i>110.2</i>
Food	110.1	111.2	112.9	113.2	<i>113.8</i>	<i>114.2</i>	<i>114.7</i>	<i>115.2</i>	<i>115.9</i>	<i>116.5</i>	<i>117.1</i>	<i>117.6</i>	111.8	<i>114.5</i>	<i>116.7</i>
Paper	96.3	95.5	95.1	94.9	<i>95.1</i>	<i>94.8</i>	<i>94.6</i>	<i>94.8</i>	<i>95.0</i>	<i>95.4</i>	<i>95.5</i>	<i>95.9</i>	95.4	<i>94.8</i>	<i>95.4</i>
Petroleum and Coal Products	102.5	106.1	101.3	104.2	<i>107.3</i>	<i>108.7</i>	<i>109.5</i>	<i>110.3</i>	<i>111.1</i>	<i>111.9</i>	<i>112.4</i>	<i>113.0</i>	103.5	<i>108.9</i>	<i>112.1</i>
Chemicals	97.6	98.8	98.3	101.9	<i>101.8</i>	<i>102.4</i>	<i>103.1</i>	<i>104.0</i>	<i>104.9</i>	<i>106.0</i>	<i>106.9</i>	<i>107.9</i>	99.2	<i>102.8</i>	<i>106.4</i>
Nonmetallic Mineral Products	116.7	115.3	115.1	117.2	<i>118.6</i>	<i>119.9</i>	<i>121.2</i>	<i>122.1</i>	<i>122.6</i>	<i>123.1</i>	<i>123.3</i>	<i>123.8</i>	116.1	<i>120.4</i>	<i>123.2</i>
Primary Metals	96.8	95.4	95.4	96.9	<i>96.2</i>	<i>96.0</i>	<i>95.8</i>	<i>96.6</i>	<i>97.4</i>	<i>98.5</i>	<i>99.0</i>	<i>99.9</i>	96.1	<i>96.2</i>	<i>98.7</i>
Coal-weighted Manufacturing (a)	102.6	102.7	101.4	103.7	<i>104.1</i>	<i>104.5</i>	<i>104.9</i>	<i>105.7</i>	<i>106.5</i>	<i>107.4</i>	<i>107.9</i>	<i>108.8</i>	102.6	<i>104.8</i>	<i>107.6</i>
Distillate-weighted Manufacturing (a)	108.5	108.8	108.3	110.0	<i>111.1</i>	<i>112.0</i>	<i>112.8</i>	<i>113.6</i>	<i>114.3</i>	<i>114.9</i>	<i>115.3</i>	<i>115.9</i>	108.9	<i>112.3</i>	<i>115.1</i>
Electricity-weighted Manufacturing (a)	103.1	103.6	102.5	104.8	<i>105.3</i>	<i>105.8</i>	<i>106.3</i>	<i>107.1</i>	<i>108.0</i>	<i>109.1</i>	<i>109.9</i>	<i>110.8</i>	103.5	<i>106.1</i>	<i>109.4</i>
Natural Gas-weighted Manufacturing (a) ...	103.0	104.3	102.2	105.6	<i>106.2</i>	<i>106.9</i>	<i>107.5</i>	<i>108.6</i>	<i>109.6</i>	<i>110.8</i>	<i>111.7</i>	<i>112.9</i>	103.8	<i>107.3</i>	<i>111.3</i>
Price Indexes															
Consumer Price Index (all urban consumers) (index, 1982-1984=1.00)	2.44	2.44	2.45	2.47	<i>2.49</i>	<i>2.49</i>	<i>2.51</i>	<i>2.52</i>	<i>2.53</i>	<i>2.55</i>	<i>2.56</i>	<i>2.57</i>	2.45	<i>2.50</i>	<i>2.55</i>
Producer Price Index: All Commodities (index, 1982=1.00)	1.93	1.92	1.92	1.96	<i>1.97</i>	<i>1.98</i>	<i>1.98</i>	<i>1.99</i>	<i>2.00</i>	<i>2.01</i>	<i>2.02</i>	<i>2.03</i>	1.93	<i>1.98</i>	<i>2.01</i>
Producer Price Index: Petroleum (index, 1982=1.00)	1.66	1.67	1.77	1.90	<i>1.86</i>	<i>1.87</i>	<i>1.90</i>	<i>1.88</i>	<i>1.83</i>	<i>1.92</i>	<i>1.94</i>	<i>1.90</i>	1.75	<i>1.88</i>	<i>1.90</i>
GDP Implicit Price Deflator (index, 2009=100)	112.8	113.0	113.6	114.3	<i>115.0</i>	<i>115.6</i>	<i>116.2</i>	<i>116.8</i>	<i>117.5</i>	<i>118.2</i>	<i>118.8</i>	<i>119.4</i>	113.4	<i>115.9</i>	<i>118.5</i>
Miscellaneous															
Vehicle Miles Traveled (b) (million miles/day)	8,302	9,163	9,014	8,651	<i>8,336</i>	<i>9,280</i>	<i>9,141</i>	<i>8,776</i>	<i>8,442</i>	<i>9,442</i>	<i>9,291</i>	<i>8,913</i>	8,784	<i>8,885</i>	<i>9,024</i>
Air Travel Capacity (Available ton-miles/day, thousands)	567	619	667	568	<i>541</i>	<i>625</i>	<i>649</i>	<i>568</i>	<i>543</i>	<i>625</i>	<i>651</i>	<i>573</i>	606	<i>596</i>	<i>598</i>
Aircraft Utilization (Revenue ton-miles/day, thousands)	344	390	397	350	<i>332</i>	<i>394</i>	<i>407</i>	<i>348</i>	<i>332</i>	<i>396</i>	<i>410</i>	<i>353</i>	370	<i>370</i>	<i>373</i>
Airline Ticket Price Index (index, 1982-1984=100)	277.8	297.0	264.9	266.5	<i>281.3</i>	<i>321.9</i>	<i>309.1</i>	<i>309.3</i>	<i>303.5</i>	<i>338.0</i>	<i>321.4</i>	<i>320.4</i>	276.6	<i>305.4</i>	<i>320.8</i>
Raw Steel Production (million short tons per day)	0.248	0.247	0.250	0.245	<i>0.281</i>	<i>0.263</i>	<i>0.238</i>	<i>0.203</i>	<i>0.264</i>	<i>0.263</i>	<i>0.244</i>	<i>0.211</i>	0.248	<i>0.246</i>	<i>0.245</i>
Carbon Dioxide (CO₂) Emissions (million metric tons)															
Petroleum	565	588	593	585	<i>575</i>	<i>588</i>	<i>603</i>	<i>596</i>	<i>577</i>	<i>591</i>	<i>607</i>	<i>601</i>	2,331	<i>2,361</i>	<i>2,375</i>
Natural Gas	424	312	337	391	<i>462</i>	<i>332</i>	<i>341</i>	<i>403</i>	<i>468</i>	<i>342</i>	<i>356</i>	<i>415</i>	1,464	<i>1,538</i>	<i>1,581</i>
Coal	321	309	376	323	<i>321</i>	<i>294</i>	<i>375</i>	<i>325</i>	<i>311</i>	<i>282</i>	<i>360</i>	<i>313</i>	1,330	<i>1,315</i>	<i>1,267</i>
Total Energy (c)	1,314	1,211	1,310	1,302	<i>1,360</i>	<i>1,217</i>	<i>1,322</i>	<i>1,326</i>	<i>1,359</i>	<i>1,218</i>	<i>1,326</i>	<i>1,332</i>	5,137	<i>5,225</i>	<i>5,235</i>

- = no data available

SAAR = Seasonally-adjusted annual rate

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

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

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

Notes: 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 Aviation Administration. Minor discrepancies with published historical data are due to independent rounding.

Projections: EIA Regional Short-Term Energy Model. U.S. macroeconomic projections are based on the IHS Markit model of the U.S. Economy.

Table 9b. U.S. Regional Macroeconomic Data

U.S. Energy Information Administration | Short-Term Energy Outlook - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Real Gross State Product (Billion \$2009)															
New England	888	893	899	904	908	911	915	920	924	929	934	939	896	913	931
Middle Atlantic	2,483	2,496	2,514	2,526	2,534	2,546	2,557	2,569	2,579	2,591	2,603	2,615	2,505	2,551	2,597
E. N. Central	2,318	2,336	2,355	2,366	2,375	2,385	2,395	2,405	2,417	2,429	2,441	2,452	2,344	2,390	2,435
W. N. Central	1,070	1,075	1,085	1,091	1,095	1,099	1,104	1,110	1,115	1,121	1,127	1,133	1,080	1,102	1,124
S. Atlantic	3,008	3,029	3,051	3,071	3,089	3,105	3,123	3,143	3,165	3,183	3,203	3,221	3,040	3,115	3,193
E. S. Central	761	767	774	778	781	785	789	792	797	801	805	810	770	787	803
W. S. Central	2,021	2,050	2,063	2,080	2,095	2,111	2,127	2,144	2,161	2,177	2,192	2,207	2,054	2,119	2,184
Mountain	1,082	1,092	1,104	1,112	1,119	1,125	1,132	1,141	1,150	1,158	1,166	1,174	1,097	1,130	1,162
Pacific	3,168	3,188	3,219	3,244	3,261	3,281	3,300	3,323	3,345	3,372	3,395	3,419	3,205	3,291	3,383
Industrial Output, Manufacturing (Index, Year 2012=100)															
New England	98.0	98.7	97.9	99.5	99.8	99.9	100.0	100.5	101.0	101.5	102.0	102.5	98.5	100.1	101.8
Middle Atlantic	98.2	97.9	97.1	98.7	99.2	99.5	99.7	100.3	100.8	101.4	101.9	102.3	98.0	99.7	101.6
E. N. Central	106.2	106.9	106.1	108.2	109.1	109.9	110.4	110.9	111.8	112.6	113.3	114.1	106.9	110.1	112.9
W. N. Central	102.3	103.3	103.3	105.2	105.8	106.3	106.8	107.4	108.2	109.0	109.7	110.4	103.5	106.6	109.3
S. Atlantic	107.2	108.0	107.9	109.9	110.5	111.0	111.3	112.0	112.7	113.4	114.0	114.7	108.2	111.2	113.7
E. S. Central	110.1	110.6	109.8	111.8	112.7	113.4	113.8	114.6	115.3	116.1	116.8	117.5	110.6	113.6	116.5
W. S. Central	98.0	99.7	100.0	102.0	102.9	103.6	104.3	105.3	106.1	107.0	107.7	108.5	99.9	104.0	107.3
Mountain	108.3	109.1	108.7	110.8	111.5	112.2	112.6	113.4	114.2	115.0	115.7	116.5	109.2	112.4	115.3
Pacific	103.7	104.3	104.1	106.0	106.6	107.4	107.8	108.7	109.4	110.1	110.8	111.5	104.5	107.6	110.5
Real Personal Income (Billion \$2009)															
New England	774	778	780	782	787	792	796	800	807	812	817	823	778	794	815
Middle Atlantic	1,963	1,973	1,981	1,987	1,998	2,009	2,018	2,027	2,043	2,054	2,067	2,080	1,976	2,013	2,061
E. N. Central	2,109	2,118	2,124	2,131	2,145	2,159	2,170	2,181	2,199	2,213	2,227	2,242	2,121	2,164	2,220
W. N. Central	992	994	997	1,002	1,009	1,016	1,023	1,030	1,040	1,049	1,057	1,066	996	1,020	1,053
S. Atlantic	2,773	2,792	2,797	2,813	2,838	2,859	2,879	2,900	2,930	2,954	2,978	3,003	2,794	2,869	2,966
E. S. Central	778	782	785	788	794	799	803	808	816	821	827	833	783	801	824
W. S. Central	1,703	1,711	1,716	1,726	1,741	1,756	1,769	1,783	1,803	1,818	1,834	1,852	1,714	1,762	1,827
Mountain	976	983	985	991	1,000	1,009	1,017	1,025	1,036	1,045	1,054	1,064	984	1,013	1,050
Pacific	2,396	2,407	2,417	2,430	2,449	2,467	2,483	2,501	2,525	2,545	2,566	2,587	2,412	2,475	2,556
Households (Thousands)															
New England	5,835	5,842	5,861	5,868	5,878	5,888	5,896	5,908	5,920	5,932	5,943	5,953	5,868	5,908	5,953
Middle Atlantic	15,890	15,902	15,951	15,965	15,988	16,010	16,033	16,059	16,089	16,114	16,141	16,166	15,965	16,059	16,166
E. N. Central	18,811	18,824	18,880	18,896	18,925	18,959	18,991	19,025	19,060	19,095	19,131	19,167	18,896	19,025	19,167
W. N. Central	8,514	8,531	8,568	8,588	8,616	8,644	8,668	8,693	8,719	8,745	8,769	8,793	8,588	8,693	8,793
S. Atlantic	25,194	25,286	25,445	25,547	25,658	25,768	25,872	25,979	26,091	26,195	26,296	26,395	25,547	25,979	26,395
E. S. Central	7,599	7,613	7,645	7,660	7,682	7,703	7,724	7,744	7,768	7,790	7,812	7,833	7,660	7,744	7,833
W. S. Central	14,598	14,650	14,734	14,785	14,844	14,903	14,964	15,028	15,095	15,159	15,222	15,285	14,785	15,028	15,285
Mountain	9,042	9,080	9,139	9,179	9,226	9,274	9,319	9,365	9,413	9,458	9,503	9,548	9,179	9,365	9,548
Pacific	18,714	18,775	18,872	18,928	18,993	19,058	19,121	19,183	19,249	19,310	19,370	19,429	18,928	19,183	19,429
Total Non-farm Employment (Millions)															
New England	7.4	7.4	7.4	7.4	7.4	7.4	7.5	7.5	7.5	7.5	7.5	7.5	7.4	7.5	7.5
Middle Atlantic	19.4	19.5	19.5	19.6	19.6	19.6	19.7	19.7	19.8	19.8	19.8	19.8	19.5	19.7	19.8
E. N. Central	21.9	21.9	22.0	22.0	22.1	22.1	22.2	22.2	22.3	22.4	22.4	22.4	21.9	22.2	22.4
W. N. Central	10.6	10.7	10.7	10.7	10.8	10.8	10.8	10.8	10.9	10.9	10.9	10.9	10.7	10.8	10.9
S. Atlantic	28.0	28.1	28.2	28.4	28.5	28.6	28.7	28.8	29.0	29.0	29.1	29.2	28.2	28.6	29.1
E. S. Central	8.0	8.1	8.1	8.1	8.1	8.2	8.2	8.2	8.3	8.3	8.3	8.3	8.1	8.2	8.3
W. S. Central	17.0	17.1	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.7	17.8	17.8	17.1	17.4	17.8
Mountain	10.4	10.4	10.5	10.5	10.6	10.6	10.7	10.7	10.8	10.8	10.9	10.9	10.5	10.7	10.9
Pacific	22.7	22.8	22.9	23.0	23.1	23.1	23.2	23.3	23.4	23.5	23.5	23.6	22.8	23.2	23.5

- = no data available

Notes: 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.

Projections: Macroeconomic projections 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 - January 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Heating Degree Days															
New England	2,982	804	92	2,155	<i>3,197</i>	<i>877</i>	<i>131</i>	<i>2,165</i>	<i>3,128</i>	<i>877</i>	<i>131</i>	<i>2,165</i>	6,033	<i>6,370</i>	<i>6,301</i>
Middle Atlantic	2,658	602	74	1,979	<i>2,961</i>	<i>707</i>	<i>92</i>	<i>1,990</i>	<i>2,924</i>	<i>707</i>	<i>92</i>	<i>1,989</i>	5,314	<i>5,750</i>	<i>5,713</i>
E. N. Central	2,692	628	106	2,238	<i>3,187</i>	<i>740</i>	<i>134</i>	<i>2,226</i>	<i>3,145</i>	<i>740</i>	<i>134</i>	<i>2,226</i>	5,664	<i>6,288</i>	<i>6,246</i>
W. N. Central	2,811	662	137	2,368	<i>3,276</i>	<i>702</i>	<i>161</i>	<i>2,397</i>	<i>3,220</i>	<i>703</i>	<i>161</i>	<i>2,397</i>	5,978	<i>6,536</i>	<i>6,481</i>
South Atlantic	1,148	125	15	939	<i>1,431</i>	<i>197</i>	<i>15</i>	<i>981</i>	<i>1,437</i>	<i>196</i>	<i>15</i>	<i>979</i>	2,226	<i>2,624</i>	<i>2,627</i>
E. S. Central	1,375	154	25	1,280	<i>1,832</i>	<i>244</i>	<i>22</i>	<i>1,307</i>	<i>1,832</i>	<i>245</i>	<i>22</i>	<i>1,308</i>	2,834	<i>3,406</i>	<i>3,406</i>
W. S. Central	772	66	4	730	<i>1,115</i>	<i>73</i>	<i>4</i>	<i>783</i>	<i>1,114</i>	<i>73</i>	<i>4</i>	<i>782</i>	1,571	<i>1,975</i>	<i>1,973</i>
Mountain	2,057	697	154	1,651	<i>2,185</i>	<i>675</i>	<i>146</i>	<i>1,834</i>	<i>2,193</i>	<i>675</i>	<i>146</i>	<i>1,833</i>	4,558	<i>4,840</i>	<i>4,847</i>
Pacific	1,562	532	69	993	<i>1,547</i>	<i>604</i>	<i>98</i>	<i>1,222</i>	<i>1,528</i>	<i>605</i>	<i>98</i>	<i>1,222</i>	3,157	<i>3,472</i>	<i>3,454</i>
U.S. Average	1,858	428	65	1,462	<i>2,137</i>	<i>493</i>	<i>79</i>	<i>1,529</i>	<i>2,115</i>	<i>492</i>	<i>79</i>	<i>1,527</i>	3,813	<i>4,238</i>	<i>4,213</i>
Heating Degree Days, Prior 10-year Average															
New England	3,201	831	122	2,125	<i>3,172</i>	<i>818</i>	<i>119</i>	<i>2,119</i>	<i>3,180</i>	<i>817</i>	<i>117</i>	<i>2,107</i>	6,279	<i>6,228</i>	<i>6,221</i>
Middle Atlantic	2,983	661	81	1,941	<i>2,947</i>	<i>646</i>	<i>81</i>	<i>1,947</i>	<i>2,958</i>	<i>646</i>	<i>81</i>	<i>1,933</i>	5,666	<i>5,621</i>	<i>5,618</i>
E. N. Central	3,254	701	114	2,198	<i>3,209</i>	<i>693</i>	<i>117</i>	<i>2,208</i>	<i>3,194</i>	<i>689</i>	<i>119</i>	<i>2,185</i>	6,267	<i>6,226</i>	<i>6,187</i>
W. N. Central	3,302	707	142	2,380	<i>3,264</i>	<i>705</i>	<i>144</i>	<i>2,377</i>	<i>3,240</i>	<i>690</i>	<i>144</i>	<i>2,358</i>	6,531	<i>6,490</i>	<i>6,432</i>
South Atlantic	1,502	188	12	966	<i>1,476</i>	<i>177</i>	<i>12</i>	<i>973</i>	<i>1,479</i>	<i>174</i>	<i>13</i>	<i>964</i>	2,667	<i>2,638</i>	<i>2,630</i>
E. S. Central	1,905	231	16	1,287	<i>1,868</i>	<i>217</i>	<i>18</i>	<i>1,301</i>	<i>1,863</i>	<i>214</i>	<i>19</i>	<i>1,289</i>	3,440	<i>3,404</i>	<i>3,385</i>
W. S. Central	1,228	88	4	799	<i>1,181</i>	<i>80</i>	<i>4</i>	<i>800</i>	<i>1,175</i>	<i>78</i>	<i>4</i>	<i>794</i>	2,119	<i>2,066</i>	<i>2,051</i>
Mountain	2,216	734	142	1,862	<i>2,195</i>	<i>737</i>	<i>144</i>	<i>1,840</i>	<i>2,171</i>	<i>722</i>	<i>141</i>	<i>1,842</i>	4,954	<i>4,916</i>	<i>4,876</i>
Pacific	1,462	598	89	1,206	<i>1,465</i>	<i>593</i>	<i>84</i>	<i>1,178</i>	<i>1,455</i>	<i>588</i>	<i>84</i>	<i>1,182</i>	3,355	<i>3,320</i>	<i>3,310</i>
U.S. Average	2,192	487	71	1,527	<i>2,160</i>	<i>478</i>	<i>71</i>	<i>1,523</i>	<i>2,151</i>	<i>473</i>	<i>71</i>	<i>1,511</i>	4,277	<i>4,232</i>	<i>4,206</i>
Cooling Degree Days															
New England	0	75	368	11	<i>0</i>	<i>79</i>	<i>399</i>	<i>1</i>	<i>0</i>	<i>79</i>	<i>399</i>	<i>1</i>	454	<i>479</i>	<i>479</i>
Middle Atlantic	0	138	500	22	<i>0</i>	<i>145</i>	<i>512</i>	<i>4</i>	<i>0</i>	<i>145</i>	<i>512</i>	<i>4</i>	660	<i>662</i>	<i>662</i>
E. N. Central	1	210	478	15	<i>0</i>	<i>210</i>	<i>515</i>	<i>6</i>	<i>0</i>	<i>210</i>	<i>515</i>	<i>6</i>	704	<i>731</i>	<i>731</i>
W. N. Central	9	264	623	14	<i>3</i>	<i>265</i>	<i>659</i>	<i>10</i>	<i>3</i>	<i>264</i>	<i>659</i>	<i>10</i>	910	<i>936</i>	<i>936</i>
South Atlantic	160	669	1,154	262	<i>119</i>	<i>640</i>	<i>1,135</i>	<i>225</i>	<i>116</i>	<i>641</i>	<i>1,136</i>	<i>226</i>	2,245	<i>2,119</i>	<i>2,119</i>
E. S. Central	65	481	965	72	<i>27</i>	<i>512</i>	<i>1,024</i>	<i>63</i>	<i>27</i>	<i>512</i>	<i>1,024</i>	<i>63</i>	1,583	<i>1,627</i>	<i>1,626</i>
W. S. Central	214	827	1,457	228	<i>95</i>	<i>899</i>	<i>1,512</i>	<i>202</i>	<i>95</i>	<i>899</i>	<i>1,512</i>	<i>202</i>	2,726	<i>2,708</i>	<i>2,709</i>
Mountain	36	463	915	120	<i>20</i>	<i>434</i>	<i>926</i>	<i>76</i>	<i>18</i>	<i>435</i>	<i>927</i>	<i>76</i>	1,535	<i>1,456</i>	<i>1,455</i>
Pacific	30	220	700	97	<i>29</i>	<i>166</i>	<i>564</i>	<i>58</i>	<i>28</i>	<i>166</i>	<i>564</i>	<i>58</i>	1,047	<i>817</i>	<i>816</i>
U.S. Average	70	402	837	116	<i>43</i>	<i>397</i>	<i>834</i>	<i>91</i>	<i>43</i>	<i>398</i>	<i>836</i>	<i>91</i>	1,425	<i>1,366</i>	<i>1,368</i>
Cooling Degree Days, Prior 10-year Average															
New England	0	81	433	1	<i>0</i>	<i>81</i>	<i>434</i>	<i>1</i>	<i>0</i>	<i>79</i>	<i>437</i>	<i>1</i>	515	<i>516</i>	<i>517</i>
Middle Atlantic	0	169	566	6	<i>0</i>	<i>166</i>	<i>566</i>	<i>5</i>	<i>0</i>	<i>162</i>	<i>569</i>	<i>6</i>	741	<i>737</i>	<i>737</i>
E. N. Central	3	234	542	8	<i>3</i>	<i>228</i>	<i>532</i>	<i>7</i>	<i>3</i>	<i>230</i>	<i>535</i>	<i>7</i>	788	<i>770</i>	<i>775</i>
W. N. Central	7	281	673	12	<i>7</i>	<i>276</i>	<i>659</i>	<i>11</i>	<i>7</i>	<i>281</i>	<i>666</i>	<i>12</i>	973	<i>953</i>	<i>965</i>
South Atlantic	117	666	1,167	230	<i>119</i>	<i>675</i>	<i>1,160</i>	<i>227</i>	<i>119</i>	<i>675</i>	<i>1,166</i>	<i>234</i>	2,179	<i>2,181</i>	<i>2,193</i>
E. S. Central	33	544	1,056	65	<i>34</i>	<i>539</i>	<i>1,031</i>	<i>63</i>	<i>35</i>	<i>541</i>	<i>1,035</i>	<i>65</i>	1,698	<i>1,667</i>	<i>1,676</i>
W. S. Central	90	876	1,527	204	<i>100</i>	<i>887</i>	<i>1,531</i>	<i>205</i>	<i>100</i>	<i>887</i>	<i>1,547</i>	<i>209</i>	2,697	<i>2,722</i>	<i>2,743</i>
Mountain	23	424	930	81	<i>24</i>	<i>425</i>	<i>921</i>	<i>84</i>	<i>25</i>	<i>430</i>	<i>924</i>	<i>83</i>	1,458	<i>1,455</i>	<i>1,462</i>
Pacific	30	181	608	74	<i>30</i>	<i>185</i>	<i>621</i>	<i>78</i>	<i>31</i>	<i>184</i>	<i>615</i>	<i>75</i>	892	<i>914</i>	<i>904</i>
U.S. Average	43	405	857	94	<i>45</i>	<i>408</i>	<i>855</i>	<i>94</i>	<i>45</i>	<i>409</i>	<i>860</i>	<i>96</i>	1,399	<i>1,402</i>	<i>1,410</i>

- = no data available

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

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

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

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

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

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