



Short-Term Energy Outlook (STEO)

Forecast highlights

Global liquid fuels

- Brent crude oil spot prices averaged \$65 per barrel (b) in November, down \$16/b from October, the largest monthly average price decline since December 2014.
- EIA expects Brent spot prices will average \$61 in 2019 and that West Texas Intermediate (WTI) crude oil prices will average about \$7/b lower than Brent prices next year. NYMEX WTI futures and options contract values for March 2019 delivery that traded during the five-day period ending December 6, 2018, suggest a range of \$36/b to \$77/b encompasses the market expectation for March WTI prices at the 95% confidence level.
- EIA estimates that U.S. crude oil production averaged 11.5 million barrels per day (b/d) in November, up 150,000 b/d from October levels because of platforms resuming normal operations after hurricane-related outages in October. EIA expects that U.S. crude oil production will average 10.9 million b/d in 2018, up from [9.4 million b/d in 2017](#), and will average 12.1 million b/d in 2019.
- EIA forecasts total global liquid fuels inventories will increase by about 0.3 million b/d in 2018 and by 0.2 million b/d in 2019. Global liquid fuels production is forecast to increase by 1.4 million b/d in 2019. EIA expects production growth in the United States to be partially offset by declining production elsewhere, notably in the Organization of the Petroleum Exporting Countries (OPEC), where EIA forecasts that liquid fuels production will decline by 0.9 million b/d in 2019. EIA expects global liquid fuels consumption to increase by 1.5 million b/d in 2019, with growth largely coming from China, the United States, and India.

Natural gas

- The Henry Hub natural gas spot price averaged \$4.15/million British thermal units (MMBtu) in November, up \$0.87/MMBtu from the October average. Cold temperatures and low inventory levels contributed to the [increase in price](#). Despite low inventory levels, EIA expects strong growth in U.S. natural gas production to put downward pressure on prices in 2019. EIA expects Henry Hub natural gas spot prices to average \$3.11/MMBtu in 2019, down 6 cents from the 2018 average and down from a forecast average price of \$3.88/MMBtu in the fourth quarter of 2018. NYMEX futures and options contract values for March 2019 delivery traded during the five-day period

ending December 6, 2018, suggest a range of \$1.85/MMBtu to \$8.37/MMBtu encompasses the market expectation for March Henry Hub natural gas prices at the 95% confidence level.

- EIA estimates that U.S. natural gas storage inventories were 3.0 trillion cubic feet (Tcf) at the end of November, which was 19% lower than the five-year (2013–17) average for the end of November.
- EIA forecasts that dry natural gas production will average 83.3 billion cubic feet per day (Bcf/d) in 2018, up 8.5 Bcf/d from 2017. Both the level and volume growth of natural gas production in 2018 would establish new records. EIA expects natural gas production will continue to rise in 2019 to an average of 90.0 Bcf/d.

Electricity, coal, renewables, and emissions

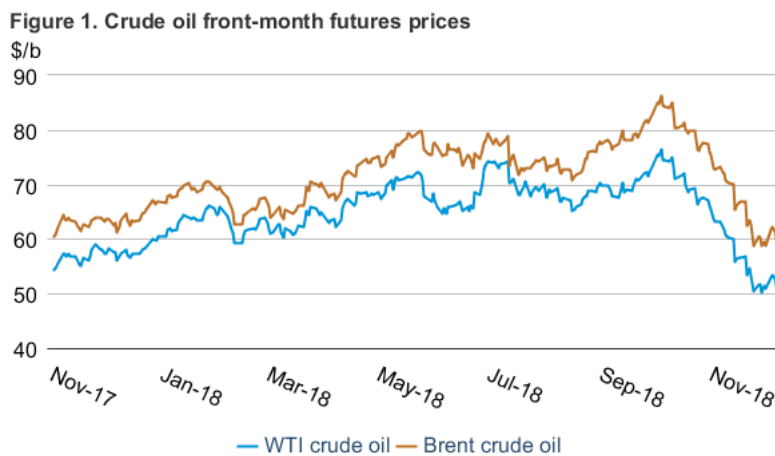
- EIA expects the share of U.S. total utility-scale electricity generation from natural gas-fired power plants to rise from 32% in 2017 to 35% in 2018 and in 2019. EIA forecasts that the electricity generation share from coal will average 28% in 2018 and 26% in 2019, down from 30% in 2017. The nuclear share of generation was 20% in 2017 and EIA forecasts that it will average about 19% in 2018 and in 2019. Wind, solar, and other nonhydropower renewables provided about 10% of electricity generation in 2017. EIA expects them to provide 10% in 2018 and 11% in 2019. The generation share of hydropower was 7% in 2017, and EIA forecasts that it will be about the same in 2018 and in 2019.
- EIA expects average U.S. solar generation will rise from 212,000 megawatt hours per day (MWh/d) in 2017 to 268,000 MWh/d in 2018 (an increase of 27%) and to 303,000 MWh/d in 2019 (an increase of 13%). In recent years, the industry has seen a shift from [fixed-tilt solar PV systems to tracking systems](#). Although tracking systems are more expensive than fixed-tilt systems, revenue from the additional electricity generated by following the path of the sun across the sky often exceeds the increased cost.
- U.S. coal exports for the first nine months of 2018 totaled 87 million short tons (MMst), compared with 69 MMst exported during the same period in 2017. In July and September 2018, exports of steam coal (used for generating electricity) exceeded exports of metallurgical coal (used for producing steel). Before July 2018, the last month that this occurred was in February 2015. EIA expects coal exports to total 113 MMst in 2018 and 102 MMst in 2019. EIA expects U.S. coal production will total 762 MMst in 2018 (down 2% from 2017) and 742 MMst in 2019 (down 3% from 2018).
- After declining by 0.8% in 2017, EIA forecasts that U.S. energy-related carbon dioxide (CO₂) emissions will rise by 3.0% in 2018. This increase largely reflects more natural gas consumption in 2018 for heating during a colder winter and for electric generation to support more cooling during a warmer summer than in 2017. EIA expects emissions to decline by 1.2% in 2019 because it forecasts that temperatures will return to near

normal. Energy-related CO2 emissions are sensitive to changes in weather, economic growth, energy prices, and fuel mix.

Petroleum and natural gas markets review

Crude oil

Prices: The front-month futures price for Brent crude oil settled at \$60.06 per barrel (b) on December 6, a decrease of \$12.83/b from November 1. The front-month futures price for West Texas Intermediate (WTI) crude oil for delivery at Cushing, Oklahoma, decreased by \$12.20/b during the same period, settling at \$51.49/b on December 6 (**Figure 1**).



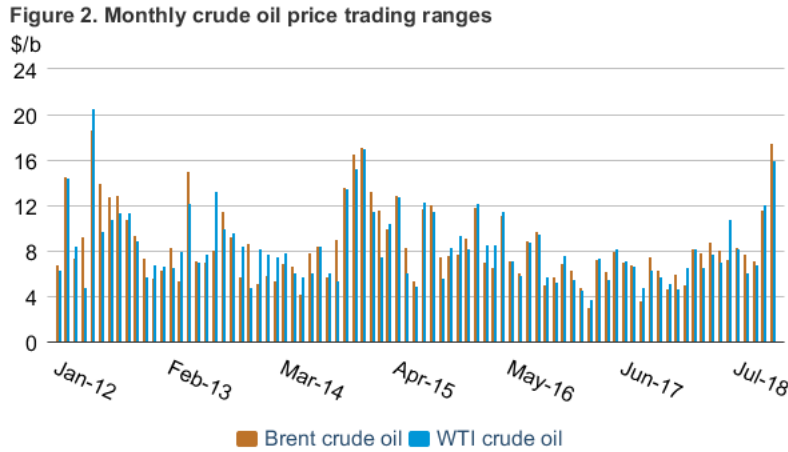
 CME Group and Intercontinental Exchange, as compiled by Bloomberg L.P.

Crude oil prices declined significantly in November but increased during the first week in December amid heightened price volatility. WTI prices experienced three [rare and large price declines](#) (each between -6% and -8%) within the span of 10 days in the middle of November, and WTI prices were down by more than 33% from the four-year highs set in early October by the end of November. Several factors contributed to falling prices. Crude oil production from the world's three largest producers—the United States, Russia, and Saudi Arabia—were at or near record levels in November. Implementation of sanctions on Iran began on November 5, but the United States granted waivers for some of Iran's largest customers to continue importing limited volumes of crude oil for six months. In addition, concerns about the pace of global economic growth in coming months have led to related concerns about the pace of oil demand growth.

On December 7, the Organization of the Petroleum Exporting Countries (OPEC) and several non-OPEC countries announced a production reduction of 1.2 million barrels per day (b/d) from their October production levels for six months beginning in January 2019. The cuts were in response to increasing evidence that oil markets could become oversupplied in 2019. This potential oversupply was reflected in recent price declines. EIA is revising its 2019 price forecasts for Brent and WTI to \$61/b and \$54/b, respectively, which are both \$11/b lower than forecast in

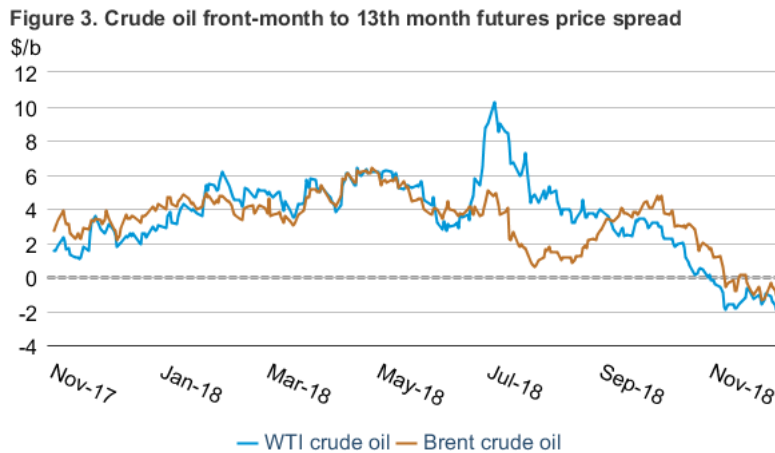
the November STEO. In last month’s STEO, EIA expected downward price pressures could materialize by the middle of 2019 to reduce global inventory builds. EIA expects that the magnitude of the recent price declines combined with the OPEC production cuts will bring 2019 supply and demand numbers largely into balance, which EIA forecasts will keep prices near current levels in the coming months.

The realized volatility in crude oil prices last month, as measured by the difference between the monthly high and low prices (trading range), was the largest since 2012 for Brent and the largest for WTI since 2014 (**Figure 2**). The two crude oils traded in a \$17.49/b and \$15.98/b range, respectively, during the month. The implied volatility of Brent and WTI, calculated from options prices, more than doubled during the month, reflecting the market’s heightened uncertainty regarding future oil supply and demand.



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

The crude oil 1st–13th futures contract price spreads for Brent and WTI declined to the lowest levels since the third quarter of 2017, settling at $-\$1.02/b$ and $-\$1.95/b$, respectively, on December 6 (**Figure 3**). Both crude oils are in contango (when near-term prices are lower than longer-dated ones), reflecting recent increases in global oil inventories. Some recent supply increases in Saudi Arabia and the United States have been larger than expected and likely contributed to an estimated global liquid fuels inventory build of 1.3 million b/d during November.

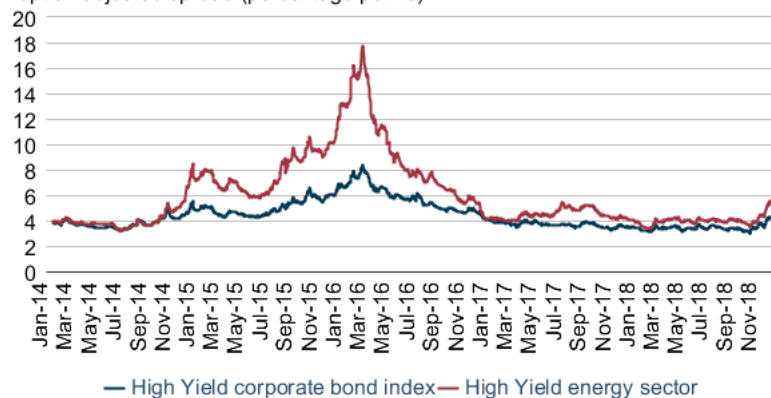


 CME Group and Intercontinental Exchange, as compiled by Bloomberg L.P.

Third-party ship tracking data suggest some of the inventories have recently built in [floating storage](#). Floating storage is typically the most expensive way to store oil, only occurring in markets where producers and traders have more difficulty finding customers or accessing available onshore storage. However, the increase in floating storage may not entirely be because of the recent market weakness. The increase also likely reflects, in part, the effects of U.S. sanctions on Iran, limiting the country’s ability to sell crude oil openly. EIA estimates that Iranian crude oil exports have declined at a faster rate than their total crude oil production, indicating their oil is being stored. A similar phenomenon [occurred](#) during the 2012 sanctions.

Energy high yield bonds: Yields for high yield bonds—those from companies with a rating lower than investment grade from a credit rating agency—for energy and nonenergy companies increased at the same time as the higher market volatility in November. An increase in bond yields, measured by a higher [option adjusted spread](#) to U.S. government bonds, reflects higher default risk and could increase the cost of borrowing for some companies. The Bloomberg Barclays high yield corporate bond index increased by 0.7 percentage points from November 1, settling at 4.4% on December 6. For companies specific to the energy sector, the option adjusted spread increased 1.3 percentage points during the same period, settling at 5.8% on December 6 (**Figure 4**). Even though the energy bonds’ option adjusted spread remains significantly lower than the highs reached in early 2016 when crude oil prices fell to \$26/b, the increase during the past two months has brought them to the highest level in two years. The decline in oil prices increases the default risk of some oil producers’ ability to repay principal and interest.

Figure 4. Bloomberg Barclays high-yield corporate bond index option adjusted spread (percentage points)

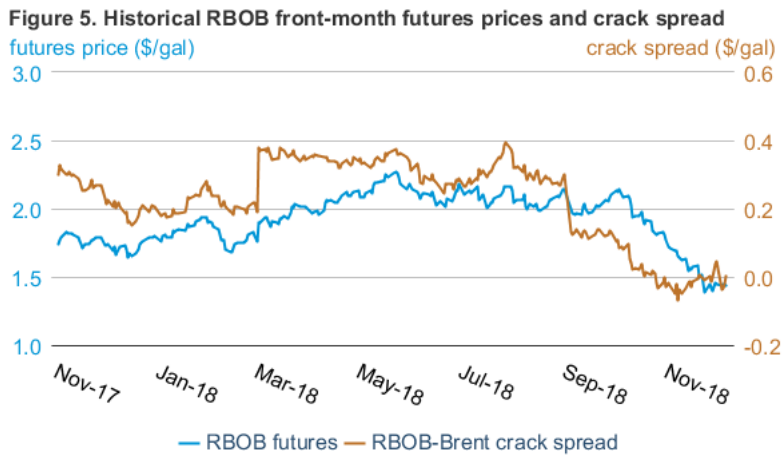


 Bloomberg L.P., Barclays

Petroleum products

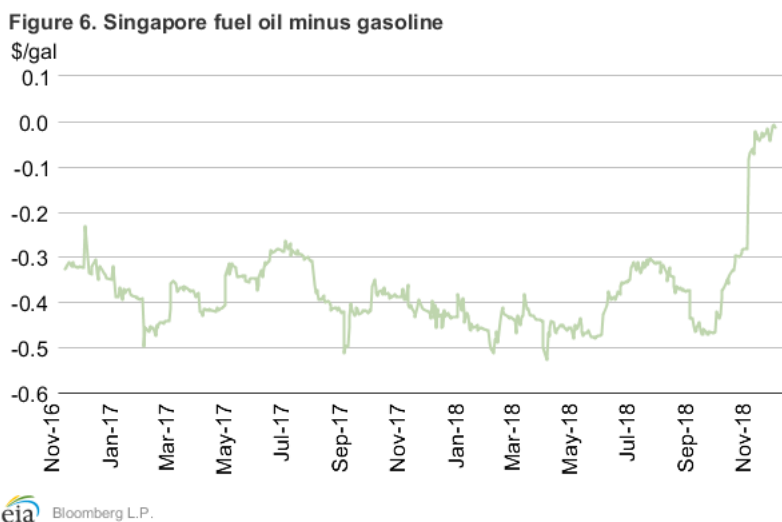
Gasoline prices: The front-month futures price of reformulated blendstock for oxygenate blending (RBOB, the petroleum component of gasoline used in many parts of the country) settled at \$1.43 per gallon (gal) on December 6 (**Figure 5**), a decrease of 28 cents/gal from November 1. The RBOB–Brent crack spread (the difference between the price of RBOB and the price of Brent crude oil) increased by 2 cents/gal to settle at 0 cents/gal during the same period.

The RBOB–Brent crack spread was negative for 18 consecutive days in late October through mid-November, the longest such stretch since 2011. According to EIA’s latest [Petroleum Supply Monthly](#), U.S. gasoline consumption declined by 260,000 barrels per day (b/d) year-over-year in September. STEO estimates that U.S. gasoline consumption continued to decline year-over-year for the fourth consecutive month in November. In addition, low [international demand and increased global gasoline supply](#) likely contributed to reduced U.S. gasoline exports. EIA estimates U.S. gasoline exports to have declined year-over-year by 289,000 b/d in November, based on the four-week average through November 30.



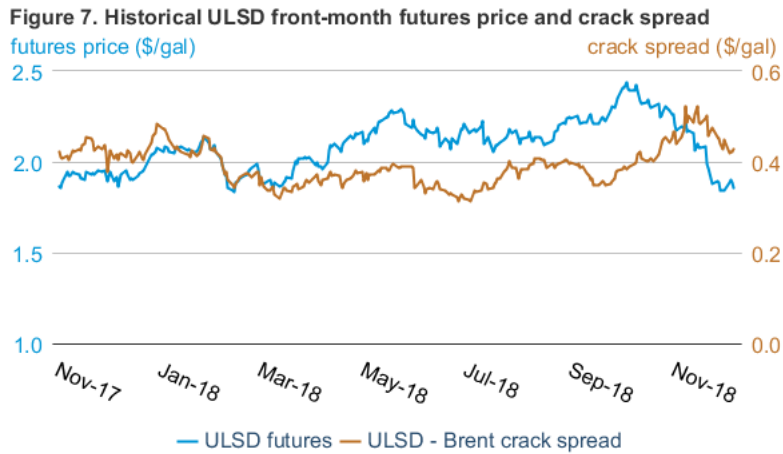
eia CME Group, as compiled by Bloomberg L.P., RBOB=reformulated blendstock for oxygenate blending

Singapore gasoline and fuel oil: Unique market dynamics in Singapore brought wholesale fuel oil prices near parity with gasoline prices for the first time based on available data. The Singapore fuel oil–gasoline spread increased to just under 0 cents/gal on December 4 before settling at -6 cents/gal on December 6 (**Figure 6**). The Asian gasoline market received several new sources of supply in 2018. The startup of a refinery in Vietnam has reduced gasoline imports into the country, and new Chinese refinery projects have contributed to increased gasoline exports. The Chinese government recently granted more export quotas—the fourth announcement this year—to state-owned refiners, which could contribute to additional regional supply. In contrast, the fuel oil market has been comparatively strong. Inventories in Singapore have remained lower than their five-year (2013–17) minimum level for most of the second-half of 2018. Russian fuel oil production, which has traditionally been a major supplier to Asian customers, also continues to decline because the country has [upgraded its refineries](#).



Ultra-low sulfur diesel prices: The ultra-low sulfur diesel (ULSD) front-month futures price for delivery in New York Harbor settled at \$1.86/gal on December 6 (**Figure 7**), a decrease of 34 cents/gal from November 1. The ULSD–Brent crack spread (the difference between the price of ULSD and the price of Brent crude oil) decreased by 4 cents/gal to settle at 43 cents/gal during the same period.

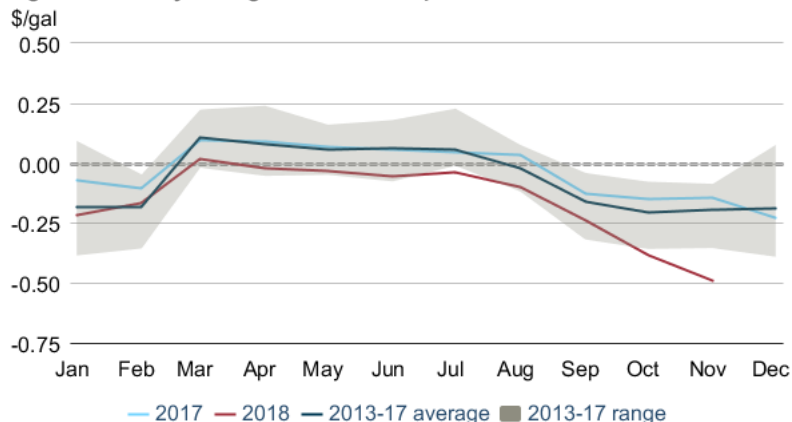
The ULSD–Brent crack spread approached a four-year high in mid-November of 52 cents/gal and averaged near the top of its five-year range in November. U.S. distillate inventories remain 10% lower than the five-year average, and the increasingly tight market was met by colder than normal weather. Temperatures in November were the coldest for the month in four years, and STEO estimates U.S. distillate consumption was the [highest for the month of November on record](#), averaging 4.2 million b/d.



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

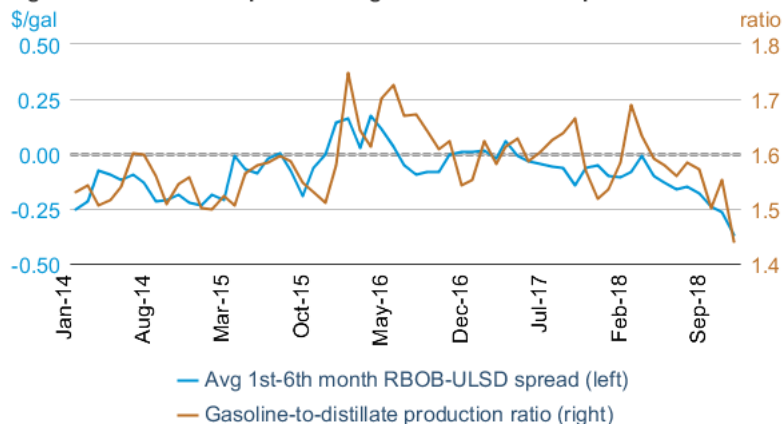
Gasoline-to-distillate production ratios and prices: The recent declines in gasoline prices relative to distillate prices are also reflected in the futures curves for both products, which could have an effect on the relative production of each fuel in the United States. The RBOB–ULSD front-month spread averaged -49 cents/gal in November, the lowest in 10 years (**Figure 8**). Averaging the spread between front-month contract prices and those six months in the future (to account for the seasonality in the RBOB futures curve), the RBOB–ULSD price spread declined to a monthly average of -37 cents/gal in November (**Figure 9**). The relative prices of these two products could have an effect on refinery operations and ultimately the amount of production of each fuel. Absent significant investments in new equipment, refiners can make small adjustments to their crude slate and operations to shift their yields of gasoline or distillate. When the RBOB–ULSD spread averaged 12 cents/gal in the first quarter of 2016, refiners adjusted operations to increase the relative production of gasoline to distillate. Now that the spread has reached significantly lower levels, STEO estimates the gasoline-to-distillate production ratio declined to less than 1.5 in November. The last time the ratio fell below 1.5 was in January 2015.

Figure 8. Monthly average RBOB-ULSD spread



eia CME Group, as compiled by Bloomberg L.P.

Figure 9. RBOB-ULSD spreads and gasoline-to-distillate production ratio

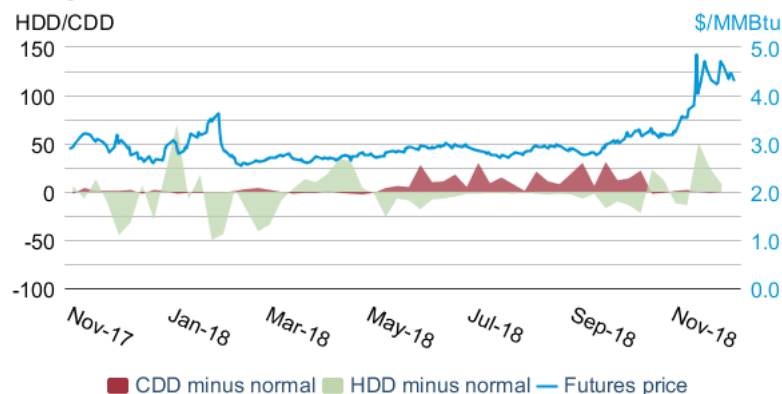


eia U.S. Energy Information Administration; CME Group, as compiled by Bloomberg, L.P.

Natural Gas

Prices: The front-month natural gas futures contract for delivery at the Henry Hub settled at \$4.33/million British thermal units (MMBtu) on December 6, an increase of \$1.09/MMBtu from November 1 (**Figure 10**). Prices rose substantially in the first half of November because of high natural gas demand for heating and power generation. Cold weather across the Lower 48 states in mid-November increased natural gas demand in the residential and commercial sectors. Heating degree days (HDD) reached 14% above normal, the coldest November in the United States in four years. The higher demand contributed to several early-season withdrawals, which kept storage levels low heading into winter and put upward pressure on prices. The deficit of working gas in underground storage widened month-over-month and stands at 0.7 trillion cubic feet (Tcf) lower than the five-year average for the end of November.

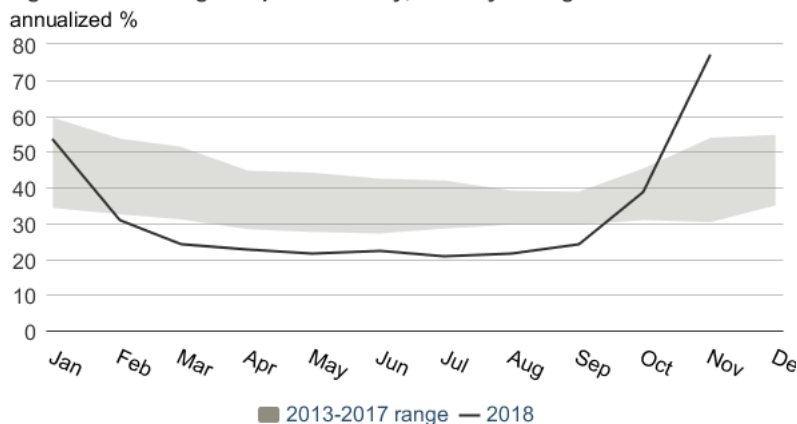
Figure 10. Natural gas front-month futures prices and actual minus historical average HDD and CDD



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

Implied volatility: Concerns about low storage levels with winter weather approaching contributed to an increase in volatility in natural gas futures prices. Natural gas implied volatility averaged 77% in November, much higher than the five-year range and the highest volatility in November in 17 years (**Figure 11**). In contrast, implied volatility reached the lowest levels ever recorded for the natural gas front-month contract during the summer, but it re-emerged at the end of this year’s injection season when inventories remained lower than historical levels. Throughout November, the increasing storage deficit to the five-year average, along with forecasts of colder temperatures, likely contributed to the increase in implied volatility.

Figure 11. Natural gas implied volatility, monthly averages

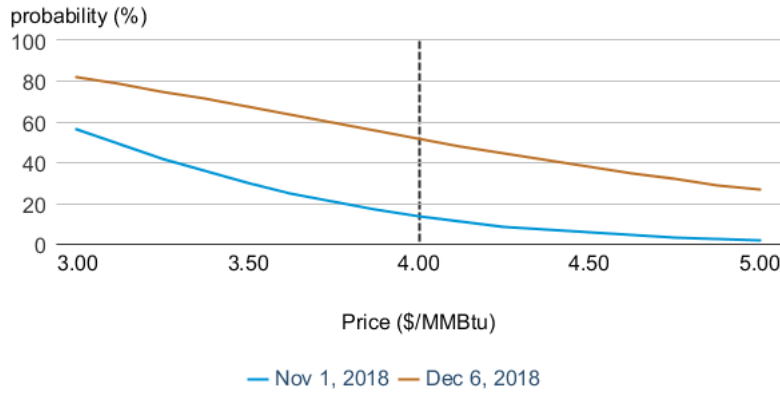


eia Bloomberg L.P.

Probability: At the beginning of November, the probability of the February 2019 Henry Hub contract expiring at more than \$4/MMBtu was 13% (**Figure 12**). The probability, [calculated using futures and options data](#), of the contract expiring at more than \$4/MMBtu increased significantly throughout the month, reaching 52% on December 6. The higher probability was

driven by a much higher futures price, which increased by more than \$1/MMBtu, and by substantially higher implied volatility, which more than doubled from November 1.

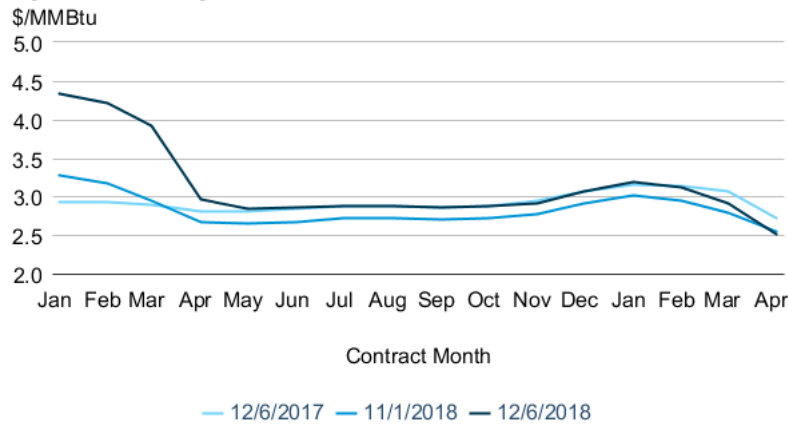
Figure 12. Probability of the February 2019 Henry Hub contract expiring above specified price levels



eia U.S. Energy Information Administration, CME Group

Futures curve: Natural gas futures prices have increased substantially since November 1 but primarily in the front part of the futures curve (**Figure 13**). Prices are elevated for the winter months, but as of December 6, the April 2019 contract showed prices falling back below \$3/MMBtu. EIA expects that dry natural gas production in April 2019 will be 90 Bcf/d—2 Bcf/d higher than current levels—putting downward pressure on prices as demand declines after the winter.

Figure 13. Natural gas futures curves



eia Bloomberg, Intercontinental Exchange

Notable forecast changes

- EIA forecasts Brent and West Texas Intermediate crude oil spot prices will average \$61 per barrel (b) and \$54/b, respectively, in 2019, which are both \$11/b lower than in the November STEO. The price of both crude oils fell significantly in November. In previous STEOs, EIA had been forecasting downward price pressures in the coming months. However, the drop in price occurred more quickly than expected and the magnitude was greater than expected. Prices have likely declined to a level that EIA believes will contribute to a roughly balanced oil market in 2019, which EIA expects will keep prices close to current levels on average. Uncertainty exists, though, in the both EIA's supply and demand outlooks for 2019, and deviations in actual outcomes or market expectations of supply and demand from those forecasted for the coming year could cause daily and monthly averages prices to fluctuate significantly.
- EIA revised downward its forecast of Canadian oil production for 2019 by 0.12 million b/d to reflect Alberta's announced production cuts on December 3. EIA's forecast for 2019 is an average of 5.1 million b/d compared with last month's forecast of 5.2 million b/d.
- On December 3, Qatar submitted to the Organization of the Petroleum Exporting Countries (OPEC) a notice of its withdrawal from the organization, effective January 1, 2019. In this STEO, Qatar is included in OPEC supply totals. Beginning with the January 2019 STEO, EIA will list Qatar as a non-OPEC producer.
- EIA forecasts coal production will be 742 million short tons (MMst) in 2019, which is 2% (13 MMst) higher than forecast in the November STEO, and would be a decrease of 3% (20 MMst) from 2018 levels. The increase in the production forecast reflects higher demand for coal in the U.S. electric power sector and in global export markets than expected in the previous STEO.
- For more information, see the [detailed table of STEO forecast changes](#).

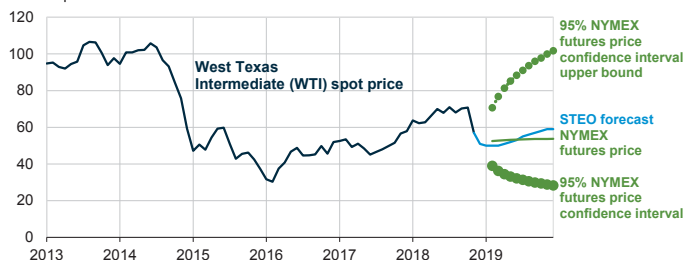
This report was prepared by the U.S. Energy Information Administration (EIA), the statistical and analytical agency within the U.S. Department of Energy. By law, EIA's data, analyses, and forecasts are independent of approval by any other officer or employee of the United States Government. The views 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 December 2018

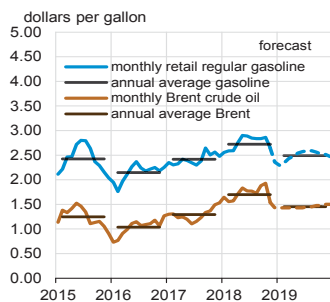
West Texas Intermediate (WTI) crude oil price and NYMEX confidence intervals
dollars per barrel



Note: Confidence interval derived from options market information for the five trading days ending Dec 6, 2018. Intervals not calculated for months with sparse trading in near-the-money options contracts.
Source: Short-Term Energy Outlook, December 2018, and CME Group

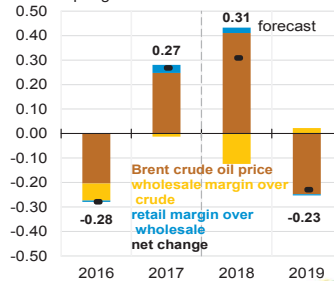


U.S. gasoline and crude oil prices

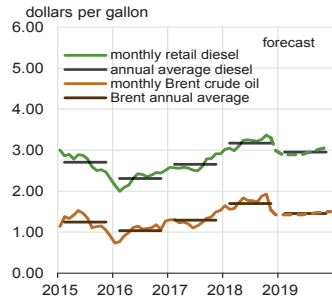


Source: Short-Term Energy Outlook, December 2018

Components of annual gasoline price changes
dollars per gallon

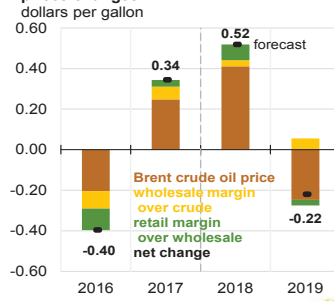


U.S. diesel and crude oil prices



Source: Short-Term Energy Outlook, December 2018

Components of annual diesel prices changes



Henry Hub natural gas price and NYMEX confidence intervals

dollars per million Btu



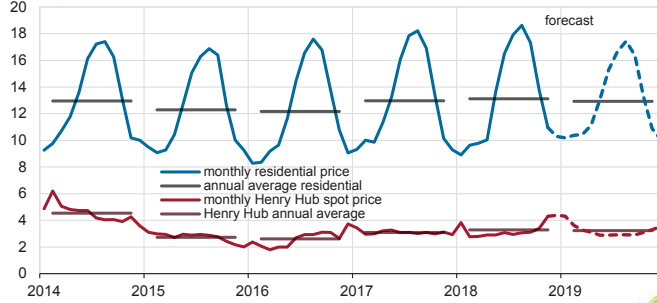
Note: Confidence interval derived from options market information for the five trading days ending Dec 6, 2018. Intervals not calculated for months with sparse trading in near-the-money options contracts.

Source: Short-Term Energy Outlook, December 2018, and CME Group



U.S. natural gas prices

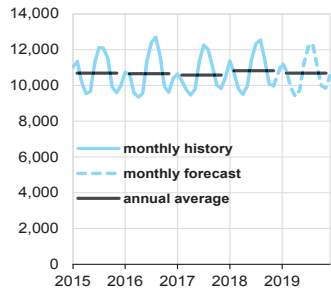
dollars per thousand cubic feet



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

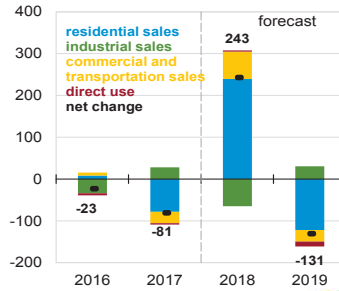


U.S. electricity consumption
million kilowatthours per day

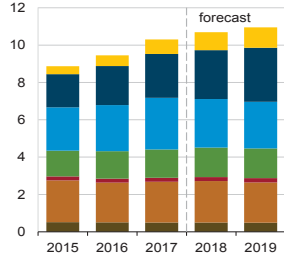


Source: Short-Term Energy Outlook, December 2018

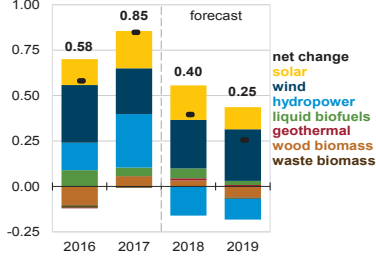
Components of annual change
million kilowatthours per day



U.S. renewable energy supply
quadrillion British thermal units



Components of annual change
quadrillion British thermal units

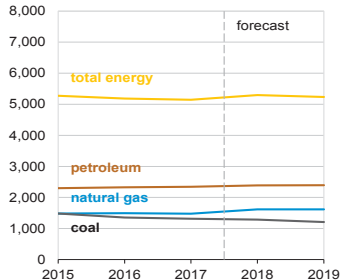


Note: Hydropower excludes pumped storage generation. Liquid biofuels include ethanol and biodiesel. Other biomass includes municipal waste from biogenic sources, landfill gas, and other non-wood waste.

Source: Short-Term Energy Outlook, December 2018

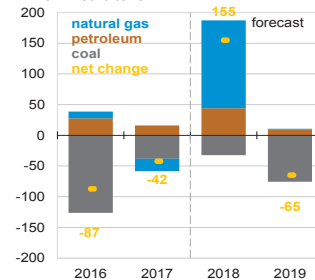


U.S. annual carbon emissions by source
million metric tons



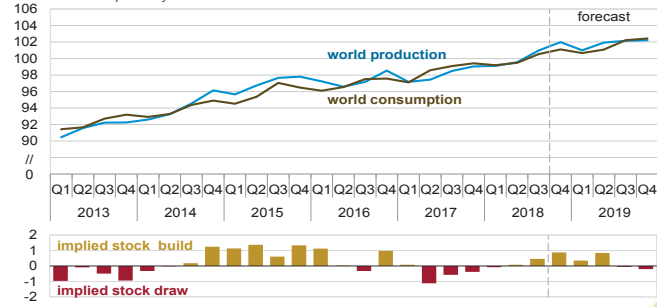
Source: Short-Term Energy Outlook, December 2018

Components of annual change
million metric tons



World liquid fuels production and consumption balance

million barrels per day

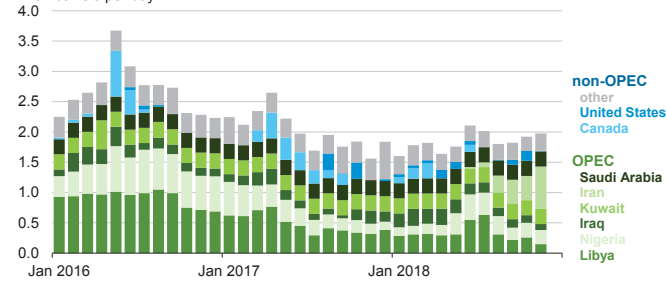


Source: Short-Term Energy Outlook, December 2018



Estimated unplanned liquid fuels production outages

million barrels per day

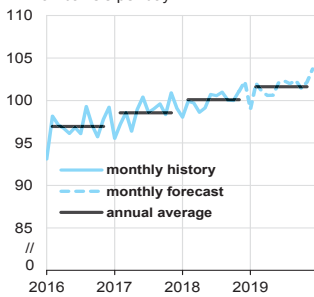


Source: Short-Term Energy Outlook, December 2018



World liquid fuels consumption

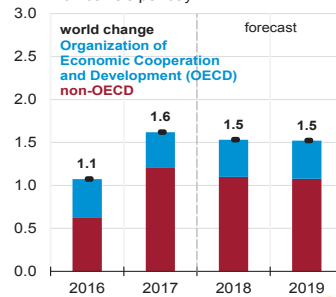
million barrels per day



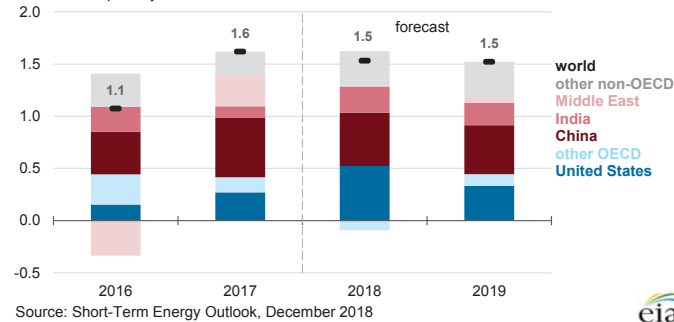
Source: Short-Term Energy Outlook, December 21

Components of annual change

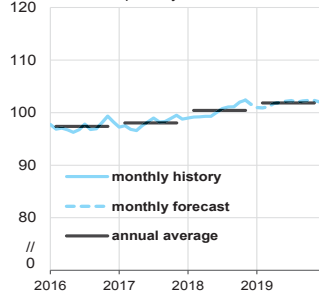
million barrels per day



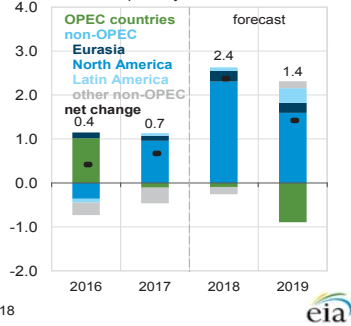
Annual change in world liquid fuels consumption
million barrels per day



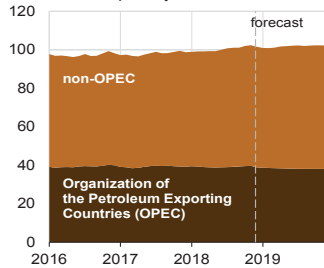
World crude oil and liquid fuels production
million barrels per day



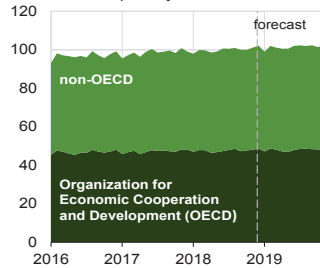
Components of annual change
million barrels per day



World liquid fuels production
million barrels per day



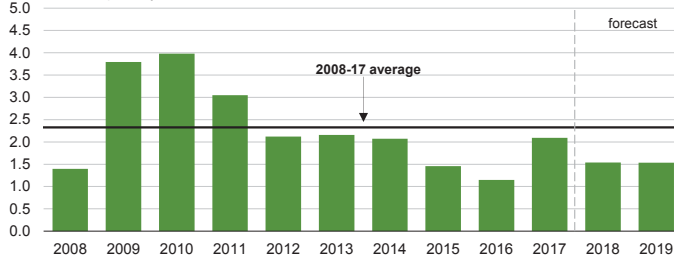
World liquid fuels consumption
million barrels per day



Source: Short-Term Energy Outlook, December 2018



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

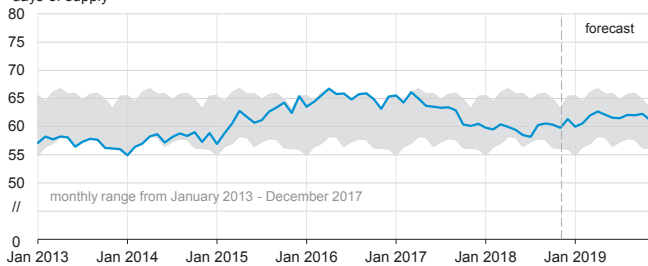


Note: Black line represents 2008-2017 average (2.3 million barrels per day).

Source: Short-Term Energy Outlook, December 2018



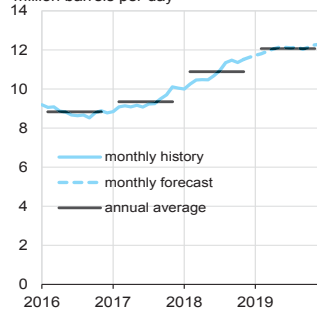
**Organization for Economic Cooperation and Development (OECD)
commercial inventories of crude oil and other liquids**
days of supply



Source: Short-Term Energy Outlook, December 2018

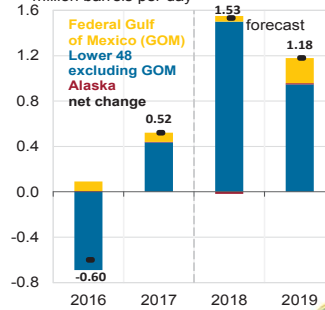


U.S. crude oil production
million barrels per day

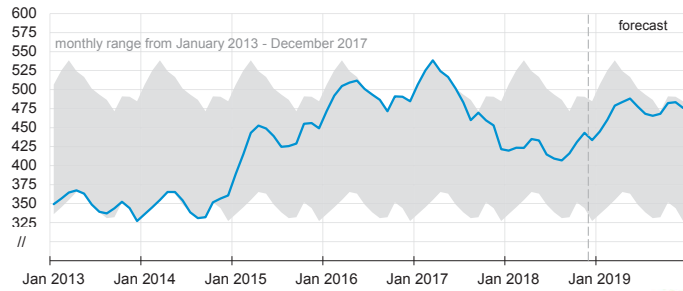


Source: Short-Term Energy Outlook, December 2018

Components of annual change
million barrels per day



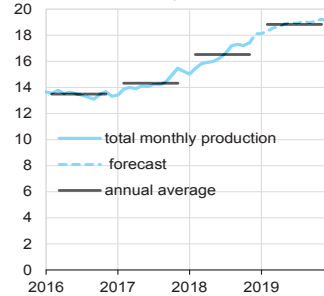
U.S. commercial crude oil inventories
million barrels



Source: Short-Term Energy Outlook, December 2018

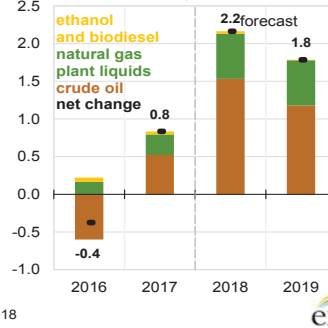


U.S. crude oil and liquid fuels production
million barrels per day

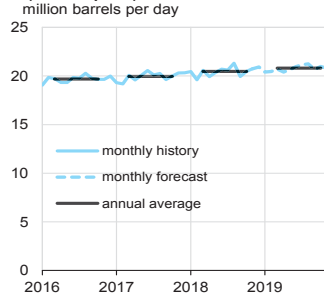


Source: Short-Term Energy Outlook, December 2018

Components of annual change
million barrels per day

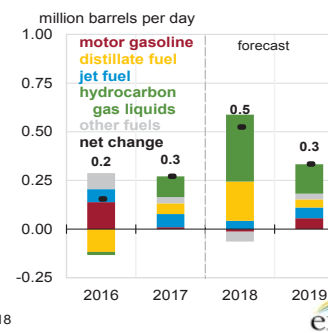


U.S. liquid fuels product supplied (consumption)
million barrels per day

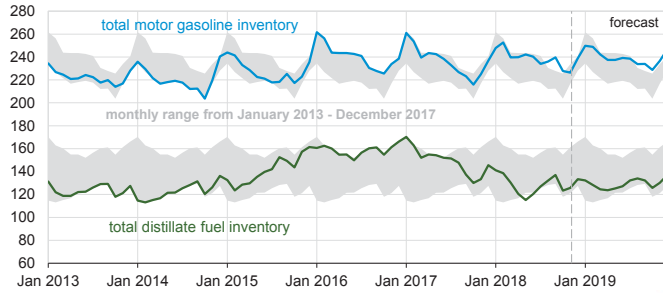


Source: Short-Term Energy Outlook, December 2018

Components of annual change
million barrels per day



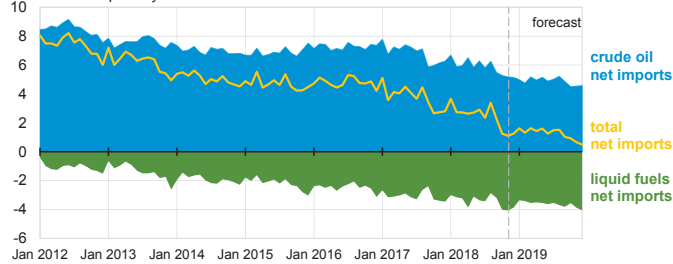
U.S. gasoline and distillate inventories
million barrels



Source: Short-Term Energy Outlook, December 2018



U.S. net imports of crude oil and liquid fuels
million barrels per day

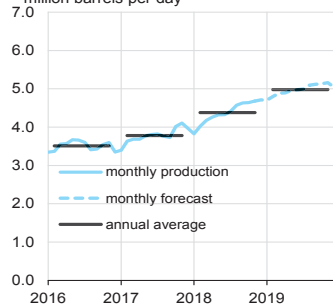


Note: Liquids fuels include: gasoline, distillate fuels, hydrocarbon gas liquids, jet fuel, residual fuel oil, unfinished oils, other hydrocarbons/oxygenates, and other oils.

Source: Short-Term Energy Outlook, December 2018

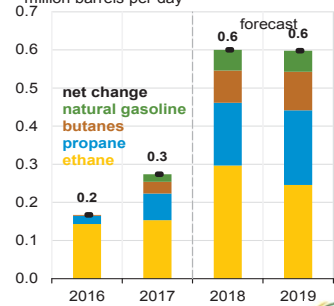


U.S. natural gas plant liquids production
million barrels per day

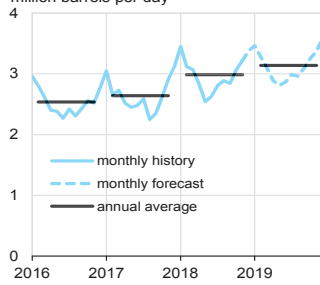


Source: Short-Term Energy Outlook, December 2018

Components of annual change
million barrels per day

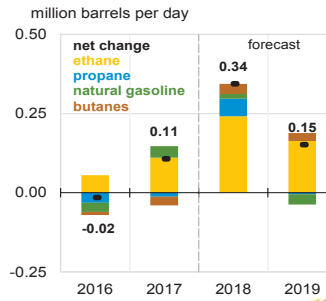


U.S. hydrocarbon gas liquids product supplied (consumption)
million barrels per day

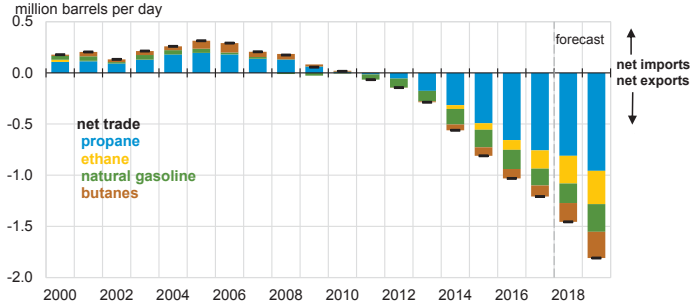


Source: Short-Term Energy Outlook, December 2018

Components of annual change



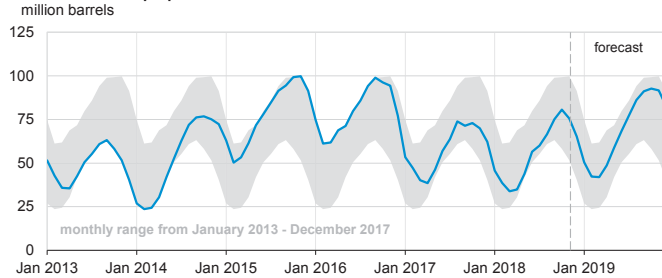
U.S. net trade of hydrocarbon gas liquids (HGL)



Source: Short-Term Energy Outlook, December 2018



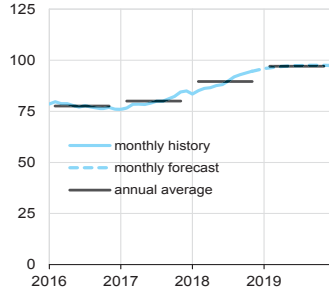
U.S. commercial propane inventories



Source: Short-Term Energy Outlook, December 2018

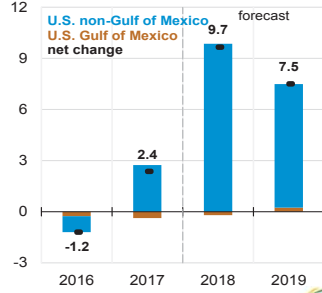


U.S. marketed natural gas production
billion cubic feet per day

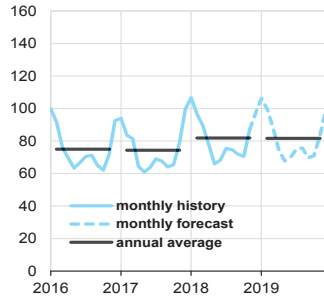


Source: Short-Term Energy Outlook, December 2018

Components of annual change
billion cubic feet per day

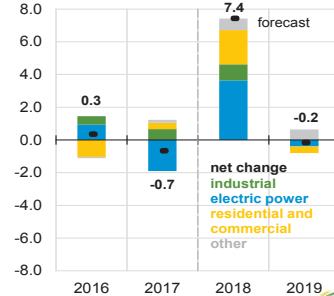


U.S. natural gas consumption
billion cubic feet per day

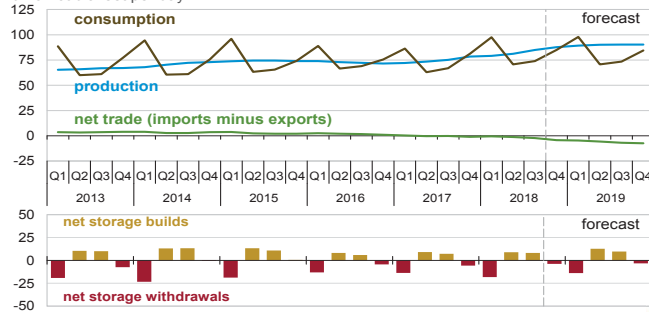


Source: Short-Term Energy Outlook, December 2018

Components of annual change
billion cubic feet per day



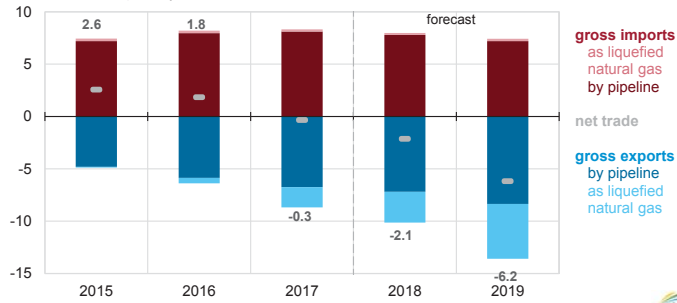
U.S. natural gas production, consumption, and net imports
billion cubic feet per day



Source: Short-Term Energy Outlook, December 2018



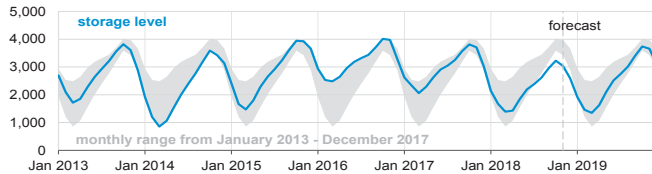
Annual natural gas trade
billion cubic feet per day



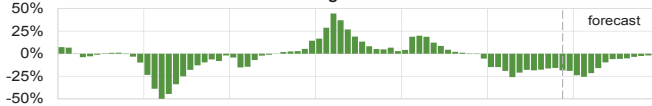
Source: Short-Term Energy Outlook, December 2018



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



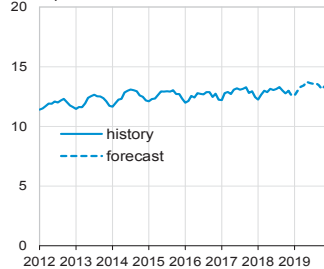
Percent deviation from 2013 - 2017 average



Source: Short-Term Energy Outlook, December 2018

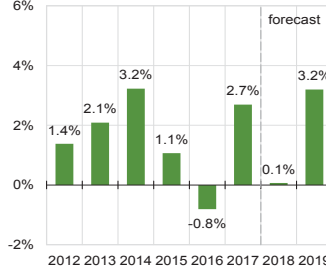


U.S. monthly residential electricity price
cents per kilowatthour

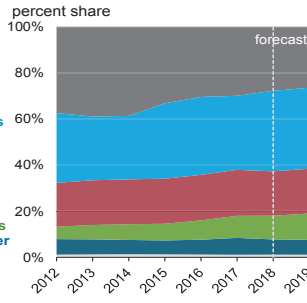
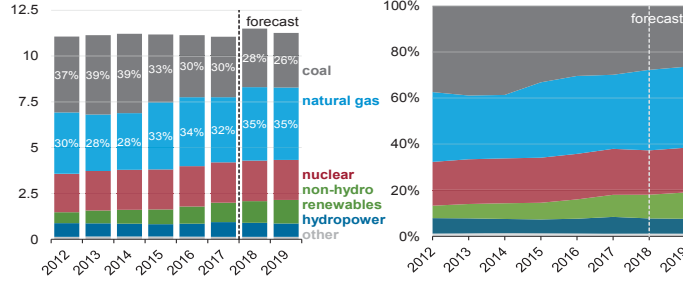


Source: Short-Term Energy Outlook, December 2018

Annual growth in residential electricity prices
percent



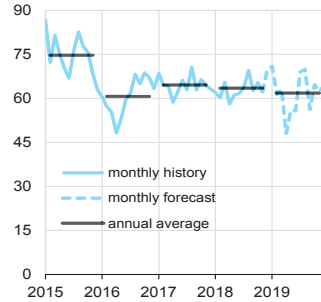
U.S. electricity generation by fuel, all sectors
million megawatthours per day



Note: Labels show percentage share of total generation provided by coal and natural gas.
Source: Short-Term Energy Outlook, December 2018

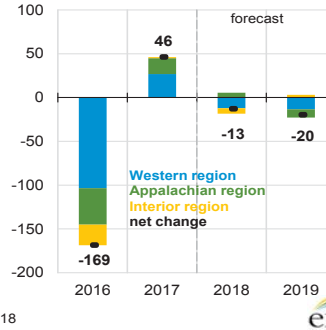


U.S. coal production
million short tons

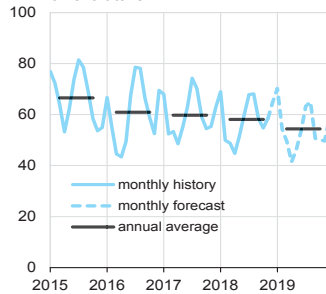


Source: Short-Term Energy Outlook, December 2018

Components of annual change
million short tons

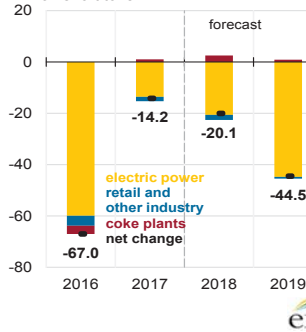


U.S. coal consumption
million short tons

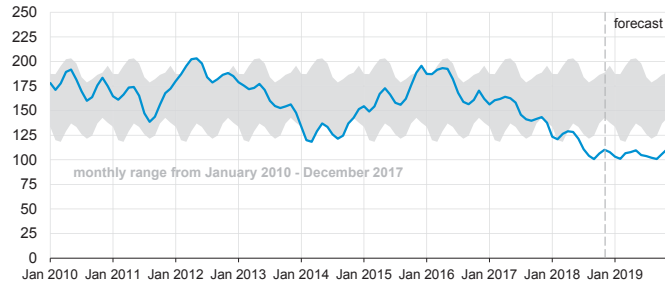


Source: Short-Term Energy Outlook, December 2018

Components of annual change
million short tons



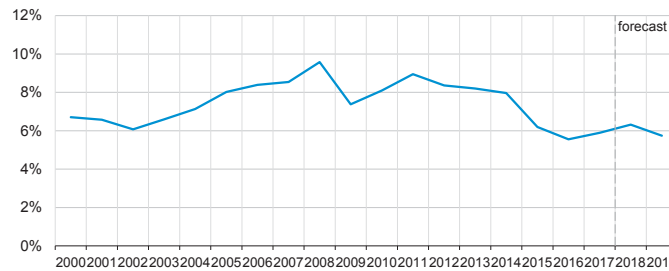
U.S. electric power coal inventories
million short tons



Source: Short-Term Energy Outlook, December 2018



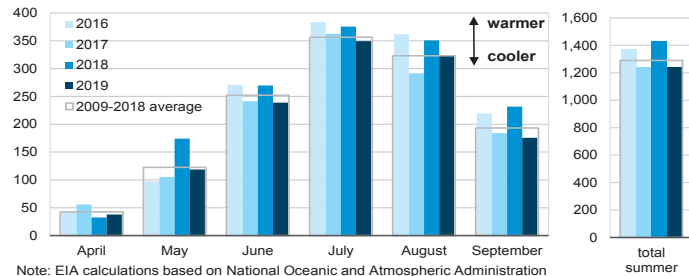
U.S. annual energy expenditures
share of gross domestic product



Source: Short-Term Energy Outlook, December 2018



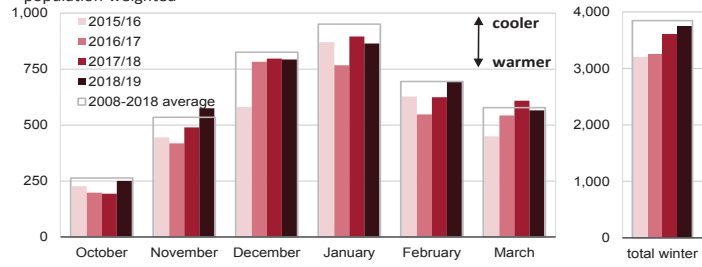
U.S. summer cooling degree days
population-weighted



Note: EIA calculations based on National Oceanic and Atmospheric Administration (NOAA) data. Projections reflect NOAA's 14-16 month outlook.
Source: Short-Term Energy Outlook, December 2018



U.S. winter heating degree days
population-weighted

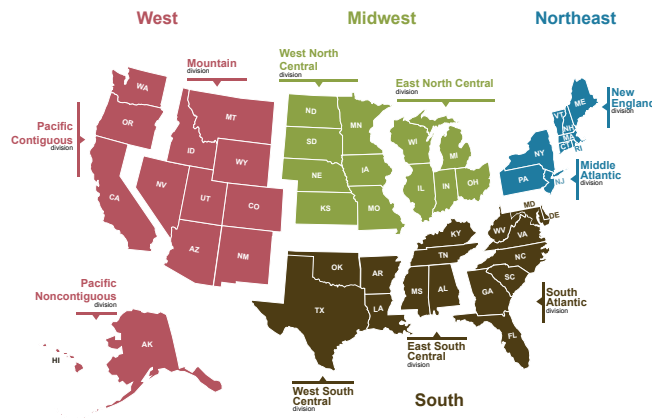


Note: EIA calculations based on National Oceanic and Atmospheric Administration (NOAA) data. Projections reflect NOAA's 14-16 month outlook.

Source: Short-Term Energy Outlook, December 2018



U.S. Census regions and divisions



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



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

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

Fuel / Region	Winter of							Forecast	
	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	% Change
Natural Gas									
Northeast									
Consumption (Mcf**)	56.2	64.7	71.7	72.2	57.4	61.5	65.2	67.4	3.4
Price (\$/mcf)	12.20	11.71	11.52	10.80	10.18	10.70	11.37	11.59	1.9
Expenditures (\$)	686	757	826	780	584	659	741	781	5.3
Midwest									
Consumption (Mcf)	61.2	73.5	84.2	79.1	63.6	64.8	73.9	75.0	1.5
Price (\$/mcf)	8.96	8.34	8.68	8.54	7.55	8.28	7.83	9.53	21.7
Expenditures (\$)	549	614	731	676	480	536	579	715	23.5
South									
Consumption (Mcf)	40.4	46.6	52.7	50.9	40.3	37.9	45.6	48.1	5.4
Price (\$/mcf)	11.41	10.67	10.71	10.75	10.72	12.04	11.27	11.43	1.5
Expenditures (\$)	461	497	564	547	432	457	514	549	7.0
West									
Consumption (Mcf)	48.0	47.4	45.2	40.1	44.7	45.6	43.8	45.3	3.6
Price (\$/mcf)	9.34	9.13	9.96	10.71	9.92	10.68	10.24	11.07	8.2
Expenditures (\$)	448	433	450	430	443	488	448	502	12.0
U.S. Average									
Consumption (Mcf)	51.7	58.4	63.9	60.7	51.8	52.9	57.5	59.1	2.9
Price (\$/mcf)	10.23	9.71	9.95	9.89	9.28	10.06	9.82	10.72	9.1
Expenditures (\$)	529	567	636	600	481	532	564	634	12.3
Heating Oil									
U.S. Average									
Consumption (gallons)	427.4	493.0	547.5	548.2	436.6	468.0	495.1	516.2	4.3
Price (\$/gallon)	3.73	3.87	3.87	3.04	2.06	2.41	2.78	3.04	9.4
Expenditures (\$)	1,594	1,910	2,121	1,668	900	1,128	1,375	1,568	14.1
Electricity									
Northeast									
Consumption (kWh***)	7,610	8,299	8,879	8,927	7,705	8,049	8,338	8,529	2.3
Price (\$/kwh)	0.154	0.152	0.163	0.168	0.164	0.165	0.169	0.175	3.7
Expenditures (\$)	1,173	1,264	1,448	1,501	1,263	1,324	1,406	1,491	6.1
Midwest									
Consumption (kWh)	9,132	10,344	11,363	10,816	9,365	9,480	10,385	10,489	1.0
Price (\$/kwh)	0.111	0.111	0.112	0.118	0.122	0.124	0.124	0.127	2.3
Expenditures (\$)	1,009	1,152	1,275	1,274	1,138	1,173	1,287	1,330	3.3
South									
Consumption (kWh)	8,793	9,731	10,487	10,300	8,781	8,510	9,545	9,858	3.3
Price (\$/kwh)	0.107	0.107	0.109	0.111	0.110	0.111	0.112	0.113	1.0
Expenditures (\$)	938	1,037	1,140	1,141	967	948	1,069	1,115	4.3
West									
Consumption (kWh)	8,848	8,778	8,487	7,830	8,441	8,566	8,321	8,530	2.5
Price (\$/kwh)	0.115	0.119	0.123	0.127	0.130	0.132	0.136	0.138	1.4
Expenditures (\$)	1,015	1,041	1,045	993	1,095	1,129	1,128	1,173	4.0
U.S. Average									
Consumption (kWh)	8,470	9,193	9,728	9,417	8,456	8,420	9,047	9,289	2.7
Price (\$/kwh)	0.116	0.117	0.120	0.123	0.124	0.125	0.126	0.129	1.7
Expenditures (\$)	983	1,071	1,163	1,158	1,044	1,055	1,143	1,194	4.4

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

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

Fuel / Region	Winter of							Forecast	
	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	% Change
Propane									
Northeast									
Consumption (gallons)	495.6	564.7	624.4	629.7	505.7	542.4	568.8	590.9	3.9
Price* (\$/gallon)	3.34	3.00	3.56	3.00	2.71	3.06	3.26	3.22	-1.2
Expenditures (\$)	1,656	1,697	2,223	1,889	1,370	1,660	1,854	1,903	2.6
Midwest									
Consumption (gallons)	596.2	711.7	808.5	755.9	618.3	629.0	715.2	725.0	1.4
Price* (\$/gallon)	2.23	1.74	2.61	1.91	1.47	1.73	1.95	1.86	-4.6
Expenditures (\$)	1,330	1,238	2,110	1,444	909	1,088	1,395	1,348	-3.3
Number of households by primary space heating fuel (thousands)									
Northeast									
Natural gas	11,245	11,356	11,529	11,705	11,802	11,858	12,020	12,184	1.4
Heating oil	5,705	5,464	5,244	5,097	4,923	4,763	4,661	4,519	-3.1
Propane	761	814	846	856	884	933	953	951	-0.2
Electricity	2,896	3,014	3,038	3,093	3,253	3,311	3,369	3,492	3.7
Wood	548	583	585	569	511	474	435	369	-15.2
Other/None	324	377	436	437	433	429	446	481	7.8
Midwest									
Natural gas	18,033	18,072	18,083	18,206	18,241	18,230	18,225	18,182	-0.2
Heating oil	393	360	336	319	301	287	271	251	-7.4
Propane	2,039	2,065	2,089	2,085	2,077	2,062	2,078	2,078	0.0
Electricity	5,123	5,338	5,425	5,514	5,747	5,853	6,049	6,314	4.4
Wood	631	641	632	617	587	551	532	511	-4.0
Other/None	282	319	353	351	354	357	368	388	5.2
South									
Natural gas	13,647	13,694	13,802	13,919	13,948	13,948	14,029	14,109	0.6
Heating oil	790	739	699	681	653	621	603	575	-4.6
Propane	2,025	1,983	1,944	1,925	1,899	1,864	1,854	1,822	-1.7
Electricity	27,305	27,884	28,247	28,843	29,509	29,928	30,544	31,172	2.1
Wood	609	613	616	593	552	507	507	523	3.1
Other/None	305	367	419	407	413	427	441	456	3.4
West									
Natural gas	15,033	15,023	15,068	15,227	15,312	15,436	15,588	15,623	0.2
Heating oil	262	247	235	225	219	215	207	194	-5.9
Propane	886	910	930	915	923	940	934	913	-2.3
Electricity	8,446	8,680	8,759	8,927	9,228	9,345	9,560	9,850	3.0
Wood	737	729	744	749	719	699	696	703	1.1
Other/None	830	903	1,016	1,075	1,087	1,056	1,102	1,196	8.5
U.S. Totals									
Natural gas	57,959	58,145	58,481	59,057	59,303	59,472	59,862	60,098	0.4
Heating oil	7,150	6,810	6,513	6,322	6,095	5,886	5,742	5,539	-3.5
Propane	5,712	5,772	5,810	5,781	5,783	5,799	5,819	5,764	-1.0
Electricity	43,770	44,916	45,470	46,377	47,737	48,436	49,521	50,828	2.6
Wood	2,526	2,565	2,578	2,528	2,369	2,231	2,170	2,106	-3.0
Other/None	1,740	1,967	2,223	2,271	2,287	2,270	2,359	2,521	6.9
Heating degree days									
Northeast	4,219	4,965	5,596	5,647	4,321	4,698	5,006	5,216	4.2
Midwest	4,486	5,545	6,452	6,002	4,688	4,793	5,579	5,670	1.6
South	2,020	2,428	2,784	2,689	2,013	1,880	2,351	2,496	6.2
West	3,231	3,182	2,990	2,568	2,955	3,044	2,881	3,006	4.3
U.S. Average	3,225	3,721	4,110	3,882	3,202	3,256	3,610	3,745	3.8

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, electronics, and lighting (electricity). Per-household consumption based on EIA's 2015 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 - December 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)	9.02	9.11	9.32	9.95	10.23	10.54	11.25	11.50	11.82	12.10	12.10	12.23	9.35	10.88	12.06
Dry Natural Gas Production (billion cubic feet per day)	71.99	73.49	75.09	78.44	79.14	81.19	85.00	87.76	89.31	90.07	90.30	90.26	74.77	83.30	89.99
Coal Production (million short tons)	197	187	196	194	188	181	196	197	195	160	195	191	775	762	742
Energy Consumption															
Liquid Fuels (million barrels per day)	19.54	20.07	20.01	20.21	20.24	20.33	20.63	20.71	20.53	20.67	21.03	21.02	19.96	20.48	20.81
Natural Gas (billion cubic feet per day)	86.39	62.98	66.88	81.16	97.54	70.66	74.05	84.94	97.94	70.68	73.52		74.32	81.74	81.57
Coal (b) (million short tons)	174	167	203	173	168	157	194	178	174	141	179	158	717	697	652
Electricity (billion kilowatt hours per day)	10.22	10.19	11.80	10.11	10.61	10.32	12.12	10.23	10.65	10.11	11.88	10.13	10.58	10.82	10.69
Renewables (c) (quadrillion Btu)	2.73	2.98	2.61	2.73	2.89	3.06	2.71	2.75	2.83	3.12	2.84	2.91	11.05	11.41	11.69
Total Energy Consumption (d) (quadrillion Btu)	25.04	23.24	24.39	25.22	26.41	24.06	25.03	25.49	26.25	23.54	24.78	25.29	97.88	100.99	99.86
Energy Prices															
Crude Oil West Texas Intermediate Spot (dollars per barrel)	51.64	48.15	48.16	55.27	62.90	68.07	69.69	60.05	50.00	51.97	55.97	58.64	50.79	65.18	54.19
Natural Gas Henry Hub Spot (dollars per million Btu)	3.01	3.08	2.95	2.90	3.02	2.85	2.93	3.88	3.60	2.86	2.80	3.20	2.99	3.17	3.11
Coal (dollars per million Btu)	2.07	2.08	2.04	2.04	2.06	2.05	2.06	2.12	2.09	2.07	2.07	2.08	2.06	2.07	2.08
Macroeconomic															
Real Gross Domestic Product (billion chained 2012 dollars - SAAR)	17,863	17,995	18,121	18,224	18,324	18,512	18,671	18,800	18,929	19,059	19,183	19,296	18,051	18,577	19,117
Percent change from prior year	1.9	2.1	2.3	2.5	2.6	2.9	3.0	3.2	3.3	3.0	2.7	2.6	2.2	2.9	2.9
GDP Implicit Price Deflator (Index, 2012=100)	107.2	107.6	108.1	108.8	109.3	110.2	110.6	111.1	111.9	112.4	113.0	113.7	107.9	110.3	112.7
Percent change from prior year	2.1	1.7	1.9	2.0	2.0	2.4	2.3	2.1	2.3	2.0	2.2	2.3	1.9	2.2	2.2
Real Disposable Personal Income (billion chained 2012 dollars - SAAR)	13,835	13,910	13,986	14,066	14,220	14,307	14,394	14,460	14,535	14,642	14,741	14,846	13,949	14,345	14,691
Percent change from prior year	2.0	2.7	2.9	2.8	2.8	2.9	2.9	2.8	2.2	2.3	2.4	2.7	2.6	2.8	2.4
Manufacturing Production Index (Index, 2012=100)	102.0	102.7	102.2	103.6	104.1	104.8	105.8	106.7	107.4	108.2	109.0	109.7	102.6	105.4	108.6
Percent change from prior year	0.6	1.9	1.2	2.1	2.1	2.0	3.6	3.0	3.1	3.2	3.0	2.8	1.5	2.7	3.0
Weather															
U.S. Heating Degree-Days	1,858	427	65	1,480	2,129	523	48	1,619	2,126	480	74	1,525	3,830	4,319	4,206
U.S. Cooling Degree-Days	70	402	838	115	52	476	958	100	40	395	848	91	1,425	1,586	1,374

- = 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 - December 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	62.90	68.07	69.69	60.05	50.00	51.97	55.97	58.64	50.79	65.18	54.19
Brent Spot Average	53.57	49.59	52.09	61.42	66.84	74.53	75.02	69.12	60.00	60.00	61.31	62.64	54.15	71.40	61.00
U.S. Imported Average	47.94	46.25	47.43	55.08	58.08	64.67	66.31	56.20	46.50	48.50	52.48	55.17	48.98	61.47	50.59
U.S. Refiner Average Acquisition Cost	49.90	47.73	48.31	56.73	61.89	67.29	69.05	58.42	49.00	51.01	54.98	57.67	50.68	64.23	53.22
U.S. Liquid Fuels (cents per gallon)															
Refiner Prices for Resale															
Gasoline	163	165	172	175	186	213	213	177	163	179	183	174	169	198	175
Diesel Fuel	162	155	169	190	199	219	222	210	187	188	197	203	169	213	194
Heating Oil	154	144	154	179	193	205	214	202	185	178	188	195	160	200	187
Refiner Prices to End Users															
Jet Fuel	158	151	162	181	197	217	220	207	185	185	194	199	163	211	191
No. 6 Residual Fuel Oil (a)	128	120	124	140	149	162	176	153	125	124	134	128	128	160	128
Retail Prices Including Taxes															
Gasoline Regular Grade (b)	233	238	244	251	258	285	284	262	236	253	258	250	242	273	250
Gasoline All Grades (b)	244	250	255	263	270	294	292	271	247	265	270	263	253	282	261
On-highway Diesel Fuel	257	255	263	287	302	320	324	323	289	289	297	306	265	317	295
Heating Oil	247	238	234	265	287	299	325	316	295	273	275	288	251	302	287
Natural Gas															
Henry Hub Spot (dollars per thousand cubic feet)	3.12	3.19	3.06	3.01	3.13	2.96	3.04	4.03	3.74	2.96	2.91	3.31	3.10	3.29	3.23
Henry Hub Spot (dollars per million Btu)	3.01	3.08	2.95	2.90	3.02	2.85	2.93	3.88	3.60	2.86	2.80	3.20	2.99	3.17	3.11
U.S. Retail Prices (dollars per thousand cubic feet)															
Industrial Sector	4.46	4.07	3.85	3.97	4.45	3.83	3.73	4.85	5.21	3.99	3.80	4.34	4.10	4.25	4.37
Commercial Sector	7.70	8.30	8.69	7.55	7.64	8.05	8.76	8.13	8.39	8.55	8.68	7.95	7.86	7.97	8.32
Residential Sector	9.68	12.95	17.64	10.12	9.37	11.94	17.93	11.06	10.32	12.43	16.80	10.85	10.86	10.84	11.24
U.S. Electricity															
Power Generation Fuel Costs (dollars per million Btu)															
Coal	2.07	2.08	2.04	2.04	2.06	2.05	2.06	2.12	2.09	2.07	2.07	2.08	2.06	2.07	2.08
Natural Gas	3.68	3.37	3.17	3.37	3.96	3.09	3.23	4.25	4.16	3.03	2.89	3.55	3.37	3.58	3.35
Residual Fuel Oil (c)	11.15	10.60	10.03	12.04	11.47	13.02	13.78	13.99	12.49	12.56	11.79	11.69	11.01	12.78	12.16
Distillate Fuel Oil	12.79	12.24	13.11	14.50	15.77	16.61	16.80	16.31	14.74	14.68	15.19	15.77	13.27	16.18	15.08
Retail Prices (cents per kilowatthour)															
Industrial Sector	6.64	6.86	7.23	6.73	6.81	6.87	7.23	6.84	6.81	6.91	7.27	6.83	6.88	6.94	6.96
Commercial Sector	10.38	10.68	11.00	10.52	10.54	10.59	10.89	10.46	10.67	10.76	10.97	10.48	10.66	10.63	10.73
Residential Sector	12.60	13.02	13.16	12.71	12.59	13.03	13.15	12.76	12.93	13.61	13.56	13.13	12.89	12.90	13.31

- = 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 - December 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	27.45	27.16	27.47	28.62	29.14	29.27	30.22	30.86	30.93	31.57	31.68	32.06	27.68	29.88	31.56
U.S. (50 States)	15.08	15.40	15.58	16.55	16.77	17.39	18.41	18.73	19.09	19.60	19.75	19.93	15.65	17.83	19.60
Canada	5.05	4.60	5.00	5.18	5.32	5.10	5.16	5.27	4.93	5.12	5.18	5.19	4.96	5.21	5.11
Mexico	2.35	2.34	2.19	2.16	2.18	2.14	2.10	2.12	2.10	2.08	2.06	2.04	2.26	2.14	2.07
Other OECD	4.97	4.82	4.70	4.72	4.88	4.64	4.55	4.73	4.80	4.76	4.70	4.91	4.80	4.70	4.79
Non-OECD	69.73	70.30	71.03	70.43	69.97	70.28	70.77	71.13	70.08	70.37	70.48	70.17	70.37	70.54	70.27
OPEC	38.88	39.17	39.76	39.40	39.34	38.91	39.19	39.41	38.64	38.30	38.19	38.15	39.31	39.21	38.32
Crude Oil Portion	32.25	32.52	33.16	32.78	32.68	32.32	32.55	32.72	32.06	31.80	31.68	31.63	32.68	32.57	31.79
Other Liquids (b)	6.63	6.65	6.61	6.62	6.66	6.59	6.64	6.69	6.57	6.50	6.51	6.52	6.63	6.65	6.52
Eurasia	14.44	14.31	14.23	14.33	14.41	14.43	14.62	14.84	14.88	14.75	14.78	14.81	14.33	14.58	14.80
China	4.81	4.82	4.74	4.75	4.76	4.80	4.75	4.82	4.76	4.80	4.80	4.85	4.78	4.78	4.80
Other Non-OECD	11.59	11.99	12.30	11.95	11.46	12.13	12.22	12.06	11.80	12.53	12.71	12.36	11.96	11.97	12.35
Total World Supply	97.18	97.45	98.50	99.04	99.11	99.55	100.99	101.98	101.01	101.94	102.16	102.23	98.05	100.42	101.84
Non-OPEC Supply	58.30	58.28	58.74	59.64	59.77	60.64	61.80	62.57	62.37	63.64	63.97	64.08	58.74	61.20	63.52
Consumption (million barrels per day) (c)															
OECD	46.73	46.87	47.47	47.83	47.58	46.91	47.97	48.19	47.97	47.37	48.46	48.62	47.23	47.66	48.11
U.S. (50 States)	19.54	20.07	20.01	20.21	20.24	20.33	20.63	20.71	20.53	20.67	21.03	21.02	19.96	20.48	20.81
U.S. Territories	0.16	0.14	0.12	0.09	0.10	0.08	0.09	0.11	0.12	0.11	0.12	0.13	0.13	0.10	0.12
Canada	2.37	2.36	2.52	2.52	2.32	2.34	2.50	2.46	2.41	2.36	2.47	2.44	2.44	2.41	2.42
Europe	13.82	14.25	14.70	14.40	14.05	14.15	14.75	14.31	14.05	14.27	14.78	14.48	14.30	14.32	14.40
Japan	4.30	3.58	3.63	4.06	4.27	3.43	3.54	3.88	4.15	3.40	3.47	3.79	3.89	3.78	3.70
Other OECD	6.54	6.46	6.48	6.55	6.60	6.57	6.46	6.71	6.71	6.56	6.59	6.76	6.51	6.58	6.66
Non-OECD	50.37	51.71	51.60	51.59	51.62	52.57	52.57	52.92	52.69	53.72	53.76	53.82	51.32	52.42	53.50
Eurasia	4.73	4.72	4.99	4.86	4.78	4.83	5.11	4.98	4.80	4.87	5.24	5.09	4.83	4.93	5.00
Europe	0.73	0.73	0.74	0.74	0.75	0.74	0.76	0.76	0.75	0.75	0.77	0.77	0.73	0.75	0.76
China	13.17	13.61	13.17	13.49	13.80	14.00	13.73	13.95	14.28	14.47	14.20	14.41	13.36	13.87	14.34
Other Asia	13.06	13.37	13.08	13.42	13.58	13.82	13.45	13.88	14.06	14.22	13.81	14.14	13.23	13.68	14.05
Other Non-OECD	18.69	19.28	19.63	19.07	18.71	19.18	19.52	19.35	18.79	19.40	19.74	19.41	19.17	19.19	19.34
Total World Consumption	97.10	98.58	99.08	99.42	99.20	99.48	100.54	101.11	100.66	101.09	102.22	102.43	98.55	100.09	101.61
Total Crude Oil and Other Liquids Inventory Net Withdrawals (million barrels per day)															
U.S. (50 States)	-0.01	0.23	0.35	0.90	0.36	-0.06	-0.70	0.57	-0.28	-0.55	-0.27	0.24	0.37	0.04	-0.21
Other OECD	-0.38	0.08	0.34	0.48	-0.03	0.11	-0.17	-0.50	-0.02	-0.10	0.11	-0.01	0.13	-0.15	0.00
Other Stock Draws and Balance	0.31	0.83	-0.11	-1.00	-0.25	-0.12	0.42	-0.95	-0.05	-0.20	0.22	-0.02	0.00	-0.23	-0.01
Total Stock Draw	-0.08	1.13	0.58	0.38	0.09	-0.07	-0.45	-0.88	-0.35	-0.84	0.06	0.21	0.50	-0.33	-0.23
End-of-period Commercial Crude Oil and Other Liquids Inventories (million barrels)															
U.S. Commercial Inventory	1,339	1,331	1,304	1,232	1,196	1,207	1,272	1,230	1,257	1,310	1,335	1,315	1,232	1,230	1,315
OECD Commercial Inventory	3,029	3,013	2,960	2,843	2,806	2,807	2,890	2,894	2,923	2,985	2,999	2,981	2,843	2,894	2,981

- = 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, Congo (Brazzaville), Ecuador, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab

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

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

 (c) Consumption of petroleum by the OECD countries is synonymous with "petroleum product supplied," defined in the glossary of the EIA *Petroleum Supply Monthly*, DOE/EIA-0109.

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

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 - December 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
North America	22.48	22.34	22.77	23.90	24.26	24.63	25.67	26.12	26.13	26.81	26.98	27.15	22.87	25.18	26.77
Canada	5.05	4.60	5.00	5.18	5.32	5.10	5.16	5.27	4.93	5.12	5.18	5.19	4.96	5.21	5.11
Mexico	2.35	2.34	2.19	2.16	2.18	2.14	2.10	2.12	2.10	2.08	2.06	2.04	2.26	2.14	2.07
United States	15.08	15.40	15.58	16.55	16.77	17.39	18.41	18.73	19.09	19.60	19.75	19.93	15.65	17.83	19.60
Central and South America	4.92	5.41	5.71	5.33	4.89	5.64	5.70	5.44	5.16	5.92	6.13	5.79	5.34	5.42	5.75
Argentina	0.67	0.67	0.67	0.70	0.67	0.69	0.69	0.69	0.66	0.68	0.68	0.68	0.68	0.68	0.68
Brazil	2.95	3.44	3.73	3.32	2.95	3.64	3.74	3.46	3.23	3.94	4.18	3.82	3.36	3.45	3.79
Colombia	0.87	0.88	0.88	0.89	0.86	0.89	0.88	0.88	0.87	0.89	0.88	0.88	0.88	0.88	0.88
Other Central and S. America	0.43	0.42	0.42	0.42	0.41	0.42	0.40	0.41	0.41	0.41	0.39	0.40	0.42	0.41	0.40
Europe	4.48	4.32	4.19	4.22	4.35	4.14	4.05	4.28	4.33	4.26	4.19	4.37	4.30	4.21	4.29
Norway	2.08	2.00	1.91	1.92	1.97	1.80	1.80	1.91	1.93	1.87	1.88	1.92	1.98	1.87	1.90
United Kingdom	1.12	1.09	1.03	1.04	1.13	1.10	1.02	1.13	1.17	1.18	1.09	1.22	1.07	1.10	1.16
Eurasia	14.44	14.31	14.23	14.33	14.41	14.43	14.62	14.84	14.88	14.75	14.78	14.81	14.33	14.58	14.80
Azerbaijan	0.79	0.80	0.79	0.81	0.82	0.81	0.79	0.78	0.80	0.80	0.79	0.78	0.80	0.80	0.79
Kazakhstan	1.87	1.87	1.86	1.92	1.98	1.96	1.90	2.01	2.09	1.99	2.07	2.13	1.88	1.96	2.07
Russia	11.33	11.19	11.15	11.17	11.19	11.23	11.49	11.60	11.57	11.54	11.51	11.49	11.21	11.38	11.53
Turkmenistan	0.28	0.28	0.28	0.28	0.27	0.28	0.28	0.27	0.25	0.25	0.25	0.25	0.28	0.27	0.25
Other Eurasia	0.17	0.17	0.16	0.16	0.16	0.15	0.16	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Middle East	1.07	1.07	1.07	1.08	1.08	1.08	1.09	1.10	1.13	1.13	1.13	1.13	1.08	1.09	1.13
Oman	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99	0.99	1.00	1.00	0.98	0.98	1.00
Asia and Oceania	9.39	9.32	9.23	9.22	9.27	9.21	9.16	9.29	9.25	9.27	9.27	9.32	9.29	9.23	9.28
Australia	0.34	0.35	0.36	0.34	0.37	0.35	0.38	0.40	0.42	0.44	0.46	0.48	0.35	0.37	0.45
China	4.81	4.82	4.74	4.75	4.76	4.80	4.75	4.82	4.76	4.80	4.80	4.85	4.78	4.78	4.80
India	1.01	1.00	1.00	1.00	1.01	1.01	0.98	0.98	0.99	0.98	0.96	0.98	1.00	0.99	0.98
Indonesia	0.92	0.91	0.90	0.90	0.89	0.90	0.90	0.90	0.88	0.87	0.85	0.84	0.91	0.90	0.86
Malaysia	0.76	0.74	0.74	0.75	0.77	0.74	0.72	0.74	0.74	0.73	0.73	0.72	0.75	0.74	0.73
Vietnam	0.29	0.29	0.28	0.27	0.27	0.25	0.25	0.25	0.25	0.26	0.26	0.26	0.28	0.25	0.26
Africa	1.52	1.52	1.54	1.55	1.51	1.50	1.51	1.50	1.50	1.50	1.50	1.50	1.53	1.50	1.50
Egypt	0.65	0.65	0.66	0.66	0.66	0.66	0.65	0.63	0.61	0.61	0.61	0.61	0.65	0.65	0.61
South Sudan	0.15	0.15	0.15	0.15	0.12	0.12	0.12	0.14	0.15	0.15	0.15	0.15	0.15	0.13	0.15
Total non-OPEC liquids	58.30	58.28	58.74	59.64	59.77	60.64	61.80	62.57	62.37	63.64	63.97	64.08	58.74	61.20	63.52
OPEC non-crude liquids	6.63	6.65	6.61	6.62	6.66	6.59	6.64	6.69	6.57	6.50	6.51	6.52	6.63	6.65	6.52
Non-OPEC + OPEC non-crude	64.93	64.93	65.34	66.27	66.43	67.23	68.44	69.27	68.95	70.14	70.48	70.59	65.37	67.85	70.04
Unplanned non-OPEC Production Outages	0.43	0.68	0.63	0.54	0.53	0.40	0.30	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	0.57	<i>n/a</i>	<i>n/a</i>

- = no data available

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

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 - December 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	1.02	1.02	1.03	-	-	-	-	-	1.03	-	-
Angola	1.64	1.66	1.66	1.63	1.59	1.56	1.56	-	-	-	-	-	1.65	-	-
Congo (Brazzaville)	0.18	0.20	0.27	0.30	0.34	0.35	0.33	-	-	-	-	-	0.24	-	-
Ecuador	0.53	0.53	0.54	0.52	0.51	0.52	0.53	-	-	-	-	-	0.53	-	-
Equatorial Guinea	0.14	0.14	0.13	0.13	0.14	0.13	0.14	-	-	-	-	-	0.13	-	-
Gabon	0.19	0.20	0.20	0.20	0.20	0.20	0.19	-	-	-	-	-	0.20	-	-
Iran	3.80	3.81	3.83	3.84	3.83	3.80	3.55	-	-	-	-	-	3.82	-	-
Iraq	4.46	4.44	4.50	4.36	4.46	4.50	4.66	-	-	-	-	-	4.44	-	-
Kuwait	2.74	2.71	2.72	2.72	2.71	2.71	2.80	-	-	-	-	-	2.72	-	-
Libya	0.65	0.72	0.94	0.95	1.00	0.92	0.91	-	-	-	-	-	0.82	-	-
Nigeria	1.38	1.49	1.68	1.72	1.72	1.53	1.55	-	-	-	-	-	1.57	-	-
Qatar	0.62	0.61	0.61	0.60	0.61	0.61	0.62	-	-	-	-	-	0.61	-	-
Saudi Arabia	9.98	10.09	10.18	10.12	10.10	10.20	10.47	-	-	-	-	-	10.09	-	-
United Arab Emirates	2.92	2.90	2.92	2.90	2.88	2.86	2.94	-	-	-	-	-	2.91	-	-
Venezuela	1.99	1.97	1.95	1.78	1.57	1.42	1.26	-	-	-	-	-	1.92	-	-
OPEC Total	32.25	32.52	33.16	32.78	32.68	32.32	32.55	32.72	32.06	31.80	31.68	31.63	32.68	32.57	31.79
Other Liquids (a)	6.63	6.65	6.61	6.62	6.66	6.59	6.64	6.69	6.57	6.50	6.51	6.52	6.63	6.65	6.52
Total OPEC Supply	38.88	39.17	39.76	39.40	39.34	38.91	39.19	39.41	38.64	38.30	38.19	38.15	39.31	39.21	38.32
Crude Oil Production Capacity															
Africa	5.22	5.44	5.91	5.94	6.00	5.70	5.72	5.90	5.76	5.78	5.82	5.84	5.63	5.83	5.80
Middle East	26.70	26.69	26.71	26.64	26.51	26.52	26.43	26.14	26.24	26.07	26.01	26.03	26.69	26.40	26.09
South America	2.53	2.51	2.49	2.31	2.08	1.94	1.80	1.71	1.60	1.48	1.39	1.30	2.46	1.88	1.44
OPEC Total	34.45	34.64	35.11	34.88	34.59	34.16	33.94	33.75	33.60	33.33	33.22	33.17	34.77	34.11	33.33
Surplus Crude Oil Production Capacity															
Africa	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
Middle East	2.19	2.13	1.95	2.10	1.91	1.83	1.39	1.04	1.54	1.54	1.54	1.54	2.09	1.54	1.54
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	2.10	1.91	1.83	1.39	1.04	1.54	1.54	1.54	1.54	2.09	1.54	1.54
Unplanned OPEC Production Outages	1.81	1.60	1.17	1.21	1.21	1.43	1.59	n/a	n/a	n/a	n/a	n/a	1.45	n/a	n/a

- = no data available

OPEC = Organization of the Petroleum Exporting Countries: Algeria, Angola, Congo (Brazzaville), 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 - December 2018

	2017				2018				2019				2017	2018	2019
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
North America	23.94	24.48	24.49	24.67	24.56	24.71	25.08	<i>25.15</i>	<i>24.91</i>	<i>25.03</i>	<i>25.49</i>	<i>25.48</i>	24.40	<i>24.88</i>	<i>25.23</i>
Canada	2.37	2.36	2.52	2.52	2.32	2.34	2.50	<i>2.46</i>	<i>2.41</i>	<i>2.36</i>	<i>2.47</i>	<i>2.44</i>	2.44	<i>2.41</i>	<i>2.42</i>
Mexico	2.02	2.03	1.95	1.93	1.99	2.02	1.94	<i>1.97</i>	<i>1.96</i>	<i>1.98</i>	<i>1.98</i>	<i>2.01</i>	1.98	<i>1.98</i>	<i>1.98</i>
United States	19.54	20.07	20.01	20.21	20.24	20.33	20.63	<i>20.71</i>	<i>20.53</i>	<i>20.67</i>	<i>21.03</i>	<i>21.02</i>	19.96	<i>20.48</i>	<i>20.81</i>
Central and South America	6.84	6.93	7.06	6.94	6.72	6.76	6.94	<i>6.96</i>	<i>6.69</i>	<i>6.82</i>	<i>6.94</i>	<i>6.93</i>	6.94	<i>6.84</i>	<i>6.84</i>
Brazil	2.96	3.00	3.12	3.08	2.98	2.95	3.11	<i>3.15</i>	<i>2.97</i>	<i>3.04</i>	<i>3.12</i>	<i>3.11</i>	3.04	<i>3.05</i>	<i>3.06</i>
Europe	14.55	14.98	15.44	15.14	14.80	14.90	15.51	<i>15.08</i>	<i>14.81</i>	<i>15.02</i>	<i>15.55</i>	<i>15.25</i>	15.03	<i>15.07</i>	<i>15.16</i>
Eurasia	4.73	4.72	4.99	4.86	4.78	4.83	5.11	<i>4.98</i>	<i>4.80</i>	<i>4.87</i>	<i>5.24</i>	<i>5.09</i>	4.83	<i>4.93</i>	<i>5.00</i>
Russia	3.61	3.62	3.82	3.69	3.63	3.70	3.91	<i>3.78</i>	<i>3.64</i>	<i>3.73</i>	<i>4.04</i>	<i>3.88</i>	3.68	<i>3.75</i>	<i>3.82</i>
Middle East	8.24	8.77	9.10	8.48	8.30	8.73	8.99	<i>8.58</i>	<i>8.32</i>	<i>8.78</i>	<i>9.10</i>	<i>8.58</i>	8.65	<i>8.65</i>	<i>8.70</i>
Asia and Oceania	34.49	34.43	33.83	35.03	35.68	35.20	34.66	<i>35.92</i>	<i>36.68</i>	<i>36.11</i>	<i>35.51</i>	<i>36.54</i>	34.44	<i>35.36</i>	<i>36.21</i>
China	13.17	13.61	13.17	13.49	13.80	14.00	13.73	<i>13.95</i>	<i>14.28</i>	<i>14.47</i>	<i>14.20</i>	<i>14.41</i>	13.36	<i>13.87</i>	<i>14.34</i>
Japan	4.30	3.58	3.63	4.06	4.27	3.43	3.54	<i>3.88</i>	<i>4.15</i>	<i>3.40</i>	<i>3.47</i>	<i>3.79</i>	3.89	<i>3.78</i>	<i>3.70</i>
India	4.40	4.64	4.42	4.75	4.73	4.89	4.59	<i>5.01</i>	<i>5.07</i>	<i>5.13</i>	<i>4.79</i>	<i>5.10</i>	4.55	<i>4.81</i>	<i>5.02</i>
Africa	4.32	4.28	4.17	4.29	4.34	4.35	4.26	<i>4.45</i>	<i>4.45</i>	<i>4.46</i>	<i>4.39</i>	<i>4.56</i>	4.27	<i>4.35</i>	<i>4.46</i>
Total OECD Liquid Fuels Consumption	46.73	46.87	47.47	47.83	47.58	46.91	47.97	<i>48.19</i>	<i>47.97</i>	<i>47.37</i>	<i>48.46</i>	<i>48.62</i>	47.23	<i>47.66</i>	<i>48.11</i>
Total non-OECD Liquid Fuels Consumption	50.37	51.71	51.60	51.59	51.62	52.57	52.57	<i>52.92</i>	<i>52.69</i>	<i>53.72</i>	<i>53.76</i>	<i>53.82</i>	51.32	<i>52.42</i>	<i>53.50</i>
Total World Liquid Fuels Consumption	97.10	98.58	99.08	99.42	99.20	99.48	100.54	<i>101.11</i>	<i>100.66</i>	<i>101.09</i>	<i>102.22</i>	<i>102.43</i>	98.55	<i>100.09</i>	<i>101.61</i>
Oil-weighted Real Gross Domestic Product (a)															
World Index, 2015 Q1 = 100	105.7	106.4	107.3	108.2	109.2	110.0	110.7	<i>111.4</i>	<i>112.4</i>	<i>113.1</i>	<i>113.9</i>	<i>114.7</i>	106.9	<i>110.3</i>	<i>113.5</i>
Percent change from prior year	3.6	2.9	3.2	3.1	3.4	3.3	3.1	<i>3.0</i>	<i>2.9</i>	<i>2.9</i>	<i>3.0</i>	<i>3.0</i>	3.2	<i>3.2</i>	<i>2.9</i>
OECD Index, 2015 Q1 = 100	104.0	104.5	105.1	105.8	106.5	107.1	107.6	<i>108.2</i>	<i>108.9</i>	<i>109.3</i>	<i>109.8</i>	<i>110.3</i>	104.9	<i>107.4</i>	<i>109.6</i>
Percent change from prior year	3.0	2.1	2.4	2.3	2.5	2.5	2.4	<i>2.3</i>	<i>2.3</i>	<i>2.0</i>	<i>2.1</i>	<i>1.9</i>	2.4	<i>2.4</i>	<i>2.1</i>
Non-OECD Index, 2015 Q1 = 100	107.3	108.3	109.4	110.5	111.8	112.7	113.6	<i>114.5</i>	<i>115.7</i>	<i>116.8</i>	<i>117.9</i>	<i>119.1</i>	108.9	<i>113.1</i>	<i>117.4</i>
Percent change from prior year	4.3	3.7	3.9	3.8	4.2	4.1	3.8	<i>3.7</i>	<i>3.5</i>	<i>3.6</i>	<i>3.8</i>	<i>4.0</i>	3.9	<i>3.9</i>	<i>3.7</i>
Real U.S. Dollar Exchange Rate (a)															
Index, 2015 Q1 = 100	105.19	103.78	102.27	102.60	100.87	102.86	105.64	<i>106.18</i>	<i>105.96</i>	<i>105.44</i>	<i>104.62</i>	<i>103.75</i>	103.46	<i>103.89</i>	<i>104.94</i>
Percent change from prior year	-0.1	0.4	-0.9	-2.3	-4.1	-0.9	3.3	<i>3.5</i>	<i>5.0</i>	<i>2.5</i>	<i>-1.0</i>	<i>-2.3</i>	-0.7	<i>0.4</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 - December 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)	9.02	9.11	9.32	9.95	10.23	10.54	11.25	11.50	11.82	12.10	12.10	12.23	9.35	10.88	12.06
Alaska	0.52	0.50	0.45	0.51	0.51	0.48	0.43	0.48	0.50	0.49	0.46	0.49	0.49	0.48	0.49
Federal Gulf of Mexico (b)	1.76	1.66	1.72	1.58	1.67	1.58	1.85	1.81	1.92	1.98	1.89	2.02	1.68	1.73	1.95
Lower 48 States (excl GOM)	6.74	6.95	7.15	7.86	8.05	8.47	8.97	9.21	9.39	9.64	9.74	9.73	7.18	8.68	9.63
Crude Oil Net Imports (c)	7.26	7.23	6.65	6.12	6.18	6.19	5.84	5.19	4.97	4.99	5.02	4.53	6.81	5.85	4.88
SPR Net Withdrawals	0.04	0.14	0.06	0.12	-0.03	0.06	0.00	0.12	0.03	0.03	0.00	0.03	0.09	0.04	0.02
Commercial Inventory Net Withdrawals	-0.60	0.41	0.35	0.52	-0.02	0.09	-0.01	-0.19	-0.50	0.01	0.10	-0.08	0.17	-0.03	-0.12
Crude Oil Adjustment (d)	0.18	0.24	0.22	0.02	0.05	0.26	0.25	0.20	0.19	0.19	0.21	0.15	0.17	0.19	0.19
Total Crude Oil Input to Refineries	15.90	17.13	16.60	16.72	16.41	17.14	17.32	16.81	16.50	17.32	17.43	16.86	16.59	16.92	17.03
Other Supply															
Refinery Processing Gain	1.11	1.15	1.08	1.12	1.11	1.12	1.17	1.11	1.08	1.12	1.14	1.13	1.11	1.13	1.12
Natural Gas Plant Liquids Production	3.57	3.75	3.77	4.03	4.01	4.30	4.54	4.68	4.80	4.94	5.07	5.11	3.78	4.38	4.98
Renewables and Oxygenate Production (e)	1.18	1.17	1.19	1.24	1.21	1.22	1.25	1.23	1.18	1.22	1.22	1.23	1.19	1.23	1.21
Fuel Ethanol Production	1.05	1.01	1.03	1.06	1.05	1.04	1.06	1.05	1.04	1.04	1.03	1.04	1.04	1.05	1.04
Petroleum Products Adjustment (f)	0.20	0.22	0.21	0.22	0.21	0.21	0.21	0.22	0.21	0.22	0.22	0.22	0.21	0.21	0.22
Product Net Imports (c)	-2.97	-3.02	-2.79	-3.39	-3.13	-3.44	-3.17	-3.98	-3.44	-3.56	-3.68	-3.83	-3.04	-3.43	-3.63
Hydrocarbon Gas Liquids	-1.21	-1.20	-1.16	-1.26	-1.22	-1.53	-1.49	-1.57	-1.76	-1.85	-1.83	-1.80	-1.21	-1.46	-1.81
Unfinished Oils	0.41	0.36	0.41	0.45	0.39	0.32	0.35	0.31	0.35	0.38	0.40	0.32	0.41	0.34	0.36
Other HC/Oxygenates	-0.13	-0.09	-0.09	-0.14	-0.18	-0.15	-0.13	-0.09	-0.12	-0.10	-0.08	-0.09	-0.11	-0.14	-0.10
Motor Gasoline Blend Comp.	0.43	0.68	0.64	0.36	0.50	0.78	0.66	0.25	0.50	0.67	0.50	0.45	0.53	0.55	0.53
Finished Motor Gasoline	-0.68	-0.63	-0.63	-0.92	-0.94	-0.71	-0.72	-0.79	-0.80	-0.64	-0.63	-0.88	-0.72	-0.79	-0.74
Jet Fuel	-0.04	-0.06	-0.01	0.02	-0.10	-0.10	-0.06	-0.10	0.01	-0.01	-0.04	0.00	-0.02	-0.09	-0.01
Distillate Fuel Oil	-1.02	-1.37	-1.33	-1.19	-0.87	-1.30	-1.14	-1.28	-1.00	-1.29	-1.32	-1.10	-1.23	-1.15	-1.18
Residual Fuel Oil	-0.12	-0.13	-0.12	-0.11	-0.10	-0.14	-0.10	-0.07	-0.01	-0.09	-0.06	-0.09	-0.12	-0.10	-0.06
Other Oils (g)	-0.60	-0.59	-0.50	-0.58	-0.62	-0.61	-0.53	-0.64	-0.60	-0.64	-0.62	-0.65	-0.57	-0.60	-0.63
Product Inventory Net Withdrawals	0.55	-0.32	-0.06	0.27	0.41	-0.21	-0.69	0.65	0.19	-0.59	-0.37	0.29	0.11	0.04	-0.12
Total Supply	19.54	20.07	20.01	20.21	20.23	20.33	20.63	20.71	20.53	20.67	21.03	21.02	19.96	20.48	20.81
Consumption (million barrels per day)															
Hydrocarbon Gas Liquids	2.82	2.48	2.40	2.88	3.22	2.67	2.85	3.22	3.28	2.85	3.01	3.40	2.64	2.99	3.14
Unfinished Oils	0.02	0.06	0.02	0.05	0.13	-0.04	-0.10	0.02	0.00	-0.03	-0.03	0.01	0.04	0.00	-0.01
Motor Gasoline	8.94	9.54	9.58	9.24	9.01	9.51	9.51	9.22	9.05	9.58	9.55	9.28	9.33	9.31	9.37
Fuel Ethanol blended into Motor Gasoline	0.90	0.96	0.96	0.95	0.91	0.94	0.96	0.97	0.92	0.98	0.97	0.95	0.94	0.95	0.95
Jet Fuel	1.60	1.69	1.71	1.73	1.64	1.73	1.78	1.75	1.71	1.78	1.83	1.80	1.68	1.72	1.78
Distillate Fuel Oil	3.93	3.89	3.85	4.05	4.18	4.13	4.05	4.18	4.22	4.12	4.13	4.24	3.93	4.13	4.18
Residual Fuel Oil	0.38	0.33	0.31	0.34	0.28	0.32	0.34	0.33	0.37	0.33	0.34	0.31	0.34	0.32	0.34
Other Oils (g)	1.84	2.08	2.14	1.92	1.78	2.01	2.22	2.00	1.90	2.04	2.20	1.98	2.00	2.00	2.03
Total Consumption	19.54	20.07	20.01	20.21	20.24	20.33	20.63	20.71	20.53	20.67	21.03	21.02	19.96	20.48	20.81
Total Petroleum and Other Liquids Net Imports	4.29	4.21	3.86	2.73	3.05	2.75	2.67	1.21	1.52	1.43	1.35	0.70	3.77	2.41	1.25
End-of-period Inventories (million barrels)															
Commercial Inventory															
Crude Oil (excluding SPR)	538.6	501.6	469.6	421.6	423.4	414.8	416.1	433.7	478.9	477.9	468.3	475.9	421.6	433.7	475.9
Hydrocarbon Gas Liquids	147.6	189.9	228.7	190.0	139.3	180.8	224.8	184.5	152.1	206.2	248.3	209.3	190.0	184.5	209.3
Unfinished Oils	91.9	89.9	91.6	86.3	98.3	92.6	92.0	83.8	91.7	90.0	88.1	81.7	86.3	83.8	81.7
Other HC/Oxygenates	32.8	29.3	28.5	29.6	30.5	28.8	30.5	29.8	31.5	30.5	29.8	30.4	29.6	29.8	30.4
Total Motor Gasoline	239.6	238.4	223.2	236.8	239.6	240.3	239.7	238.9	242.2	239.1	234.0	246.8	236.8	238.9	246.8
Finished Motor Gasoline	21.5	22.5	21.8	24.5	23.1	24.7	24.8	27.3	25.1	24.0	24.8	25.4	24.5	27.3	25.4
Motor Gasoline Blend Comp.	218.0	215.9	201.4	212.3	216.5	215.6	214.9	211.6	217.1	215.1	209.1	221.3	212.3	211.6	221.3
Jet Fuel	42.4	41.0	43.6	41.3	40.4	40.8	46.9	38.4	39.0	41.0	42.9	41.1	41.3	38.4	41.1
Distillate Fuel Oil	152.0	152.1	137.3	145.6	130.4	120.4	137.1	133.4	124.5	127.2	132.2	137.0	145.6	133.4	137.0
Residual Fuel Oil	37.5	33.2	33.6	29.4	35.0	30.0	28.6	29.4	34.7	36.9	36.1	36.4	29.4	29.4	36.4
Other Oils (g)	56.5	55.4	48.0	51.0	59.3	58.8	56.1	57.8	62.8	61.0	54.8	56.7	51.0	57.8	56.7
Total Commercial Inventory	1,339	1,331	1,304	1,232	1,196	1,207	1,272	1,230	1,257	1,310	1,335	1,315	1,232	1,230	1,315
Crude Oil in SPR	692	679	674	663	665	660	660	649	647	644	644	641	663	649	641

- = 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.

SPR: Strategic Petroleum Reserve

HC: Hydrocarbons

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

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

Projections: EIA Regional Short-Term Energy Model.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - December 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	1.35	1.41	1.36	1.58	1.59	1.70	1.76	1.84	1.89	1.94	2.00	2.05	1.43	1.72	1.97
Propane	1.18	1.22	1.25	1.30	1.29	1.37	1.44	1.50	1.55	1.59	1.62	1.62	1.24	1.40	1.60
Butanes	0.63	0.66	0.68	0.69	0.69	0.74	0.78	0.80	0.83	0.85	0.87	0.87	0.67	0.75	0.85
Natural Gasoline (Pentanes Plus)	0.41	0.45	0.48	0.46	0.44	0.50	0.55	0.54	0.52	0.56	0.59	0.57	0.45	0.51	0.56
Refinery and Blender Net Production															
Ethane/Ethylene	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.00
Propane	0.29	0.32	0.30	0.32	0.30	0.31	0.31	0.29	0.28	0.30	0.29	0.29	0.31	0.30	0.29
Propylene (refinery-grade)	0.27	0.29	0.27	0.30	0.28	0.29	0.29	0.28	0.28	0.29	0.28	0.29	0.28	0.29	0.28
Butanes/Butylenes	-0.09	0.27	0.16	-0.22	-0.11	0.24	0.19	-0.20	-0.08	0.26	0.19	-0.20	0.03	0.03	0.04
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	-0.22	-0.29	-0.26	-0.31	-0.33	-0.32	-0.32	-0.34	-0.18	-0.27	-0.33
Propane/Propylene	-0.80	-0.73	-0.69	-0.82	-0.72	-0.81	-0.87	-0.83	-0.98	-0.97	-0.94	-0.94	-0.76	-0.81	-0.96
Butanes/Butylenes	-0.08	-0.13	-0.11	-0.11	-0.10	-0.20	-0.19	-0.25	-0.22	-0.28	-0.27	-0.26	-0.11	-0.18	-0.26
Natural Gasoline (Pentanes Plus)	-0.18	-0.18	-0.16	-0.14	-0.18	-0.23	-0.17	-0.18	-0.24	-0.27	-0.30	-0.26	-0.17	-0.19	-0.27
HGL Refinery and Blender Net Inputs															
Butanes/Butylenes	0.43	0.30	0.33	0.50	0.45	0.30	0.32	0.51	0.41	0.30	0.33	0.51	0.39	0.40	0.39
Natural Gasoline (Pentanes Plus)	0.16	0.18	0.18	0.19	0.15	0.16	0.18	0.17	0.17	0.18	0.18	0.18	0.18	0.17	0.18
HGL Consumption															
Ethane/Ethylene	1.20	1.25	1.15	1.37	1.44	1.45	1.51	1.53	1.56	1.60	1.68	1.74	1.24	1.48	1.65
Propane	1.05	0.61	0.68	0.87	1.16	0.60	0.65	1.05	1.09	0.60	0.71	1.06	0.80	0.87	0.86
Propylene (refinery-grade)	0.34	0.32	0.28	0.32	0.32	0.31	0.31	0.30	0.31	0.31	0.30	0.30	0.31	0.31	0.30
Butanes/Butylenes	0.14	0.23	0.20	0.16	0.20	0.21	0.21	0.22	0.21	0.27	0.25	0.23	0.18	0.21	0.24
Natural Gasoline (Pentanes Plus)	0.09	0.08	0.09	0.15	0.10	0.09	0.16	0.12	0.11	0.07	0.07	0.09	0.10	0.12	0.08
HGL Inventories (million barrels)															
Ethane	49.66	51.90	51.76	57.72	51.41	47.90	46.07	47.86	46.62	49.70	48.91	48.95	52.78	48.29	48.55
Propane	40.18	56.92	71.42	62.21	33.83	56.51	75.16	65.26	41.94	68.37	91.18	82.44	62.21	65.26	82.44
Propylene (refinery-grade)	3.66	3.86	4.90	4.61	3.82	3.64	3.86	4.15	3.25	3.08	3.05	3.72	4.61	4.15	3.72
Butanes/Butylenes	31.28	56.79	75.55	47.45	32.02	55.37	78.52	44.12	36.83	60.50	78.94	48.31	47.45	44.12	48.31
Natural Gasoline (Pentanes Plus)	21.49	20.55	23.40	20.11	19.36	18.59	20.34	24.07	22.55	24.49	25.65	27.50	20.11	24.07	27.50
Refinery and Blender Net Inputs															
Crude Oil	15.90	17.13	16.60	16.72	16.41	17.14	17.32	16.81	16.50	17.32	17.43	16.86	16.59	16.92	17.03
Hydrocarbon Gas Liquids	0.59	0.48	0.51	0.69	0.61	0.47	0.50	0.68	0.58	0.48	0.52	0.69	0.57	0.56	0.57
Other Hydrocarbons/Oxygenates	1.16	1.23	1.22	1.20	1.16	1.23	1.22	1.26	1.20	1.29	1.29	1.29	1.20	1.22	1.27
Unfinished Oils	0.26	0.32	0.38	0.45	0.12	0.42	0.45	0.38	0.26	0.43	0.46	0.38	0.35	0.34	0.38
Motor Gasoline Blend Components	0.35	0.64	0.67	0.24	0.34	0.70	0.58	0.50	0.57	0.84	0.66	0.49	0.47	0.53	0.64
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	18.25	19.80	19.37	19.31	18.63	19.96	20.08	19.63	19.12	20.36	20.36	19.71	19.19	19.58	19.89
Refinery Processing Gain															
.....	1.11	1.15	1.08	1.12	1.11	1.12	1.17	1.11	1.08	1.12	1.14	1.13	1.11	1.13	1.12
Refinery and Blender Net Production															
Hydrocarbon Gas Liquids	0.48	0.89	0.73	0.40	0.48	0.84	0.80	0.38	0.48	0.85	0.77	0.38	0.63	0.63	0.62
Finished Motor Gasoline	9.53	10.08	10.04	10.15	9.79	10.14	10.11	10.21	9.94	10.33	10.27	10.31	9.95	10.06	10.21
Jet Fuel	1.63	1.74	1.75	1.69	1.72	1.83	1.90	1.76	1.70	1.82	1.89	1.78	1.70	1.80	1.80
Distillate Fuel	4.75	5.17	4.93	5.25	4.81	5.25	5.29	5.34	5.08	5.37	5.43	5.32	5.02	5.17	5.30
Residual Fuel	0.46	0.41	0.43	0.41	0.44	0.40	0.42	0.40	0.44	0.44	0.40	0.40	0.43	0.42	0.42
Other Oils (a)	2.51	2.65	2.56	2.53	2.49	2.61	2.72	2.65	2.55	2.66	2.75	2.65	2.56	2.62	2.65
Total Refinery and Blender Net Production	19.36	20.95	20.44	20.43	19.74	21.08	21.25	20.74	20.20	21.47	21.50	20.84	20.30	20.71	21.01
Refinery Distillation Inputs															
.....	16.25	17.44	16.91	17.01	16.76	17.50	17.69	17.12	16.71	17.44	17.62	17.06	16.90	17.27	17.21
Refinery Operable Distillation Capacity															
.....	18.62	18.58	18.54	18.52	18.57	18.60	18.60	18.60	18.60	18.60	18.64	18.65	18.56	18.59	18.62
Refinery Distillation Utilization Factor															
.....	0.87	0.94	0.91	0.92	0.90	0.94	0.95	0.92	0.90	0.94	0.95	0.92	0.91	0.93	0.92

- = 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 - December 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	175	186	213	213	177	163	179	183	174	169	198	175
Gasoline Regular Grade Retail Prices Including Taxes															
PADD 1	231	233	241	249	255	279	278	257	232	246	252	250	239	268	245
PADD 2	223	228	232	242	246	274	276	248	228	245	251	243	231	262	242
PADD 3	210	216	222	225	230	261	258	233	212	229	232	224	218	245	224
PADD 4	227	239	245	252	247	288	297	274	225	245	258	248	241	277	244
PADD 5	276	289	290	299	312	342	335	324	280	306	308	290	288	328	297
U.S. Average	233	238	244	251	258	285	284	262	236	253	258	250	242	273	250
Gasoline All Grades Including Taxes	244	250	255	263	270	294	292	271	247	265	270	263	253	282	261
End-of-period Inventories (million barrels)															
Total Gasoline Inventories															
PADD 1	65.5	67.7	59.0	60.6	58.4	66.5	70.2	66.0	66.9	67.6	64.2	68.0	60.6	66.0	68.0
PADD 2	57.3	53.6	50.4	52.2	57.3	53.5	53.1	52.6	55.1	53.1	51.6	53.7	52.2	52.6	53.7
PADD 3	79.1	82.4	77.7	83.3	84.2	82.3	80.5	83.1	82.9	82.3	82.2	85.6	83.3	83.1	85.6
PADD 4	7.9	7.0	6.9	7.6	7.7	7.3	7.0	7.3	7.6	7.6	7.4	7.8	7.6	7.3	7.8
PADD 5	29.7	27.7	29.2	33.1	32.0	30.7	28.8	30.0	29.7	28.4	28.5	31.6	33.1	30.0	31.6
U.S. Total	239.6	238.4	223.2	236.8	239.6	240.3	239.7	238.9	242.2	239.1	234.0	246.8	236.8	238.9	246.8
Finished Gasoline Inventories															
U.S. Total	21.5	22.5	21.8	24.5	23.1	24.7	24.8	27.3	25.1	24.0	24.8	25.4	24.5	27.3	25.4
Gasoline Blending Components Inventories															
U.S. Total	218.0	215.9	201.4	212.3	216.5	215.6	214.9	211.6	217.1	215.1	209.1	221.3	212.3	211.6	221.3

- = 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 - December 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	77.02	78.62	80.33	83.92	84.93	87.39	91.52	94.55	96.28	97.15	97.46	97.47	79.99	89.63	97.09
Alaska	1.01	0.97	0.82	0.98	1.00	0.92	0.86	0.94	1.00	0.86	0.79	0.94	0.94	0.93	0.90
Federal GOM (a)	3.24	3.00	2.90	2.49	2.57	2.48	2.86	2.88	2.95	2.95	2.91	2.97	2.90	2.70	2.95
Lower 48 States (excl GOM)	72.78	74.65	76.61	80.45	81.37	83.98	87.80	90.74	92.33	93.33	93.76	93.55	76.14	86.00	93.25
Total Dry Gas Production	71.99	73.49	75.09	78.44	79.14	81.19	85.00	87.76	89.31	90.07	90.30	90.26	74.77	83.30	89.99
LNG Gross Imports	0.29	0.18	0.17	0.21	0.33	0.10	0.15	0.18	0.32	0.17	0.17	0.21	0.21	0.19	0.22
LNG Gross Exports	1.63	1.80	1.67	2.64	2.64	2.79	2.95	3.33	4.17	4.47	5.73	6.59	1.94	2.93	5.25
Pipeline Gross Imports	8.89	7.76	7.74	8.10	8.76	7.63	7.50	7.32	8.57	6.78	6.34	7.15	8.12	7.80	7.20
Pipeline Gross Exports	7.24	6.49	6.43	6.81	7.02	6.15	7.04	8.56	9.36	8.17	7.71	8.18	6.74	7.20	8.35
Supplemental Gaseous Fuels	0.17	0.18	0.18	0.19	0.21	0.17	0.19	0.20	0.21	0.21	0.21	0.21	0.18	0.19	0.21
Net Inventory Withdrawals	13.74	-9.02	-7.20	5.76	18.31	-8.86	-8.22	3.90	13.82	-12.81	-9.67	3.33	0.78	1.22	-1.38
Total Supply	86.22	84.30	86.88	91.16	97.10	101.29	104.63	107.47	108.70	107.78	103.90	106.39	75.39	82.57	82.63
Balancing Item (b)	0.17	-1.32	-1.00	-2.10	0.44	-0.63	-0.58	-2.53	-0.76	-1.09	-0.38	-2.00	-1.07	-0.83	-1.06
Total Primary Supply	86.39	82.98	85.88	89.16	97.54	100.66	104.05	104.94	107.94	106.68	103.52	104.39	74.32	81.74	81.57
Consumption (billion cubic feet per day)															
Residential	22.11	6.62	3.54	16.24	25.75	7.97	3.45	17.24	25.70	7.53	3.66	16.24	12.09	13.55	13.23
Commercial	13.45	5.81	4.52	10.97	15.34	6.61	4.58	10.75	15.33	6.73	4.61	10.26	8.67	9.29	9.21
Industrial	23.13	20.61	20.41	22.98	24.27	21.78	21.23	23.79	24.30	21.72	21.13	24.01	21.78	22.76	22.79
Electric Power (c)	21.12	23.94	32.21	24.17	24.91	27.61	37.80	25.68	24.64	27.32	36.53	25.94	25.39	29.03	28.63
Lease and Plant Fuel	4.13	4.21	4.30	4.50	4.55	4.68	4.90	5.07	5.16	5.21	5.22	5.22	4.29	4.80	5.20
Pipeline and Distribution Use	2.32	1.66	1.77	2.16	2.60	1.88	1.97	2.29	2.69	2.05	2.24	2.59	1.98	2.18	2.39
Vehicle Use	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.13	0.12	0.12
Total Consumption	86.39	82.98	85.88	89.16	97.54	100.66	104.05	104.94	107.94	106.68	103.52	104.39	74.32	81.74	81.57
End-of-period Inventories (billion cubic feet)															
Working Gas Inventory	2,063	2,907	3,567	3,033	1,391	2,196	2,951	2,592	1,348	2,514	3,403	3,097	3,033	2,592	3,097
East Region (d)	260	563	866	710	229	465	778	663	232	586	908	776	710	663	776
Midwest Region (d)	477	701	993	829	261	459	846	743	267	558	932	793	829	743	793
South Central Region (d)	938	1,139	1,137	1,016	614	846	846	812	581	929	1,037	1,065	1,016	812	1,065
Mountain Region (d)	142	184	218	177	87	140	179	138	87	137	183	154	177	138	154
Pacific Region (d)	219	288	314	264	169	253	263	199	143	267	306	272	264	199	272
Alaska	27	32	39	36	31	33	38	37	37	37	37	37	36	37	37

- = 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 - December 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	3.13	2.96	3.04	4.03	<i>3.74</i>	<i>2.96</i>	<i>2.91</i>	<i>3.31</i>	3.10	3.29	3.23
Residential Retail															
New England	12.86	14.09	18.10	13.58	14.38	16.60	19.08	<i>14.30</i>	<i>13.78</i>	<i>14.19</i>	<i>17.14</i>	<i>13.69</i>	13.61	14.99	14.04
Middle Atlantic	9.88	12.21	17.18	11.31	10.17	11.92	18.30	<i>11.44</i>	<i>10.53</i>	<i>12.07</i>	<i>16.67</i>	<i>11.55</i>	11.15	11.31	11.48
E. N. Central	7.79	11.58	17.93	7.84	7.20	9.77	18.39	<i>9.78</i>	<i>8.94</i>	<i>11.27</i>	<i>16.61</i>	<i>8.90</i>	8.90	8.95	9.77
W. N. Central	8.27	11.74	18.64	9.36	8.15	10.48	18.55	<i>10.18</i>	<i>9.71</i>	<i>12.43</i>	<i>17.79</i>	<i>9.73</i>	9.67	9.63	10.61
S. Atlantic	11.87	19.32	25.73	12.76	11.07	15.62	24.90	<i>13.64</i>	<i>11.97</i>	<i>16.44</i>	<i>22.55</i>	<i>13.23</i>	14.11	13.34	13.74
E. S. Central	10.41	15.64	20.60	11.19	9.61	12.70	21.49	<i>12.30</i>	<i>10.33</i>	<i>14.51</i>	<i>20.51</i>	<i>13.07</i>	11.90	11.39	12.21
W. S. Central	10.21	16.31	21.92	13.00	9.27	14.25	22.03	<i>11.05</i>	<i>8.69</i>	<i>13.77</i>	<i>20.12</i>	<i>12.25</i>	13.05	11.27	11.33
Mountain	8.25	10.20	13.95	8.70	8.22	10.41	14.03	<i>8.90</i>	<i>9.25</i>	<i>10.46</i>	<i>13.86</i>	<i>9.13</i>	9.14	9.20	9.78
Pacific	12.00	12.61	12.88	11.28	11.62	12.02	12.88	<i>11.71</i>	<i>12.89</i>	<i>12.75</i>	<i>12.79</i>	<i>11.66</i>	11.99	11.87	12.46
U.S. Average	9.68	12.95	17.64	10.12	9.37	11.94	17.93	<i>11.06</i>	<i>10.32</i>	<i>12.43</i>	<i>16.80</i>	<i>10.85</i>	10.86	10.84	11.24
Commercial Retail															
New England	9.66	10.11	10.69	9.78	11.05	11.73	10.85	<i>10.65</i>	<i>10.90</i>	<i>10.62</i>	<i>10.03</i>	<i>9.64</i>	9.86	11.02	10.42
Middle Atlantic	7.73	7.46	6.88	7.44	8.13	7.67	7.47	<i>7.93</i>	<i>8.18</i>	<i>7.84</i>	<i>7.13</i>	<i>7.76</i>	7.49	7.91	7.87
E. N. Central	6.61	7.87	8.93	6.19	6.19	6.95	9.01	<i>7.34</i>	<i>7.50</i>	<i>8.13</i>	<i>9.10</i>	<i>7.04</i>	6.81	6.86	7.58
W. N. Central	6.92	7.69	9.06	7.00	6.96	7.13	8.92	<i>7.70</i>	<i>8.24</i>	<i>8.24</i>	<i>8.96</i>	<i>7.37</i>	7.23	7.35	8.03
S. Atlantic	8.79	9.85	9.63	8.74	8.29	9.14	9.73	<i>9.11</i>	<i>9.20</i>	<i>9.73</i>	<i>10.00</i>	<i>9.24</i>	9.05	8.83	9.40
E. S. Central	8.92	10.12	10.61	9.16	8.62	9.32	10.50	<i>9.24</i>	<i>9.24</i>	<i>10.00</i>	<i>10.18</i>	<i>8.97</i>	9.38	9.10	9.38
W. S. Central	7.55	8.13	8.79	8.11	7.21	7.90	8.55	<i>7.94</i>	<i>8.08</i>	<i>8.03</i>	<i>8.24</i>	<i>7.63</i>	8.02	7.70	7.98
Mountain	6.90	7.40	8.30	7.22	7.00	7.52	7.91	<i>6.85</i>	<i>7.50</i>	<i>7.85</i>	<i>8.49</i>	<i>7.38</i>	7.24	7.14	7.63
Pacific	9.08	9.05	9.10	8.53	8.90	8.58	9.11	<i>8.96</i>	<i>9.34</i>	<i>9.08</i>	<i>9.06</i>	<i>8.69</i>	8.91	8.89	9.04
U.S. Average	7.70	8.30	8.69	7.55	7.64	8.05	8.76	<i>8.13</i>	<i>8.39</i>	<i>8.55</i>	<i>8.68</i>	<i>7.95</i>	7.86	7.97	8.32
Industrial Retail															
New England	7.81	7.03	6.37	6.97	9.01	8.62	6.49	<i>8.14</i>	<i>9.05</i>	<i>7.90</i>	<i>7.13</i>	<i>8.27</i>	7.17	8.25	8.26
Middle Atlantic	7.71	7.65	7.59	7.69	8.33	8.07	7.73	<i>8.13</i>	<i>8.70</i>	<i>7.73</i>	<i>7.43</i>	<i>7.65</i>	7.68	8.17	8.12
E. N. Central	5.92	5.97	5.58	5.32	5.69	5.02	5.20	<i>6.06</i>	<i>7.14</i>	<i>6.37</i>	<i>5.88</i>	<i>5.82</i>	5.69	5.61	6.47
W. N. Central	4.98	4.26	4.19	4.66	5.05	4.23	4.21	<i>5.44</i>	<i>6.33</i>	<i>4.98</i>	<i>4.50</i>	<i>5.15</i>	4.56	4.79	5.32
S. Atlantic	5.32	4.95	4.87	4.92	5.34	4.67	4.68	<i>5.68</i>	<i>6.16</i>	<i>4.89</i>	<i>4.75</i>	<i>5.31</i>	5.02	5.11	5.32
E. S. Central	4.99	4.50	4.30	4.48	4.93	4.21	4.14	<i>5.24</i>	<i>5.59</i>	<i>4.45</i>	<i>4.29</i>	<i>4.93</i>	4.58	4.67	4.86
W. S. Central	3.42	3.41	3.29	3.13	3.32	3.09	3.12	<i>4.18</i>	<i>4.14</i>	<i>3.21</i>	<i>3.17</i>	<i>3.48</i>	3.31	3.45	3.51
Mountain	5.33	5.40	5.69	5.55	5.44	5.38	4.73	<i>5.04</i>	<i>6.11</i>	<i>5.90</i>	<i>6.03</i>	<i>6.07</i>	5.48	5.17	6.04
Pacific	7.24	6.61	6.21	6.27	6.97	6.03	6.72	<i>6.83</i>	<i>7.63</i>	<i>6.68</i>	<i>6.53</i>	<i>6.61</i>	6.62	6.66	6.89
U.S. Average	4.46	4.07	3.85	3.97	4.45	3.83	3.73	<i>4.85</i>	<i>5.21</i>	<i>3.99</i>	<i>3.80</i>	<i>4.34</i>	4.10	4.25	4.37

- = 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 - December 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	197.1	187.1	196.4	193.9	187.6	180.8	195.8	<i>197.5</i>	<i>195.4</i>	<i>159.9</i>	<i>195.2</i>	<i>191.4</i>	774.6	<i>761.7</i>	<i>741.9</i>
Appalachia	50.9	50.7	46.5	50.3	50.0	51.6	50.6	<i>51.8</i>	<i>55.3</i>	<i>46.4</i>	<i>47.8</i>	<i>44.7</i>	198.4	<i>203.9</i>	<i>194.3</i>
Interior	38.5	36.3	34.9	35.6	34.0	34.6	35.1	<i>35.4</i>	<i>37.1</i>	<i>28.9</i>	<i>37.3</i>	<i>38.9</i>	145.3	<i>139.0</i>	<i>142.2</i>
Western	107.8	100.1	115.0	108.0	103.7	94.6	110.1	<i>110.4</i>	<i>102.9</i>	<i>84.6</i>	<i>110.1</i>	<i>107.8</i>	430.9	<i>418.8</i>	<i>405.5</i>
Primary Inventory Withdrawals	0.1	1.8	0.0	-0.6	-2.8	2.3	1.1	<i>-0.7</i>	<i>0.6</i>	<i>1.2</i>	<i>0.8</i>	<i>-3.5</i>	1.3	<i>-0.1</i>	<i>-0.9</i>
Imports	1.9	2.2	2.3	1.4	1.4	1.5	1.4	<i>1.4</i>	<i>1.3</i>	<i>1.4</i>	<i>1.7</i>	<i>1.7</i>	7.8	<i>5.8</i>	<i>6.1</i>
Exports	22.3	21.8	24.6	28.2	27.2	30.9	29.1	<i>25.5</i>	<i>27.0</i>	<i>25.2</i>	<i>25.0</i>	<i>25.1</i>	97.0	<i>112.7</i>	<i>102.2</i>
Metallurgical Coal	12.2	13.5	14.8	14.8	14.9	16.9	14.5	<i>12.2</i>	<i>12.9</i>	<i>12.5</i>	<i>13.1</i>	<i>13.2</i>	55.3	<i>58.6</i>	<i>51.7</i>
Steam Coal	10.1	8.3	9.8	13.4	12.3	13.9	14.5	<i>13.3</i>	<i>14.1</i>	<i>12.7</i>	<i>11.8</i>	<i>11.9</i>	41.7	<i>54.1</i>	<i>50.5</i>
Total Primary Supply	176.9	169.3	174.1	166.5	159.0	153.7	169.3	<i>172.7</i>	<i>170.3</i>	<i>137.3</i>	<i>172.8</i>	<i>164.5</i>	686.7	<i>654.7</i>	<i>644.9</i>
Secondary Inventory Withdrawals	0.9	3.5	18.2	2.1	11.9	4.9	20.5	<i>-7.1</i>	<i>1.3</i>	<i>1.5</i>	<i>3.8</i>	<i>-8.4</i>	24.7	<i>30.2</i>	<i>-1.9</i>
Waste Coal (a)	2.9	2.1	2.6	2.3	2.8	2.3	2.4	<i>2.4</i>	<i>2.3</i>	<i>2.3</i>	<i>2.3</i>	<i>2.3</i>	10.0	<i>9.8</i>	<i>9.2</i>
Total Supply	180.6	174.9	194.9	170.9	173.7	160.9	192.1	<i>168.0</i>	<i>173.9</i>	<i>141.1</i>	<i>178.9</i>	<i>158.4</i>	721.4	<i>694.6</i>	<i>652.3</i>
Consumption (million short tons)															
Coke Plants	4.2	4.3	4.5	4.5	4.2	4.6	5.2	<i>6.0</i>	<i>5.0</i>	<i>4.5</i>	<i>5.2</i>	<i>6.2</i>	17.5	<i>20.1</i>	<i>21.0</i>
Electric Power Sector (b)	160.6	154.2	190.5	159.6	154.8	144.2	181.6	<i>163.9</i>	<i>160.6</i>	<i>128.8</i>	<i>166.0</i>	<i>144.3</i>	665.0	<i>644.4</i>	<i>599.7</i>
Retail and Other Industry	8.9	8.3	8.4	8.7	8.5	7.9	7.7	<i>8.2</i>	<i>8.3</i>	<i>7.8</i>	<i>7.7</i>	<i>7.9</i>	34.3	<i>32.3</i>	<i>31.6</i>
Residential and Commercial	0.4	0.2	0.2	0.3	0.4	0.2	0.2	<i>0.3</i>	<i>0.2</i>	<i>0.1</i>	<i>0.1</i>	<i>0.2</i>	1.1	<i>1.0</i>	<i>0.7</i>
Other Industrial	8.5	8.1	8.3	8.4	8.2	7.7	7.5	<i>7.9</i>	<i>8.0</i>	<i>7.6</i>	<i>7.5</i>	<i>7.6</i>	33.3	<i>31.3</i>	<i>30.9</i>
Total Consumption	173.7	166.9	203.5	172.8	167.6	156.6	194.5	<i>178.1</i>	<i>173.9</i>	<i>141.1</i>	<i>178.9</i>	<i>158.4</i>	716.9	<i>696.8</i>	<i>652.3</i>
Discrepancy (c)	6.9	8.0	-8.5	-1.9	6.1	4.2	-2.3	<i>-10.1</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	4.5	<i>-2.1</i>	<i>0.0</i>
End-of-period Inventories (million short tons)															
Primary Inventories (d)	25.2	23.4	23.4	24.0	26.8	24.5	23.4	<i>24.1</i>	<i>23.5</i>	<i>22.3</i>	<i>21.5</i>	<i>25.0</i>	24.0	<i>24.1</i>	<i>25.0</i>
Secondary Inventories	166.8	163.3	145.1	143.0	131.1	126.2	105.7	<i>112.8</i>	<i>111.5</i>	<i>110.1</i>	<i>106.3</i>	<i>114.7</i>	143.0	<i>112.8</i>	<i>114.7</i>
Electric Power Sector	161.9	158.1	139.6	137.7	126.4	121.4	100.7	<i>107.8</i>	<i>106.8</i>	<i>104.9</i>	<i>100.8</i>	<i>109.2</i>	137.7	<i>107.8</i>	<i>109.2</i>
Retail and General Industry	3.2	3.3	3.5	3.2	2.9	2.9	3.0	<i>2.9</i>	<i>3.1</i>	<i>3.1</i>	<i>3.3</i>	<i>3.2</i>	3.2	<i>2.9</i>	<i>3.2</i>
Coke Plants	1.4	1.6	1.7	1.7	1.5	1.6	1.7	<i>1.8</i>	<i>1.4</i>	<i>1.8</i>	<i>1.9</i>	<i>2.0</i>	1.7	<i>1.8</i>	<i>2.0</i>
Coal Market Indicators															
Coal Miner Productivity															
(Tons per hour)	6.19	6.19	6.19	6.19	6.10	6.10	6.10	<i>6.10</i>	<i>6.02</i>	<i>6.02</i>	<i>6.02</i>	<i>6.02</i>	6.19	<i>6.10</i>	<i>6.02</i>
Total Raw Steel Production															
(Million short tons per day)	0.248	0.247	0.250	0.245	0.251	0.253	0.263	<i>0.268</i>	<i>0.305</i>	<i>0.295</i>	<i>0.275</i>	<i>0.243</i>	0.248	<i>0.259</i>	<i>0.280</i>
Cost of Coal to Electric Utilities															
(Dollars per million Btu)	2.07	2.08	2.04	2.04	2.06	2.05	2.06	<i>2.12</i>	<i>2.09</i>	<i>2.07</i>	<i>2.07</i>	<i>2.08</i>	2.06	<i>2.07</i>	<i>2.08</i>

- = 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 - December 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	10.56	10.71	12.22	10.70	11.13	11.14	12.82	10.87	<i>11.11</i>	<i>10.79</i>	<i>12.44</i>	<i>10.69</i>	11.05	<i>11.49</i>	<i>11.26</i>
Electric Power Sector (a)	10.14	10.29	11.78	10.27	10.69	10.71	12.37	10.45	<i>10.69</i>	<i>10.38</i>	<i>12.02</i>	<i>10.27</i>	10.62	<i>11.06</i>	<i>10.84</i>
Comm. and Indus. Sectors (b)	0.43	0.42	0.44	0.43	0.43	0.43	0.45	0.42	<i>0.42</i>	<i>0.41</i>	<i>0.43</i>	<i>0.42</i>	0.43	<i>0.43</i>	<i>0.42</i>
Net Imports	0.16	0.16	0.18	0.14	0.13	0.12	0.16	0.10	<i>0.13</i>	<i>0.14</i>	<i>0.17</i>	<i>0.13</i>	0.16	<i>0.13</i>	<i>0.14</i>
Total Supply	10.73	10.87	12.40	10.83	11.26	11.27	12.98	10.97	<i>11.24</i>	<i>10.93</i>	<i>12.61</i>	<i>10.82</i>	11.21	<i>11.62</i>	<i>11.40</i>
Losses and Unaccounted for (c)	0.51	0.68	0.60	0.73	0.65	0.94	0.86	0.74	<i>0.59</i>	<i>0.82</i>	<i>0.73</i>	<i>0.69</i>	0.63	<i>0.80</i>	<i>0.71</i>
Electricity Consumption (billion kilowatthours per day unless noted)															
Retail Sales	9.84	9.82	11.41	9.73	10.23	9.95	11.72	9.86	<i>10.28</i>	<i>9.74</i>	<i>11.50</i>	<i>9.76</i>	10.20	<i>10.44</i>	<i>10.32</i>
Residential Sector	3.70	3.42	4.46	3.51	4.10	3.61	4.72	3.64	<i>4.11</i>	<i>3.41</i>	<i>4.53</i>	<i>3.53</i>	3.78	<i>4.02</i>	<i>3.89</i>
Commercial Sector	3.52	3.65	4.09	3.56	3.61	3.71	4.21	3.57	<i>3.62</i>	<i>3.66</i>	<i>4.15</i>	<i>3.56</i>	3.71	<i>3.77</i>	<i>3.75</i>
Industrial Sector	2.60	2.72	2.83	2.64	2.50	2.62	2.77	2.64	<i>2.53</i>	<i>2.66</i>	<i>2.81</i>	<i>2.65</i>	2.70	<i>2.63</i>	<i>2.66</i>
Transportation Sector	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	<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	0.39	0.38	0.38	0.38	0.40	0.37	<i>0.37</i>	<i>0.36</i>	<i>0.38</i>	<i>0.37</i>	0.38	<i>0.38</i>	<i>0.37</i>
Total Consumption	10.22	10.19	11.80	10.11	10.61	10.32	12.12	10.23	<i>10.65</i>	<i>10.11</i>	<i>11.88</i>	<i>10.13</i>	10.58	<i>10.82</i>	<i>10.69</i>
Average residential electricity usage per customer (kWh)	2,514	2,350	3,098	2,437	2,754	2,447	3,238	2,522	<i>2,727</i>	<i>2,290</i>	<i>3,072</i>	<i>2,396</i>	10,399	<i>10,961</i>	<i>10,485</i>
Prices															
Power Generation Fuel Costs (dollars per million Btu)															
Coal	2.07	2.08	2.04	2.04	2.06	2.05	2.06	2.12	<i>2.09</i>	<i>2.07</i>	<i>2.07</i>	<i>2.08</i>	2.06	<i>2.07</i>	<i>2.08</i>
Natural Gas	3.68	3.37	3.17	3.37	3.96	3.09	3.23	4.25	<i>4.16</i>	<i>3.03</i>	<i>2.89</i>	<i>3.55</i>	3.37	<i>3.58</i>	<i>3.35</i>
Residual Fuel Oil	11.15	10.60	10.03	12.04	11.47	13.02	13.78	13.99	<i>12.49</i>	<i>12.56</i>	<i>11.79</i>	<i>11.69</i>	11.01	<i>12.78</i>	<i>12.16</i>
Distillate Fuel Oil	12.79	12.24	13.11	14.50	15.77	16.61	16.80	16.31	<i>14.74</i>	<i>14.68</i>	<i>15.19</i>	<i>15.77</i>	13.27	<i>16.18</i>	<i>15.08</i>
Retail Prices (cents per kilowatthour)															
Residential Sector	12.60	13.02	13.16	12.71	12.59	13.03	13.15	12.76	<i>12.93</i>	<i>13.61</i>	<i>13.56</i>	<i>13.13</i>	12.89	<i>12.90</i>	<i>13.31</i>
Commercial Sector	10.38	10.68	11.00	10.52	10.54	10.59	10.89	10.46	<i>10.67</i>	<i>10.76</i>	<i>10.97</i>	<i>10.48</i>	10.66	<i>10.63</i>	<i>10.73</i>
Industrial Sector	6.64	6.86	7.23	6.73	6.81	6.87	7.23	6.84	<i>6.81</i>	<i>6.91</i>	<i>7.27</i>	<i>6.83</i>	6.88	<i>6.94</i>	<i>6.96</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 - December 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Residential Sector															
New England	134	113	136	120	140	111	153	123	141	110	139	119	126	132	127
Middle Atlantic	369	308	404	328	394	323	453	333	394	314	417	322	352	375	361
E. N. Central	507	435	547	476	552	480	604	487	545	442	571	473	491	531	508
W. N. Central	296	241	303	262	327	274	318	273	319	245	317	267	275	298	287
S. Atlantic	896	894	1,139	898	1,040	920	1,184	944	1,049	875	1,147	894	957	1,022	991
E. S. Central	302	273	365	285	368	301	396	306	369	277	383	289	306	343	330
W. S. Central	505	540	764	519	608	582	803	541	604	542	782	527	583	634	614
Mountain	244	258	346	231	239	263	360	237	245	257	351	239	270	275	273
Pacific contiguous	435	351	449	381	422	339	435	380	427	338	408	388	404	394	390
AK and HI	14	12	12	13	14	12	13	13	14	12	13	13	13	13	13
Total	3,703	3,424	4,464	3,512	4,103	3,605	4,719	3,636	4,108	3,412	4,527	3,531	3,777	4,017	3,895
Commercial Sector															
New England	143	139	156	139	141	136	160	139	142	136	153	137	144	144	142
Middle Atlantic	425	406	464	414	431	411	480	412	430	407	462	408	427	434	427
E. N. Central	488	486	536	481	499	501	556	486	498	487	545	483	498	511	503
W. N. Central	272	270	303	270	282	282	308	270	282	274	309	270	279	285	284
S. Atlantic	786	853	943	811	811	862	975	810	808	851	959	796	849	865	854
E. S. Central	229	245	280	233	242	253	296	236	243	246	292	234	247	257	254
W. S. Central	480	531	609	510	501	549	637	515	514	547	646	522	533	551	558
Mountain	247	266	302	250	249	270	310	252	251	267	307	256	266	270	270
Pacific contiguous	430	444	486	438	435	424	470	436	434	426	460	436	449	441	439
AK and HI	16	16	16	16	16	15	16	16	16	15	16	16	16	16	16
Total	3,516	3,655	4,094	3,562	3,606	3,705	4,205	3,571	3,618	3,657	4,148	3,557	3,708	3,773	3,746
Industrial Sector															
New England	45	45	49	45	42	43	47	43	40	42	45	42	46	44	42
Middle Atlantic	196	198	208	198	196	194	214	200	199	197	217	201	200	201	204
E. N. Central	519	528	547	512	499	517	530	519	507	525	536	519	526	516	522
W. N. Central	244	255	270	251	232	242	258	254	240	250	266	260	255	246	254
S. Atlantic	369	393	397	379	366	388	404	370	366	387	402	366	385	382	380
E. S. Central	276	284	290	270	257	261	286	267	257	261	286	265	280	268	267
W. S. Central	505	532	546	526	467	500	511	523	479	513	524	532	527	500	512
Mountain	212	229	247	212	208	229	251	216	214	234	258	222	225	226	232
Pacific contiguous	220	240	263	229	216	231	258	230	219	234	259	231	238	234	236
AK and HI	13	14	14	14	13	13	14	14	13	13	14	14	14	13	13
Total	2,599	2,719	2,831	2,636	2,498	2,618	2,773	2,636	2,535	2,655	2,805	2,651	2,697	2,632	2,662
Total All Sectors (a)															
New England	324	298	342	306	325	292	361	307	326	290	338	300	318	321	313
Middle Atlantic	1,001	922	1,087	950	1,033	939	1,157	954	1,035	927	1,106	940	990	1,021	1,002
E. N. Central	1,516	1,450	1,632	1,470	1,552	1,500	1,691	1,494	1,552	1,455	1,653	1,476	1,517	1,559	1,534
W. N. Central	813	767	877	783	841	798	883	796	842	769	892	796	810	830	825
S. Atlantic	2,054	2,143	2,482	2,092	2,220	2,174	2,567	2,127	2,227	2,117	2,511	2,059	2,194	2,272	2,229
E. S. Central	806	802	934	788	867	815	979	809	869	784	960	789	833	867	851
W. S. Central	1,491	1,603	1,919	1,555	1,577	1,632	1,951	1,579	1,597	1,602	1,953	1,582	1,643	1,685	1,684
Mountain	702	754	895	694	697	762	921	706	710	758	917	717	762	772	776
Pacific contiguous	1,088	1,037	1,200	1,050	1,075	996	1,166	1,049	1,082	1,000	1,129	1,057	1,094	1,072	1,067
AK and HI	43	41	43	43	42	41	42	42	42	40	42	42	42	42	42
Total	9,839	9,817	11,410	9,731	10,230	9,948	11,718	9,862	10,283	9,743	11,500	9,759	10,202	10,442	10,323

- = 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 Kilowatthour)
 U.S. Energy Information Administration | Short-Term Energy Outlook - December 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Residential Sector															
New England	19.12	19.43	19.48	19.61	20.56	20.58	20.38	20.97	21.90	21.97	22.03	22.09	19.41	20.61	22.00
Middle Atlantic	15.50	16.23	16.38	15.82	15.62	16.21	16.33	16.09	16.01	16.74	16.84	16.36	15.99	16.07	16.49
E. N. Central	13.04	13.74	13.41	13.29	12.94	13.48	13.09	13.39	13.40	14.13	13.63	13.79	13.36	13.21	13.71
W. N. Central	10.97	12.80	13.22	11.53	10.91	12.63	13.10	11.62	11.26	13.24	13.45	11.91	12.13	12.06	12.44
S. Atlantic	11.63	11.98	12.12	11.66	11.65	11.91	11.82	11.51	11.80	12.28	12.19	11.83	11.86	11.73	12.02
E. S. Central	11.13	11.48	11.34	11.24	10.86	11.40	11.16	11.27	11.20	12.01	11.50	11.51	11.30	11.16	11.53
W. S. Central	10.49	10.89	10.81	10.70	10.53	11.01	10.97	10.77	10.82	11.55	11.31	10.85	10.74	10.83	11.15
Mountain	11.24	12.10	12.26	11.78	11.58	12.25	12.25	11.93	11.85	12.58	12.55	12.16	11.89	12.04	12.32
Pacific	14.55	14.70	16.49	14.36	14.88	15.28	17.20	14.46	15.15	15.82	17.81	15.09	15.08	15.51	15.98
U.S. Average	12.60	13.02	13.16	12.71	12.59	13.03	13.15	12.76	12.93	13.61	13.56	13.13	12.89	12.90	13.31
Commercial Sector															
New England	15.13	15.14	15.69	15.52	16.61	15.91	16.18	16.20	16.77	15.63	15.96	15.78	15.38	16.23	16.04
Middle Atlantic	12.05	12.75	13.33	12.07	12.07	12.22	13.15	12.10	12.09	12.26	13.16	12.15	12.57	12.41	12.44
E. N. Central	10.10	10.32	10.15	10.07	10.09	10.15	10.08	10.14	10.26	10.38	10.25	10.26	10.16	10.12	10.29
W. N. Central	9.15	10.14	10.60	9.26	9.17	10.03	10.38	9.35	9.34	10.32	10.62	9.58	9.81	9.75	9.98
S. Atlantic	9.38	9.34	9.43	9.41	9.61	9.30	9.18	9.38	9.93	9.54	9.33	9.45	9.39	9.35	9.55
E. S. Central	10.59	10.59	10.64	10.59	10.51	10.49	10.34	10.53	10.42	10.68	10.42	10.55	10.60	10.46	10.51
W. S. Central	8.34	8.43	8.36	8.25	8.36	8.17	8.11	7.99	8.01	7.92	7.83	7.76	8.35	8.15	7.88
Mountain	9.08	9.84	9.97	9.43	9.26	9.87	9.99	9.61	9.29	9.94	10.06	9.66	9.61	9.70	9.76
Pacific	12.51	13.48	15.27	13.55	12.90	14.02	15.87	12.97	13.45	14.58	16.54	13.17	13.76	13.98	14.47
U.S. Average	10.38	10.68	11.00	10.52	10.54	10.59	10.89	10.46	10.67	10.76	10.97	10.48	10.66	10.63	10.73
Industrial Sector															
New England	12.48	12.31	12.75	12.58	13.48	12.60	12.83	12.87	13.96	12.90	13.01	12.96	12.54	12.94	13.19
Middle Atlantic	6.94	6.96	6.90	6.80	7.20	6.80	6.85	6.98	7.07	6.69	6.74	6.80	6.90	6.95	6.82
E. N. Central	7.12	7.09	7.10	7.00	7.10	6.96	6.99	7.07	7.10	7.01	7.03	7.06	7.08	7.03	7.05
W. N. Central	6.80	7.22	7.92	6.68	7.05	7.38	7.99	6.84	7.15	7.51	8.12	6.92	7.17	7.32	7.44
S. Atlantic	6.38	6.44	6.82	6.36	6.54	6.40	6.59	6.60	6.55	6.46	6.63	6.54	6.50	6.53	6.55
E. S. Central	5.86	5.90	6.12	5.83	5.74	5.92	5.88	5.97	5.84	6.06	5.98	5.97	5.93	5.88	5.96
W. S. Central	5.30	5.52	5.65	5.32	5.41	5.41	5.67	5.32	5.23	5.34	5.62	5.19	5.45	5.45	5.35
Mountain	6.13	6.61	7.18	6.18	6.10	6.47	6.93	6.01	6.12	6.57	7.07	6.15	6.55	6.41	6.51
Pacific	8.05	9.18	10.50	9.48	8.63	9.53	11.19	9.71	8.75	9.58	11.28	9.81	9.36	9.83	9.92
U.S. Average	6.64	6.86	7.23	6.73	6.81	6.87	7.23	6.84	6.81	6.91	7.27	6.83	6.88	6.94	6.96
All Sectors (a)															
New England	16.38	16.29	16.74	16.66	17.88	17.15	17.49	17.60	18.61	17.61	18.03	17.86	16.52	17.54	18.04
Middle Atlantic	12.31	12.65	13.22	12.25	12.48	12.46	13.22	12.41	12.61	12.58	13.28	12.43	12.63	12.67	12.75
E. N. Central	10.06	10.17	10.21	10.04	10.14	10.11	10.18	10.15	10.32	10.30	10.37	10.27	10.12	10.15	10.32
W. N. Central	9.10	10.00	10.68	9.19	9.26	10.12	10.66	9.34	9.44	10.34	10.88	9.49	9.77	9.86	10.06
S. Atlantic	9.82	9.90	10.24	9.82	10.06	9.88	9.99	9.84	10.25	10.11	10.20	9.96	9.96	9.94	10.14
E. S. Central	9.17	9.23	9.51	9.20	9.24	9.36	9.37	9.32	9.40	9.62	9.53	9.36	9.29	9.33	9.48
W. S. Central	8.03	8.29	8.56	8.07	8.32	8.34	8.65	8.08	8.24	8.32	8.63	7.93	8.26	8.36	8.30
Mountain	8.94	9.64	10.08	9.22	9.11	9.67	10.04	9.28	9.22	9.79	10.17	9.41	9.51	9.57	9.69
Pacific	12.42	12.89	14.67	12.95	12.81	13.39	15.32	12.80	13.16	13.82	15.78	13.13	13.28	13.63	14.00
U.S. Average	10.22	10.44	10.91	10.28	10.45	10.50	10.94	10.35	10.62	10.71	11.09	10.45	10.48	10.57	10.73

- = 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 - December 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
United States															
Coal	3,239	3,095	3,754	3,123	3,127	2,859	3,559	3,210	3,257	2,568	3,256	2,818	3,304	3,190	2,975
Natural Gas	3,035	3,338	4,416	3,403	3,456	3,806	5,160	3,623	3,469	3,762	4,942	3,642	3,552	4,015	3,957
Petroleum (a)	59	55	56	64	102	53	61	58	76	57	64	56	59	68	63
Other Gases	34	33	35	34	34	33	36	33	33	32	35	32	34	34	33
Nuclear	2,242	2,034	2,302	2,243	2,294	2,155	2,277	2,122	2,240	2,097	2,272	2,135	2,205	2,212	2,186
Renewable Energy Sources:	1,936	2,137	1,644	1,813	2,094	2,212	1,718	1,810	2,019	2,251	1,858	1,982	1,881	1,957	2,027
Conventional Hydropower	886	1,011	733	665	856	944	696	607	737	868	711	645	823	775	740
Wind	734	735	516	804	869	821	582	835	903	919	677	945	697	776	861
Wood Biomass	113	107	117	114	119	113	115	111	117	114	122	116	113	114	117
Waste Biomass	61	59	58	59	61	58	57	58	57	58	58	59	59	58	58
Geothermal	45	42	43	44	46	45	46	46	46	45	45	46	44	46	45
Solar	98	182	177	126	142	232	222	153	160	247	244	171	146	187	206
Pumped Storage Hydropower	-16	-16	-22	-17	-15	-13	-22	-15	-13	-12	-18	-14	-18	-16	-14
Other Nonrenewable Fuels (b)	35	36	38	35	36	35	32	32	32	34	35	36	36	34	34
Total Generation	10,564	10,712	12,224	10,697	11,128	11,141	12,822	10,872	11,113	10,790	12,445	10,688	11,053	11,494	11,261
Northeast Census Region															
Coal	155	133	135	139	149	120	132	228	184	78	81	169	141	158	128
Natural Gas	522	527	703	533	500	527	783	559	533	597	755	602	572	593	622
Petroleum (a)	3	2	2	13	32	3	3	4	13	2	4	4	5	11	6
Other Gases	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Nuclear	539	476	549	529	552	507	525	489	512	476	507	463	523	518	489
Hydropower (c)	109	120	98	102	108	114	106	95	106	103	99	92	107	106	100
Other Renewables (d)	79	68	60	77	81	76	72	82	85	77	70	85	71	78	80
Other Nonrenewable Fuels (b)	11	11	12	12	11	10	11	12	11	11	12	12	12	11	12
Total Generation	1,420	1,340	1,560	1,405	1,435	1,359	1,635	1,471	1,446	1,346	1,530	1,429	1,432	1,475	1,438
South Census Region															
Coal	1,330	1,416	1,681	1,293	1,262	1,260	1,529	1,290	1,319	1,103	1,420	1,116	1,431	1,336	1,239
Natural Gas	1,764	2,085	2,545	1,928	2,049	2,345	2,955	2,069	1,986	2,305	2,862	2,066	2,083	2,356	2,306
Petroleum (a)	25	23	22	21	39	21	26	23	30	25	28	22	23	27	26
Other Gases	13	14	15	13	13	12	14	12	11	11	13	11	14	13	12
Nuclear	973	888	1,003	1,012	1,008	952	1,010	941	1,009	948	1,032	978	969	978	992
Hydropower (c)	99	125	95	99	114	127	112	92	112	114	104	90	104	111	105
Other Renewables (d)	389	393	318	400	452	494	375	439	482	527	433	490	375	439	483
Other Nonrenewable Fuels (b)	15	15	16	15	16	16	11	11	12	13	13	15	15	13	13
Total Generation	4,608	4,958	5,695	4,781	4,952	5,227	6,031	4,877	4,961	5,046	5,905	4,789	5,013	5,274	5,177
Midwest Census Region															
Coal	1,285	1,173	1,389	1,212	1,303	1,140	1,386	1,213	1,269	1,025	1,276	1,083	1,265	1,261	1,163
Natural Gas	301	289	394	354	403	441	552	382	410	401	553	397	335	445	441
Petroleum (a)	7	9	8	9	10	7	9	9	10	9	10	8	8	9	10
Other Gases	14	12	13	12	13	12	14	12	13	12	14	13	13	13	13
Nuclear	555	543	580	535	571	539	569	535	553	519	564	534	553	553	542
Hydropower (c)	46	57	43	44	57	58	36	41	56	54	35	40	47	48	46
Other Renewables (d)	309	297	196	377	367	303	234	377	397	369	272	441	295	320	370
Other Nonrenewable Fuels (b)	3	4	4	4	4	3	4	4	4	4	4	4	4	4	4
Total Generation	2,519	2,383	2,627	2,547	2,727	2,505	2,804	2,572	2,713	2,394	2,728	2,520	2,519	2,652	2,589
West Census Region															
Coal	469	373	549	479	413	339	512	479	486	362	480	450	468	436	444
Natural Gas	448	438	774	588	503	493	871	614	539	459	772	578	563	621	588
Petroleum (a)	23	22	23	22	21	21	23	22	22	21	22	21	23	22	22
Other Gases	5	6	6	6	7	7	7	7	7	7	6	7	6	7	7
Nuclear	175	127	171	167	164	158	173	157	165	155	169	160	160	163	162
Hydropower (c)	616	694	475	403	562	632	420	364	449	584	454	409	546	494	474
Other Renewables (d)	273	367	337	293	338	395	341	305	318	409	371	321	318	345	355
Other Nonrenewable Fuels (b)	6	5	6	5	6	6	6	5	5	6	6	5	5	6	6
Total Generation	2,016	2,031	2,341	1,964	2,014	2,051	2,352	1,953	1,993	2,003	2,281	1,950	2,089	2,093	2,057

(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 - December 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)	1,781	1,693	2,068	1,732	1,717	1,583	1,972	1,777	1,779	1,411	1,800	1,563	1,819	1,763	1,638
Natural Gas (million cf/d)	21,745	24,619	32,891	24,831	25,473	28,252	38,455	26,152	25,034	27,762	36,994	26,443	26,049	29,609	29,084
Petroleum (thousand b/d)	108	101	104	117	180	96	111	105	137	103	116	102	107	123	115
Residual Fuel Oil	26	27	28	34	51	27	30	25	38	24	28	25	29	33	29
Distillate Fuel Oil	27	24	22	33	71	26	22	30	36	25	25	28	27	37	29
Petroleum Coke (a)	51	46	50	44	48	40	54	46	57	51	59	46	48	47	53
Other Petroleum Liquids (b)	4	4	4	6	9	4	5	4	5	3	4	4	4	5	4
Northeast Census Region															
Coal (thousand st/d)	80	66	70	69	77	63	69	114	94	40	43	87	71	81	66
Natural Gas (million cf/d)	3,732	3,857	5,256	3,898	3,815	3,894	5,823	4,032	3,881	4,417	5,701	4,402	4,189	4,396	4,605
Petroleum (thousand b/d)	6	4	4	21	53	6	6	7	23	4	7	7	9	18	10
South Census Region															
Coal (thousand st/d)	716	761	902	705	659	670	821	693	685	580	753	597	771	711	654
Natural Gas (million cf/d)	12,448	15,193	18,701	13,948	14,730	17,258	21,785	14,786	14,069	16,786	21,075	14,756	15,087	17,152	16,685
Petroleum (thousand b/d)	47	43	43	40	72	39	48	44	57	46	52	43	43	51	49
Midwest Census Region															
Coal (thousand st/d)	716	653	785	686	743	654	793	693	719	584	729	620	710	721	663
Natural Gas (million cf/d)	2,270	2,264	3,183	2,706	3,135	3,415	4,309	2,850	3,099	3,101	4,425	3,027	2,608	3,429	3,416
Petroleum (thousand b/d)	15	18	18	18	19	15	17	17	20	18	20	17	17	17	19
West Census Region															
Coal (thousand st/d)	269	213	311	273	239	195	290	277	280	207	274	260	266	251	255
Natural Gas (million cf/d)	3,296	3,304	5,751	4,279	3,793	3,685	6,538	4,485	3,985	3,459	5,793	4,259	4,165	4,632	4,378
Petroleum (thousand b/d)	39	36	39	37	36	36	39	37	37	35	37	36	38	37	36
End-of-period U.S. Fuel Inventories Held by Electric Power Sector															
Coal (million short tons)	161.9	158.1	139.6	137.7	126.4	121.4	100.7	107.8	106.8	104.9	100.8	109.2	137.7	107.8	109.2
Residual Fuel Oil (mmb)	12.7	12.0	11.4	10.9	10.1	9.9	8.5	9.3	9.9	10.3	10.5	11.1	10.9	9.3	11.1
Distillate Fuel Oil (mmb)	17.3	17.1	16.8	16.4	14.8	14.6	14.2	14.8	15.1	15.2	15.2	15.6	16.4	14.8	15.6
Petroleum Coke (mmb)	3.9	3.7	4.0	4.3	4.8	4.1	3.7	3.8	3.8	3.8	3.8	3.8	4.3	3.8	3.8

(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 - December 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	0.035	0.037	0.038	0.038	0.038	0.039	0.039	0.038	0.038	0.038	0.039	0.147	0.154	0.153
Hydroelectric Power (a)	0.730	0.843	0.618	0.561	0.706	0.787	0.587	0.512	0.608	0.725	0.600	0.544	2.752	2.593	2.479
Solar (b)	0.081	0.151	0.149	0.106	0.116	0.193	0.186	0.128	0.131	0.205	0.205	0.143	0.487	0.624	0.683
Waste Biomass (c)	0.072	0.070	0.069	0.070	0.073	0.070	0.067	0.068	0.067	0.069	0.071	0.070	0.280	0.279	0.276
Wood Biomass	0.060	0.052	0.059	0.058	0.058	0.053	0.056	0.052	0.056	0.055	0.066	0.060	0.229	0.219	0.236
Wind	0.609	0.617	0.438	0.682	0.722	0.689	0.494	0.709	0.749	0.771	0.575	0.802	2.346	2.613	2.897
Subtotal	1.589	1.768	1.369	1.514	1.714	1.830	1.429	1.509	1.649	1.863	1.555	1.658	6.241	6.482	6.725
Industrial Sector															
Biofuel Losses and Co-products (d)	0.204	0.200	0.205	0.212	0.202	0.204	0.212	0.207	0.201	0.205	0.205	0.206	0.821	0.825	0.817
Geothermal	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.004	0.004	0.004
Hydroelectric Power (a)	0.003	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.013	0.012	0.012
Solar (b)	0.004	0.007	0.007	0.005	0.005	0.007	0.008	0.005	0.006	0.008	0.009	0.006	0.022	0.025	0.029
Waste Biomass (c)	0.044	0.041	0.039	0.044	0.044	0.041	0.040	0.043	0.042	0.040	0.040	0.043	0.168	0.168	0.165
Wood Biomass	0.379	0.378	0.390	0.392	0.381	0.382	0.389	0.370	0.352	0.348	0.359	0.361	1.539	1.522	1.419
Subtotal	0.636	0.628	0.643	0.657	0.636	0.635	0.649	0.629	0.604	0.602	0.612	0.618	2.564	2.550	2.436
Commercial Sector															
Geothermal	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.020	0.020	0.020
Solar (b)	0.015	0.022	0.023	0.016	0.019	0.029	0.029	0.021	0.024	0.034	0.035	0.025	0.076	0.097	0.118
Waste Biomass (c)	0.012	0.012	0.012	0.012	0.011	0.011	0.011	0.012	0.011	0.011	0.011	0.012	0.048	0.045	0.044
Wood Biomass	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.022	0.021	0.084	0.084	0.084
Subtotal	0.059	0.067	0.068	0.061	0.063	0.072	0.073	0.066	0.067	0.078	0.079	0.070	0.255	0.274	0.295
Residential Sector															
Geothermal	0.010	0.010	0.010	0.010	0.010	0.010	0.011	0.013	0.013	0.013	0.013	0.013	0.040	0.044	0.053
Solar (e)	0.036	0.057	0.058	0.040	0.043	0.066	0.067	0.046	0.049	0.076	0.077	0.054	0.191	0.221	0.256
Wood Biomass	0.082	0.083	0.084	0.084	0.095	0.096	0.099	0.104	0.105	0.105	0.105	0.105	0.334	0.394	0.420
Subtotal	0.128	0.150	0.152	0.134	0.147	0.172	0.177	0.163	0.167	0.194	0.196	0.172	0.565	0.659	0.729
Transportation Sector															
Biomass-based Diesel (f)	0.054	0.079	0.078	0.069	0.054	0.068	0.071	0.089	0.066	0.085	0.098	0.101	0.280	0.283	0.350
Ethanol (f)	0.269	0.292	0.295	0.292	0.273	0.286	0.299	0.292	0.275	0.296	0.297	0.291	1.148	1.150	1.159
Subtotal	0.322	0.372	0.374	0.361	0.327	0.354	0.374	0.382	0.341	0.381	0.394	0.392	1.429	1.437	1.509
All Sectors Total															
Biomass-based Diesel (f)	0.054	0.079	0.078	0.069	0.054	0.068	0.071	0.089	0.066	0.085	0.098	0.101	0.280	0.283	0.350
Biofuel Losses and Co-products (d)	0.204	0.200	0.205	0.212	0.202	0.204	0.212	0.207	0.201	0.205	0.205	0.206	0.821	0.825	0.817
Ethanol (f)	0.279	0.304	0.307	0.303	0.283	0.297	0.305	0.309	0.285	0.307	0.308	0.303	1.192	1.194	1.203
Geothermal	0.053	0.051	0.053	0.054	0.054	0.053	0.056	0.058	0.057	0.057	0.057	0.058	0.210	0.222	0.230
Hydroelectric Power (a)	0.734	0.848	0.621	0.564	0.710	0.791	0.590	0.516	0.612	0.729	0.604	0.548	2.767	2.607	2.493
Solar (b)(e)	0.136	0.236	0.236	0.166	0.183	0.295	0.287	0.200	0.209	0.324	0.326	0.228	0.774	0.965	1.087
Waste Biomass (c)	0.128	0.122	0.120	0.125	0.128	0.122	0.120	0.124	0.120	0.120	0.122	0.125	0.495	0.494	0.486
Wood Biomass	0.542	0.534	0.554	0.556	0.555	0.552	0.566	0.547	0.533	0.528	0.551	0.546	2.187	2.220	2.159
Wind	0.609	0.617	0.438	0.682	0.722	0.689	0.494	0.709	0.749	0.771	0.575	0.802	2.346	2.613	2.897
Total Consumption	2.735	2.985	2.605	2.728	2.887	3.064	2.713	2.748	2.828	3.118	2.836	2.911	11.053	11.413	11.693

- = 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 - December 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	7,233	7,269	7,326	7,313	7,254	7,227	7,223	7,202	7,365	7,358	7,358	7,352	7,313	7,202	7,352
Waste	4,202	4,238	4,241	4,234	4,212	4,184	4,180	4,215	4,219	4,212	4,212	4,206	4,234	4,215	4,206
Wood	3,031	3,031	3,085	3,079	3,042	3,042	3,042	2,987	3,146	3,146	3,146	3,146	3,079	2,987	3,146
Conventional Hydroelectric	79,336	79,343	79,437	79,432	79,444	79,412	79,412	79,565	79,583	79,612	79,513	79,562	79,432	79,565	79,562
Geothermal	2,449	2,449	2,449	2,486	2,499	2,499	2,499	2,499	2,507	2,507	2,507	2,542	2,486	2,499	2,542
Large-Scale Solar (b)	22,591	23,624	24,134	26,432	27,956	28,799	29,283	32,115	32,720	33,449	33,742	36,371	26,432	32,115	36,371
Wind	82,919	83,378	84,109	87,488	88,538	88,662	89,565	95,828	96,653	97,970	99,549	106,717	87,488	95,828	106,717
Other Sectors (c)															
Biomass	6,686	6,690	6,688	6,657	6,656	6,621	6,621	6,630	6,630	6,605	6,607	6,621	6,657	6,630	6,621
Waste	881	885	883	872	873	873	873	873	873	873	875	889	872	873	889
Wood	5,805	5,805	5,805	5,785	5,783	5,747	5,747	5,757	5,757	5,732	5,732	5,732	5,785	5,757	5,732
Conventional Hydroelectric	357	357	357	357	357	357	357	364	364	364	364	364	357	364	364
Large-Scale Solar (b)	322	340	340	349	355	362	367	367	369	369	369	368	349	367	368
Small-Scale Solar (d)	13,559	14,402	15,216	16,148	17,029	17,863	18,708	19,604	20,535	21,503	22,506	23,547	16,148	19,604	23,547
Residential Sector	8,115	8,618	9,113	9,627	10,155	10,657	11,180	11,719	12,276	12,853	13,447	14,059	9,627	11,719	14,059
Commercial Sector	4,204	4,482	4,738	5,156	5,490	5,761	6,020	6,318	6,633	6,963	7,311	7,676	5,156	6,318	7,676
Industrial Sector	1,240	1,302	1,365	1,365	1,385	1,445	1,509	1,567	1,626	1,686	1,748	1,812	1,365	1,567	1,812
Wind	94	93	93	97	103	100	107	107	107	107	107	107	97	107	107
Renewable Electricity Generation (thousand megawatthours per day)															
Electric Power Sector (a)															
Biomass	90	83	87	87	93	85	86	83	86	86	95	90	87	87	89
Waste	51	50	48	49	52	49	48	48	48	49	50	49	50	49	49
Wood	39	33	39	38	41	36	38	36	39	37	45	41	37	38	40
Conventional Hydroelectric	881	1,006	729	661	852	939	692	603	732	863	707	641	818	771	736
Geothermal	45	42	43	44	46	45	46	46	46	45	45	46	44	46	45
Large-Scale Solar (b)	97	180	175	125	140	230	219	151	157	244	241	168	144	185	203
Wind	733	734	515	803	869	820	581	835	902	918	676	944	696	775	860
Other Sectors (c)															
Biomass	84	84	87	85	87	86	86	85	87	86	86	85	85	86	86
Waste	74	74	78	75	78	77	77	75	78	77	77	75	75	77	77
Wood	10	10	10	10	9	9	8	10	9	9	8	10	10	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	1	1	3	3	2	2	3	3	3	2	2	3
Small-Scale Solar (d)	51	78	79	55	64	97	96	67	77	116	117	82	66	81	98
Residential Sector	29	46	46	32	37	57	56	38	44	68	68	48	38	47	57
Commercial Sector	17	25	25	18	22	32	32	22	26	38	38	27	21	27	32
Industrial Sector	5	8	8	5	6	8	9	6	7	10	10	7	6	7	8
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 - December 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 2012 dollars - SAAR)	17,863	17,995	18,121	18,224	18,324	18,512	18,671	18,800	18,929	19,059	19,183	19,296	18,051	18,577	19,117
Real Personal Consumption Expend. (billion chained 2012 dollars - SAAR)	12,428	12,516	12,585	12,706	12,723	12,842	12,969	13,059	13,157	13,254	13,348	13,436	12,559	12,898	13,299
Real Private Fixed Investment (billion chained 2012 dollars - SAAR)	3,109	3,141	3,161	3,209	3,271	3,322	3,320	3,357	3,388	3,423	3,468	3,514	3,155	3,318	3,448
Business Inventory Change (billion chained 2012 dollars - SAAR)	8	17	55	21	36	-10	80	77	85	90	96	94	25	46	91
Real Government Expenditures (billion chained 2012 dollars - SAAR)	3,130	3,130	3,122	3,140	3,152	3,172	3,197	3,228	3,251	3,272	3,280	3,287	3,130	3,187	3,273
Real Exports of Goods & Services (billion chained 2012 dollars - SAAR)	2,413	2,435	2,456	2,496	2,518	2,574	2,551	2,577	2,607	2,637	2,672	2,712	2,450	2,555	2,657
Real Imports of Goods & Services (billion chained 2012 dollars - SAAR)	3,259	3,279	3,302	3,395	3,420	3,415	3,490	3,554	3,619	3,682	3,752	3,821	3,309	3,470	3,719
Real Disposable Personal Income (billion chained 2012 dollars - SAAR)	13,835	13,910	13,986	14,066	14,220	14,307	14,394	14,460	14,535	14,642	14,741	14,846	13,949	14,345	14,691
Non-Farm Employment (millions)	145.9	146.3	146.9	147.4	148.1	148.7	149.3	150.0	150.6	151.2	151.7	152.2	146.6	149.0	151.4
Civilian Unemployment Rate (percent)	4.7	4.3	4.3	4.1	4.1	3.9	3.8	3.7	3.5	3.4	3.3	3.3	4.4	3.9	3.4
Housing Starts (millions - SAAR)	1.23	1.17	1.17	1.26	1.32	1.26	1.22	1.26	1.28	1.33	1.37	1.40	1.21	1.26	1.35
Industrial Production Indices (Index, 2012=100)															
Total Industrial Production	102.5	103.7	103.3	105.3	105.9	107.3	108.5	109.3	110.0	110.7	111.5	112.3	103.7	107.8	111.1
Manufacturing	102.0	102.7	102.2	103.6	104.1	104.8	105.8	106.7	107.4	108.2	109.0	109.7	102.6	105.4	108.6
Food	109.2	110.1	112.1	112.5	114.1	114.8	115.9	116.4	117.2	117.9	118.5	119.0	111.0	115.3	118.1
Paper	97.8	96.9	96.4	96.1	96.0	96.1	96.1	96.1	96.0	96.0	95.9	95.7	96.8	96.1	95.9
Petroleum and Coal Products	105.5	108.9	104.7	107.4	106.6	107.5	108.0	108.3	109.0	109.4	109.8	110.1	106.6	107.6	109.6
Chemicals	94.2	95.9	94.7	97.7	96.7	98.9	100.2	100.6	101.2	102.1	102.9	103.8	95.6	99.1	102.5
Nonmetallic Mineral Products	114.0	113.2	113.6	117.1	119.2	120.7	119.0	119.0	118.9	119.6	120.4	121.3	114.5	119.5	120.0
Primary Metals	94.0	92.9	93.6	95.2	96.1	96.5	97.1	101.8	104.4	105.5	105.8	105.3	93.9	97.9	105.2
Coal-weighted Manufacturing (a)	101.7	102.1	101.1	103.3	103.5	104.8	105.3	106.7	107.8	108.5	109.0	109.3	102.0	105.1	108.7
Distillate-weighted Manufacturing (a)	107.8	108.2	108.2	110.1	111.1	111.7	112.0	112.8	113.4	114.0	114.6	115.1	108.6	111.9	114.3
Electricity-weighted Manufacturing (a)	102.1	102.8	101.9	103.9	104.1	105.2	106.1	107.5	108.7	109.5	110.2	110.7	102.7	105.7	109.8
Natural Gas-weighted Manufacturing (a)	101.7	103.5	101.6	104.5	103.8	105.6	106.6	107.6	108.7	109.6	110.3	110.8	102.9	105.9	109.9
Price Indexes															
Consumer Price Index (all urban consumers) (index, 1982-1984=1.00)	2.44	2.44	2.45	2.47	2.49	2.50	2.52	2.53	2.54	2.55	2.57	2.58	2.45	2.51	2.56
Producer Price Index: All Commodities (index, 1982=1.00)	1.93	1.92	1.92	1.97	2.01	2.01	2.02	2.03	2.04	2.04	2.05	2.06	1.94	2.02	2.05
Producer Price Index: Petroleum (index, 1982=1.00)	1.66	1.67	1.75	1.90	1.98	2.22	2.26	2.00	1.77	1.84	1.91	1.87	1.74	2.11	1.85
GDP Implicit Price Deflator (index, 2012=100)	107.2	107.6	108.1	108.8	109.3	110.2	110.6	111.1	111.9	112.4	113.0	113.7	107.9	110.3	112.7
Miscellaneous															
Vehicle Miles Traveled (b) (million miles/day)	8,210	9,202	9,057	8,730	8,232	9,225	9,079	8,863	8,416	9,382	9,229	8,957	8,802	8,852	8,998
Air Travel Capacity (Available ton-miles/day, thousands)	567	619	661	631	603	663	672	641	619	654	664	641	620	645	645
Aircraft Utilization (Revenue ton-miles/day, thousands)	344	390	398	382	368	414	426	403	382	417	423	403	378	403	406
Airline Ticket Price Index (index, 1982-1984=100)	277.8	297.0	264.9	263.4	262.8	277.9	261.3	285.4	309.4	347.4	319.5	315.7	275.8	271.8	323.0
Raw Steel Production (million short tons per day)	0.248	0.247	0.250	0.245	0.251	0.253	0.263	0.268	0.305	0.295	0.275	0.243	0.248	0.259	0.280
Carbon Dioxide (CO2) Emissions (million metric tons)															
Petroleum	565	587	594	596	580	594	606	605	586	596	609	605	2,342	2,386	2,396
Natural Gas	423	311	334	406	478	349	365	425	480	349	367	422	1,474	1,617	1,618
Coal	319	307	373	317	308	288	355	333	321	261	330	296	1,316	1,284	1,208
Total Energy (c)	1,310	1,208	1,304	1,322	1,369	1,235	1,330	1,366	1,389	1,209	1,309	1,326	5,144	5,299	5,234

- = 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 - December 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	893	896	907	911	915	922	931	935	941	946	951	957	902	926	949
Middle Atlantic	2,505	2,512	2,530	2,534	2,545	2,568	2,585	2,599	2,615	2,629	2,643	2,657	2,520	2,574	2,636
E. N. Central	2,328	2,336	2,356	2,368	2,379	2,399	2,417	2,430	2,443	2,457	2,469	2,480	2,347	2,406	2,462
W. N. Central	1,084	1,094	1,088	1,091	1,097	1,107	1,115	1,120	1,126	1,133	1,140	1,145	1,089	1,110	1,136
S. Atlantic	3,023	3,035	3,060	3,077	3,095	3,127	3,154	3,180	3,204	3,226	3,248	3,267	3,049	3,139	3,236
E. S. Central	763	766	770	775	779	785	791	796	800	805	810	814	768	788	807
W. S. Central	2,029	2,050	2,061	2,082	2,097	2,128	2,152	2,171	2,190	2,208	2,226	2,242	2,055	2,137	2,217
Mountain	1,088	1,097	1,115	1,121	1,129	1,143	1,154	1,162	1,171	1,181	1,192	1,200	1,105	1,147	1,186
Pacific	3,173	3,225	3,243	3,266	3,284	3,320	3,351	3,376	3,401	3,430	3,455	3,479	3,227	3,333	3,441
Industrial Output, Manufacturing (Index, Year 2012=100)															
New England	96.8	97.2	96.8	98.5	98.7	99.2	99.8	<i>100.3</i>	<i>100.7</i>	<i>101.3</i>	<i>101.9</i>	<i>102.2</i>	97.3	<i>99.5</i>	<i>101.5</i>
Middle Atlantic	97.0	97.5	96.9	97.6	97.9	98.3	98.6	<i>99.3</i>	<i>99.8</i>	<i>100.4</i>	<i>101.0</i>	<i>101.5</i>	97.2	<i>98.5</i>	<i>100.7</i>
E. N. Central	104.3	105.2	104.4	106.0	106.3	106.9	107.5	<i>108.5</i>	<i>109.2</i>	<i>110.2</i>	<i>110.9</i>	<i>111.6</i>	105.0	<i>107.3</i>	<i>110.5</i>
W. N. Central	101.1	101.8	101.5	103.0	103.8	104.4	105.7	<i>106.4</i>	<i>107.1</i>	<i>108.0</i>	<i>108.9</i>	<i>109.6</i>	101.8	<i>105.1</i>	<i>108.4</i>
S. Atlantic	105.6	106.4	105.8	107.1	107.6	108.5	109.9	<i>110.8</i>	<i>111.4</i>	<i>112.2</i>	<i>113.0</i>	<i>113.7</i>	106.2	<i>109.2</i>	<i>112.6</i>
E. S. Central	107.8	108.3	107.4	108.5	108.7	108.8	110.1	<i>111.0</i>	<i>111.7</i>	<i>112.7</i>	<i>113.6</i>	<i>114.4</i>	108.0	<i>109.7</i>	<i>113.1</i>
W. S. Central	95.1	96.0	95.9	96.8	97.3	98.9	99.7	<i>100.8</i>	<i>101.6</i>	<i>102.5</i>	<i>103.5</i>	<i>104.2</i>	95.9	<i>99.2</i>	<i>102.9</i>
Mountain	106.5	107.8	108.1	110.0	111.4	112.8	114.7	<i>115.6</i>	<i>116.4</i>	<i>117.3</i>	<i>118.2</i>	<i>119.0</i>	108.1	<i>113.6</i>	<i>117.7</i>
Pacific	102.2	102.7	101.7	103.0	103.4	103.5	104.6	<i>105.4</i>	<i>106.0</i>	<i>106.8</i>	<i>107.6</i>	<i>108.2</i>	102.4	<i>104.2</i>	<i>107.1</i>
Real Personal Income (Billion \$2009)															
New England	787	791	797	797	805	807	812	815	819	824	829	834	793	810	827
Middle Atlantic	2,030	2,041	2,060	2,078	2,081	2,090	2,101	2,108	2,117	2,130	2,142	2,155	2,052	2,095	2,136
E. N. Central	2,158	2,163	2,177	2,181	2,197	2,209	2,224	2,233	2,244	2,259	2,271	2,285	2,170	2,216	2,265
W. N. Central	1,006	1,011	1,010	1,013	1,014	1,020	1,029	1,033	1,038	1,046	1,054	1,063	1,010	1,024	1,051
S. Atlantic	2,819	2,833	2,853	2,870	2,890	2,906	2,925	2,942	2,960	2,985	3,010	3,035	2,844	2,916	2,997
E. S. Central	795	798	801	804	809	813	816	819	823	829	834	839	800	814	831
W. S. Central	1,716	1,725	1,736	1,742	1,761	1,777	1,789	1,801	1,813	1,828	1,842	1,857	1,730	1,782	1,835
Mountain	999	1,004	1,015	1,021	1,032	1,038	1,045	1,051	1,058	1,067	1,076	1,086	1,010	1,041	1,072
Pacific	2,435	2,451	2,464	2,490	2,504	2,516	2,531	2,545	2,559	2,580	2,600	2,620	2,460	2,524	2,590
Households (Thousands)															
New England	5,838	5,842	5,851	5,860	5,869	5,877	5,890	5,896	5,905	5,914	5,924	5,934	5,860	5,896	5,934
Middle Atlantic	15,836	15,836	15,855	15,874	15,892	15,910	15,944	15,959	15,977	15,999	16,023	16,049	15,874	15,959	16,049
E. N. Central	18,801	18,825	18,846	18,869	18,892	18,921	18,966	18,985	19,005	19,032	19,063	19,098	18,869	18,985	19,098
W. N. Central	8,478	8,489	8,510	8,532	8,556	8,582	8,612	8,630	8,650	8,671	8,693	8,717	8,532	8,630	8,717
S. Atlantic	25,253	25,382	25,490	25,594	25,693	25,794	25,914	25,999	26,091	26,184	26,276	26,374	25,594	25,999	26,374
E. S. Central	7,546	7,547	7,564	7,581	7,600	7,619	7,645	7,659	7,677	7,696	7,716	7,737	7,581	7,659	7,737
W. S. Central	14,614	14,679	14,729	14,778	14,827	14,879	14,948	15,000	15,059	15,121	15,184	15,249	14,778	15,000	15,249
Mountain	9,129	9,202	9,243	9,285	9,329	9,374	9,426	9,463	9,503	9,542	9,582	9,624	9,285	9,463	9,624
Pacific	18,723	18,792	18,848	18,903	18,958	19,012	19,089	19,138	19,191	19,243	19,298	19,354	18,903	19,138	19,354
Total Non-farm Employment (Millions)															
New England	7.4	7.4	7.4	7.4	7.4	7.5	7.5	7.5	7.5	7.6	7.6	7.6	7.4	7.5	7.6
Middle Atlantic	19.5	19.5	19.6	19.7	19.7	19.8	19.8	19.9	19.9	20.0	20.0	20.1	19.6	19.8	20.0
E. N. Central	21.9	22.0	22.0	22.0	22.1	22.2	22.2	22.3	22.4	22.5	22.5	22.6	22.0	22.2	22.5
W. N. Central	10.6	10.6	10.7	10.7	10.7	10.7	10.8	10.8	10.9	10.9	10.9	10.9	10.6	10.8	10.9
S. Atlantic	28.0	28.1	28.2	28.3	28.4	28.6	28.7	28.9	29.0	29.2	29.3	29.4	28.2	28.7	29.2
E. S. Central	8.1	8.1	8.1	8.1	8.1	8.2	8.2	8.2	8.2	8.3	8.3	8.3	8.1	8.2	8.3
W. S. Central	17.0	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	17.9	17.1	17.5	17.8
Mountain	10.4	10.5	10.6	10.6	10.7	10.8	10.8	10.9	11.0	11.0	11.1	11.1	10.5	10.8	11.0
Pacific	22.8	22.9	23.0	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	24.0	23.0	23.4	23.8

- = 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 - December 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	2,980	800	93	2,167	3,051	908	71	2,352	3,215	868	127	2,129	6,040	6,382	6,339
Middle Atlantic	2,658	600	74	1,997	2,934	753	36	2,120	2,971	696	78	1,969	5,329	5,843	5,714
E. N. Central	2,692	627	106	2,264	3,209	825	60	2,427	3,143	730	128	2,233	5,689	6,521	6,234
W. N. Central	2,813	661	138	2,388	3,422	828	121	2,682	3,206	700	164	2,415	5,999	7,053	6,486
South Atlantic	1,145	125	15	945	1,444	220	2	1,026	1,465	196	13	990	2,229	2,692	2,664
E. S. Central	1,376	154	25	1,282	1,818	327	2	1,403	1,863	244	22	1,327	2,838	3,549	3,456
W. S. Central	773	66	4	740	1,193	143	3	930	1,211	86	4	784	1,583	2,268	2,086
Mountain	2,057	699	153	1,664	2,121	599	123	1,924	2,177	681	143	1,820	4,573	4,767	4,821
Pacific	1,560	530	69	1,030	1,440	540	83	1,080	1,424	540	85	1,203	3,189	3,143	3,253
U.S. Average	1,858	427	65	1,480	2,129	523	48	1,619	2,126	480	74	1,525	3,830	4,319	4,206
Heating Degree Days, Prior 10-year Average															
New England	3,201	831	122	2,125	3,171	818	119	2,121	3,165	820	111	2,127	6,279	6,229	6,223
Middle Atlantic	2,983	661	81	1,941	2,947	646	81	1,949	2,955	650	76	1,947	5,666	5,623	5,629
E. N. Central	3,255	701	114	2,198	3,209	692	117	2,211	3,196	697	112	2,208	6,267	6,228	6,213
W. N. Central	3,302	707	142	2,380	3,264	705	144	2,380	3,255	702	140	2,388	6,531	6,492	6,486
South Atlantic	1,502	188	12	966	1,476	177	12	973	1,480	177	11	969	2,667	2,638	2,637
E. S. Central	1,906	231	16	1,287	1,868	217	18	1,301	1,862	222	17	1,299	3,440	3,405	3,399
W. S. Central	1,228	88	4	799	1,181	80	4	801	1,183	85	4	809	2,119	2,066	2,081
Mountain	2,216	734	142	1,862	2,194	737	144	1,842	2,164	715	139	1,852	4,954	4,917	4,871
Pacific	1,462	598	89	1,205	1,465	592	84	1,181	1,444	581	82	1,171	3,354	3,322	3,279
U.S. Average	2,193	487	71	1,527	2,160	478	71	1,524	2,151	476	68	1,522	4,277	4,233	4,216
Cooling Degree Days															
New England	0	75	364	11	0	80	577	0	0	86	419	2	450	657	507
Middle Atlantic	0	139	500	22	0	176	708	5	0	155	541	4	662	889	700
E. N. Central	1	210	478	15	0	333	638	4	0	216	525	6	704	976	748
W. N. Central	9	264	623	14	2	439	686	5	3	263	653	10	910	1,132	929
South Atlantic	160	672	1,156	262	136	725	1,265	277	111	647	1,152	221	2,251	2,403	2,130
E. S. Central	65	481	963	73	36	649	1,159	81	26	517	1,033	60	1,582	1,925	1,636
W. S. Central	213	825	1,458	217	126	1,005	1,560	191	81	846	1,506	206	2,713	2,881	2,639
Mountain	37	467	921	122	21	508	1,002	50	17	423	933	78	1,546	1,581	1,451
Pacific	30	220	701	100	31	183	725	67	28	172	589	58	1,051	1,006	846
U.S. Average	70	402	838	115	52	476	958	100	40	395	848	91	1,425	1,586	1,374
Cooling Degree Days, Prior 10-year Average															
New England	0	81	433	1	0	81	433	1	0	79	455	1	515	515	535
Middle Atlantic	0	169	566	6	0	166	567	5	0	165	589	6	741	738	760
E. N. Central	3	234	542	8	3	228	532	7	3	242	548	7	788	770	799
W. N. Central	7	281	672	12	7	277	659	11	7	298	668	11	973	953	985
South Atlantic	117	666	1,167	230	119	675	1,161	227	120	684	1,180	239	2,179	2,182	2,223
E. S. Central	33	544	1,056	65	34	539	1,031	63	36	554	1,049	67	1,698	1,667	1,706
W. S. Central	90	876	1,528	205	100	887	1,532	204	103	897	1,552	207	2,698	2,722	2,760
Mountain	23	424	930	81	24	426	922	84	25	438	933	81	1,458	1,457	1,476
Pacific	30	180	608	74	30	185	621	78	31	185	631	76	892	914	923
U.S. Average	43	405	857	94	45	408	855	94	46	417	873	97	1,399	1,402	1,432

- = 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>).

Appendix to the December 2018 Short-Term Energy Outlook

This appendix is prepared in fulfillment of section 1245(d)(4)(A) of the National Defense Authorization Act (NDAA) for Fiscal Year 2012, as amended. The law requires the U.S. Energy Information Administration (EIA), the statistical and analytical agency within the U.S. Department of Energy, to submit to Congress a report on the availability and price of petroleum and petroleum products produced in countries other than Iran in the two-month period preceding the submission of the report. By law, EIA's data, analyses, and forecasts are independent of approval by any other officer or employee of the U.S. Government. The data in this appendix, therefore, should not be construed as representing those of the U.S. Department of Energy or other federal agencies.

EIA consulted with the U.S. Department of the Treasury, the U.S. Department of State, and the intelligence community in the process of developing the NDAA report, which was previously published as a stand-alone report. Detailed background and contextual information not repeated here can be found in [early editions of the NDAA report](#).

This appendix is published in the *Short-Term Energy Outlook* in even numbered months.

Table a1. Summary of Estimated Petroleum and Other Liquids Quantities

	October 2018	November 2018	October–November 2018 Average	October–November 2017 Average	2015 – 2017 Average
Global Petroleum and Other Liquids (million barrels per day)					
Global Petroleum and Other Liquids Production (a)	102.0	102.4	102.2	99.2	97.5
Global Petroleum and Other Liquids Consumption (b)	100.0	101.1	100.5	99.6	97.1
Biofuels Production (c)	2.7	2.5	2.6	2.6	2.3
Biofuels Consumption (c)	2.4	2.4	2.4	2.4	2.3
Iran Liquid Fuels Production	4.3	4.0	4.2	4.7	4.2
Iran Liquid Fuels Consumption	1.7	1.8	1.7	1.8	1.8
Petroleum and Petroleum Products Produced and Consumed in Countries Other Than Iran (million barrels per day)					
Production (d)	95.0	95.8	95.4	91.9	90.9
Consumption (d)	95.8	96.9	96.4	95.4	93.0
Production minus Consumption	-0.8	-1.1	-1.0	-3.5	-2.1
World Inventory Net Withdrawals Including Iran	-2.0	-1.3	-1.7	0.4	-0.4
Estimated OECD Inventory Level (e) (million barrels)	2,902	2,912	2,907	2,904	2,968
Surplus Production Capacity (million barrels per day)					
OPEC Surplus Crude Oil Production Capacity (f)	1.1	0.9	1.0	2.1	1.6

Note: The term "petroleum and other liquids" encompasses crude oil, lease condensate, natural gas liquids, biofuels, coal-to-liquids, gas-to-liquids, and refinery processing gains, which are important to consider in concert due to the inter-related supply, demand, and price dynamics of petroleum, petroleum products, and related fuels.

(a) Production includes crude oil (including lease condensates), natural gas liquids, other liquids, and refinery processing gains.

(b) Consumption of petroleum by the OECD countries is synonymous with "products supplied," defined in the glossary of the EIA Petroleum Supply Monthly, DOE/EIA-0109. Consumption of petroleum by the non-OECD countries is "apparent consumption," which includes internal consumption, refinery fuel, and loss, and bunkering.

(c) Biofuels production and consumption are based on EIA estimates as published in the International Energy Statistics. Biofuels production in the third quarter tends to be at its highest level in the year as ethanol production in Brazil reaches its seasonal peak and is typically lowest in the first quarter as seasonal production falls in the South/South-Central region of Brazil.

(d) Global production of petroleum and petroleum products outside of Iran is derived by subtracting biofuels production and Iran liquid fuels production from global liquid fuels production. The same method is used to calculate global consumption outside of Iran.

(e) Estimated inventory level is for OECD countries only.

(f) EIA defines surplus oil production capacity as potential oil production that could be brought online within 30 days and sustained for at least 90 days, consistent with sound business practices. This does not include oil production increases that could not be sustained without degrading the future production capacity of a field.

Source: U.S. Energy Information Administration.

Table a2. Crude Oil and Petroleum Product Price Data

Item	October 2018	November 2018	October–November 2018 Average	October–November 2017 Average	2015–2017 Average
Brent Front Month Futures Price (\$ per barrel)	80.63	65.95	73.64	60.26	51.16
WTI Front Month Futures Price (\$ per barrel)	70.76	56.69	64.06	54.13	47.69
Dubai Front Month Futures Price (\$ per barrel)	80.05	65.63	73.18	58.28	48.82
Brent 1st - 13th Month Futures Spread (\$ per barrel)	3.00	-0.31	1.42	2.45	-3.90
WTI 1st - 13th Month Futures Spread (\$ per barrel)	1.38	-1.24	0.13	0.97	-4.26
RBOB Front Month Futures Price (\$ per gallon)	1.95	1.56	1.76	1.71	1.55
Heating Oil Front Month Futures Price (\$ per gallon)	2.33	2.05	2.20	1.86	1.56
RBOB - Brent Futures Crack Spread (\$ per gallon)	0.03	-0.01	0.01	0.28	0.34
Heating Oil - Brent Futures Crack Spread (\$ per gallon)	0.41	0.48	0.45	0.43	0.34

(a) Brent refers to Brent crude oil traded on the Intercontinental Exchange (ICE).

(b) WTI refers to West Texas Intermediate crude oil traded on the New York Mercantile Exchange (NYMEX), owned by Chicago Mercantile Exchange (CME) Group.

(c) RBOB refers to reformulated blendstock for oxygenate blending traded on the NYMEX.

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