



Short-Term Energy Outlook (STEO)

Forecast highlights

Winter Fuels Outlook

- EIA forecasts that average U.S. household expenditures for most major home heating fuels will be higher this winter compared with last winter. Average increases vary by fuel; natural gas expenditures are forecast to rise by 5%, home heating oil by 20%, and electricity by 3%, while propane expenditures are forecast to remain similar to last year. Most of the increase reflects higher forecast energy prices. U.S. average heating degree days are expected to be 1% higher than last winter. However, realized expenditures are highly dependent on actual weather outcomes ([Winter Fuels Outlook](#)).
- EIA expects natural gas inventories to end October at the lowest levels for that time of year since 2005. Inventories of distillate fuel and propane are also below the five-year (2013–17) average in several regions. Although inventory levels are low, EIA expects fuel supplies to be adequate to meet winter demand.

Global liquid fuels

- Brent crude oil spot prices averaged \$79 per barrel (b) in September, up \$6/b from August. EIA expects Brent spot prices will average \$74/b in 2018 and \$75/b in 2019. EIA expects West Texas Intermediate (WTI) crude oil prices will average about \$6/b lower than Brent prices in 2018 and in 2019. NYMEX WTI futures and options contract values for January 2019 delivery that traded during the five-day period ending October 4, 2018, suggest a range of \$60/b to \$93/b encompasses the market expectation for January WTI prices at the 95% confidence level.
- EIA estimates that U.S. crude oil production averaged 11.1 million barrels per day (b/d) in September, up slightly from August levels. EIA forecasts that U.S. crude oil production will average 10.7 million b/d in 2018, up from [9.4 million b/d in 2017](#), and will average 11.8 million b/d in 2019.

Natural gas

- EIA estimates dry natural gas production in the United States averaged 85.1 billion cubic feet per day (Bcf/d) in September, up 0.6 Bcf/d from August. EIA forecasts that dry natural gas production will average 82.7 Bcf/d in 2018, up by 7.9 Bcf/d from 2017 and

establishing a new record high. EIA expects natural gas production will continue to rise in 2019 to an average of 87.7 Bcf/d.

- EIA forecasts that U.S. natural gas storage inventories will total 3.3 trillion cubic feet (Tcf) at the end of October. This level would be 14% lower than both the 2017 end-of-October level and the five-year (2013–17) average for the end of October, and it would also mark the lowest level for that time of year since 2005.
- EIA expects Henry Hub natural gas spot prices to average \$2.99/million British thermal units (MMBtu) in 2018 and \$3.12/MMBtu in 2019. NYMEX futures and options contract values for January 2019 delivery that traded during the five-day period ending October 4, 2018, suggest a range of \$2.22/MMBtu to \$4.85/MMBtu encompasses the market expectation for January Henry Hub natural gas prices at the 95% confidence level.

Electricity, coal, renewables, and emissions

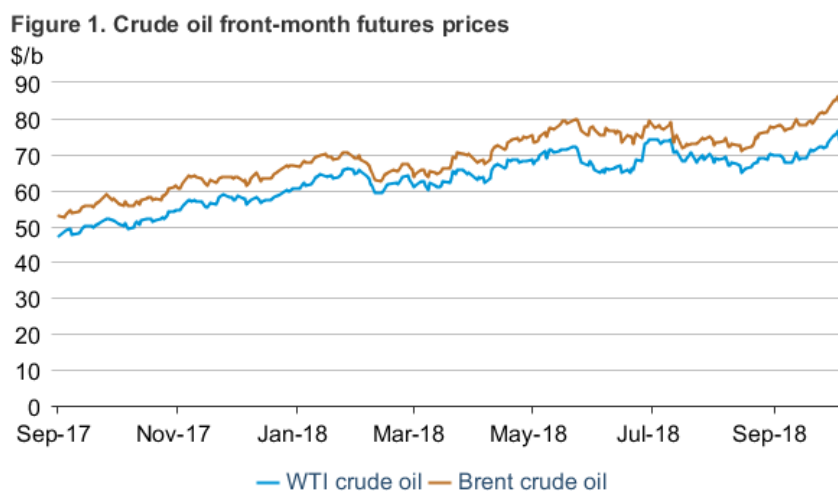
- EIA expects the share of U.S. total utility-scale electricity generation from natural gas-fired power plants to rise from 32% in 2017 to 35% in both 2018 and 2019. EIA's forecast electricity generation share from coal averages 28% in 2018 and 27% in 2019, down from 30% in 2017. The nuclear share of generation was 20% in 2017 and EIA forecasts that it will be slightly below 20% in 2018 and in 2019. Wind, solar, and other nonhydropower renewables provided slightly less than 10% of electricity generation in 2017, and EIA expects them to provide more than 10% in 2018 and nearly 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 2019.
- In 2017, EIA estimates that U.S. wind generation averaged 697,000 megawatthours per day (MWh/d). EIA forecasts that wind generation will rise by 8% to 750,000 MWh/d in 2018 and by a further 6% to 793,000 MWh/d in 2019.
- Solar power generates less electricity in the United States than wind power but continues to grow at a faster rate. EIA expects solar generation will rise from 211,000 MWh/d in 2017 to 267,000 MWh/d in 2018 (an increase of 26%) and to 305,000 MWh/d in 2019 (an increase of 14%).
- EIA forecasts U.S. coal production will decline by 2% to 756 MMst in 2018, despite a 12% (11 MMst) increase in coal exports. The production decrease is largely attributable to a forecast decline of 4% (26 MMst) in domestic coal consumption in 2018. EIA expects coal production to decline by 2% (13 MMst) in 2019 because it forecasts that coal exports and coal consumption will decrease by 7% and 5%, respectively.
- After declining by 0.8% in 2017, EIA forecasts that U.S. energy-related carbon dioxide (CO₂) emissions will rise by 2.2% in 2018. This increase largely reflects higher natural gas consumption because of a colder winter and a warmer summer than in 2017. EIA expects emissions to decline by 1.1% in 2019, as forecast temperatures are forecast to

return to 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 \$84.58 per barrel (b) on October 4, an increase of \$6.41/b from September 4. The front-month futures price for West Texas Intermediate (WTI) crude oil for delivery at Cushing, Oklahoma, increased by \$4.46/b during the same period, settling at \$74.33/b on October 4 (**Figure 1**).



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

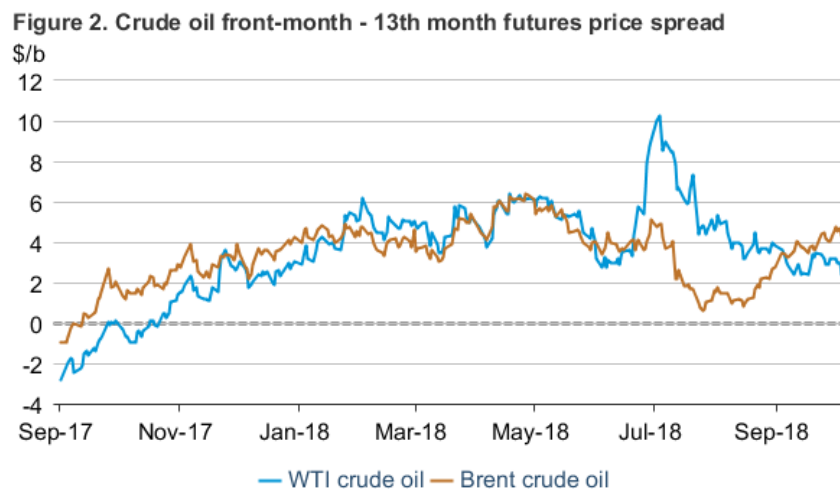
Both Brent and WTI crude oil prices reached four-year highs on October 3. Crude oil prices rose in anticipation of potentially steep declines in Iranian crude oil production and exports as a result of the reinstitution of U.S. sanctions on November 4. Trade press reports that major oil-importing countries including Japan, South Korea, China, and India, are planning or are considering sharp reductions in crude oil imports from Iran. As a result, the amount of Iranian crude oil supply available in the global market may be much lower than market participants initially expected in May, when the United States announced it would exit from the Joint Comprehensive Plan of Action. EIA estimates that Iranian crude oil production fell by more than 0.4 million barrels per day (b/d) since May to an average of 3.4 million b/d in September.

In June, members of the Organization of the Petroleum Exporting Countries (OPEC), along with Russia, agreed to increase oil production levels to the original crude oil production target set in November 2016. In the third quarter of 2018, OPEC members (other than Iran and Venezuela) increased crude oil production by more than the amount that crude oil production in Iran and Venezuela declined. However, recent price increases indicate that oil market participants have concerns about the ability of Saudi Arabia, other OPEC members, and Russia to continue to offset expected further production declines in Iran and in Venezuela. Increases in OPEC crude oil

production to offset declines in Iran and Venezuela have resulted in declining OPEC spare crude oil production capacity. STEO estimates that [OPEC spare capacity](#) fell below 1.4 million b/d in September, the lowest level since December 2016 when global oil inventory levels were much higher.

With increased uncertainty about the amount that Iranian crude oil production could decline, and how much of the decline can be offset by other supplier, STEO now forecasts the Brent crude oil spot price will average \$81/b in the fourth quarter of 2018, up from a forecast of \$76/b in the September STEO. Despite continuing production declines in Iran and Venezuela, EIA forecasts global oil supply and demand to be nearly balanced in 2019 contributing to downward oil price pressures. By the second half of 2019, when transportation constraints in the Permian region of the United States are expected to be alleviated, U.S. crude oil production, and potentially crude oil exports, are expected to increase, which could help keep prices in the mid-\$70/b range.

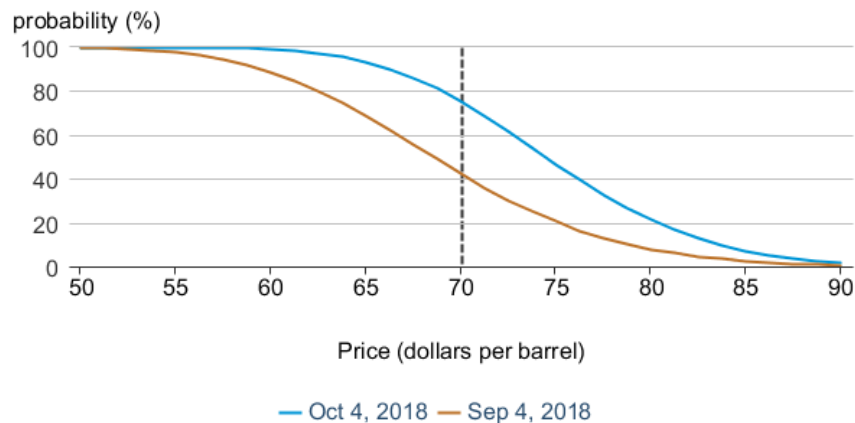
Although both the Brent and WTI front-month futures price rose during the past several weeks, Brent prices increased more than WTI prices. As a result, the Brent futures curve became more backwardated (when near-term contract prices exceed those of longer-dated ones) than the WTI futures curve for the first time since June (**Figure 2**). From September 4 to October 4, the Brent 1st–13th month futures contract price spread rose from \$3.44/b to \$4.29/b. During the same period, the WTI 1st–13th month futures contract price spread declined from \$3.60/b to \$2.40/b.



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

During September and through the first week of October, the probability that the December 2018 WTI crude oil futures contract will expire at \$70/b increased sharply. A probability calculated using futures and options data indicates that WTI futures prices have a 75% chance of reaching \$70/b at expiration as of October 4 (**Figure 3**). The probability of reaching \$70/b was at just 42% on September 4.

Figure 3. Probability of the December 2018 WTI contract expiring above price levels



 U.S. Energy Information Administration, CME Group

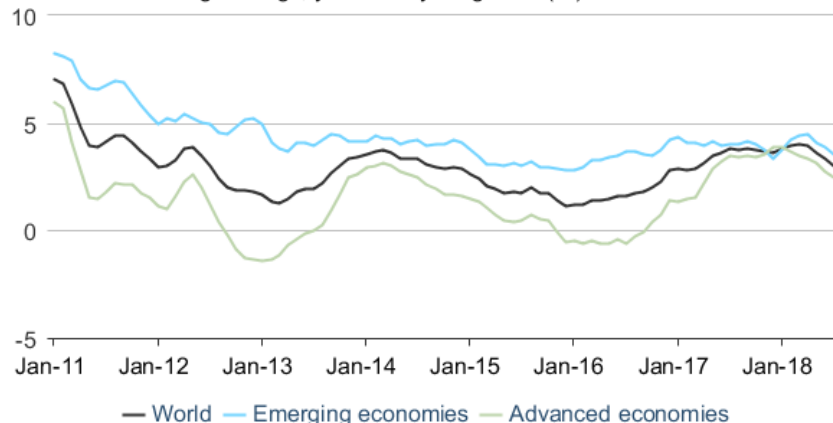
Economic growth: Some developed and emerging market economies may be starting to experience slower economic growth, which could result in lower-than-forecast oil demand, especially if crude oil prices continue to rise.

The CPB Netherlands Bureau for Economic Policy Analysis (CPB) publishes [monthly data](#) on global and regional industrial production, an important gauge for economic activity. Using a three-month moving average to smooth out short-term fluctuations, data from the CPB show that industrial production growth in advanced economies has begun to decelerate in January 2018 (**Figure 4**). Industrial production growth in emerging economies has also recently experienced a slight deceleration.

Among advanced economy regions the CPB [tracks](#), the United States is the only region with accelerating industrial production growth, while Japan, the Euro Area, and Other advanced economies are all decelerating. Industrial production growth in the Euro Area, in particular, showed a year-over-year decline in July 2018, the first decline since the beginning of 2017, as industrial production in Germany and Italy showed slowdowns.

Further, growth in gross domestic product (GDP) in 2019 for countries both within and outside the Organization for Economic Cooperation and Development (OECD) has been revised down in recent months. The April 2018 STEO forecast OECD GDP growth of 2.2% for 2019; however, the current STEO forecast OECD GDP to be 2.0% next year. Similarly, non-OECD GDP growth was [revised down](#) from 4.3% to 3.8%. This decline in forecast growth is part of the reason that global oil demand growth for 2019 is forecast to be 1.5 million b/d in the current STEO, compared with 1.8 million b/d in the April STEO.

Figure 4. Industrial production growth
three-month moving average, year-over-year growth (%)



eia CPB Netherlands Bureau for Economic Policy Analysis

Equity markets: A divergence between the economic outlooks for the United States compared with that of other countries can be seen in equity market returns. From January 2, 2018, to October 4, 2018, the S&P 500 rose 8% (**Figure 5**). In contrast, the [MSCI Emerging Markets Index](#) fell 14% during the same period. The MSCI Emerging Markets Index consists of equities in 24 developing countries, and Chinese shares account for 30% of the index.

General trends affecting this divergence include interest rate increases by the U.S. Federal Reserve, the strengthening U.S. dollar (USD), and weakening emerging market currencies. Better returns in less risky assets along with concerns about high dollar-denominated debt in certain countries may have affected the outlook and investment in emerging markets more broadly.

Country-specific issues have also affected the MSCI Emerging Markets Index. Weaker-than-expected economic data from China and larger portions of the U.S.-China trade flow that are subject to tariffs have negatively affected Chinese equities. During past several weeks, the Indian rupee fell to record lows against the USD, increasing the cost of imports and resulting in domestic fuel prices reaching record highs. The Indian government may try to support its currency by further increasing interest rates and limiting imports. In Brazil, political uncertainty, currency depreciation, a strike related to high fuel prices, and weak economic fundamentals resulted in a selloff in Brazilian equities earlier in the summer. Rising oil prices could begin to affect oil demand in countries experiencing currency depreciation and/or a slowdown in their economic fundamentals.

Figure 5. S&P 500 vs. MSCI Emerging Markets Index
indexed to January 2, 2018

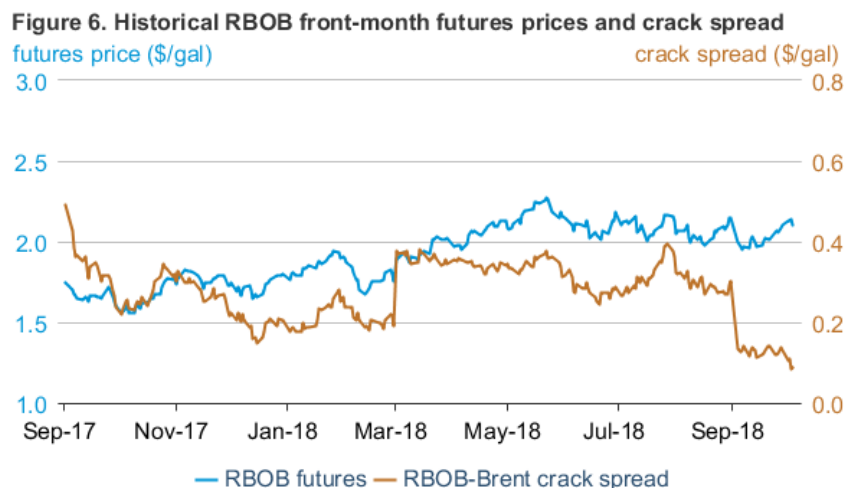


eia S&P Dow Jones Indices and MSCI, as compiled by Bloomberg L.P.

Petroleum products

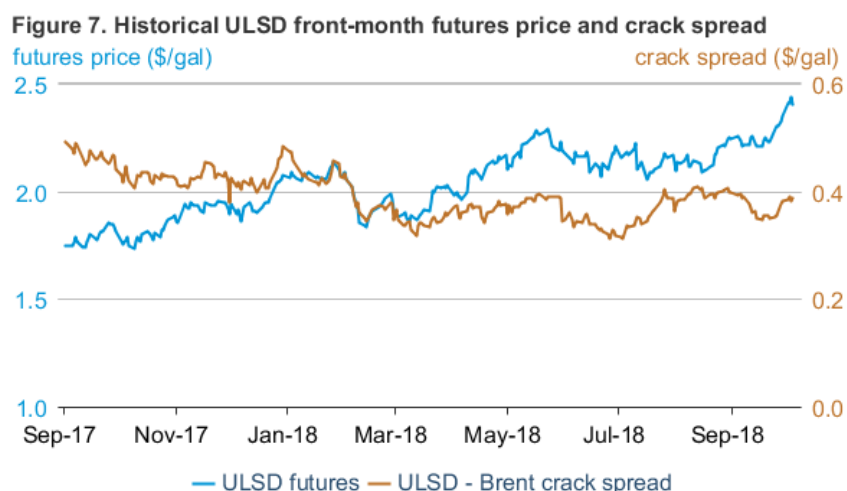
Gasoline prices: The front-month futures price of reformulated blendstock for oxygenate blending (RBOB, the petroleum component of gasoline used in many parts of the country) settled at \$2.10 per gallon (gal) on October 4 (**Figure 6**), an increase of 11 cents/gal from September 4. The RBOB–Brent crack spread (the difference between the price of RBOB and the price of Brent crude oil) decreased by 5 cents/gal to settle at 9 cents/gal during the same period.

The RBOB–Brent crack spread declined as RBOB prices increased less than crude oil prices despite high gasoline demand in September. U.S. gasoline consumption combined with exports totaled 10.1 million barrels per day (b/d) for the four weeks ending September 28, which, if confirmed in monthly data, would be the highest on record for September. However, gasoline production and imports have more than kept pace with demand, resulting in gasoline inventory levels that were much higher than the five-year (2013–17) range on September 28.



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

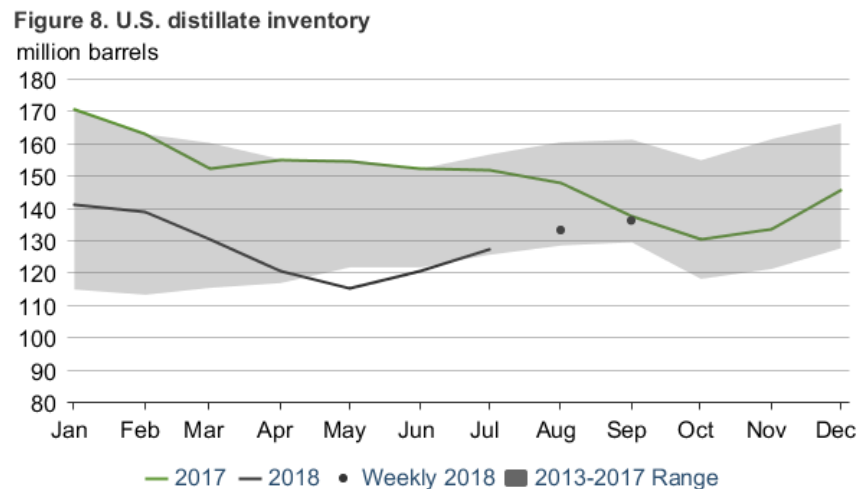
Ultra-low sulfur diesel prices: The ultra-low sulfur diesel (ULSD) front-month futures price settled at \$2.40/gal on October 4 (**Figure 7**), an increase of 15 cents/gal from September 4. The ULSD–Brent crack spread (the difference between the price of ULSD and the price of Brent crude oil) declined by 1 cent/gal to settle at 39 cents/gal during the same period. The ULSD–Brent crack spread has been at or higher than the five-year average for most of 2018, but large U.S. distillate inventory growth in September resulted in a ULSD crack spread less than the five-year average. ULSD crack spreads are also declining in Northwest Europe. Rising gasoil inventories in the Amsterdam-Rotterdam-Antwerp (ARA) trading hub may have contributed to lower ARA ULSD-Brent crack spreads. Low water levels on the Rhine River hampered product movements inland and may have contributed to the increase in ARA inventories.



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

U.S. distillate inventories: U.S. distillate inventories increased by 3.0 million barrels for the four weeks ending September 28, an unusually large build for September. For the first time in 2018,

distillate inventories at the end of September nearly equaled those of the prior year (**Figure 8**). High throughput at U.S. refineries contributed to record-high distillate production for the month of September. Distillate production has set monthly records since June, which has supported inventory growth despite strong consumption and export demand. U.S. consumption and exports combined for the four weeks ending September 28, if confirmed in monthly data, would be the highest for September since 2015.

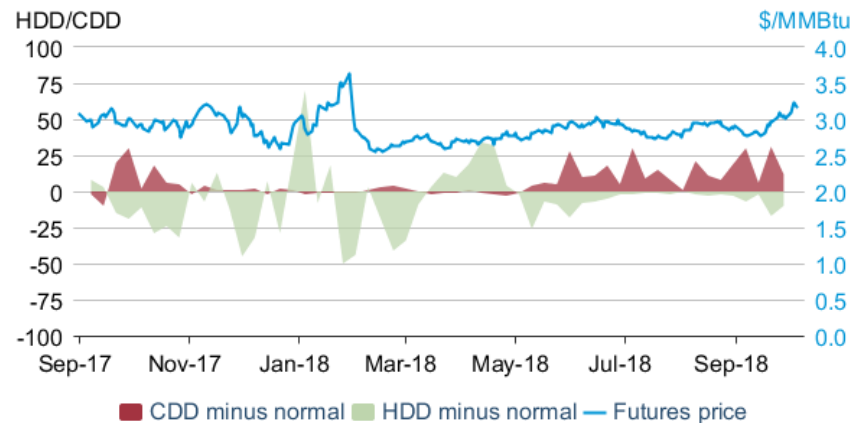


eia U.S. Energy Information Administration

Natural Gas

Prices: The front-month natural gas futures contract for delivery at the Henry Hub settled at \$3.17/million British thermal units (MMBtu) on October 4, an increase of 34 cents/MMBtu from September 4 (**Figure 9**). The Henry Hub natural gas spot price averaged \$2.99/MMBtu in September, 3 cents/MMBtu higher than in August. On September 24, natural gas futures prices rose to more than \$3/MMBtu for the first time since June 2018. Temperatures were higher than normal across much of the Lower 48 states, which contributed to high natural gas demand for power generation and limited significant inventory level gains this month. Working natural gas in underground storage has remained below the five-year (2013–17) average for most of the year. Inventories on September 28 totaled 2,866 billion cubic feet (Bcf), which is 17% less than the five-year average and 18% less than last year at this time.

Figure 9. Natural gas front-month futures prices and actual minus historical average HDD and CDD

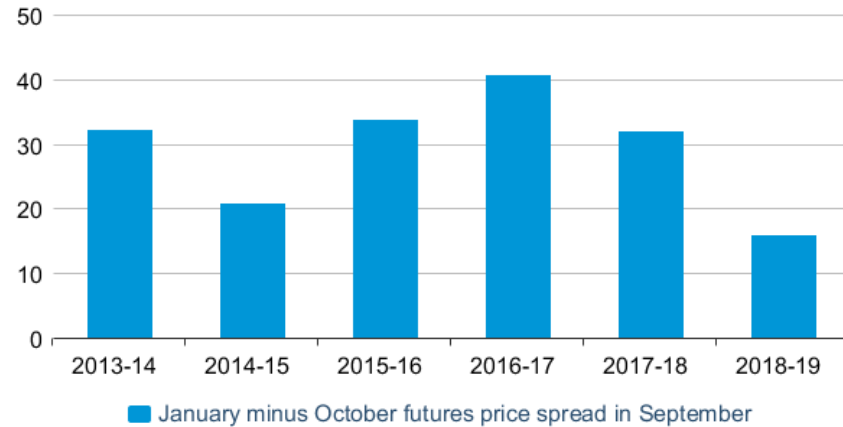


eia CME Group and National Oceanic and Atmospheric Administration, as compiled by Bloomberg L.P.

Prices for natural gas futures contracts for October delivery generally trade at a lower price than contracts for January delivery, when natural gas demand is expected to be much greater. This year, however, the discount of the October contract to the January contract was at its lowest in the past five years. High use of natural gas for electric power generation through the summer months did not allow for sufficiently high injections to compensate for the low inventory level on April 1, the traditional start of the injection season. From June through September, natural gas used for power generation and for LNG exports reached record high levels. Natural gas production also rose to record levels, but the high demand prevented inventory levels from rising sufficiently to account for the initial deficit relative to the five-year average, which reached 607 Bcf as of September 28. The tighter natural gas market this summer contributed to a narrower spread between the October and January natural gas futures prices, which averaged 16 cents/MMBtu during the month of September compared with a range of a 20 cent to 40 cent/MMBtu discount over the past five years (**Figure 10**). In addition, higher natural gas production reduces the need for inventory to meet winter demand, which further contributes to the smaller price spread.

Figure 10. Average price spread of natural gas futures

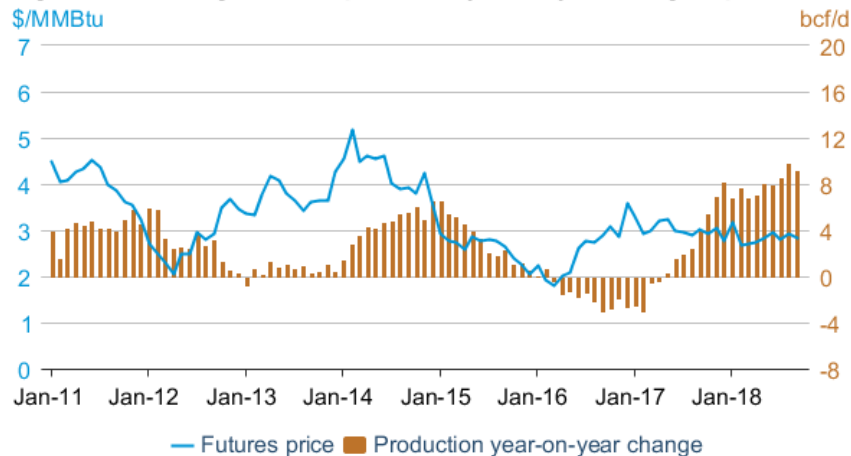
cents/MMBtu



eia Bloomberg L.P.

U.S. natural gas production: Total U.S. dry natural gas production reached an estimated 85.1 billion cubic feet per day (Bcf/d) in September, 9.3 Bcf/d higher than year-ago levels and a record high if confirmed in monthly data. Compared with historical levels, front-month natural gas futures prices during this period of production growth have remained steady and not experienced a decline with increased production, likely because of lower-than-average inventory levels (**Figure 11**).

Figure 11. Natural gas futures prices and year-on-year change in production



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

Notable forecast changes

- EIA forecasts that U.S. crude oil production will average 11.8 million barrels per day (b/d) in 2019, which is almost 0.3 million b/d higher than the forecast in the September STEO. The higher production reflects higher-than-expected increases to Texas and North Dakota production in July, revising up the baseline of the forecast, and a response to higher forecast prices.
- EIA forecasts that dry natural gas production will average 82.7 billion cubic feet per day (Bcf/d) in 2018, which is 1.8 Bcf/d higher than the forecast in the September STEO. The higher production reflects higher than expected increases to Texas production in July, increasing the baseline of the forecast. EIA expects natural gas production will continue to rise in 2019 to an average of 87.7 Bcf/d, 3.1 Bcf/d higher than the forecast in the September STEO. The 2019 upward revision is the result of increased expected production in the Haynesville region in response to higher forecast prices, upward revisions to the Permian region in response to higher prices, and expected new pipeline capacity to come online in the second quarter of 2019.
- EIA forecasts Brent crude oil prices to average \$81 per barrel (b) in the fourth quarter of 2018, which is \$5/b higher than forecast in the September STEO. This increase reflects recent price movements incorporated into EIA's forecast, the higher starting point for the forecast, and the possibility that crude oil prices could remain elevated while market participants assess how much crude oil production in Iran will decline in the coming months and the ability of other oil producers to offset lost volumes.
- For more information, see the [detailed table of STEO forecast changes](#).

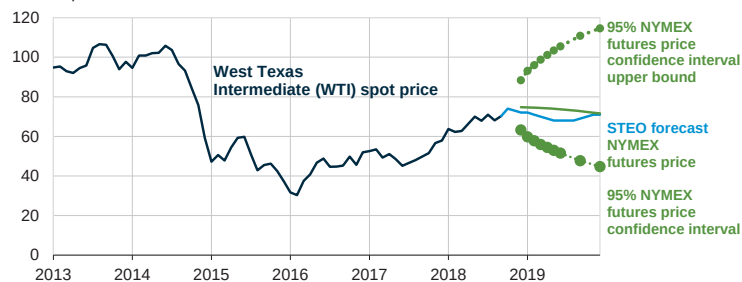
This report was prepared by the U.S. Energy Information Administration (EIA), the statistical and analytical agency within the U.S. Department of Energy. By law, EIA's data, analyses, and forecasts are independent of approval by any other officer or employee of the United States Government. The views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

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

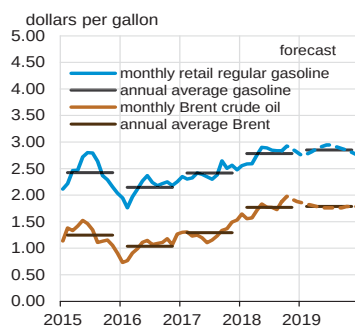


Note: Confidence interval derived from options market information for the five trading days ending Oct 4, 2018. Intervals not calculated for months with sparse trading in near-the-money options contracts.

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

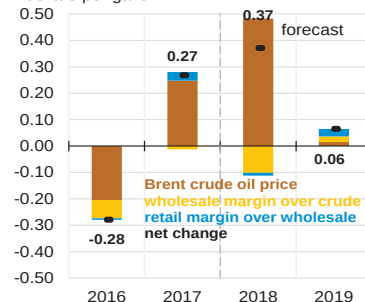


U.S. gasoline and crude oil prices

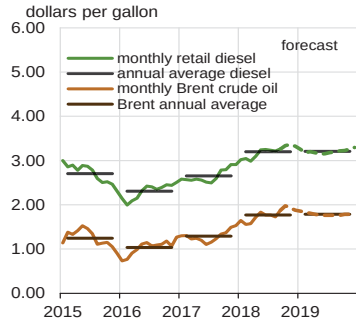


Source: Short-Term Energy Outlook, October 2018

Components of annual gasoline price changes
dollars per gallon

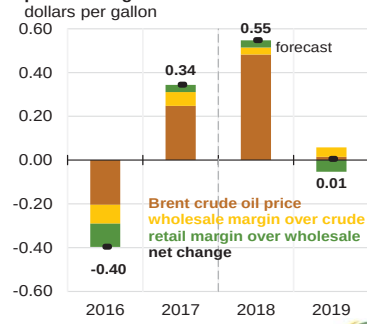


U.S. diesel and crude oil prices



Source: Short-Term Energy Outlook, October 2018

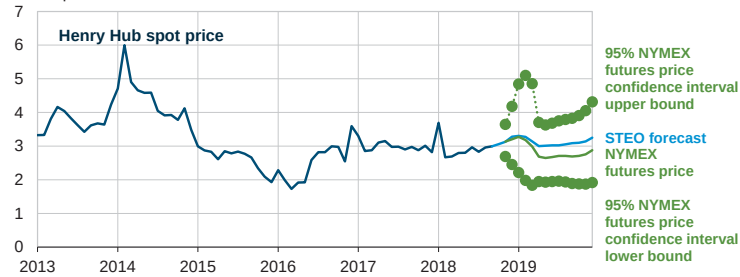
Components of annual diesel prices changes



eia

Henry Hub natural gas price and NYMEX confidence intervals

dollars per million Btu



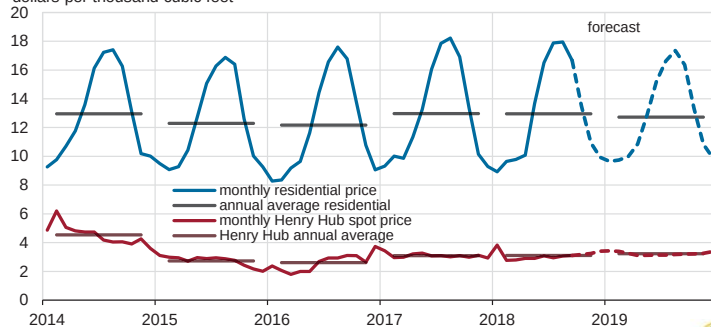
Note: Confidence interval derived from options market information for the five trading days ending Oct 4, 2018. Intervals not calculated for months with sparse trading in near-the-money options contracts.

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

eia

U.S. natural gas prices

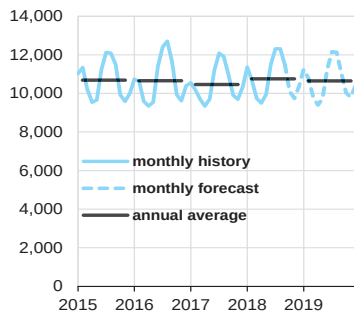
dollars per thousand cubic feet



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

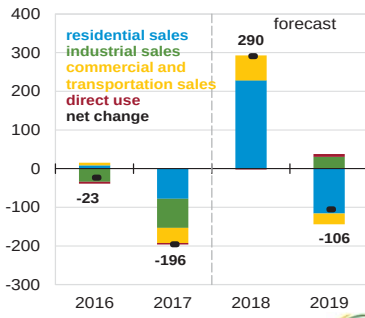
eia

U.S. electricity consumption
million kilowatthours per day



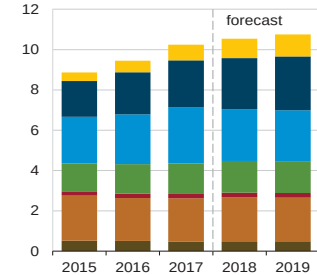
Source: Short-Term Energy Outlook, October 2018

Components of annual change
million kilowatthours per day



eia

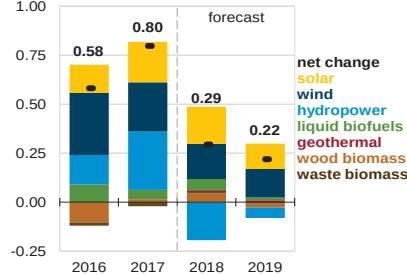
U.S. renewable energy supply
quadrillion British thermal units



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.

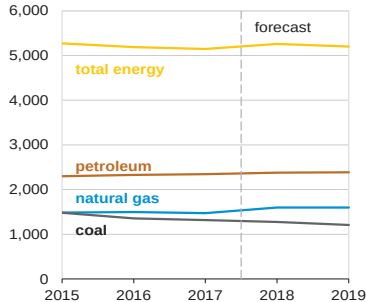
Source: Short-Term Energy Outlook, October 2018

Components of annual change
quadrillion British thermal units



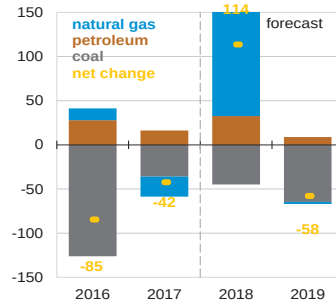
eia

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



Source: Short-Term Energy Outlook, October 2018

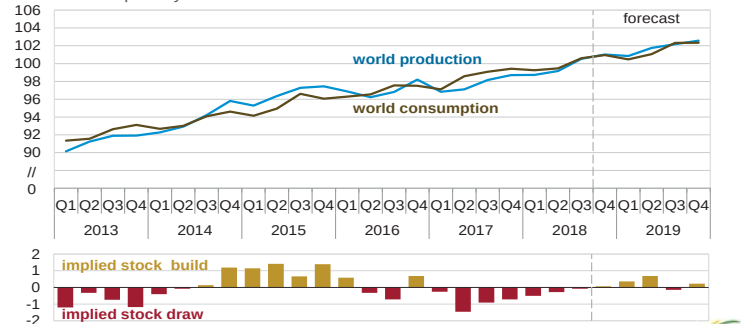
Components of annual change
million metric tons



eia

World liquid fuels production and consumption balance

million barrels per day

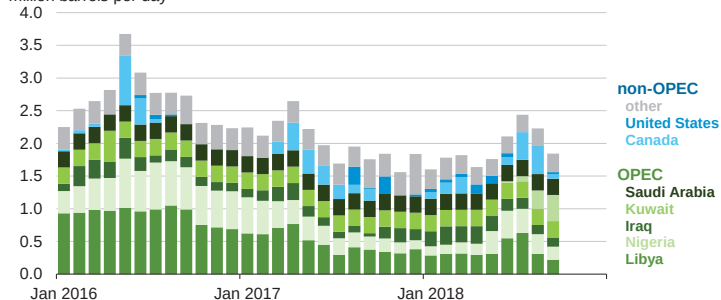


Source: Short-Term Energy Outlook, October 2018



Estimated unplanned liquid fuels production outages

million barrels per day

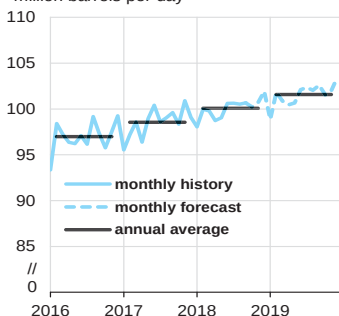


Source: Short-Term Energy Outlook, October 2018



World liquid fuels consumption

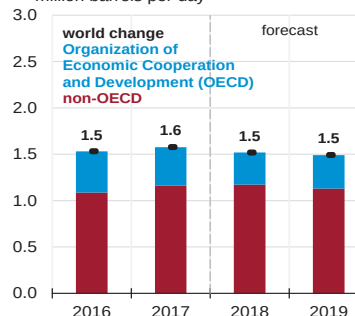
million barrels per day



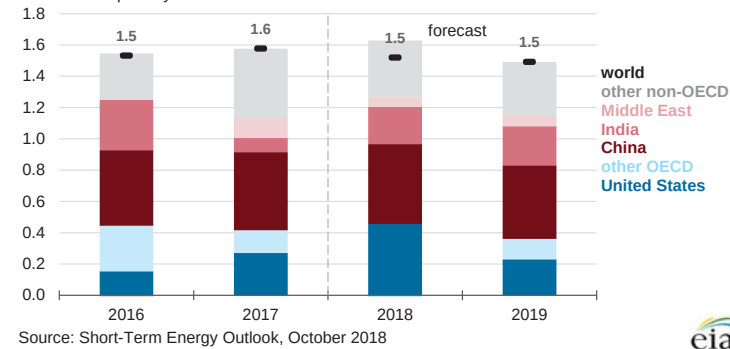
Source: Short-Term Energy Outlook, October 2018

Components of annual change

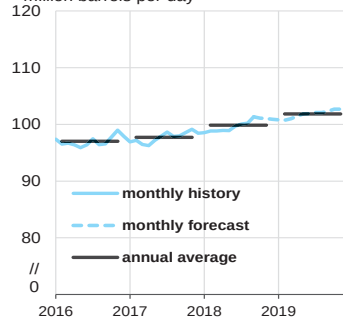
million barrels per day



Annual change in world liquid fuels consumption
million barrels per day

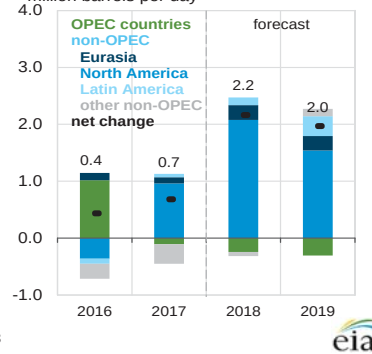


World crude oil and liquid fuels production
million barrels per day

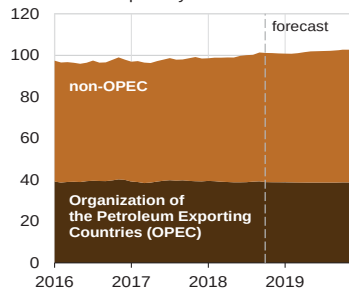


Source: Short-Term Energy Outlook, October 2018

Components of annual change
million barrels per day

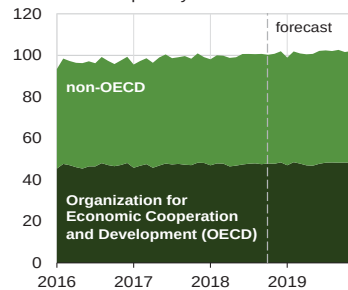


World liquid fuels production
million barrels per day

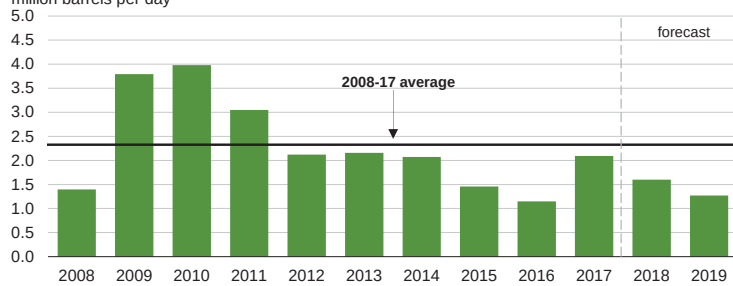


Source: Short-Term Energy Outlook, October 2018

World liquid fuels consumption
million barrels per day



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

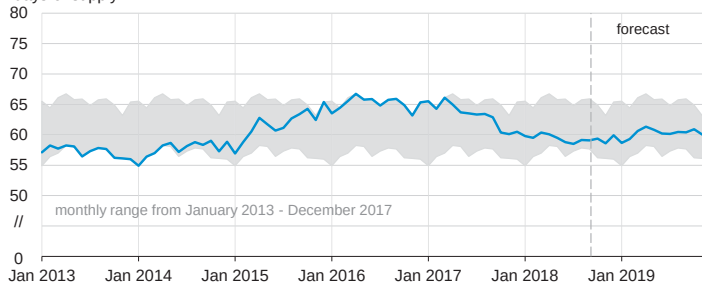


Note: Black line represents 2008-2017 average (2.3 million barrels per day).

Source: Short-Term Energy Outlook, October 2018



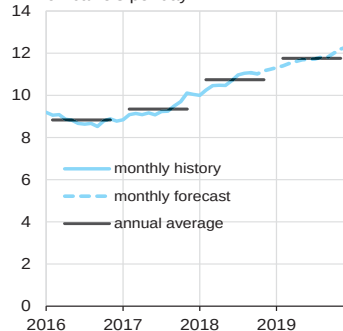
Organization for Economic Cooperation and Development (OECD)
commercial inventories of crude oil and other liquids



Source: Short-Term Energy Outlook, October 2018

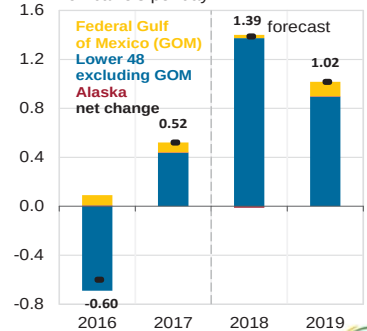


U.S. crude oil production
million barrels per day



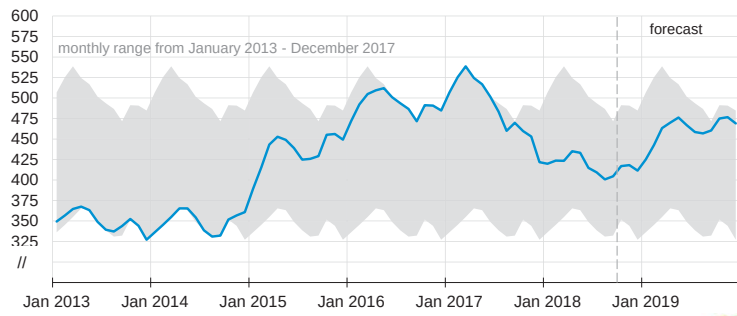
Source: Short-Term Energy Outlook, October 2018

Components of annual change
million barrels per day



U.S. commercial crude oil inventories

million barrels

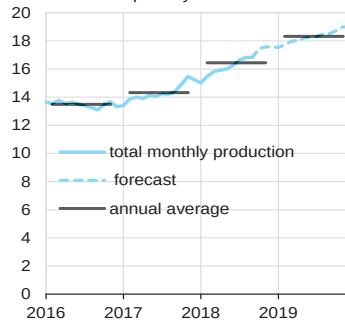


Source: Short-Term Energy Outlook, October 2018



U.S. crude oil and liquid fuels production

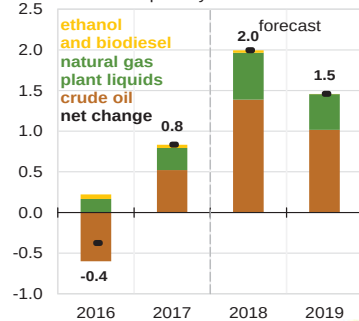
million barrels per day



Source: Short-Term Energy Outlook, October 2018

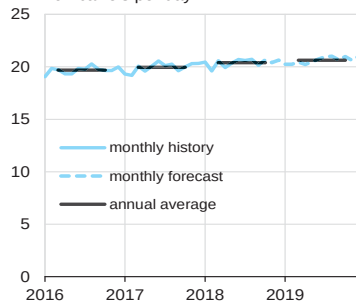
Components of annual change

million barrels per day



U.S. liquid fuels product supplied (consumption)

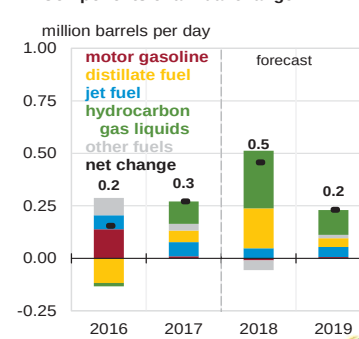
million barrels per day



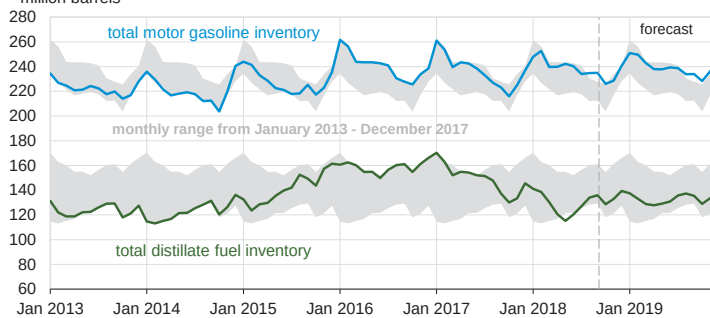
Source: Short-Term Energy Outlook, October 2018

Components of annual change

million barrels per day



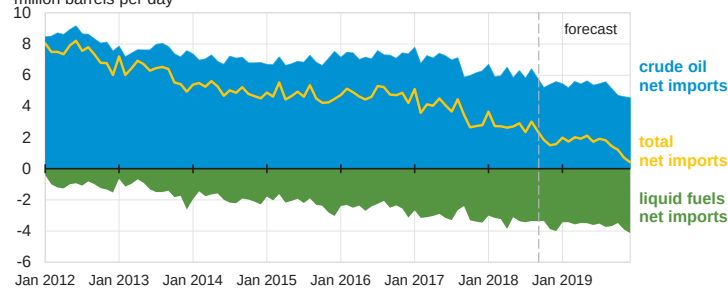
U.S. gasoline and distillate inventories
million barrels



Source: Short-Term Energy Outlook, October 2018



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

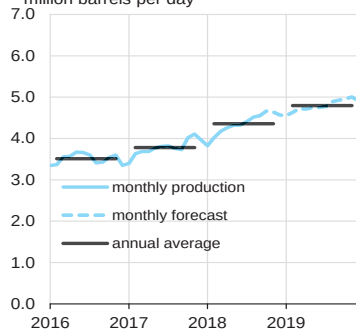


Note: Liquids fuels include: gasoline, distillate fuels, hydrocarbon gas liquids, jet fuel, residual fuel oil, unfinished oils, other hydrocarbons/oxygenates, and other oils.

Source: Short-Term Energy Outlook, October 2018

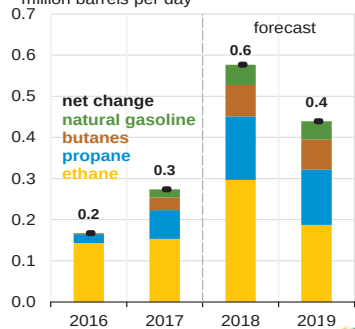


U.S. natural gas plant liquids production
million barrels per day

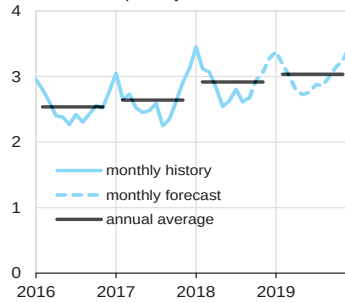


Source: Short-Term Energy Outlook, October 2018

Components of annual change
million barrels per day

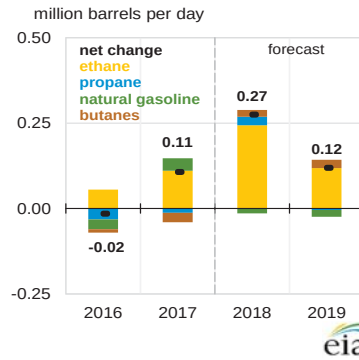


**U.S. hydrocarbon gas liquids
product supplied (consumption)**
million barrels per day



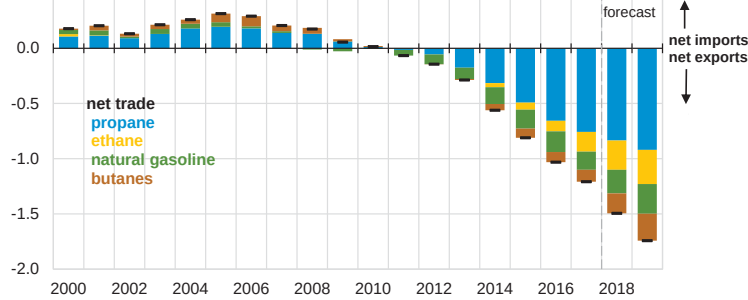
Source: Short-Term Energy Outlook, October 2018

Components of annual change



eia

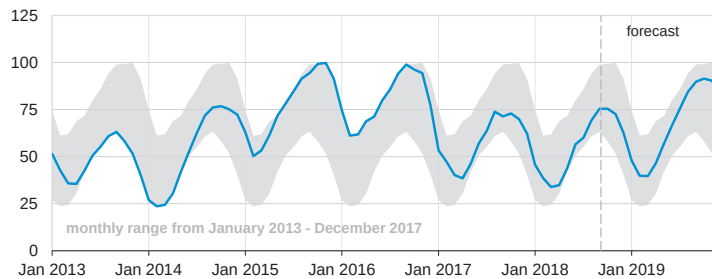
U.S. net trade of hydrocarbon gas liquids (HGL)
million barrels per day



Source: Short-Term Energy Outlook, October 2018

eia

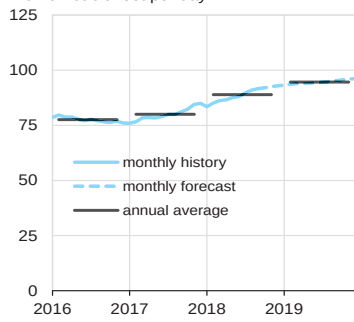
U.S. commercial propane inventories
million barrels



Source: Short-Term Energy Outlook, October 2018

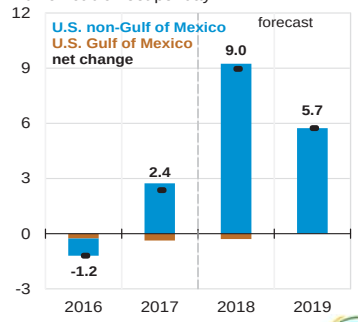
eia

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

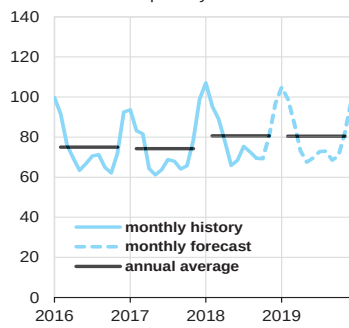


Source: Short-Term Energy Outlook, October 2018

Components of annual change
billion cubic feet per day

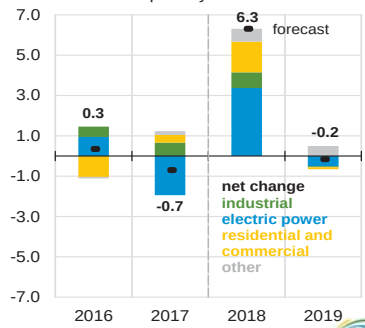


U.S. natural gas consumption
billion cubic feet per day

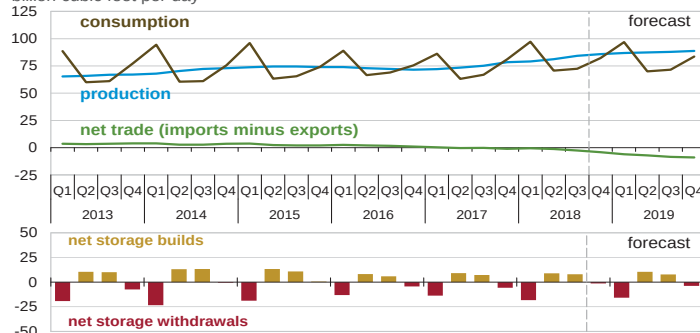


Source: Short-Term Energy Outlook, October 2018

Components of annual change
billion cubic feet per day



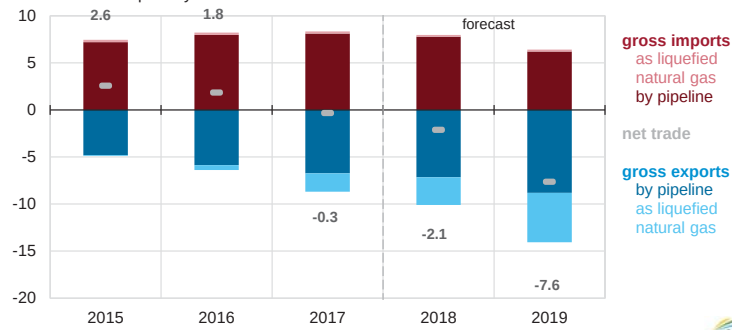
U.S. natural gas production, consumption, and net imports
billion cubic feet per day



Source: Short-Term Energy Outlook, October 2018



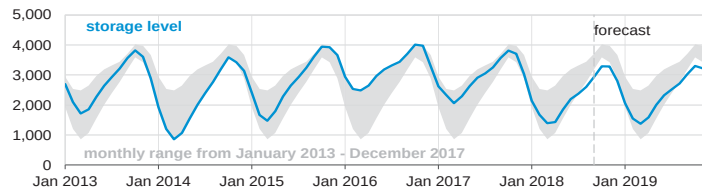
Annual natural gas trade
billion cubic feet per day



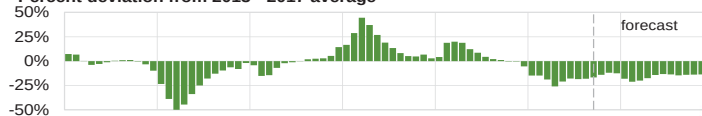
Source: Short-Term Energy Outlook, October 2018



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



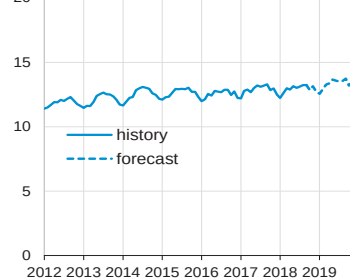
Percent deviation from 2013 - 2017 average



Source: Short-Term Energy Outlook, October 2018

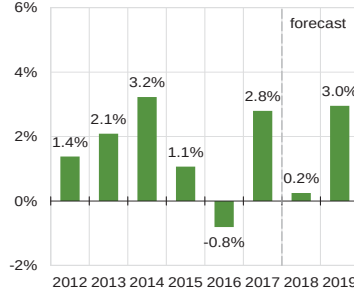


U.S. monthly residential electricity price
cents per kilowatthour

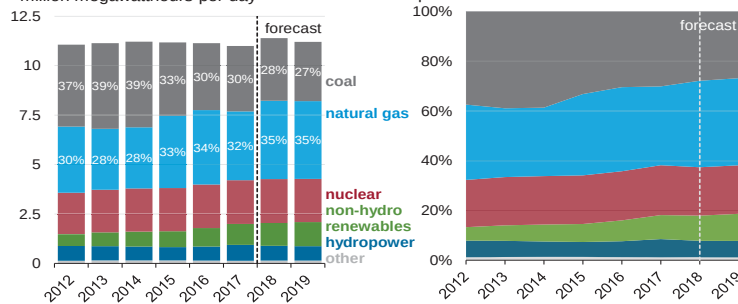


Source: Short-Term Energy Outlook, October 2018

Annual growth in residential electricity prices
percent



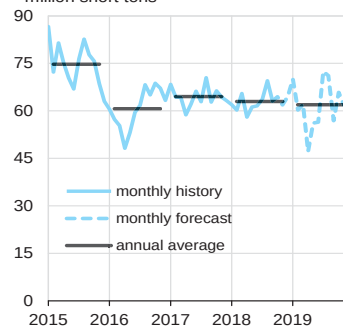
U.S. electricity generation by fuel, all sectors
million megawatthours per day



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

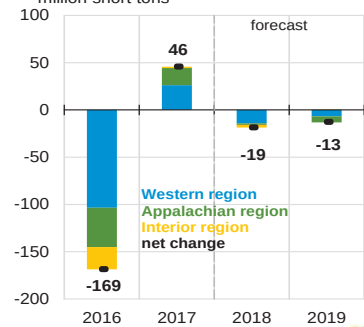


U.S. coal production
million short tons

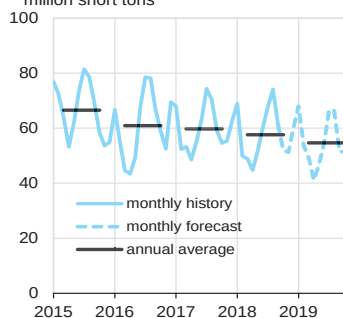


Source: Short-Term Energy Outlook, October 2018

Components of annual change
million short tons

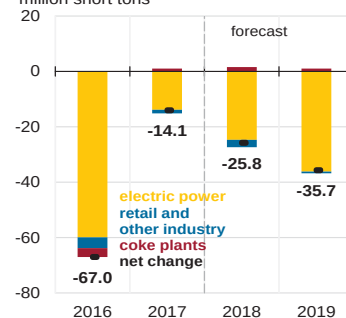


U.S. coal consumption
million short tons

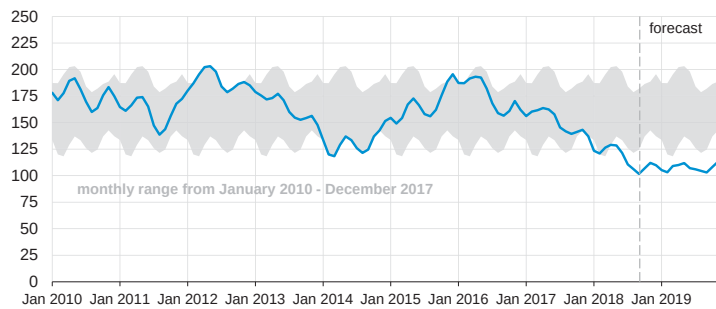


Source: Short-Term Energy Outlook, October 2018

Components of annual change
million short tons



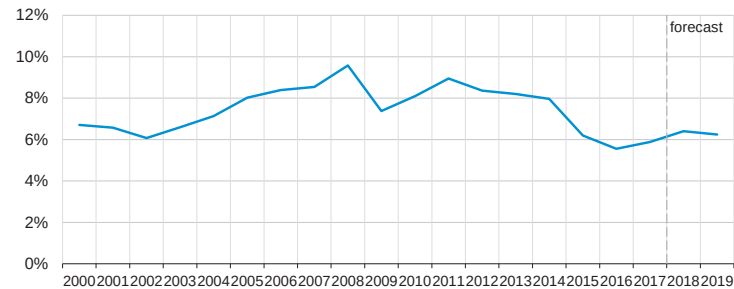
U.S. electric power coal inventories
million short tons



Source: Short-Term Energy Outlook, October 2018



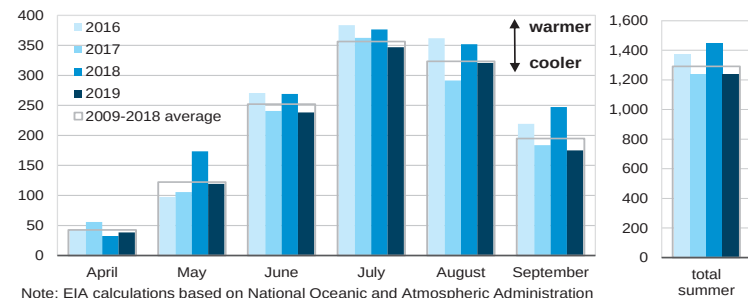
U.S. annual energy expenditures
share of gross domestic product



Source: Short-Term Energy Outlook, October 2018



U.S. summer cooling degree days
population-weighted

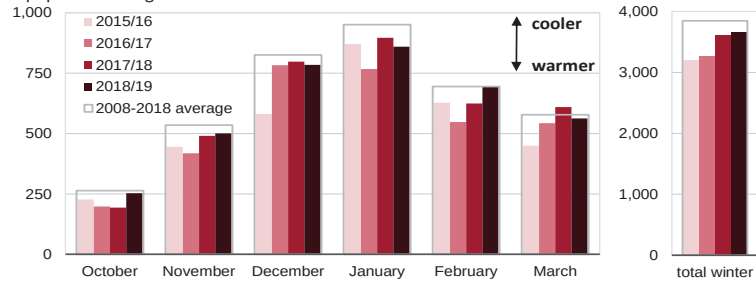


Note: EIA calculations based on National Oceanic and Atmospheric Administration (NOAA) data. Projections reflect NOAA's 14-16 month outlook.

Source: Short-Term Energy Outlook, October 2018



U.S. winter heating degree days population-weighted

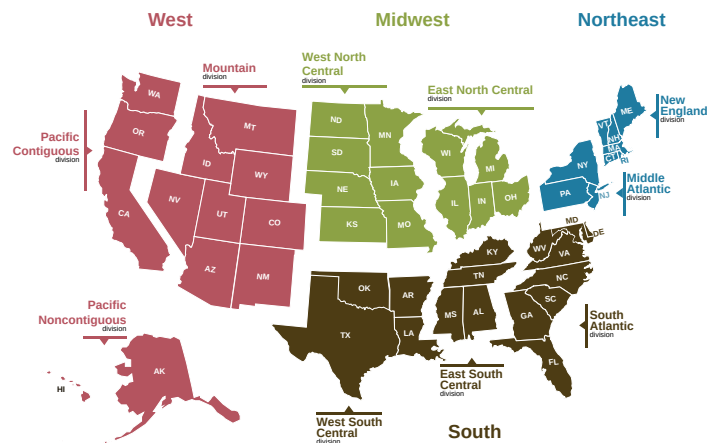


Note: EIA calculations based on National Oceanic and Atmospheric Administration (NOAA) data. Projections reflect NOAA's 14-16 month outlook.

Source: Short-Term Energy Outlook, October 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 - October 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	61.6	65.3	65.7	0.8
Price (\$/mcf)	12.20	11.71	11.52	10.80	10.18	10.70	11.39	11.00	-3.4
Expenditures (\$)	686	757	826	780	584	659	743	723	-2.6
Midwest									
Consumption (Mcf)	61.2	73.5	84.2	79.1	63.6	64.8	73.9	72.0	-2.6
Price (\$/mcf)	8.96	8.34	8.68	8.54	7.55	8.28	7.83	9.01	15.0
Expenditures (\$)	549	614	731	676	480	536	579	649	12.1
South									
Consumption (Mcf)	40.4	46.6	52.7	50.9	40.3	37.9	45.6	46.7	2.5
Price (\$/mcf)	11.41	10.67	10.71	10.75	10.72	12.04	11.27	10.94	-2.9
Expenditures (\$)	461	497	564	547	432	457	514	511	-0.6
West									
Consumption (Mcf)	48.0	47.4	45.2	40.1	44.7	45.7	43.8	46.1	5.2
Price (\$/mcf)	9.34	9.13	9.96	10.71	9.92	10.68	10.24	11.03	7.7
Expenditures (\$)	448	433	450	430	443	488	449	508	13.3
U.S. Average									
Consumption (Mcf)	51.7	58.4	63.9	60.7	51.8	52.9	57.5	57.8	0.5
Price (\$/mcf)	10.23	9.71	9.95	9.89	9.28	10.06	9.82	10.29	4.8
Expenditures (\$)	529	567	636	600	481	533	565	595	5.3
Heating Oil									
U.S. Average									
Consumption (gallons)	427.4	493.0	547.5	548.2	436.6	468.2	495.7	502.9	1.4
Price (\$/gallon)	3.73	3.87	3.87	3.04	2.06	2.41	2.78	3.27	17.8
Expenditures (\$)	1,594	1,910	2,121	1,668	900	1,128	1,377	1,646	19.5
Electricity									
Northeast									
Consumption (kWh***)	7,610	8,299	8,879	8,927	7,705	8,051	8,345	8,392	0.6
Price (\$/kwh)	0.154	0.152	0.163	0.168	0.164	0.164	0.168	0.172	2.4
Expenditures (\$)	1,173	1,264	1,448	1,501	1,263	1,322	1,405	1,447	3.0
Midwest									
Consumption (kWh)	9,132	10,344	11,363	10,816	9,365	9,479	10,386	10,183	-2.0
Price (\$/kwh)	0.111	0.111	0.112	0.118	0.122	0.123	0.124	0.128	3.2
Expenditures (\$)	1,009	1,152	1,275	1,274	1,138	1,167	1,283	1,299	1.2
South									
Consumption (kWh)	8,793	9,731	10,487	10,300	8,781	8,513	9,548	9,700	1.6
Price (\$/kwh)	0.107	0.107	0.109	0.111	0.110	0.112	0.112	0.113	1.0
Expenditures (\$)	938	1,037	1,140	1,141	967	950	1,072	1,101	2.7
West									
Consumption (kWh)	8,848	8,778	8,487	7,830	8,441	8,567	8,328	8,628	3.6
Price (\$/kwh)	0.115	0.119	0.123	0.127	0.130	0.132	0.136	0.138	1.9
Expenditures (\$)	1,015	1,041	1,045	993	1,095	1,129	1,129	1,191	5.5
U.S. Average									
Consumption (kWh)	8,470	9,193	9,728	9,417	8,456	8,422	9,051	9,165	1.3
Price (\$/kwh)	0.116	0.117	0.120	0.123	0.124	0.125	0.126	0.129	1.9
Expenditures (\$)	983	1,071	1,163	1,158	1,044	1,055	1,145	1,181	3.2

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

U.S. Energy Information Administration | Short-Term Energy Outlook - October 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	542.7	569.5	576.2	1.2
Price* (\$/gallon)	3.34	3.00	3.56	3.00	2.71	3.06	3.25	3.25	0.0
Expenditures (\$)	1,656	1,697	2,223	1,889	1,370	1,661	1,851	1,873	1.2
Midwest									
Consumption (gallons)	596.2	711.7	808.5	755.9	618.3	628.9	715.2	695.8	-2.7
Price* (\$/gallon)	2.23	1.74	2.61	1.91	1.47	1.73	1.93	1.95	1.0
Expenditures (\$)	1,330	1,238	2,110	1,444	909	1,088	1,380	1,357	-1.7
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	4,701	5,014	5,067	1.1
Midwest	4,486	5,545	6,452	6,002	4,688	4,792	5,579	5,411	-3.0
South	2,020	2,428	2,784	2,689	2,013	1,881	2,352	2,420	2.9
West	3,231	3,182	2,990	2,568	2,955	3,045	2,886	3,075	6.6
U.S. Average	3,225	3,721	4,110	3,882	3,202	3,257	3,613	3,653	1.1

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 - October 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	11.03	11.14	11.41	11.66	11.78	12.16	9.35	10.74	11.76
Dry Natural Gas Production (billion cubic feet per day)	71.99	73.49	75.09	78.44	79.14	81.21	84.36	85.86	86.83	87.36	87.91	88.80	74.77	82.67	87.73
Coal Production (million short tons)	197	187	196	194	188	181	196	191	192	160	200	190	774	756	743
Energy Consumption															
Liquid Fuels (million barrels per day)	19.54	20.07	20.01	20.21	20.24	20.33	20.51	20.57	20.32	20.49	20.89	20.87	19.96	20.41	20.64
Natural Gas (billion cubic feet per day)	86.21	63.04	66.96	81.02	97.15	70.66	72.49	82.27	96.82	70.06	71.47		74.27	80.58	80.42
Coal (b) (million short tons)	173	167	204	173	168	157	203	163	171	142	185	158	717	691	655
Electricity (billion kilowatt hours per day)	10.13	10.08	11.66	9.98	10.59	10.31	12.04	10.08	10.61	10.12	11.78	10.08	10.47	10.76	10.65
Renewables (c) (quadrillion Btu)	2.78	2.99	2.57	2.66	2.87	3.04	2.65	2.71	2.78	3.07	2.80	2.85	11.00	11.27	11.50
Total Energy Consumption (d) (quadrillion Btu)	25.08	23.26	24.38	25.15	26.39	24.07	24.76	24.85	25.97	23.39	24.62	25.10	97.87	100.07	99.08
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	73.05	71.00	68.34	68.31	70.64	50.79	68.46	69.56
Natural Gas Henry Hub Spot (dollars per million Btu)	3.01	3.08	2.95	2.90	3.02	2.85	2.93	3.15	3.24	3.01	3.05	3.16	2.99	2.99	3.12
Coal (dollars per million Btu)	2.08	2.12	2.07	2.04	2.06	2.05	2.10	2.12	2.11	2.09	2.10	2.09	2.08	2.09	2.10
Macroeconomic															
Real Gross Domestic Product (billion chained 2012 dollars - SAAR)	17,863	17,995	18,121	18,224	18,324	18,515	18,649	18,792	18,922	19,040	19,144	19,244	18,051	18,570	19,087
Percent change from prior year	1.9	2.1	2.3	2.5	2.6	2.9	2.9	3.1	3.3	2.8	2.7	2.4	2.2	2.9	2.8
GDP Implicit Price Deflator (Index, 2012=100)	107.2	107.6	108.1	108.8	109.3	110.2	110.7	111.3	111.9	112.5	113.2	113.9	107.9	110.4	112.9
Percent change from prior year	2.1	1.7	1.9	2.0	2.0	2.4	2.3	2.3	2.3	2.2	2.3	2.3	1.9	2.3	2.3
Real Disposable Personal Income (billion chained 2012 dollars - SAAR)	13,835	13,910	13,986	14,066	14,220	14,307	14,391	14,460	14,594	14,688	14,777	14,874	13,949	14,345	14,733
Percent change from prior year	2.0	2.7	2.9	2.8	2.8	2.9	2.9	2.8	2.6	2.7	2.7	2.9	2.6	2.8	2.7
Manufacturing Production Index (Index, 2012=100)	102.0	102.7	102.2	103.6	104.1	104.8	105.7	106.2	107.1	108.0	108.7	109.1	102.6	105.2	108.2
Percent change from prior year	0.6	1.9	1.2	2.1	2.1	2.0	3.4	2.5	2.8	3.1	2.8	2.8	1.5	2.5	2.9
Weather															
U.S. Heating Degree-Days	1,858	427	65	1,481	2,131	523	53	1,538	2,115	481	76	1,511	3,832	4,245	4,184
U.S. Cooling Degree-Days	70	402	838	114	51	475	976	88	40	396	843	91	1,424	1,590	1,370

- = 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 - October 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	73.05	71.00	68.34	68.31	70.64	50.79	68.46	69.56
Brent Spot Average	53.57	49.59	52.09	61.42	66.84	74.53	75.02	81.09	77.00	74.34	74.00	75.00	54.15	74.43	75.06
U.S. Imported Average	47.94	46.25	47.43	55.08	58.08	64.86	66.19	69.48	67.49	64.83	64.81	67.16	48.98	64.52	66.02
U.S. Refiner Average Acquisition Cost	49.90	47.73	48.31	56.73	61.89	67.36	68.74	71.98	70.00	67.32	67.32	69.67	50.68	67.56	68.55
U.S. Liquid Fuels (cents per gallon)															
Refiner Prices for Resale															
Gasoline	163	165	172	175	186	213	215	213	205	217	215	204	169	207	211
Diesel Fuel	162	155	169	190	199	219	223	239	226	221	227	231	169	220	226
Heating Oil	154	144	154	179	193	205	213	230	223	211	217	224	160	211	220
Refiner Prices to End Users															
Jet Fuel	158	151	162	181	197	217	220	236	224	218	224	228	163	218	223
No. 6 Residual Fuel Oil (a)	128	120	124	140	149	162	173	176	173	165	165	157	128	165	165
Retail Prices Including Taxes															
Gasoline Regular Grade (b)	233	238	244	251	258	285	284	287	278	291	291	281	242	279	285
Gasoline All Grades (b)	244	250	255	263	270	294	292	297	289	302	303	293	253	288	297
On-highway Diesel Fuel	257	255	263	287	302	320	324	334	321	316	320	326	265	320	321
Heating Oil	247	238	234	265	287	299	323	329	326	306	305	317	251	305	318
Natural Gas															
Henry Hub Spot (dollars per thousand cubic feet)	3.12	3.19	3.06	3.01	3.13	2.96	3.04	3.27	3.36	3.12	3.17	3.28	3.10	3.10	3.23
Henry Hub Spot (dollars per million Btu)	3.01	3.08	2.95	2.90	3.02	2.85	2.93	3.15	3.24	3.01	3.05	3.16	2.99	2.99	3.12
U.S. Retail Prices (dollars per thousand cubic feet)															
Industrial Sector	4.46	4.07	3.85	3.97	4.45	3.84	3.84	4.35	4.69	4.06	4.03	4.41	4.10	4.14	4.31
Commercial Sector	7.70	8.30	8.69	7.55	7.64	8.08	8.85	7.99	7.90	8.33	8.72	8.01	7.86	7.94	8.10
Residential Sector	9.68	12.95	17.64	10.12	9.38	11.96	17.49	10.83	9.77	12.26	16.76	10.76	10.86	10.74	10.94
U.S. Electricity															
Power Generation Fuel Costs (dollars per million Btu)															
Coal	2.08	2.12	2.07	2.04	2.06	2.05	2.10	2.12	2.11	2.09	2.10	2.09	2.08	2.09	2.10
Natural Gas	3.69	3.38	3.19	3.38	3.98	3.09	3.22	3.54	3.78	3.21	3.23	3.54	3.38	3.42	3.42
Residual Fuel Oil (c)	11.16	10.60	10.03	11.93	11.47	13.02	13.57	14.62	14.71	14.75	13.92	13.71	10.97	12.86	14.31
Distillate Fuel Oil	12.74	12.23	13.13	14.54	15.77	16.66	17.09	18.33	17.61	17.10	17.37	17.85	13.26	16.61	17.50
Retail Prices (cents per kilowatthour)															
Industrial Sector	6.64	6.89	7.27	6.79	6.79	6.87	7.35	6.96	6.85	6.99	7.44	7.03	6.91	7.00	7.09
Commercial Sector	10.39	10.68	11.03	10.56	10.51	10.60	11.07	10.72	10.66	10.73	11.14	10.79	10.68	10.74	10.84
Residential Sector	12.59	12.99	13.19	12.75	12.57	13.02	13.20	12.89	12.88	13.55	13.59	13.23	12.90	12.93	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 - October 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	27.17	26.87	27.19	28.33	28.85	29.02	29.60	30.48	30.67	30.99	31.18	31.82	27.39	29.49	31.17
U.S. (50 States)	15.08	15.40	15.58	16.55	16.77	17.40	18.12	18.33	18.51	18.95	19.22	19.70	15.65	17.66	19.10
Canada	5.05	4.60	5.00	5.18	5.32	5.08	4.85	5.25	5.25	5.21	5.21	5.22	4.96	5.12	5.22
Mexico	2.35	2.34	2.19	2.16	2.18	2.17	2.13	2.20	2.19	2.17	2.16	2.15	2.26	2.17	2.17
Other OECD	4.69	4.54	4.42	4.44	4.60	4.37	4.49	4.71	4.73	4.66	4.58	4.75	4.52	4.54	4.68
Non-OECD	69.68	70.24	70.97	70.37	69.88	70.16	70.93	70.53	70.17	70.76	71.00	70.75	70.32	70.38	70.67
OPEC	38.87	39.15	39.74	39.38	39.32	38.88	39.11	38.88	38.84	38.67	38.72	38.73	39.29	39.05	38.74
Crude Oil Portion	32.25	32.52	33.16	32.78	32.68	32.31	32.52	32.35	32.25	32.07	32.11	32.11	32.68	32.46	32.14
Other Liquids (b)	6.61	6.63	6.59	6.60	6.65	6.57	6.60	6.53	6.59	6.60	6.61	6.62	6.61	6.59	6.61
Eurasia	14.43	14.30	14.22	14.32	14.40	14.42	14.64	14.85	14.86	14.78	14.78	14.91	14.32	14.58	14.83
China	4.81	4.82	4.74	4.75	4.76	4.80	4.76	4.81	4.75	4.78	4.79	4.83	4.78	4.78	4.79
Other Non-OECD	11.57	11.97	12.27	11.92	11.40	12.05	12.42	11.99	11.72	12.53	12.71	12.28	11.93	11.97	12.31
Total World Supply	96.85	97.11	98.16	98.71	98.74	99.18	100.53	101.01	100.84	101.75	102.18	102.57	97.71	99.87	101.84
Non-OPEC Supply	57.98	57.96	58.42	59.32	59.41	60.30	61.42	62.14	62.00	63.08	63.46	63.84	58.42	60.83	63.10
Consumption (million barrels per day) (c)															
OECD	46.73	46.87	47.47	47.83	47.58	46.91	47.76	48.04	47.77	47.19	48.31	48.47	47.23	47.58	47.94
U.S. (50 States)	19.54	20.07	20.01	20.21	20.24	20.33	20.51	20.57	20.32	20.49	20.89	20.87	19.96	20.41	20.64
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	2.35	2.48	2.46	2.42	2.37	2.48	2.45	2.44	2.40	2.43
Europe	13.82	14.25	14.70	14.40	14.05	14.16	14.61	14.31	14.03	14.25	14.76	14.46	14.30	14.28	14.38
Japan	4.30	3.58	3.63	4.06	4.27	3.43	3.55	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	6.53	6.71	6.72	6.57	6.60	6.77	6.51	6.60	6.67
Non-OECD	50.37	51.71	51.60	51.59	51.67	52.54	52.85	52.91	52.72	53.88	54.01	53.88	51.32	52.50	53.63
Eurasia	4.73	4.72	4.99	4.86	4.78	4.83	5.11	4.98	4.78	4.85	5.22	5.07	4.83	4.93	4.98
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	13.76	13.46	13.86	14.08	14.24	13.83	14.16	13.23	13.67	14.07
Other Non-OECD	18.69	19.28	19.63	19.07	18.76	19.21	19.79	19.36	18.82	19.57	19.99	19.47	19.17	19.28	19.47
Total World Consumption	97.10	98.58	99.08	99.42	99.25	99.46	100.61	100.95	100.48	101.07	102.32	102.35	98.55	100.07	101.56
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	-0.42	0.45	-0.31	-0.58	-0.28	0.24	0.37	0.08	-0.23
Other OECD	-0.38	0.08	0.34	0.48	-0.03	0.09	0.17	-0.17	-0.02	-0.03	0.14	-0.16	0.13	0.02	-0.02
Other Stock Draws and Balance	0.64	1.16	0.23	-0.67	0.17	0.24	0.33	-0.34	-0.04	-0.07	0.28	-0.30	0.34	0.10	-0.03
Total Stock Draw	0.26	1.47	0.92	0.72	0.51	0.28	0.08	-0.06	-0.36	-0.68	0.14	-0.22	0.84	0.20	-0.28
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	1,246	1,216	1,246	1,301	1,327	1,308	1,232	1,216	1,308
OECD Commercial Inventory	3,029	3,013	2,960	2,843	2,806	2,809	2,831	2,817	2,849	2,908	2,920	2,916	2,843	2,817	2,916

- = 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 - October 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	24.65	25.10	25.77	25.95	26.33	26.60	27.07	22.87	24.95	26.49
Canada	5.05	4.60	5.00	5.18	5.32	5.08	4.85	5.25	5.25	5.21	5.21	5.22	4.96	5.12	5.22
Mexico	2.35	2.34	2.19	2.16	2.18	2.17	2.13	2.20	2.19	2.17	2.16	2.15	2.26	2.17	2.17
United States	15.08	15.40	15.58	16.55	16.77	17.40	18.12	18.33	18.51	18.95	19.22	19.70	15.65	17.66	19.10
Central and South America	4.91	5.40	5.70	5.33	4.88	5.62	5.92	5.48	5.19	6.03	6.24	5.81	5.34	5.48	5.82
Argentina	0.67	0.67	0.67	0.70	0.66	0.68	0.68	0.69	0.66	0.68	0.67	0.68	0.68	0.68	0.67
Brazil	2.95	3.44	3.73	3.32	2.95	3.64	3.94	3.49	3.26	4.05	4.29	3.84	3.36	3.51	3.86
Colombia	0.87	0.88	0.88	0.89	0.86	0.89	0.88	0.88	0.87	0.89	0.87	0.88	0.88	0.88	0.88
Other Central and S. America	0.42	0.42	0.42	0.42	0.41	0.42	0.42	0.42	0.41	0.42	0.41	0.41	0.42	0.41	0.41
Europe	4.21	4.04	3.92	3.95	4.08	3.88	3.95	4.15	4.15	4.06	3.95	4.10	4.03	4.02	4.06
Norway	2.08	2.00	1.91	1.92	1.97	1.80	1.89	1.94	1.93	1.86	1.88	1.92	1.98	1.90	1.90
United Kingdom	1.09	1.07	1.00	1.02	1.11	1.09	1.09	1.22	1.22	1.21	1.09	1.19	1.05	1.13	1.18
Eurasia	14.43	14.30	14.22	14.32	14.40	14.42	14.64	14.85	14.86	14.78	14.78	14.91	14.32	14.58	14.83
Azerbaijan	0.79	0.80	0.79	0.81	0.82	0.81	0.79	0.78	0.79	0.79	0.78	0.77	0.80	0.80	0.78
Kazakhstan	1.87	1.87	1.86	1.92	1.98	1.96	1.93	2.07	2.08	1.99	2.06	2.13	1.88	1.99	2.06
Russia	11.32	11.18	11.14	11.16	11.18	11.22	11.48	11.56	11.58	11.59	11.53	11.60	11.20	11.36	11.57
Turkmenistan	0.28	0.28	0.28	0.28	0.27	0.28	0.27	0.27	0.25	0.25	0.25	0.25	0.28	0.27	0.25
Other Eurasia	0.16	0.17	0.16	0.16	0.16	0.15	0.17	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	1.10	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	9.36	9.29	9.20	9.19	9.25	9.18	9.23	9.28	9.23	9.25	9.25	9.31	9.26	9.24	9.26
Australia	0.34	0.35	0.36	0.34	0.37	0.35	0.37	0.38	0.41	0.43	0.45	0.47	0.35	0.37	0.44
China	4.81	4.82	4.74	4.75	4.76	4.80	4.76	4.81	4.75	4.78	4.79	4.83	4.78	4.78	4.79
India	1.01	1.00	1.00	1.00	1.01	1.00	0.98	0.99	0.99	0.98	0.98	0.99	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	0.76	0.76	0.75	0.75	0.74	0.73	0.75	0.76	0.74
Vietnam	0.29	0.29	0.28	0.27	0.27	0.25	0.25	0.23	0.25	0.24	0.24	0.24	0.28	0.25	0.24
Africa	1.51	1.51	1.54	1.55	1.47	1.47	1.48	1.50	1.50	1.50	1.50	1.50	1.53	1.48	1.50
Egypt	0.64	0.65	0.66	0.66	0.63	0.63	0.63	0.63	0.61	0.61	0.61	0.61	0.65	0.63	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	57.98	57.96	58.42	59.32	59.41	60.30	61.42	62.14	62.00	63.08	63.46	63.84	58.42	60.83	63.10
OPEC non-crude liquids	6.61	6.63	6.59	6.60	6.65	6.57	6.60	6.53	6.59	6.60	6.61	6.62	6.61	6.59	6.61
Non-OPEC + OPEC non-crude	64.59	64.60	65.00	65.93	66.06	66.87	68.01	68.67	68.59	69.68	70.07	70.46	65.03	67.41	69.71
Unplanned non-OPEC Production Outages	0.43	0.68	0.63	0.54	0.53	0.40	0.59	<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 - October 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	1.54	1.56	-	-	-	-	-	1.65	-	-
Congo (Brazzaville)	0.18	0.20	0.27	0.30	0.34	0.35	0.30	-	-	-	-	-	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	32.31	32.52	32.35	32.25	32.07	32.11	32.11	32.68	32.46	32.14
Other Liquids (a)	6.61	6.63	6.59	6.60	6.65	6.57	6.60	<i>6.53</i>	<i>6.59</i>	<i>6.60</i>	<i>6.61</i>	<i>6.62</i>	6.61	<i>6.59</i>	<i>6.61</i>
Total OPEC Supply	38.87	39.15	39.74	39.38	39.32	38.88	39.11	<i>38.88</i>	<i>38.84</i>	<i>38.67</i>	<i>38.72</i>	<i>38.73</i>	39.29	<i>39.05</i>	<i>38.74</i>
Crude Oil Production Capacity															
Africa	5.22	5.44	5.91	5.94	6.00	5.70	5.68	5.71	5.76	5.78	5.82	5.84	5.63	5.77	5.80
Middle East	26.70	26.69	26.71	26.64	26.51	26.52	26.43	26.16	26.25	26.12	26.14	26.15	26.69	26.40	26.17
South America	2.53	2.51	2.49	2.31	2.08	1.94	1.80	1.73	1.60	1.48	1.39	1.30	2.46	1.89	1.44
OPEC Total	34.45	34.64	35.11	34.88	34.59	34.16	33.91	33.61	33.60	33.39	33.34	33.29	34.77	34.06	33.41
Surplus Crude Oil Production Capacity															
Africa	0.00	0.00	0.00	0.00	0.00	0.02	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	1.26	1.35	1.32	1.24	1.18	2.09	1.60	1.27
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	1.85	1.39	1.26	1.35	1.32	1.24	1.18	2.09	1.60	1.27
Unplanned OPEC Production Outages	1.81	1.60	1.17	1.21	1.21	1.43	1.59	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	1.45	<i>n/a</i>	<i>n/a</i>

- = 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 - October 2018

	2017				2018				2019						
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
North America	23.94	24.48	24.49	24.67	24.56	24.71	24.93	<i>25.00</i>	<i>24.70</i>	<i>24.84</i>	<i>25.35</i>	<i>25.33</i>	24.40	<i>24.80</i>	<i>25.06</i>
Canada	2.37	2.36	2.52	2.52	2.32	2.35	2.48	2.46	2.42	2.37	2.48	2.45	2.44	2.40	2.43
Mexico	2.02	2.03	1.95	1.93	1.99	2.02	1.93	1.97	1.95	1.97	1.97	2.00	1.98	1.98	1.97
United States	19.54	20.07	20.01	20.21	20.24	20.33	20.51	20.57	20.32	20.49	20.89	20.87	19.96	20.41	20.64
Central and South America	6.84	6.93	7.06	6.94	6.72	6.75	6.95	<i>6.96</i>	<i>6.74</i>	<i>6.87</i>	<i>6.99</i>	<i>6.98</i>	6.94	<i>6.85</i>	<i>6.89</i>
Brazil	2.96	3.00	3.12	3.08	2.98	2.95	3.13	3.15	3.01	3.08	3.16	3.15	3.04	3.05	3.10
Europe	14.55	14.98	15.44	15.14	14.80	14.90	15.37	<i>15.08</i>	<i>14.79</i>	<i>15.00</i>	<i>15.53</i>	<i>15.23</i>	15.03	<i>15.04</i>	<i>15.14</i>
Eurasia	4.73	4.72	4.99	4.86	4.78	4.83	5.11	<i>4.98</i>	<i>4.78</i>	<i>4.85</i>	<i>5.22</i>	<i>5.07</i>	4.83	<i>4.93</i>	<i>4.98</i>
Russia	3.61	3.62	3.82	3.69	3.63	3.70	3.91	3.78	3.62	3.71	4.02	3.86	3.68	3.75	3.80
Middle East	8.24	8.77	9.10	8.48	8.30	8.73	9.20	<i>8.59</i>	<i>8.30</i>	<i>8.89</i>	<i>9.30</i>	<i>8.60</i>	8.65	<i>8.71</i>	<i>8.77</i>
Asia and Oceania	34.49	34.43	33.83	35.03	35.68	35.15	34.77	<i>35.90</i>	<i>36.72</i>	<i>36.15</i>	<i>35.55</i>	<i>36.58</i>	34.44	<i>35.37</i>	<i>36.25</i>
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
Japan	4.30	3.58	3.63	4.06	4.27	3.43	3.55	3.88	4.15	3.40	3.47	3.79	3.89	3.78	3.70
India	4.40	4.64	4.42	4.75	4.73	4.84	4.61	4.98	5.09	5.15	4.81	5.12	4.55	4.79	5.04
Africa	4.32	4.28	4.17	4.29	4.39	4.38	4.29	<i>4.45</i>	<i>4.45</i>	<i>4.46</i>	<i>4.39</i>	<i>4.56</i>	4.27	<i>4.38</i>	<i>4.46</i>
Total OECD Liquid Fuels Consumption	46.73	46.87	47.47	47.83	47.58	46.91	47.76	<i>48.04</i>	<i>47.77</i>	<i>47.19</i>	<i>48.31</i>	<i>48.47</i>	47.23	<i>47.58</i>	<i>47.94</i>
Total non-OECD Liquid Fuels Consumption	50.37	51.71	51.60	51.59	51.67	52.54	52.85	<i>52.91</i>	<i>52.72</i>	<i>53.88</i>	<i>54.01</i>	<i>53.88</i>	51.32	<i>52.50</i>	<i>53.63</i>
Total World Liquid Fuels Consumption	97.10	98.58	99.08	99.42	99.25	99.46	100.61	<i>100.95</i>	<i>100.48</i>	<i>101.07</i>	<i>102.32</i>	<i>102.35</i>	98.55	<i>100.07</i>	<i>101.56</i>
Oil-weighted Real Gross Domestic Product (a)															
World Index, 2015 Q1 = 100	105.7	106.5	107.4	108.2	109.2	110.0	110.7	111.6	112.5	113.2	114.0	114.8	106.9	110.4	113.6
Percent change from prior year	3.6	2.9	3.1	3.0	3.4	3.3	3.2	3.1	2.9	2.9	2.9	2.9	3.1	3.2	2.9
OECD Index, 2015 Q1 = 100	103.9	104.5	105.1	105.8	106.5	107.1	107.7	108.3	108.9	109.3	109.8	110.2	104.8	107.4	109.6
Percent change from prior year	3.0	2.1	2.4	2.3	2.5	2.5	2.4	2.4	2.3	2.0	2.0	1.8	2.4	2.4	2.0
Non-OECD Index, 2015 Q1 = 100	107.4	108.4	109.5	110.5	111.9	112.8	113.7	114.7	115.9	117.0	118.1	119.3	109.0	113.3	117.6
Percent change from prior year	4.2	3.6	3.8	3.7	4.2	4.1	3.9	3.8	3.6	3.7	3.9	4.0	3.8	4.0	3.8
Real U.S. Dollar Exchange Rate (a)															
Index, 2015 Q1 = 100	104.97	103.52	101.97	102.33	100.60	102.57	105.04	105.23	104.29	103.43	102.40	101.46	103.19	103.36	102.89
Percent change from prior year	-0.2	0.3	-1.1	-2.4	-4.2	-0.9	3.0	2.8	3.7	0.8	-2.5	-3.6	-0.8	0.2	-0.5

- = 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 - October 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	11.03	11.14	11.41	11.66	11.78	12.16	9.35	10.74	11.76
Alaska	0.52	0.50	0.45	0.51	0.51	0.48	0.45	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	1.81	1.76	1.83	1.86	1.75	1.86	1.68	1.71	1.82
Lower 48 States (excl GOM)	6.74	6.95	7.15	7.86	8.05	8.48	8.77	8.89	9.07	9.31	9.57	9.81	7.18	8.55	9.44
Crude Oil Net Imports (c)	7.26	7.23	6.65	6.12	6.18	6.19	5.98	5.38	5.40	5.46	5.38	4.61	6.81	5.93	5.21
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	0.11	-0.08	-0.58	-0.04	0.07	-0.09	0.17	0.03	-0.16
Crude Oil Adjustment (d)	0.18	0.24	0.22	0.02	0.05	0.25	0.22	0.15	0.19	0.19	0.21	0.15	0.17	0.17	0.19
Total Crude Oil Input to Refineries	15.90	17.13	16.60	16.72	16.41	17.14	17.34	16.72	16.46	17.30	17.44	16.87	16.59	16.91	17.02
Other Supply															
Refinery Processing Gain	1.11	1.15	1.08	1.12	1.11	1.12	1.14	1.12	1.08	1.12	1.14	1.13	1.11	1.12	1.12
Natural Gas Plant Liquids Production	3.57	3.75	3.77	4.03	4.01	4.30	4.49	4.63	4.64	4.74	4.86	4.95	3.78	4.36	4.80
Renewables and Oxygenate Production (e)	1.18	1.17	1.19	1.24	1.21	1.22	1.24	1.22	1.17	1.21	1.22	1.22	1.19	1.22	1.21
Fuel Ethanol Production	1.05	1.01	1.03	1.06	1.05	1.04	1.06	1.04	1.03	1.04	1.03	1.03	1.04	1.05	1.03
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	-3.39	-3.74	-3.48	-3.53	-3.64	-3.83	-3.04	-3.43	-3.62
Hydrocarbon Gas Liquids	-1.21	-1.20	-1.16	-1.26	-1.22	-1.53	-1.57	-1.65	-1.72	-1.74	-1.73	-1.77	-1.21	-1.50	-1.74
Unfinished Oils	0.41	0.36	0.41	0.45	0.39	0.32	0.34	0.28	0.37	0.39	0.40	0.31	0.41	0.33	0.37
Other HC/Oxygenates	-0.13	-0.09	-0.09	-0.14	-0.18	-0.15	-0.11	-0.09	-0.12	-0.10	-0.08	-0.08	-0.11	-0.13	-0.10
Motor Gasoline Blend Comp.	0.43	0.68	0.64	0.36	0.50	0.78	0.66	0.36	0.49	0.67	0.49	0.45	0.53	0.57	0.53
Finished Motor Gasoline	-0.68	-0.63	-0.63	-0.92	-0.94	-0.71	-0.75	-0.82	-0.88	-0.71	-0.68	-0.90	-0.72	-0.80	-0.79
Jet Fuel	-0.04	-0.06	-0.01	0.02	-0.10	-0.10	-0.07	0.00	0.02	0.00	-0.03	0.00	-0.02	-0.06	0.00
Distillate Fuel Oil	-1.02	-1.37	-1.33	-1.19	-0.87	-1.30	-1.18	-1.12	-1.00	-1.30	-1.31	-1.10	-1.23	-1.12	-1.18
Residual Fuel Oil	-0.12	-0.13	-0.12	-0.11	-0.10	-0.14	-0.08	-0.07	-0.03	-0.10	-0.07	-0.09	-0.12	-0.10	-0.07
Other Oils (g)	-0.60	-0.59	-0.50	-0.58	-0.62	-0.61	-0.64	-0.63	-0.60	-0.64	-0.64	-0.65	-0.57	-0.62	-0.63
Product Inventory Net Withdrawals	0.55	-0.32	-0.06	0.27	0.41	-0.21	-0.53	0.40	0.24	-0.57	-0.35	0.30	0.11	0.02	-0.10
Total Supply	19.54	20.07	20.01	20.21	20.23	20.33	20.51	20.57	20.32	20.49	20.89	20.87	19.96	20.41	20.64
Consumption (million barrels per day)															
Hydrocarbon Gas Liquids	2.82	2.48	2.40	2.88	3.22	2.67	2.70	3.09	3.19	2.76	2.91	3.28	2.64	2.92	3.04
Unfinished Oils	0.02	0.06	0.02	0.05	0.13	-0.04	-0.03	0.01	0.00	-0.03	-0.03	0.01	0.04	0.02	-0.01
Motor Gasoline	8.94	9.54	9.58	9.24	9.01	9.51	9.51	9.23	8.97	9.53	9.52	9.26	9.33	9.32	9.32
Fuel Ethanol blended into Motor Gasoline	0.90	0.96	0.96	0.95	0.91	0.94	0.97	0.95	0.91	0.97	0.97	0.95	0.94	0.94	0.95
Jet Fuel	1.60	1.69	1.71	1.73	1.64	1.73	1.78	1.77	1.71	1.78	1.83	1.80	1.68	1.73	1.78
Distillate Fuel Oil	3.93	3.89	3.85	4.05	4.18	4.13	4.00	4.17	4.19	4.09	4.13	4.24	3.93	4.12	4.16
Residual Fuel Oil	0.38	0.33	0.31	0.34	0.28	0.32	0.35	0.31	0.36	0.32	0.34	0.31	0.34	0.32	0.33
Other Oils (g)	1.84	2.08	2.14	1.92	1.78	2.01	2.20	1.98	1.89	2.04	2.18	1.98	2.00	1.99	2.02
Total Consumption	19.54	20.07	20.01	20.21	20.24	20.33	20.51	20.57	20.32	20.49	20.89	20.87	19.96	20.41	20.64
Total Petroleum and Other Liquids Net Imports	4.29	4.21	3.86	2.73	3.05	2.75	2.59	1.64	1.93	1.93	1.73	0.78	3.77	2.50	1.59
End-of-period Inventories (million barrels)															
Commercial Inventory															
Crude Oil (excluding SPR)	538.6	501.6	469.6	421.6	423.4	414.8	404.5	411.5	463.3	466.8	460.4	469.0	421.6	411.5	469.0
Hydrocarbon Gas Liquids	147.6	189.9	228.7	190.0	139.3	180.8	223.8	182.9	148.7	203.3	245.1	206.1	190.0	182.9	206.1
Unfinished Oils	91.9	89.9	91.6	86.3	98.3	92.6	89.8	81.0	91.1	89.8	87.9	81.0	86.3	81.0	81.0
Other HC/Oxygenates	32.8	29.3	28.5	29.6	30.5	28.8	29.5	30.2	31.9	30.9	30.2	30.9	29.6	30.2	30.9
Total Motor Gasoline	239.6	238.4	223.2	236.8	239.6	240.3	235.0	240.5	242.8	239.3	234.0	246.7	236.8	240.5	246.7
Finished Motor Gasoline	21.5	22.5	21.8	24.5	23.1	24.7	25.6	27.5	25.2	24.1	24.7	25.4	24.5	27.5	25.4
Motor Gasoline Blend Comp.	218.0	215.9	201.4	212.3	216.5	215.6	209.4	213.1	217.6	215.3	209.2	221.2	212.3	213.1	221.2
Jet Fuel	42.4	41.0	43.6	41.3	40.4	40.8	46.3	43.4	42.9	44.0	45.3	43.1	41.3	43.4	43.1
Distillate Fuel Oil	152.0	152.1	137.3	145.6	130.4	120.4	136.0	139.3	128.8	130.8	135.4	140.3	145.6	139.3	140.3
Residual Fuel Oil	37.5	33.2	33.6	29.4	35.0	30.0	28.2	32.3	36.5	37.9	36.7	37.0	29.4	32.3	37.0
Other Oils (g)	56.5	55.4	48.0	51.0	59.3	58.8	52.7	54.6	59.9	58.4	52.4	54.4	51.0	54.6	54.4
Total Commercial Inventory	1,339	1,331	1,304	1,232	1,196	1,207	1,246	1,216	1,246	1,301	1,327	1,308	1,232	1,216	1,308
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 - October 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	1.75	1.85	1.86	1.88	1.92	1.98	1.43	1.72	1.91
Propane	1.18	1.22	1.25	1.30	1.29	1.37	1.44	1.46	1.48	1.51	1.54	1.57	1.24	1.39	1.53
Butanes	0.63	0.66	0.68	0.69	0.69	0.74	0.77	0.79	0.79	0.81	0.83	0.84	0.67	0.74	0.82
Natural Gasoline (Pentanes Plus)	0.41	0.45	0.48	0.46	0.44	0.50	0.54	0.53	0.51	0.54	0.57	0.56	0.45	0.50	0.55
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	0.30	0.30	0.29	0.31	0.30	0.30	0.31	0.30	0.30
Propylene (refinery-grade)	0.27	0.29	0.27	0.30	0.28	0.29	0.28	0.28	0.28	0.29	0.28	0.29	0.28	0.28	0.28
Butanes/Butylenes	-0.09	0.27	0.16	-0.22	-0.11	0.24	0.18	-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	-0.30	-0.30	-0.31	-0.31	-0.32	-0.18	-0.27	-0.31
Propane/Propylene	-0.80	-0.73	-0.69	-0.82	-0.72	-0.81	-0.89	-0.91	-0.92	-0.92	-0.89	-0.94	-0.76	-0.83	-0.92
Butanes/Butylenes	-0.08	-0.13	-0.11	-0.11	-0.10	-0.20	-0.20	-0.22	-0.23	-0.25	-0.25	-0.25	-0.11	-0.18	-0.24
Natural Gasoline (Pentanes Plus)	-0.18	-0.18	-0.16	-0.14	-0.18	-0.23	-0.22	-0.22	-0.26	-0.26	-0.29	-0.26	-0.17	-0.21	-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	0.18	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	1.49	1.55	1.55	1.55	1.62	1.69	1.24	1.48	1.60
Propane	1.05	0.61	0.68	0.87	1.16	0.60	0.62	0.97	1.07	0.58	0.68	1.01	0.80	0.84	0.83
Propylene (refinery-grade)	0.34	0.32	0.28	0.32	0.32	0.31	0.30	0.30	0.31	0.31	0.30	0.30	0.31	0.30	0.30
Butanes/Butylenes	0.14	0.23	0.20	0.16	0.20	0.21	0.19	0.20	0.18	0.26	0.25	0.22	0.18	0.20	0.23
Natural Gasoline (Pentanes Plus)	0.09	0.08	0.09	0.15	0.10	0.09	0.09	0.07	0.07	0.06	0.06	0.07	0.10	0.09	0.07
HGL Inventories (million barrels)															
Ethane	49.66	51.90	51.76	57.72	51.41	47.90	46.89	48.43	47.34	50.46	49.65	49.74	52.78	48.65	49.31
Propane	40.18	56.92	71.42	62.21	33.83	56.51	75.43	62.52	39.68	66.47	89.76	81.19	62.21	62.52	81.19
Propylene (refinery-grade)	3.66	3.86	4.90	4.61	3.82	3.64	3.96	4.16	3.29	3.12	3.14	3.74	4.61	4.16	3.74
Butanes/Butylenes	31.28	56.79	75.55	47.45	32.02	55.37	76.52	45.49	35.60	59.27	76.82	45.79	47.45	45.49	45.79
Natural Gasoline (Pentanes Plus)	21.49	20.55	23.40	20.11	19.36	18.59	20.42	23.20	21.84	23.91	25.18	27.09	20.11	23.20	27.09
Refinery and Blender Net Inputs															
Crude Oil	15.90	17.13	16.60	16.72	16.41	17.14	17.34	16.72	16.46	17.30	17.44	16.87	16.59	16.91	17.02
Hydrocarbon Gas Liquids	0.59	0.48	0.51	0.69	0.61	0.47	0.51	0.69	0.58	0.48	0.52	0.69	0.57	0.57	0.57
Other Hydrocarbons/Oxygenates	1.16	1.23	1.22	1.20	1.16	1.23	1.24	1.26	1.20	1.28	1.29	1.28	1.20	1.22	1.26
Unfinished Oils	0.26	0.32	0.38	0.45	0.12	0.42	0.41	0.37	0.25	0.43	0.46	0.38	0.35	0.33	0.38
Motor Gasoline Blend Components	0.35	0.64	0.67	0.24	0.34	0.70	0.63	0.47	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	20.12	19.51	19.05	20.33	20.37	19.71	19.19	19.56	19.87
Refinery Processing Gain															
	1.11	1.15	1.08	1.12	1.11	1.12	1.14	1.12	1.08	1.12	1.14	1.13	1.11	1.12	1.12
Refinery and Blender Net Production															
Hydrocarbon Gas Liquids	0.48	0.89	0.73	0.40	0.48	0.84	0.77	0.39	0.49	0.86	0.77	0.39	0.63	0.62	0.63
Finished Motor Gasoline	9.53	10.08	10.04	10.15	9.79	10.14	10.14	10.20	9.93	10.34	10.29	10.31	9.95	10.07	10.22
Jet Fuel	1.63	1.74	1.75	1.69	1.72	1.83	1.91	1.74	1.68	1.79	1.88	1.77	1.70	1.80	1.78
Distillate Fuel	4.75	5.17	4.93	5.25	4.81	5.25	5.26	5.25	5.04	5.35	5.41	5.32	5.02	5.14	5.28
Residual Fuel	0.46	0.41	0.43	0.41	0.44	0.40	0.41	0.43	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	2.77	2.63	2.55	2.66	2.75	2.65	2.56	2.63	2.65
Total Refinery and Blender Net Production	19.36	20.95	20.44	20.43	19.74	21.08	21.26	20.63	20.13	21.44	21.51	20.84	20.30	20.68	20.99
Refinery Distillation Inputs															
	16.25	17.44	16.91	17.01	16.76	17.50	17.66	16.93	16.67	17.42	17.62	17.07	16.90	17.21	17.20
Refinery Operable Distillation Capacity															
	18.62	18.58	18.54	18.52	18.57	18.60	18.60	18.60	18.61	18.61	18.64	18.65	18.56	18.59	18.63
Refinery Distillation Utilization Factor															
	0.87	0.94	0.91	0.92	0.90	0.94	0.95	0.91	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 - October 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	215	213	205	217	215	204	169	207	211
Gasoline Regular Grade Retail Prices Including Taxes															
PADD 1	231	233	241	249	255	279	278	284	275	284	285	280	239	274	281
PADD 2	223	228	232	242	246	274	276	278	269	283	284	273	231	269	277
PADD 3	210	216	222	225	230	261	258	261	255	267	265	254	218	253	260
PADD 4	227	239	245	252	247	288	297	289	266	284	292	279	241	281	280
PADD 5	276	289	290	299	312	342	335	333	320	344	341	321	288	330	332
U.S. Average	233	238	244	251	258	285	284	287	278	291	291	281	242	279	285
Gasoline All Grades Including Taxes	244	250	255	263	270	294	292	297	289	302	303	293	253	288	297
End-of-period Inventories (million barrels)															
Total Gasoline Inventories															
PADD 1	65.5	67.7	59.0	60.6	58.4	66.5	69.0	66.8	67.1	67.7	64.2	68.0	60.6	66.8	68.0
PADD 2	57.3	53.6	50.4	52.2	57.3	53.5	51.4	52.2	55.0	53.1	51.7	53.7	52.2	52.2	53.7
PADD 3	79.1	82.4	77.7	83.3	84.2	82.3	79.6	82.6	82.8	82.3	82.2	85.3	83.3	82.6	85.3
PADD 4	7.9	7.0	6.9	7.6	7.7	7.3	7.0	7.7	7.7	7.6	7.4	7.9	7.6	7.7	7.9
PADD 5	29.7	27.7	29.2	33.1	32.0	30.7	27.9	31.2	30.2	28.6	28.5	31.7	33.1	31.2	31.7
U.S. Total	239.6	238.4	223.2	236.8	239.6	240.3	235.0	240.5	242.8	239.3	234.0	246.7	236.8	240.5	246.7
Finished Gasoline Inventories															
U.S. Total	21.5	22.5	21.8	24.5	23.1	24.7	25.6	27.5	25.2	24.1	24.7	25.4	24.5	27.5	25.4
Gasoline Blending Components Inventories															
U.S. Total	218.0	215.9	201.4	212.3	216.5	215.6	209.4	213.1	217.6	215.3	209.2	221.2	212.3	213.1	221.2

- = 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 - October 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	87.41	90.81	92.49	93.58	94.21	94.86	95.87	79.99	88.94	94.64
Alaska	1.01	0.97	0.82	0.98	1.00	0.92	0.88	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	2.49	2.74	2.65	2.70	2.65	2.56	2.58	2.90	2.61	2.62
Lower 48 States (excl GOM)	72.78	74.65	76.61	80.45	81.37	84.00	87.19	88.90	89.89	90.69	91.51	92.34	76.14	85.39	91.11
Total Dry Gas Production	71.99	73.49	75.09	78.44	79.14	81.21	84.36	85.86	86.83	87.36	87.91	88.80	74.77	82.67	87.73
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	3.04	3.33	4.17	4.47	5.73	6.59	1.94	2.95	5.25
Pipeline Gross Imports	8.89	7.76	7.74	8.10	8.76	7.63	7.40	7.40	7.38	5.83	5.45	6.15	8.12	7.79	6.20
Pipeline Gross Exports	7.24	6.49	6.43	6.81	7.02	6.15	7.04	8.37	9.61	8.62	8.26	8.78	6.74	7.15	8.81
Supplemental Gaseous Fuels	0.17	0.18	0.18	0.19	0.21	0.17	0.19	0.20	0.20	0.20	0.21	0.21	0.18	0.19	0.21
Net Inventory Withdrawals	13.74	-9.02	-7.20	5.76	18.29	-8.83	-8.01	1.44	15.85	-10.41	-7.71	3.90	0.78	0.65	0.35
Total Supply	86.22	64.30	67.88	83.26	97.08	71.33	74.00	83.38	96.81	70.06	72.04	83.90	75.39	81.39	80.64
Balancing Item (b)	0.00	-1.25	-0.92	-2.24	0.07	-0.67	-1.51	-1.11	0.01	0.00	-0.57	-0.34	-1.11	-0.81	-0.23
Total Primary Supply	86.21	63.04	66.96	81.02	97.15	70.66	72.49	82.27	96.82	70.06	71.47	83.55	74.27	80.58	80.42
Consumption (billion cubic feet per day)															
Residential	22.11	6.62	3.54	16.24	25.75	7.97	3.46	16.05	25.35	7.56	3.73	16.08	12.09	13.25	13.13
Commercial	13.45	5.81	4.52	10.97	15.35	6.61	4.40	9.89	15.07	6.48	4.75	10.04	8.67	9.03	9.06
Industrial	23.13	20.61	20.41	22.98	24.27	21.78	20.89	23.28	23.84	21.50	20.90	23.77	21.78	22.55	22.50
Electric Power (c)	20.95	24.00	32.28	24.03	24.53	27.62	36.83	25.80	24.81	27.35	34.74	25.87	25.34	28.72	28.21
Lease and Plant Fuel	4.13	4.21	4.30	4.50	4.55	4.68	4.87	4.96	5.01	5.05	5.08	5.14	4.29	4.77	5.07
Pipeline and Distribution Use	2.32	1.66	1.77	2.16	2.59	1.88	1.92	2.18	2.61	2.00	2.16	2.53	1.98	2.14	2.32
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	86.21	63.04	66.96	81.02	97.15	70.66	72.49	82.27	96.82	70.06	71.47	83.55	74.27	80.58	80.42
End-of-period Inventories (billion cubic feet)															
Working Gas Inventory	2,063	2,907	3,567	3,033	1,392	2,195	2,932	2,800	1,374	2,321	3,030	2,671	3,033	2,800	2,671
East Region (d)	260	563	866	710	229	465	769	703	199	467	718	592	710	703	592
Midwest Region (d)	477	701	993	829	261	459	845	746	276	551	894	763	829	746	763
South Central Region (d)	938	1,139	1,137	1,016	615	846	837	911	575	821	863	828	1,016	911	828
Mountain Region (d)	142	184	218	177	87	140	178	162	111	155	196	163	177	162	163
Pacific Region (d)	219	288	314	264	169	253	264	239	174	288	321	286	264	239	286
Alaska	27	32	39	36	31	33	39	39	39	39	39	39	36	39	39

- = 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 - October 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	3.27	3.36	3.12	3.17	3.28	3.10	3.10	3.23
Residential Retail															
New England	12.86	14.09	18.10	13.58	14.53	17.28	18.29	13.72	13.10	13.95	17.17	13.61	13.61	14.99	13.65
Middle Atlantic	9.88	12.21	17.18	11.31	10.17	11.92	17.33	10.97	9.99	11.84	16.37	10.85	11.15	11.12	10.95
E. N. Central	7.79	11.58	17.93	7.84	7.20	9.77	17.93	9.22	8.16	10.91	16.67	9.02	8.90	8.76	9.36
W. N. Central	8.27	11.74	18.64	9.36	8.15	10.48	18.95	10.68	9.70	12.42	17.94	10.01	9.67	9.75	10.72
S. Atlantic	11.87	19.32	25.73	12.76	11.07	15.62	23.55	12.90	11.27	16.15	22.36	12.69	14.11	13.07	13.12
E. S. Central	10.41	15.64	20.60	11.19	9.61	12.70	20.68	12.12	9.79	14.23	20.38	12.70	11.90	11.29	11.74
W. S. Central	10.21	16.31	21.92	13.00	9.27	14.25	20.99	11.11	8.14	13.64	19.93	11.67	13.05	11.27	10.84
Mountain	8.25	10.20	13.95	8.70	8.22	10.41	14.80	9.58	9.23	10.43	14.00	9.45	9.14	9.45	9.89
Pacific	12.00	12.61	12.88	11.28	11.62	12.02	12.87	11.54	12.43	12.59	12.93	11.87	11.99	11.82	12.34
U.S. Average	9.68	12.95	17.64	10.12	9.38	11.96	17.49	10.83	9.77	12.26	16.76	10.76	10.86	10.74	10.94
Commercial Retail															
New England	9.66	10.11	10.69	9.78	11.17	12.34	10.97	10.46	10.45	10.51	10.53	10.51	9.86	11.13	10.48
Middle Atlantic	7.73	7.46	6.88	7.44	8.13	7.67	7.48	7.79	7.86	7.64	7.03	7.56	7.49	7.87	7.63
E. N. Central	6.61	7.87	8.93	6.19	6.19	6.95	8.95	6.97	6.75	7.72	9.10	7.15	6.81	6.75	7.19
W. N. Central	6.92	7.69	9.06	7.00	6.96	7.13	9.00	7.47	7.71	8.05	9.07	7.49	7.23	7.29	7.81
S. Atlantic	8.79	9.85	9.63	8.74	8.29	9.14	9.76	8.80	8.65	9.45	9.77	8.74	9.05	8.75	8.95
E. S. Central	8.92	10.12	10.61	9.16	8.62	9.32	10.53	9.30	8.82	9.78	10.27	9.20	9.38	9.13	9.24
W. S. Central	7.55	8.13	8.79	8.11	7.21	7.90	8.64	7.87	7.42	7.84	8.42	7.86	8.02	7.69	7.77
Mountain	6.90	7.40	8.30	7.22	7.00	7.52	8.65	7.55	7.72	7.95	8.64	7.58	7.24	7.43	7.82
Pacific	9.08	9.05	9.10	8.53	8.90	8.58	9.09	8.57	8.79	8.86	9.15	8.88	8.91	8.77	8.89
U.S. Average	7.70	8.30	8.69	7.55	7.64	8.08	8.85	7.99	7.90	8.33	8.72	8.01	7.86	7.94	8.10
Industrial Retail															
New England	7.81	7.03	6.37	6.97	9.07	8.74	6.52	7.82	8.42	7.62	6.94	7.84	7.17	8.22	7.83
Middle Atlantic	7.71	7.65	7.59	7.69	8.33	8.07	7.55	7.69	8.09	7.44	7.44	7.67	7.68	8.04	7.79
E. N. Central	5.92	5.97	5.58	5.32	5.69	5.02	5.47	5.94	6.62	6.29	6.19	6.16	5.69	5.61	6.37
W. N. Central	4.98	4.26	4.19	4.66	5.05	4.23	4.36	5.28	5.84	4.94	4.70	5.29	4.56	4.77	5.24
S. Atlantic	5.32	4.95	4.87	4.92	5.34	4.67	4.76	5.21	5.54	4.92	4.88	5.24	5.02	5.02	5.17
E. S. Central	4.99	4.50	4.30	4.48	4.93	4.21	4.26	4.78	4.99	4.50	4.46	4.88	4.58	4.57	4.73
W. S. Central	3.42	3.41	3.29	3.13	3.32	3.09	3.29	3.55	3.63	3.34	3.45	3.57	3.31	3.32	3.50
Mountain	5.33	5.40	5.69	5.55	5.44	5.38	5.70	5.98	6.19	5.90	6.11	6.14	5.48	5.64	6.10
Pacific	7.24	6.61	6.21	6.27	6.97	6.03	6.43	6.59	7.07	6.52	6.67	6.79	6.62	6.53	6.78
U.S. Average	4.46	4.07	3.85	3.97	4.45	3.84	3.84	4.35	4.69	4.06	4.03	4.41	4.10	4.14	4.31

- = 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 - October 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Supply (million short tons)															
Production	197.0	187.1	196.2	193.8	187.6	180.8	196.3	190.9	192.3	159.7	200.5	190.5	774.1	755.6	742.9
Appalachia	50.7	51.2	46.3	50.2	50.0	51.6	50.7	44.7	50.9	44.9	49.5	45.2	198.5	196.9	190.5
Interior	38.5	36.4	34.9	35.6	34.0	34.6	35.2	38.9	38.8	29.1	37.4	38.0	145.4	142.7	143.2
Western	107.8	99.4	115.0	108.0	103.7	94.6	110.4	107.3	102.6	85.7	113.6	107.3	430.2	415.9	409.2
Primary Inventory Withdrawals	0.1	1.8	1.4	0.9	-2.8	2.3	0.9	-0.4	-1.0	1.5	1.0	-3.2	4.2	-0.1	-1.7
Imports	1.9	2.2	2.3	1.4	1.4	1.5	2.2	2.2	0.9	1.8	2.5	2.2	7.8	7.3	7.5
Exports	22.3	21.8	24.6	28.2	27.2	30.9	26.7	23.5	25.0	24.5	25.4	25.6	97.0	108.3	100.4
Metallurgical Coal	12.2	13.5	14.8	14.8	14.9	16.9	13.1	12.9	13.3	13.1	13.8	13.9	55.3	57.8	54.1
Steam Coal	10.1	8.3	9.8	13.4	12.3	13.9	13.6	10.6	11.7	11.4	11.6	11.7	41.7	50.4	46.3
Total Primary Supply	176.8	169.2	175.3	167.9	159.0	153.7	172.7	169.2	167.3	138.5	178.6	163.9	689.1	654.6	648.3
Secondary Inventory Withdrawals	1.0	3.7	18.2	2.4	11.4	4.8	19.6	-8.1	1.0	1.6	3.7	-8.4	25.2	27.7	-2.1
Waste Coal (a)	2.5	1.8	2.3	2.1	2.8	2.2	2.4	2.4	2.3	2.3	2.3	2.3	8.7	9.7	9.2
Total Supply	180.3	174.8	195.8	172.3	173.1	160.8	194.7	163.5	170.7	142.3	184.6	157.8	723.1	692.0	655.4
Consumption (million short tons)															
Coke Plants	4.2	4.3	4.5	4.5	4.2	4.6	4.8	5.5	4.7	4.3	5.1	6.1	17.5	19.1	20.1
Electric Power Sector (b)	160.3	154.2	190.6	159.6	155.0	144.4	190.7	150.0	157.9	130.3	171.9	143.9	664.7	640.1	603.9
Retail and Other Industry	8.9	8.3	8.8	8.7	8.5	7.9	7.7	8.0	8.1	7.8	7.7	7.8	34.7	32.0	31.4
Residential and Commercial	0.4	0.2	0.2	0.3	0.4	0.2	0.2	0.2	0.2	0.1	0.1	0.2	1.1	0.9	0.7
Other Industrial	8.5	8.1	8.6	8.4	8.1	7.7	7.5	7.8	7.9	7.6	7.5	7.6	33.6	31.0	30.7
Total Consumption	173.5	166.8	203.9	172.7	167.7	156.9	203.2	163.5	170.7	142.3	184.6	157.8	717.0	691.2	655.4
Discrepancy (c)	6.8	7.9	-8.1	-0.4	5.5	3.9	-8.5	0.0	0.0	0.0	0.0	0.0	6.2	0.8	0.0
End-of-period Inventories (million short tons)															
Primary Inventories (d)	25.2	23.4	22.0	21.1	23.9	21.6	20.7	21.2	22.1	20.6	19.7	22.9	21.1	21.2	22.9
Secondary Inventories	166.6	163.0	144.8	142.4	131.1	126.2	106.7	114.7	113.7	112.1	108.4	116.9	142.4	114.7	116.9
Electric Power Sector	161.7	157.7	139.3	137.2	126.4	121.5	101.7	109.8	109.0	107.1	103.1	111.5	137.2	109.8	111.5
Retail and General Industry	3.2	3.3	3.5	3.2	2.9	2.9	3.0	2.9	3.1	3.1	3.2	3.2	3.2	2.9	3.2
Coke Plants	1.4	1.6	1.7	1.7	1.5	1.6	1.7	1.8	1.3	1.7	1.8	1.9	1.7	1.8	1.9
Coal Market Indicators															
Coal Miner Productivity															
(Tons per hour)	6.19	6.19	6.19	6.19	6.10	6.10	6.10	6.10	6.02	6.02	6.02	6.02	6.19	6.10	6.02
Total Raw Steel Production															
(Million short tons per day)	0.248	0.247	0.250	0.245	0.251	0.253	0.264	0.236	0.291	0.292	0.274	0.240	0.248	0.251	0.274
Cost of Coal to Electric Utilities															
(Dollars per million Btu)	2.08	2.12	2.07	2.04	2.06	2.05	2.10	2.12	2.11	2.09	2.10	2.09	2.08	2.09	2.10

- = 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 - October 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Electricity Supply (billion kilowatthours per day)															
Electricity Generation	10.58	10.69	12.15	10.57	11.11	11.13	12.78	<i>10.57</i>	<i>11.05</i>	<i>10.79</i>	<i>12.33</i>	<i>10.63</i>	11.00	<i>11.40</i>	<i>11.20</i>
Electric Power Sector (a)	10.15	10.27	11.71	10.14	10.67	10.70	12.34	<i>10.15</i>	<i>10.62</i>	<i>10.37</i>	<i>11.88</i>	<i>10.19</i>	10.57	<i>10.97</i>	<i>10.77</i>
Comm. and Indus. Sectors (b)	0.43	0.42	0.44	0.42	0.43	0.42	0.44	<i>0.41</i>	<i>0.43</i>	<i>0.43</i>	<i>0.45</i>	<i>0.44</i>	0.43	<i>0.43</i>	<i>0.43</i>
Net Imports	0.18	0.15	0.17	0.11	0.14	0.15	0.17	<i>0.13</i>	<i>0.15</i>	<i>0.15</i>	<i>0.17</i>	<i>0.13</i>	0.15	<i>0.15</i>	<i>0.15</i>
Total Supply	10.76	10.84	12.32	10.68	11.25	11.27	12.95	<i>10.70</i>	<i>11.20</i>	<i>10.94</i>	<i>12.50</i>	<i>10.76</i>	11.15	<i>11.54</i>	<i>11.35</i>
Losses and Unaccounted for (c)	0.63	0.77	0.65	0.70	0.66	0.96	0.90	<i>0.62</i>	<i>0.58</i>	<i>0.82</i>	<i>0.72</i>	<i>0.68</i>	0.69	<i>0.79</i>	<i>0.70</i>
Electricity Consumption (billion kilowatthours per day unless noted)															
Retail Sales	9.75	9.70	11.28	9.60	10.20	9.94	11.66	<i>9.71</i>	<i>10.24</i>	<i>9.74</i>	<i>11.38</i>	<i>9.70</i>	10.09	<i>10.38</i>	<i>10.27</i>
Residential Sector	3.71	3.43	4.46	3.51	4.09	3.60	4.73	<i>3.59</i>	<i>4.08</i>	<i>3.42</i>	<i>4.50</i>	<i>3.56</i>	3.78	<i>4.01</i>	<i>3.89</i>
Commercial Sector	3.51	3.64	4.08	3.55	3.59	3.70	4.18	<i>3.57</i>	<i>3.60</i>	<i>3.65</i>	<i>4.10</i>	<i>3.57</i>	3.70	<i>3.76</i>	<i>3.73</i>
Industrial Sector	2.50	2.62	2.72	2.53	2.50	2.62	2.73	<i>2.53</i>	<i>2.53</i>	<i>2.66</i>	<i>2.76</i>	<i>2.55</i>	2.59	<i>2.59</i>	<i>2.63</i>
Transportation Sector	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>	<i>0.02</i>	0.02	<i>0.02</i>	<i>0.02</i>
Direct Use (d)	0.38	0.37	0.38	0.37	0.38	0.37	0.39	<i>0.36</i>	<i>0.38</i>	<i>0.38</i>	<i>0.39</i>	<i>0.38</i>	0.38	<i>0.38</i>	<i>0.38</i>
Total Consumption	10.13	10.08	11.66	9.98	10.59	10.31	12.04	<i>10.08</i>	<i>10.61</i>	<i>10.12</i>	<i>11.78</i>	<i>10.08</i>	10.47	<i>10.76</i>	<i>10.65</i>
Average residential electricity usage per customer (kWh)	2,532	2,365	3,109	2,446	2,760	2,457	3,300	<i>2,474</i>	<i>2,724</i>	<i>2,304</i>	<i>3,070</i>	<i>2,426</i>	10,453	<i>10,991</i>	<i>10,524</i>
Prices															
Power Generation Fuel Costs (dollars per million Btu)															
Coal	2.08	2.12	2.07	2.04	2.06	2.05	2.10	<i>2.12</i>	<i>2.11</i>	<i>2.09</i>	<i>2.10</i>	<i>2.09</i>	2.08	<i>2.09</i>	<i>2.10</i>
Natural Gas	3.69	3.38	3.19	3.38	3.98	3.09	3.22	<i>3.54</i>	<i>3.78</i>	<i>3.21</i>	<i>3.23</i>	<i>3.54</i>	3.38	<i>3.42</i>	<i>3.42</i>
Residual Fuel Oil	11.16	10.60	10.03	11.93	11.47	13.02	13.57	<i>14.62</i>	<i>14.71</i>	<i>14.75</i>	<i>13.92</i>	<i>13.71</i>	10.97	<i>12.86</i>	<i>14.31</i>
Distillate Fuel Oil	12.74	12.23	13.13	14.54	15.77	16.66	17.09	<i>18.33</i>	<i>17.61</i>	<i>17.10</i>	<i>17.37</i>	<i>17.85</i>	13.26	<i>16.61</i>	<i>17.50</i>
Retail Prices (cents per kilowatthour)															
Residential Sector	12.59	12.99	13.19	12.75	12.57	13.02	13.20	<i>12.89</i>	<i>12.88</i>	<i>13.55</i>	<i>13.59</i>	<i>13.23</i>	12.90	<i>12.93</i>	<i>13.31</i>
Commercial Sector	10.39	10.68	11.03	10.56	10.51	10.60	11.07	<i>10.72</i>	<i>10.66</i>	<i>10.73</i>	<i>11.14</i>	<i>10.79</i>	10.68	<i>10.74</i>	<i>10.84</i>
Industrial Sector	6.64	6.89	7.27	6.79	6.79	6.87	7.35	<i>6.96</i>	<i>6.85</i>	<i>6.99</i>	<i>7.44</i>	<i>7.03</i>	6.91	<i>7.00</i>	<i>7.09</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 colocated 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 - October 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Residential Sector															
New England	142	119	143	126	141	111	160	127	142	111	141	125	133	135	130
Middle Atlantic	368	307	403	327	394	323	453	329	393	313	408	321	351	375	359
E. N. Central	507	435	545	475	552	480	607	474	543	441	562	469	491	528	504
W. N. Central	298	246	303	261	327	274	320	266	317	245	314	268	277	297	286
S. Atlantic	891	891	1,131	889	1,040	920	1,182	918	1,047	875	1,135	904	951	1,015	990
E. S. Central	305	277	368	288	368	301	390	303	367	276	374	295	310	340	328
W. S. Central	501	536	760	516	608	581	799	534	598	545	783	537	579	631	616
Mountain	245	259	347	232	239	263	357	236	244	258	351	237	271	274	273
Pacific contiguous	439	346	447	381	411	339	451	388	418	339	422	387	404	397	391
AK and HI	14	12	12	13	14	12	12	13	14	12	12	13	13	13	13
Total	3,712	3,428	4,458	3,507	4,093	3,604	4,732	3,589	4,083	3,415	4,500	3,556	3,778	4,005	3,889
Commercial Sector															
New England	155	150	168	149	142	136	167	149	143	136	157	146	156	148	146
Middle Atlantic	423	404	462	412	431	411	477	410	429	406	456	407	425	433	424
E. N. Central	489	486	537	482	499	501	555	482	498	488	539	481	498	509	501
W. N. Central	272	270	302	269	282	282	306	269	282	274	306	271	278	285	283
S. Atlantic	785	853	941	807	811	862	957	809	808	850	938	806	847	860	851
E. S. Central	225	241	275	229	241	253	285	229	242	246	281	229	243	252	249
W. S. Central	471	522	598	501	498	542	622	515	510	542	633	526	523	545	553
Mountain	246	265	301	249	249	270	307	251	251	268	305	252	265	269	269
Pacific contiguous	431	431	480	438	423	426	484	438	422	427	472	438	445	443	440
AK and HI	16	16	16	16	16	15	16	16	16	15	16	16	16	16	16
Total	3,513	3,637	4,079	3,551	3,592	3,698	4,178	3,568	3,601	3,652	4,102	3,572	3,696	3,760	3,733
Industrial Sector															
New England	46	46	49	47	42	43	46	45	41	42	44	44	47	44	43
Middle Atlantic	192	194	204	195	196	194	206	196	199	197	209	198	196	198	201
E. N. Central	495	504	522	489	499	517	521	489	505	525	527	490	502	507	512
W. N. Central	228	240	253	235	232	242	255	239	240	250	264	245	239	242	250
S. Atlantic	362	386	390	372	366	388	391	369	366	387	390	365	377	379	377
E. S. Central	267	275	280	262	260	264	273	255	258	263	271	252	271	263	261
W. S. Central	480	503	511	484	466	497	515	494	480	512	530	505	495	493	507
Mountain	210	228	245	210	209	229	248	213	214	234	253	216	223	225	229
Pacific contiguous	211	230	253	220	213	231	257	221	214	233	259	222	229	230	232
AK and HI	13	14	14	13	13	13	14	13	13	13	14	13	14	13	13
Total	2,504	2,619	2,722	2,526	2,497	2,619	2,727	2,534	2,530	2,658	2,761	2,550	2,593	2,595	2,625
Total All Sectors (a)															
New England	345	317	362	323	327	292	375	323	328	291	344	317	337	329	320
Middle Atlantic	994	915	1,079	943	1,033	939	1,147	946	1,032	926	1,083	936	983	1,016	994
E. N. Central	1,493	1,427	1,605	1,447	1,552	1,500	1,685	1,446	1,548	1,455	1,629	1,442	1,493	1,546	1,519
W. N. Central	798	755	857	765	842	798	882	774	840	770	884	784	794	824	819
S. Atlantic	2,042	2,134	2,465	2,070	2,220	2,174	2,534	2,099	2,224	2,115	2,466	2,078	2,179	2,257	2,221
E. S. Central	797	793	924	779	870	818	948	788	866	785	926	776	823	856	838
W. S. Central	1,452	1,561	1,869	1,501	1,572	1,620	1,937	1,544	1,588	1,600	1,946	1,568	1,597	1,669	1,676
Mountain	701	752	893	691	697	762	912	700	709	761	910	706	760	768	772
Pacific contiguous	1,084	1,010	1,184	1,042	1,049	997	1,194	1,049	1,057	1,001	1,155	1,049	1,080	1,073	1,066
AK and HI	43	41	43	43	42	41	43	42	42	40	42	42	42	42	42
Total	9,750	9,704	11,280	9,605	10,205	9,941	11,656	9,710	10,235	9,745	11,384	9,698	10,088	10,380	10,267

- = 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 - October 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Residential Sector															
New England	18.57	18.92	18.97	19.28	20.42	20.59	19.62	20.11	21.27	21.55	21.07	21.08	18.93	20.14	21.23
Middle Atlantic	15.55	16.27	16.43	15.87	15.61	16.21	16.29	16.03	15.88	16.64	16.83	16.42	16.04	16.04	16.44
E. N. Central	12.90	13.58	13.28	13.19	12.94	13.48	13.34	13.56	13.43	14.15	13.92	14.00	13.23	13.32	13.86
W. N. Central	10.94	12.66	13.16	11.51	10.91	12.48	13.01	11.74	11.30	13.13	13.42	12.01	12.07	12.03	12.45
S. Atlantic	11.69	12.01	12.26	11.81	11.61	11.90	11.99	11.78	11.76	12.26	12.37	12.06	11.96	11.83	12.11
E. S. Central	11.08	11.44	11.32	11.20	10.86	11.40	11.12	11.23	11.25	12.09	11.48	11.45	11.26	11.14	11.54
W. S. Central	10.54	10.93	10.87	10.76	10.54	11.04	10.88	10.78	10.69	11.38	11.16	10.99	10.79	10.81	11.06
Mountain	11.28	12.16	12.31	11.82	11.57	12.25	12.35	12.02	11.83	12.57	12.68	12.31	11.94	12.09	12.38
Pacific	14.51	14.69	16.50	14.37	14.86	15.27	17.04	14.63	15.11	15.71	17.57	15.08	15.07	15.51	15.90
U.S. Average	12.59	12.99	13.19	12.75	12.57	13.02	13.20	12.89	12.88	13.55	13.59	13.23	12.90	12.93	13.31
Commercial Sector															
New England	14.64	14.65	15.30	15.20	16.56	15.92	15.67	15.58	16.32	15.29	15.35	15.27	14.95	15.91	15.55
Middle Atlantic	12.07	12.75	13.34	12.08	12.07	12.21	13.30	12.11	12.02	12.16	13.27	12.27	12.58	12.46	12.45
E. N. Central	10.02	10.24	10.05	9.99	10.10	10.15	10.22	10.17	10.32	10.43	10.41	10.30	10.08	10.16	10.37
W. N. Central	9.12	10.11	10.57	9.26	9.17	10.03	10.60	9.46	9.35	10.33	10.88	9.74	9.79	9.84	10.10
S. Atlantic	9.44	9.38	9.55	9.53	9.56	9.30	9.43	9.60	9.86	9.53	9.56	9.69	9.48	9.47	9.65
E. S. Central	10.58	10.56	10.62	10.57	10.51	10.48	10.43	10.70	10.56	10.80	10.54	10.75	10.58	10.53	10.66
W. S. Central	8.37	8.40	8.38	8.28	8.38	8.19	8.12	8.14	7.99	7.82	7.82	8.09	8.36	8.20	7.92
Mountain	9.14	9.92	10.04	9.49	9.25	9.87	9.98	9.64	9.25	9.90	10.03	9.72	9.67	9.71	9.74
Pacific	12.53	13.56	15.36	13.61	12.86	13.99	16.27	14.31	13.68	14.56	16.89	14.46	13.82	14.43	14.96
U.S. Average	10.39	10.68	11.03	10.56	10.51	10.60	11.07	10.72	10.66	10.73	11.14	10.79	10.68	10.74	10.84
Industrial Sector															
New England	12.38	12.19	12.55	12.37	13.49	12.60	12.75	12.61	13.95	12.90	12.94	12.72	12.37	12.85	13.11
Middle Atlantic	6.94	6.94	6.88	6.81	7.20	6.80	6.93	6.88	7.02	6.74	6.88	6.84	6.89	6.95	6.87
E. N. Central	7.03	7.05	7.04	6.96	7.08	6.96	7.09	7.11	7.13	7.06	7.15	7.16	7.02	7.06	7.12
W. N. Central	6.89	7.35	8.07	6.87	7.05	7.39	8.10	7.01	7.16	7.52	8.21	7.10	7.31	7.40	7.51
S. Atlantic	6.31	6.39	6.79	6.34	6.45	6.40	6.82	6.54	6.47	6.51	6.87	6.56	6.46	6.56	6.61
E. S. Central	5.90	5.96	6.18	5.89	5.74	5.91	6.06	6.01	5.86	6.10	6.17	6.09	5.98	5.93	6.06
W. S. Central	5.28	5.55	5.72	5.41	5.43	5.42	5.90	5.63	5.47	5.59	6.02	5.74	5.50	5.60	5.71
Mountain	6.08	6.54	7.12	6.13	6.10	6.48	7.00	6.14	6.22	6.64	7.18	6.30	6.50	6.46	6.61
Pacific	8.23	9.35	10.73	9.73	8.63	9.51	10.98	9.88	8.74	9.55	11.03	9.93	9.57	9.82	9.88
U.S. Average	6.64	6.89	7.27	6.79	6.79	6.87	7.35	6.96	6.85	6.99	7.44	7.03	6.91	7.00	7.09
All Sectors (a)															
New England	15.93	15.87	16.35	16.35	17.79	17.17	17.00	16.92	18.13	17.29	17.36	17.19	16.13	17.21	17.50
Middle Atlantic	12.35	12.68	13.26	12.29	12.48	12.46	13.33	12.38	12.51	12.50	13.36	12.53	12.67	12.69	12.75
E. N. Central	10.00	10.13	10.16	10.01	10.13	10.12	10.37	10.24	10.37	10.34	10.56	10.43	10.08	10.22	10.43
W. N. Central	9.15	10.06	10.75	9.29	9.26	10.07	10.75	9.49	9.46	10.31	10.99	9.69	9.84	9.91	10.13
S. Atlantic	9.86	9.93	10.35	9.93	10.00	9.88	10.22	10.01	10.19	10.10	10.43	10.17	10.04	10.04	10.23
E. S. Central	9.20	9.27	9.55	9.23	9.23	9.35	9.48	9.38	9.45	9.68	9.64	9.50	9.32	9.36	9.57
W. S. Central	8.10	8.35	8.67	8.21	8.34	8.36	8.67	8.25	8.25	8.32	8.67	8.32	8.35	8.42	8.41
Mountain	8.97	9.67	10.12	9.25	9.10	9.67	10.10	9.38	9.22	9.80	10.26	9.54	9.55	9.61	9.75
Pacific	12.48	12.98	14.79	13.06	12.78	13.38	15.40	13.48	13.24	13.77	15.81	13.72	13.38	13.83	14.18
U.S. Average	10.26	10.47	10.98	10.37	10.42	10.50	11.07	10.54	10.60	10.70	11.21	10.69	10.54	10.65	10.82

- = 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 - October 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
United States															
Coal	3,242	3,100	3,762	3,128	3,127	2,862	3,757	2,932	3,201	2,603	3,385	2,814	3,309	3,171	3,001
Natural Gas	2,969	3,286	4,359	3,322	3,442	3,798	4,987	3,616	3,514	3,787	4,734	3,652	3,487	3,964	3,925
Petroleum (a)	59	54	56	62	101	52	63	56	75	58	64	56	58	68	63
Other Gases	40	39	40	36	37	34	41	37	38	34	40	36	39	37	37
Nuclear	2,242	2,034	2,302	2,243	2,294	2,155	2,281	2,138	2,240	2,097	2,272	2,135	2,205	2,217	2,186
Renewable Energy Sources:	2,008	2,157	1,615	1,757	2,084	2,202	1,631	1,766	1,964	2,191	1,817	1,909	1,883	1,919	1,970
Conventional Hydropower	918	1,010	717	647	854	938	659	611	743	870	739	644	822	765	749
Wind	768	748	501	771	867	819	533	784	840	855	608	873	697	750	793
Wood Biomass	118	115	122	119	122	115	121	115	119	116	124	118	119	118	120
Waste Biomass	59	56	56	57	58	56	56	58	57	58	59	59	57	57	58
Geothermal	45	43	44	43	45	43	45	46	46	45	45	46	44	45	45
Solar	101	185	175	120	138	231	217	152	160	246	242	170	145	185	205
Pumped Storage Hydropower	-16	-16	-22	-17	-15	-13	-20	-15	-13	-12	-18	-14	-18	-16	-14
Other Nonrenewable Fuels (b)	35	35	38	35	36	35	38	37	35	36	37	37	36	37	36
Total Generation	10,579	10,690	12,151	10,566	11,107	11,126	12,778	10,568	11,053	10,794	12,331	10,625	10,999	11,397	11,203
Northeast Census Region															
Coal	154	134	136	139	149	119	234	171	166	84	145	153	141	169	137
Natural Gas	486	482	637	492	500	534	764	551	547	580	716	576	525	588	605
Petroleum (a)	4	2	3	11	32	3	4	3	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	528	490	512	476	507	463	523	519	489
Hydropower (c)	102	107	99	99	103	108	90	94	100	100	94	94	102	99	97
Other Renewables (d)	72	76	68	74	80	76	69	80	82	75	69	82	73	76	77
Other Nonrenewable Fuels (b)	11	11	12	12	11	10	12	12	11	11	12	12	11	12	12
Total Generation	1,370	1,290	1,506	1,359	1,430	1,359	1,702	1,405	1,433	1,330	1,549	1,385	1,381	1,475	1,425
South Census Region															
Coal	1,330	1,416	1,681	1,293	1,261	1,261	1,581	1,157	1,273	1,134	1,458	1,124	1,431	1,315	1,247
Natural Gas	1,763	2,087	2,565	1,922	2,052	2,349	2,883	2,082	2,043	2,301	2,775	2,093	2,086	2,343	2,304
Petroleum (a)	25	22	23	21	38	21	26	22	30	25	27	22	23	27	26
Other Gases	15	15	15	13	13	13	15	13	13	12	14	12	14	13	13
Nuclear	973	888	1,003	1,012	1,008	951	1,011	963	1,009	948	1,032	978	969	983	992
Hydropower (c)	128	138	99	103	126	135	91	99	122	124	97	99	117	113	110
Other Renewables (d)	401	403	323	391	453	495	353	421	459	502	409	467	379	430	459
Other Nonrenewable Fuels (b)	15	15	16	15	16	16	16	16	15	15	15	15	15	16	15
Total Generation	4,650	4,984	5,726	4,769	4,968	5,240	5,977	4,772	4,962	5,060	5,827	4,811	5,034	5,241	5,167
Midwest Census Region															
Coal	1,288	1,177	1,394	1,216	1,302	1,142	1,414	1,141	1,253	1,061	1,322	1,091	1,269	1,250	1,182
Natural Gas	289	272	407	349	400	434	517	400	433	408	506	424	330	438	443
Petroleum (a)	7	7	7	8	9	6	10	9	11	10	10	9	7	8	10
Other Gases	17	16	17	15	15	14	17	15	16	14	18	16	16	15	16
Nuclear	555	543	580	535	571	539	568	526	553	519	564	534	553	551	542
Hydropower (c)	52	58	37	36	54	56	33	35	53	53	35	35	46	45	44
Other Renewables (d)	315	304	198	340	360	299	211	344	355	331	230	388	289	303	326
Other Nonrenewable Fuels (b)	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Total Generation	2,528	2,381	2,643	2,503	2,714	2,494	2,774	2,475	2,678	2,400	2,689	2,500	2,514	2,614	2,566
West Census Region															
Coal	470	373	551	480	415	340	529	462	508	324	460	447	469	437	435
Natural Gas	430	446	751	558	490	481	823	583	492	497	737	560	547	595	572
Petroleum (a)	23	22	23	22	21	21	24	22	22	21	22	22	23	22	22
Other Gases	6	6	6	6	7	7	6	7	7	7	6	6	6	7	7
Nuclear	175	127	171	167	164	158	174	158	165	155	169	160	160	163	162
Hydropower (c)	619	692	460	392	557	626	424	368	455	581	495	402	540	493	483
Other Renewables (d)	302	364	308	305	337	394	339	311	325	413	370	327	320	345	359
Other Nonrenewable Fuels (b)	5	5	6	5	5	6	6	5	5	6	6	5	5	5	6
Total Generation	2,031	2,035	2,277	1,934	1,995	2,033	2,325	1,916	1,980	2,004	2,266	1,928	2,069	2,068	2,045

(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 - October 2018

	2017				2018				2019				Year		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2017	2018	2019
Fuel Consumption for Electricity Generation, All Sectors															
United States															
Coal (thousand st/d)	1,777	1,692	2,068	1,731	1,719	1,585	2,071	1,626	1,748	1,426	1,862	1,558	1,818	1,751	1,649
Natural Gas (million cf/d)	21,452	24,555	32,799	24,545	25,006	28,172	37,284	26,267	25,363	27,993	35,382	26,536	25,865	29,208	28,840
Petroleum (thousand b/d)	107	100	105	111	178	95	114	101	135	105	115	102	106	122	114
Residual Fuel Oil	26	27	28	33	51	27	28	25	39	26	29	26	29	33	30
Distillate Fuel Oil	28	24	23	32	71	26	25	27	34	25	24	27	27	37	28
Petroleum Coke (a)	49	45	48	42	47	39	57	45	56	51	58	45	46	47	53
Other Petroleum Liquids (b)	4	4	7	5	9	4	4	4	5	3	4	4	5	5	4
Northeast Census Region															
Coal (thousand st/d)	75	63	66	65	76	63	116	85	83	42	73	77	67	85	69
Natural Gas (million cf/d)	3,603	3,640	4,893	3,706	3,635	3,923	5,698	3,999	3,959	4,257	5,357	4,172	3,963	4,319	4,440
Petroleum (thousand b/d)	7	4	7	18	53	6	7	6	22	4	6	6	9	18	10
South Census Region															
Coal (thousand st/d)	715	761	902	705	659	671	848	625	666	599	773	602	771	701	660
Natural Gas (million cf/d)	12,471	15,401	19,033	14,045	14,832	17,387	21,443	15,019	14,593	16,927	20,599	15,089	15,252	17,183	16,814
Petroleum (thousand b/d)	47	42	43	40	70	39	49	42	56	46	51	42	43	50	49
Midwest Census Region															
Coal (thousand st/d)	717	655	787	688	745	656	807	649	706	601	752	621	712	714	670
Natural Gas (million cf/d)	2,186	2,134	3,249	2,676	2,915	3,251	3,928	2,924	3,161	3,048	3,889	3,122	2,564	3,256	3,306
Petroleum (thousand b/d)	15	16	16	16	19	15	19	17	20	19	21	17	16	17	19
West Census Region															
Coal (thousand st/d)	269	213	313	273	240	196	300	267	292	184	263	258	267	251	249
Natural Gas (million cf/d)	3,192	3,378	5,624	4,117	3,625	3,611	6,214	4,325	3,650	3,762	5,538	4,152	4,085	4,450	4,280
Petroleum (thousand b/d)	39	37	39	37	36	36	39	37	37	36	37	36	38	37	37
End-of-period U.S. Fuel Inventories Held by Electric Power Sector															
Coal (million short tons)	161.7	157.7	139.3	137.2	126.4	121.5	101.7	109.8	109.0	107.1	103.1	111.5	137.2	109.8	111.5
Residual Fuel Oil (mmb)	12.5	11.9	11.4	11.0	10.3	10.0	10.2	10.9	10.9	10.9	10.9	11.5	11.0	10.9	11.5
Distillate Fuel Oil (mmb)	17.0	16.6	16.4	15.8	15.0	14.8	15.0	15.5	15.7	15.6	15.6	16.0	15.8	15.5	16.0
Petroleum Coke (mmb)	4.3	4.3	4.9	5.6	5.3	5.1	5.6	5.5	5.4	5.3	5.2	5.1	5.6	5.5	5.1

(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 - October 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	0.036	0.037	0.037	0.038	0.037	0.038	0.039	0.038	0.038	0.038	0.039	0.147	0.151	0.153
Hydroelectric Power (a)	0.759	0.844	0.605	0.546	0.706	0.784	0.556	0.516	0.613	0.727	0.624	0.543	2.755	2.561	2.508
Solar (b)	0.083	0.153	0.147	0.100	0.113	0.192	0.182	0.127	0.131	0.205	0.203	0.142	0.483	0.615	0.680
Waste Biomass (c)	0.070	0.066	0.068	0.068	0.070	0.067	0.067	0.069	0.067	0.069	0.072	0.071	0.272	0.274	0.279
Wood Biomass	0.061	0.059	0.064	0.063	0.061	0.056	0.063	0.057	0.059	0.057	0.068	0.062	0.247	0.237	0.246
Wind	0.637	0.628	0.425	0.654	0.720	0.688	0.452	0.665	0.697	0.718	0.516	0.740	2.345	2.525	2.671
Subtotal	1.648	1.787	1.347	1.468	1.708	1.823	1.358	1.474	1.605	1.814	1.521	1.597	6.249	6.363	6.537
Industrial Sector															
Biofuel Losses and Co-products (d)	0.204	0.200	0.205	0.212	0.202	0.204	0.211	0.207	0.200	0.204	0.205	0.206	0.821	0.824	0.814
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	0.013	0.013
Solar (b)	0.005	0.007	0.007	0.005	0.005	0.008	0.008	0.006	0.006	0.009	0.009	0.007	0.024	0.027	0.031
Waste Biomass (c)	0.044	0.040	0.038	0.044	0.044	0.040	0.041	0.043	0.042	0.040	0.041	0.043	0.165	0.168	0.166
Wood Biomass	0.370	0.361	0.375	0.374	0.368	0.369	0.369	0.362	0.349	0.346	0.358	0.359	1.480	1.468	1.412
Subtotal	0.627	0.610	0.626	0.639	0.624	0.622	0.629	0.621	0.600	0.599	0.612	0.616	2.503	2.495	2.427
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	0.028	0.029	0.021	0.024	0.035	0.035	0.025	0.076	0.097	0.119
Waste Biomass (c)	0.012	0.011	0.011	0.011	0.011	0.011	0.012	0.012	0.011	0.011	0.011	0.012	0.045	0.045	0.045
Wood Biomass	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.084	0.084	0.084
Subtotal	0.059	0.066	0.067	0.060	0.062	0.072	0.074	0.066	0.067	0.079	0.080	0.070	0.253	0.274	0.296
Residential Sector															
Geothermal	0.010	0.010	0.010	0.010	0.010	0.010	0.013	0.013	0.013	0.013	0.013	0.013	0.040	0.046	0.053
Solar (e)	0.036	0.057	0.058	0.040	0.043	0.066	0.068	0.048	0.050	0.078	0.080	0.056	0.191	0.225	0.263
Wood Biomass	0.082	0.083	0.084	0.084	0.095	0.096	0.104	0.104	0.105	0.105	0.105	0.105	0.334	0.399	0.420
Subtotal	0.128	0.150	0.152	0.134	0.148	0.172	0.185	0.164	0.168	0.196	0.198	0.174	0.565	0.669	0.736
Transportation Sector															
Biomass-based Diesel (f)	0.054	0.079	0.078	0.069	0.054	0.068	0.080	0.093	0.066	0.085	0.098	0.101	0.280	0.295	0.350
Ethanol (f)	0.269	0.292	0.295	0.292	0.273	0.286	0.300	0.291	0.272	0.294	0.296	0.290	1.148	1.149	1.153
Subtotal	0.322	0.372	0.374	0.361	0.327	0.354	0.383	0.383	0.339	0.380	0.394	0.391	1.429	1.447	1.503
All Sectors Total															
Biomass-based Diesel (f)	0.054	0.079	0.078	0.069	0.054	0.068	0.080	0.093	0.066	0.085	0.098	0.101	0.280	0.295	0.350
Biofuel Losses and Co-products (d)	0.204	0.200	0.205	0.212	0.202	0.204	0.211	0.207	0.200	0.204	0.205	0.206	0.821	0.824	0.814
Ethanol (f)	0.279	0.304	0.307	0.303	0.283	0.297	0.308	0.302	0.283	0.306	0.308	0.301	1.192	1.190	1.197
Geothermal	0.053	0.052	0.053	0.053	0.053	0.052	0.057	0.058	0.057	0.057	0.057	0.058	0.211	0.220	0.229
Hydroelectric Power (a)	0.763	0.849	0.609	0.550	0.710	0.788	0.559	0.519	0.617	0.731	0.628	0.547	2.770	2.576	2.523
Solar (b)(e)	0.138	0.240	0.235	0.161	0.180	0.294	0.288	0.202	0.211	0.326	0.327	0.230	0.774	0.964	1.094
Waste Biomass (c)	0.126	0.117	0.117	0.122	0.125	0.119	0.121	0.124	0.120	0.121	0.124	0.125	0.482	0.489	0.490
Wood Biomass	0.534	0.524	0.543	0.543	0.545	0.542	0.558	0.545	0.534	0.529	0.552	0.547	2.145	2.189	2.162
Wind	0.637	0.628	0.425	0.654	0.720	0.688	0.452	0.665	0.697	0.718	0.516	0.740	2.345	2.525	2.671
Total Consumption	2.784	2.985	2.566	2.663	2.868	3.043	2.650	2.708	2.780	3.067	2.804	2.848	10.998	11.270	11.499

- = 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 - October 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	7,257	7,420	7,413	7,413	7,407	7,313	7,257	7,407
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	3,042	3,201	3,201	3,201	3,201	3,079	3,042	3,201
Conventional Hydroelectric	79,336	79,343	79,437	79,432	79,447	79,415	79,415	79,559	79,593	79,624	79,584	79,628	79,432	79,559	79,628
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	27,940	28,770	29,360	32,252	32,770	33,181	33,474	35,782	26,432	32,252	35,782
Wind	82,919	83,378	84,109	87,488	88,537	88,661	89,633	95,661	96,418	97,590	98,834	106,641	87,488	95,661	106,641
Other Sectors (c)															
Biomass	6,686	6,690	6,688	6,657	6,655	6,620	6,620	6,629	6,629	6,604	6,606	6,620	6,657	6,629	6,620
Waste	881	885	883	872	872	872	872	872	872	872	874	888	872	872	888
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	364	363	365	364	364	364	349	363	364
Small-Scale Solar (d)	13,639	14,481	15,299	16,224	16,972	17,960	18,935	19,893	20,901	21,941	23,022	24,146	16,224	19,893	24,146
Residential Sector	8,167	8,667	9,159	9,670	10,170	10,720	11,277	11,865	12,485	13,118	13,773	14,449	9,670	11,865	14,449
Commercial Sector	4,174	4,453	4,710	5,130	5,290	5,791	6,080	6,382	6,700	7,034	7,386	7,756	5,130	6,382	7,756
Industrial Sector	1,298	1,361	1,430	1,425	1,512	1,448	1,578	1,646	1,716	1,788	1,863	1,940	1,425	1,646	1,940
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	86	90	90	92	84	89	87	88	87	96	90	89	88	90
Waste	49	47	47	47	49	47	47	48	48	49	50	49	48	48	49
Wood	41	39	43	43	43	37	42	39	40	39	46	41	41	40	41
Conventional Hydroelectric	913	1,005	713	643	850	933	655	607	738	866	735	640	818	760	744
Geothermal	45	43	44	43	45	43	45	46	46	45	45	46	44	45	45
Large-Scale Solar (b)	100	182	173	118	136	228	215	150	157	244	239	167	143	182	202
Wind	767	748	501	770	866	819	533	783	839	854	607	872	696	749	793
Other Sectors (c)															
Biomass	87	84	88	86	88	87	88	86	88	87	88	86	86	87	87
Waste	78	75	79	77	79	78	79	77	79	78	79	77	77	78	78
Wood	10	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Conventional Hydroelectric	5	5	4	4	5	5	4	4	5	5	4	4	5	4	4
Large-Scale Solar (b)	1	2	2	1	1	3	3	2	3	3	3	3	2	2	3
Small-Scale Solar (d)	51	78	79	55	65	97	98	69	80	119	120	85	66	82	101
Residential Sector	29	46	46	32	37	57	57	40	46	70	71	50	38	48	59
Commercial Sector	17	24	25	17	21	31	32	22	26	38	39	27	21	27	33
Industrial Sector	5	8	8	6	6	9	9	7	7	11	11	8	7	8	9
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 - October 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	18,515	18,649	18,792	18,922	19,040	19,144	19,244	18,051	18,570	19,087
Real Personal Consumption Expend. (billion chained 2012 dollars - SAAR)	12,428	12,516	12,585	12,706	12,723	12,841	12,933	13,013	13,104	13,195	13,276	13,351	12,559	12,878	13,231
Real Private Fixed Investment (billion chained 2012 dollars - SAAR)	3,109	3,141	3,161	3,209	3,271	3,321	3,340	3,393	3,425	3,457	3,497	3,538	3,155	3,331	3,479
Business Inventory Change (billion chained 2012 dollars - SAAR)	8	17	55	21	36	-1	47	56	77	88	86	84	25	35	84
Real Government Expenditures (billion chained 2012 dollars - SAAR)	3,130	3,130	3,122	3,140	3,152	3,171	3,196	3,225	3,240	3,251	3,260	3,266	3,130	3,186	3,254
Real Exports of Goods & Services (billion chained 2012 dollars - SAAR)	2,413	2,435	2,456	2,496	2,518	2,573	2,562	2,587	2,617	2,649	2,684	2,726	2,450	2,560	2,669
Real Imports of Goods & Services (billion chained 2012 dollars - SAAR)	3,259	3,279	3,302	3,395	3,420	3,417	3,484	3,544	3,606	3,670	3,735	3,802	3,309	3,466	3,703
Real Disposable Personal Income (billion chained 2012 dollars - SAAR)	13,835	13,910	13,986	14,066	14,220	14,307	14,391	14,460	14,594	14,688	14,777	14,874	13,949	14,345	14,733
Non-Farm Employment (millions)	145.9	146.3	146.9	147.4	148.1	148.7	149.3	150.0	150.6	151.1	151.5	151.9	146.6	149.0	151.3
Civilian Unemployment Rate (percent)	4.7	4.3	4.3	4.1	4.1	3.9	3.8	3.6	3.5	3.4	3.4	3.4	4.4	3.9	3.4
Housing Starts (millions - SAAR)	1.23	1.17	1.17	1.26	1.32	1.25	1.22	1.29	1.33	1.37	1.40	1.42	1.21	1.27	1.38
Industrial Production Indices (Index, 2012=100)															
Total Industrial Production	102.5	103.7	103.3	105.3	105.9	107.3	108.2	108.7	109.5	110.2	110.9	111.5	103.7	107.5	110.5
Manufacturing	102.0	102.7	102.2	103.6	104.1	104.8	105.7	106.2	107.1	108.0	108.7	109.1	102.6	105.2	108.2
Food	109.2	110.1	112.1	112.5	114.1	114.7	115.7	115.3	115.9	116.6	117.1	117.6	111.0	114.9	116.8
Paper	97.8	96.9	96.4	96.1	96.0	96.1	95.9	95.0	95.1	95.2	95.1	94.9	96.8	95.7	95.1
Petroleum and Coal Products	105.5	108.9	104.7	107.4	106.6	107.6	108.2	108.5	108.9	109.3	109.4	109.6	106.6	107.7	109.3
Chemicals	94.2	95.9	94.7	97.7	96.7	98.9	99.6	100.9	101.8	102.8	103.7	104.5	95.6	99.0	103.2
Nonmetallic Mineral Products	114.0	113.2	113.6	117.1	119.2	120.8	120.3	121.8	123.0	124.1	125.0	125.8	114.5	120.5	124.5
Primary Metals	94.0	92.9	93.6	95.2	96.1	96.3	97.3	101.9	105.1	106.3	106.0	105.2	93.9	97.9	105.7
Coal-weighted Manufacturing (a)	101.7	102.1	101.1	103.3	103.5	104.8	105.3	106.9	108.3	109.2	109.5	109.7	102.0	105.1	109.2
Distillate-weighted Manufacturing (a)	107.8	108.2	108.2	110.1	111.1	111.7	112.1	113.1	114.1	114.9	115.3	115.6	108.6	112.0	115.0
Electricity-weighted Manufacturing (a)	102.1	102.8	101.9	103.9	104.1	105.2	106.0	107.4	108.8	109.8	110.3	110.5	102.7	105.7	109.8
Natural Gas-weighted Manufacturing (a) ...	101.7	103.5	101.6	104.5	103.8	105.6	106.4	107.7	108.9	109.9	110.5	110.9	102.9	105.9	110.1
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	2.55	2.56	2.58	2.59	2.45	2.51	2.57
Producer Price Index: All Commodities (index, 1982=1.00)	1.93	1.92	1.92	1.97	2.01	2.01	2.03	2.04	2.04	2.05	2.06	2.08	1.94	2.02	2.06
Producer Price Index: Petroleum (index, 1982=1.00)	1.66	1.67	1.75	1.90	1.98	2.22	2.25	2.27	2.20	2.21	2.22	2.16	1.74	2.18	2.20
GDP Implicit Price Deflator (index, 2012=100)	107.2	107.6	108.1	108.8	109.3	110.2	110.7	111.3	111.9	112.5	113.2	113.9	107.9	110.4	112.9
Miscellaneous															
Vehicle Miles Traveled (b) (million miles/day)	8,210	9,202	9,057	8,730	8,234	9,225	9,134	8,831	8,383	9,348	9,226	8,925	8,802	8,858	8,973
Air Travel Capacity (Available ton-miles/day, thousands)	567	619	661	631	603	663	672	641	619	653	663	640	620	645	644
Aircraft Utilization (Revenue ton-miles/day, thousands)	344	390	398	382	368	414	426	402	381	416	422	401	378	403	405
Airline Ticket Price Index (index, 1982-1984=100)	277.8	297.0	264.9	263.4	262.8	277.9	261.7	288.8	315.3	353.6	326.2	323.5	275.8	272.8	329.7
Raw Steel Production (million short tons per day)	0.248	0.247	0.250	0.245	0.251	0.253	0.264	0.236	0.291	0.292	0.274	0.240	0.248	0.251	0.274
Carbon Dioxide (CO2) Emissions (million metric tons)															
Petroleum	565	588	594	596	581	595	602	599	581	593	608	604	2,343	2,376	2,385
Natural Gas	422	311	335	405	477	350	361	411	475	347	357	418	1,474	1,599	1,597
Coal	319	307	375	317	308	288	374	303	315	261	340	293	1,318	1,273	1,209
Total Energy (c)	1,310	1,209	1,306	1,322	1,369	1,236	1,340	1,316	1,374	1,203	1,308	1,317	5,147	5,261	5,203

- = 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 - October 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	916	924	931	937	942	947	951	956	902	927	949
Middle Atlantic	2,505	2,512	2,530	2,534	2,545	2,568	2,583	2,599	2,614	2,626	2,637	2,648	2,520	2,574	2,631
E. N. Central	2,328	2,336	2,356	2,368	2,379	2,399	2,414	2,431	2,445	2,457	2,467	2,476	2,347	2,406	2,461
W. N. Central	1,084	1,094	1,088	1,091	1,097	1,107	1,113	1,121	1,127	1,133	1,138	1,143	1,089	1,109	1,135
S. Atlantic	3,023	3,035	3,060	3,077	3,095	3,127	3,150	3,175	3,199	3,218	3,237	3,253	3,049	3,137	3,227
E. S. Central	763	766	770	775	779	786	791	796	801	805	809	813	768	788	807
W. S. Central	2,029	2,050	2,061	2,082	2,097	2,128	2,149	2,168	2,188	2,205	2,220	2,235	2,055	2,135	2,212
Mountain	1,088	1,097	1,115	1,121	1,129	1,142	1,152	1,163	1,172	1,181	1,190	1,197	1,105	1,147	1,185
Pacific	3,173	3,225	3,243	3,267	3,284	3,320	3,345	3,374	3,399	3,425	3,448	3,470	3,227	3,331	3,435
Industrial Output, Manufacturing (Index, Year 2012=100)															
New England	96.8	97.2	96.8	98.5	98.7	98.7	99.4	99.6	100.1	100.8	101.2	101.4	97.3	99.1	100.9
Middle Atlantic	97.0	97.5	96.9	97.6	97.9	98.0	98.7	98.9	99.5	100.2	100.7	101.0	97.2	98.4	100.4
E. N. Central	104.3	105.2	104.4	106.0	106.3	106.6	107.9	108.7	109.7	110.8	111.4	111.9	105.0	107.4	111.0
W. N. Central	101.1	101.8	101.5	103.0	103.8	104.4	105.3	105.8	106.6	107.6	108.3	108.8	101.8	104.8	107.8
S. Atlantic	105.6	106.4	105.8	107.1	107.6	108.7	109.5	109.9	110.7	111.6	112.3	112.7	106.2	108.9	111.8
E. S. Central	107.8	108.3	107.4	108.5	108.7	108.8	109.9	110.4	111.4	112.5	113.3	113.8	108.0	109.4	112.7
W. S. Central	95.1	96.0	95.9	96.8	97.3	99.0	100.1	100.7	101.8	102.9	103.7	104.2	95.9	99.3	103.1
Mountain	106.5	107.8	108.1	110.0	111.4	112.8	113.7	114.1	115.1	116.2	117.0	117.5	108.1	113.0	116.5
Pacific	102.2	102.7	101.7	103.0	103.4	104.2	105.0	105.4	106.2	107.1	107.7	108.1	102.4	104.5	107.3
Real Personal Income (Billion \$2009)															
New England	789	791	798	797	803	807	811	815	821	826	830	835	794	809	828
Middle Atlantic	2,010	2,022	2,037	2,058	2,064	2,068	2,076	2,083	2,100	2,110	2,120	2,131	2,032	2,073	2,115
E. N. Central	2,169	2,172	2,189	2,191	2,208	2,220	2,232	2,242	2,261	2,273	2,284	2,296	2,180	2,225	2,278
W. N. Central	1,016	1,020	1,017	1,022	1,029	1,038	1,044	1,049	1,059	1,067	1,074	1,081	1,019	1,040	1,070
S. Atlantic	2,849	2,860	2,879	2,896	2,918	2,934	2,950	2,967	2,995	3,017	3,038	3,060	2,871	2,942	3,028
E. S. Central	800	802	806	810	816	820	824	827	835	839	844	848	804	822	841
W. S. Central	1,749	1,758	1,766	1,769	1,782	1,798	1,810	1,821	1,840	1,855	1,868	1,882	1,760	1,803	1,861
Mountain	1,004	1,009	1,022	1,025	1,034	1,040	1,047	1,054	1,065	1,073	1,082	1,090	1,015	1,044	1,078
Pacific	2,433	2,461	2,475	2,504	2,516	2,530	2,545	2,559	2,582	2,601	2,619	2,638	2,468	2,537	2,610
Households (Thousands)															
New England	5,859	5,868	5,888	5,896	5,906	5,915	5,920	5,929	5,937	5,946	5,955	5,965	5,896	5,929	5,965
Middle Atlantic	15,899	15,915	15,967	15,982	16,003	16,024	16,036	16,055	16,073	16,093	16,114	16,138	15,982	16,055	16,138
E. N. Central	18,823	18,840	18,900	18,917	18,944	18,977	18,995	19,019	19,038	19,063	19,092	19,124	18,917	19,019	19,124
W. N. Central	8,518	8,536	8,574	8,594	8,620	8,648	8,666	8,686	8,705	8,726	8,747	8,770	8,594	8,686	8,770
S. Atlantic	25,184	25,275	25,434	25,530	25,633	25,739	25,822	25,915	26,004	26,094	26,183	26,278	25,530	25,915	26,278
E. S. Central	7,602	7,617	7,649	7,665	7,685	7,706	7,721	7,738	7,755	7,773	7,792	7,813	7,665	7,738	7,813
W. S. Central	14,579	14,625	14,704	14,749	14,800	14,855	14,903	14,959	15,017	15,078	15,138	15,201	14,749	14,959	15,201
Mountain	9,036	9,074	9,132	9,172	9,216	9,263	9,301	9,343	9,382	9,423	9,464	9,507	9,172	9,343	9,507
Pacific	18,697	18,753	18,846	18,896	18,954	19,012	19,060	19,117	19,172	19,228	19,285	19,343	18,896	19,117	19,343
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	20.0	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	22.3	22.4	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	10.8	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	29.1	29.2	29.3	28.2	28.6	29.1
E. S. Central	8.1	8.1	8.1	8.1	8.1	8.2	8.2	8.2	8.3	8.3	8.3	8.3	8.1	8.2	8.3
W. S. Central	17.0	17.0	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	10.9	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	23.8	23.9	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 - October 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	2,983	802	93	2,171	3,053	909	99	2,176	3,203	879	132	2,115	6,050	6,237	6,328
Middle Atlantic	2,660	599	73	2,001	2,938	756	49	1,995	2,961	705	86	1,955	5,333	5,738	5,707
E. N. Central	2,691	627	105	2,264	3,211	826	91	2,223	3,123	722	131	2,221	5,687	6,351	6,197
W. N. Central	2,812	662	138	2,387	3,421	828	144	2,401	3,151	681	164	2,397	5,999	6,794	6,394
South Atlantic	1,147	125	15	947	1,445	219	2	1,000	1,461	199	15	999	2,233	2,666	2,673
E. S. Central	1,374	154	24	1,281	1,816	326	5	1,335	1,840	241	22	1,336	2,834	3,482	3,440
W. S. Central	773	65	4	741	1,193	143	4	822	1,177	83	4	771	1,583	2,162	2,036
Mountain	2,059	698	153	1,667	2,126	600	96	1,828	2,168	665	143	1,780	4,578	4,649	4,756
Pacific	1,561	531	69	1,031	1,442	541	72	1,201	1,453	557	87	1,161	3,191	3,256	3,258
U.S. Average	1,858	427	65	1,481	2,131	523	53	1,538	2,115	481	76	1,511	3,832	4,245	4,184
Heating Degree Days, Prior 10-year Average															
New England	3,201	831	122	2,125	3,172	818	119	2,121	3,166	821	114	2,110	6,279	6,230	6,210
Middle Atlantic	2,983	661	81	1,941	2,947	646	81	1,949	2,956	650	77	1,935	5,666	5,623	5,619
E. N. Central	3,255	701	114	2,198	3,209	692	116	2,211	3,196	697	115	2,187	6,267	6,228	6,195
W. N. Central	3,302	707	142	2,380	3,264	705	144	2,380	3,255	702	142	2,360	6,531	6,492	6,460
South Atlantic	1,502	188	12	966	1,476	177	12	974	1,480	177	11	967	2,667	2,639	2,635
E. S. Central	1,906	231	16	1,287	1,868	217	18	1,301	1,862	222	17	1,292	3,440	3,404	3,392
W. S. Central	1,228	88	4	799	1,181	80	4	801	1,183	85	4	798	2,119	2,066	2,070
Mountain	2,216	734	142	1,862	2,195	737	144	1,842	2,165	715	136	1,843	4,954	4,918	4,859
Pacific	1,462	598	89	1,205	1,465	592	84	1,181	1,445	582	81	1,183	3,354	3,322	3,291
U.S. Average	2,193	487	71	1,527	2,160	478	71	1,525	2,151	476	68	1,514	4,277	4,233	4,209
Cooling Degree Days															
New England	0	75	362	11	0	78	629	1	0	83	405	2	448	708	490
Middle Atlantic	0	139	501	22	0	175	740	4	0	150	525	4	661	919	679
E. N. Central	1	211	480	15	0	332	676	6	0	218	519	6	708	1,014	743
W. N. Central	9	265	623	14	2	439	716	9	3	269	655	10	910	1,166	938
South Atlantic	160	672	1,155	261	135	722	1,276	221	112	639	1,143	219	2,248	2,353	2,114
E. S. Central	65	482	965	73	36	648	1,179	59	26	517	1,030	60	1,584	1,922	1,633
W. S. Central	213	828	1,459	217	127	1,003	1,563	189	84	862	1,519	208	2,717	2,882	2,672
Mountain	36	465	919	118	21	504	991	75	18	432	932	79	1,538	1,591	1,462
Pacific	30	218	700	99	31	183	734	58	28	169	578	58	1,047	1,007	832
U.S. Average	70	402	838	114	51	475	976	88	40	396	843	91	1,424	1,590	1,370
Cooling Degree Days, Prior 10-year Average															
New England	0	81	433	1	0	81	433	1	0	79	460	1	515	515	540
Middle Atlantic	0	169	566	6	0	166	567	5	0	165	592	6	741	738	763
E. N. Central	3	234	542	8	3	228	533	7	3	242	552	7	788	770	804
W. N. Central	7	281	672	12	7	277	659	11	7	298	671	12	973	953	988
South Atlantic	117	666	1,167	230	119	675	1,160	227	120	684	1,181	233	2,179	2,182	2,217
E. S. Central	33	544	1,056	65	34	539	1,031	63	36	554	1,051	65	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	931	83	1,458	1,456	1,476
Pacific	30	180	608	74	30	185	621	78	31	185	632	75	892	914	923
U.S. Average	43	405	857	94	45	408	855	94	46	417	875	96	1,399	1,402	1,433

- = 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 October 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

	August 2018	September 2018	August-September 2018 Average	August-September 2017 Average	2015 – 2017 Average
Global Petroleum and Other Liquids (million barrels per day)					
Global Petroleum and Other Liquids Production (a)	100.2	101.3	100.8	97.9	97.1
Global Petroleum and Other Liquids Consumption (b)	100.5	100.7	100.6	99.3	97.0
Biofuels Production (c)	3.0	3.0	3.0	2.9	2.3
Biofuels Consumption (c)	2.4	2.4	2.4	2.4	2.3
Iran Liquid Fuels Production	4.4	4.4	4.4	4.7	4.2
Iran Liquid Fuels Consumption	1.7	1.7	1.7	1.7	1.8
Petroleum and Petroleum Products Produced and Consumed in Countries Other Than Iran (million barrels per day)					
Production (d)	92.8	94.0	93.4	90.4	90.6
Consumption (d)	96.4	96.6	96.5	95.2	92.9
Production minus Consumption	-3.6	-2.6	-3.1	-4.8	-2.3
World Inventory Net Withdrawals Including Iran	0.3	-0.7	-0.2	1.4	-0.1
Estimated OECD Inventory Level (e) (million barrels)	2,812	2,831	2,822	2,980	2,968
OPEC Surplus Crude Oil Production Capacity (f)	1.4	1.3	1.4	1.9	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	August 2018	September 2018	August-September 2018 Average	August-September 2017 Average	2015 – 2017 Average
Brent Front Month Futures Price (\$ per barrel)	73.84	79.11	76.22	53.56	51.16
WTI Front Month Futures Price (\$ per barrel)	67.85	70.08	68.86	48.91	47.69
Dubai Front Month Futures Price (\$ per barrel)	72.67	78.75	75.42	52.15	48.82
Brent 1st - 13th Month Futures Spread (\$ per barrel)	1.61	3.76	2.58	0.04	-3.90
WTI 1st - 13th Month Futures Spread (\$ per barrel)	3.98	2.95	3.51	-1.18	-4.26
RBOB Front Month Futures Price (\$ per gallon)	2.05	2.01	2.04	1.66	1.55
Heating Oil Front Month Futures Price (\$ per gallon)	2.15	2.25	2.20	1.71	1.56
RBOB - Brent Futures Crack Spread (\$ per gallon)	0.30	0.13	0.22	0.39	0.34
Heating Oil - Brent Futures Crack Spread (\$ per gallon)	0.40	0.37	0.38	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).