



Short-Term Energy Outlook (STEO)

Highlights

- EIA estimates that the amount of electricity generated using natural gas reached a record high during July, surpassing the previous record set in July 2015. The record natural gas-fired generation was driven by competitive economics compared with coal (despite recent natural gas price increases) and by warmer-than-normal temperatures that boosted overall electricity generation. For 2016, EIA expects natural gas to fuel 34% of electricity generation compared with 30% for coal. In 2015, natural gas was used to generate slightly less than 33% of electricity, and coal was used to generate slightly more than 33% of electricity.
- Benchmark North Sea Brent crude oil spot prices averaged \$45/barrel (b) in July, a \$3/b decrease from June. This was the first monthly decrease since the Brent price fell to a 12-year low of \$31/b in January 2016.
- Brent crude oil prices are forecast to average \$42/b in 2016 and \$52/b in 2017. West Texas Intermediate (WTI) crude oil prices are forecast to be slightly less than Brent in 2016 and the same as Brent in 2017. The current values of futures and options contracts suggest high uncertainty in the price outlook. For example, EIA's forecast for the average WTI price in November 2016 of \$44/b should be considered in the context of Nymex contract values for November 2016 delivery. Contracts traded during the five-day period ending August 4 ([Market Prices and Uncertainty Report](#)) suggest the market expects WTI prices could range from \$29/b to \$61/b (at the 95% confidence interval) in November 2016.
- U.S. regular gasoline retail prices this summer (April through September) are forecast to average \$2.19/gallon (gal), 6 cents/gal lower than forecast in last month's STEO and 44 cents/gal lower than last summer. U.S. regular gasoline retail prices are forecast to average \$2.06/gal in 2016 and \$2.26/gal in 2017.
- U.S. crude oil production averaged 9.4 million barrels per day (b/d) in 2015. Production is forecast to average 8.7 million b/d in 2016 and 8.3 million b/d in 2017. EIA estimates that crude oil production for July 2016 averaged 8.6 million b/d, almost 0.2 million b/d below the June 2016 level, and 1.1 million b/d below the 9.7 million b/d reached in April 2015.
- Natural gas working inventories were 3,288 billion cubic feet (Bcf) on July 29. This level is 13% higher than last year during the same week, and 16% higher than the previous five-year (2011–15) average for that week. EIA projects that natural gas inventories will be 4,042 Bcf at the end of October 2016, which would be the highest end-of-October level on record.

Global Petroleum and Other Liquid Fuels

EIA estimates that global petroleum and other liquid fuels inventory builds averaged 1.9 million b/d in 2015. The pace of inventory builds is expected to slow to an average of 0.8 million b/d in 2016. The market is expected to be relatively balanced in 2017, with inventory draws averaging almost 0.2 million b/d.

Global Petroleum and Other Liquid Fuels Consumption. Global consumption of petroleum and other liquid fuels is estimated to have grown by 1.4 million b/d in 2015. EIA expects global consumption of petroleum and other liquid fuels to again increase by 1.4 million b/d in both 2016 and 2017, mostly driven by growth in countries outside of the Organization for Economic Cooperation and Development (OECD). Non-OECD consumption growth was 1.0 million b/d in 2015, and it is expected to be 1.3 million b/d in 2016 and 1.5 million b/d in 2017.

India and China are expected to be the largest contributors to non-OECD petroleum consumption growth, with each country's consumption forecast to grow by 0.4 million b/d annually in both 2016 and 2017. In India, consumption growth is mainly a result of increased use of transportation fuels and of naphtha for new petrochemical projects. China's growth in consumption of petroleum and other liquid fuels is driven by increased use of gasoline, jet fuel, and hydrocarbon gas liquids (HGL), which more than offset decreases in diesel consumption. Last year's significant rise in the use of HGL in China will continue through the forecast period, as new propane dehydrogenation (PDH) plants increase the use of propane.

OECD petroleum and other liquid fuels consumption rose by 0.5 million b/d in 2015. OECD consumption is expected to increase by 0.1 million b/d in 2016 and be relatively flat in 2017.

Non-OPEC Petroleum and Other Liquid Fuels Supply. EIA estimates that petroleum and other liquid fuels production in countries outside the Organization of the Petroleum Exporting Countries (OPEC) grew by 1.6 million b/d in 2015, with more than half of the growth occurring in North America. EIA expects non-OPEC production to decline by 0.6 million b/d in 2016 and by 0.4 million b/d in 2017.

Changes in non-OPEC production are largely driven by changes in U.S. tight oil production, which has high decline rates for production and relatively short investment horizons, making it among the most price-sensitive oil producing regions. Forecast total U.S. production of liquid fuels declines by 0.4 million b/d in 2016 and by 0.2 million b/d in 2017, as declining onshore crude oil production is partially offset by expected growth in HGL production, Gulf of Mexico crude oil production, and liquid biofuels production. Outside the United States, non-OPEC production declines by 0.2 million b/d in both 2016 and 2017.

Among non-OPEC producers outside the United States, the largest declines in 2016 are forecast to be in China. EIA expects China's output to fall by 180,000 b/d in 2016 and by an additional 80,000 b/d in 2017 because of continued investment cuts and because of fewer new offshore developments. In 2017, the largest declines are in the North Sea and in Russia, which are

forecast to decline by 200,000 b/d and 150,000 b/d, respectively, following forecast production growth in both areas this year.

Canadian production is expected to grow in both 2016 and 2017, although annual growth in 2016 will be less than 0.1 million b/d because of production lost to wildfires in Alberta that resulted in oil sands outages in May and June, and to a lesser extent in July. However, Canadian production is expected to increase by 0.2 million b/d in 2017.

Non-OPEC unplanned supply outages in July were about 0.5 million b/d, a decrease of 0.3 million b/d from the June level. The decrease in unplanned outages was the result of Canadian oil sands production gradually returning from wildfire-related outages that began in May. Overall, Canada's outages averaged 0.4 million b/d in June and less than 0.1 million b/d in July.

OPEC Petroleum and Other Liquid Fuels Supply. OPEC crude oil production averaged 31.8 million b/d in 2015, an increase of 0.8 million b/d from 2014, led by rising production in Iraq and Saudi Arabia. Forecast OPEC crude oil production rises by 0.7 million b/d in 2016, with Iran accounting for most of the increase and by an additional 0.6 million b/d in 2017. The forecast does not assume a collaborative production cut among OPEC members and other producers, as major OPEC producers are expected to continue their strategy of maintaining market share.

OPEC noncrude liquids production averaged 6.6 million b/d in 2015 and is forecast to increase by about 0.3 million b/d in both 2016 and 2017, led by increases in Iran and Qatar.

OPEC unplanned crude oil supply disruptions averaged 2.3 million b/d in July, a small increase compared with June because of higher outages in Nigeria and Libya. In Nigeria, disruptions averaged 0.7 million b/d during July, 0.1 million b/d more than in June. The increase in outages comes as militants targeted pipelines that transport Bonny Light crude oil. Meanwhile, Forcados volumes also remain offline, and likely will not return to service until September when the pipeline that transports the crude oil to market is back online. In Libya, nearly 1 million b/d of crude oil remains shut in, with production at 0.3 million b/d in July. Although the Hariga export terminal reopened in late July, the Sarir field remained offline, with 0.1 million b/d shut in.

OPEC surplus crude oil production capacity, which averaged 1.6 million b/d in 2015, is expected to be 1.5 million b/d in 2016 and 1.3 million b/d in 2017. Surplus capacity is typically an indicator of market conditions, and surplus capacity below 2.5 million b/d indicates a relatively tight oil market. However, high current and forecast levels of global oil inventories make the forecast low surplus capacity less significant.

OECD Petroleum Inventories. EIA estimates that OECD commercial crude oil and other liquid fuels inventories were 3.00 billion barrels at the end of 2015, equivalent to roughly 66 days of consumption. Forecast OECD inventories rise to 3.08 billion barrels at the end of 2016 and then fall to 3.03 billion barrels at the end of 2017.

Crude Oil Prices. The monthly average spot price of Brent crude oil decreased by \$3/b in July to \$45/b, which was the first monthly decrease since January 2016. Significant outages of global oil

supply contributed to rising oil prices during the second quarter of 2016. However, concerns about future economic growth related to the United Kingdom's June 23 vote to exit the European Union and the easing of supply disruptions in Canada contributed to falling oil prices in late June. Prices continued to fall in July because of concerns about high levels of U.S. and global petroleum product inventories, despite relatively strong demand, and because of growing U.S. oil rig counts. The Baker Hughes U.S. active oil rig count increased for six consecutive weeks in July and early August, the longest stretch of weekly increases in almost a year.

EIA expects global oil inventory builds to average 0.5 million b/d in the second half of 2016, limiting upward price pressures in the coming months. Brent prices are forecast to average \$43/b during the second half of 2016. However, daily and even monthly price variations could be significant as economic and geopolitical events affect market participants' expectations of oil market balances.

EIA expects consistent global oil inventory draws to begin in mid-2017. The expectation of inventory draws contributes to accelerating price increases in the second quarter of 2017, with price increases continuing later in 2017. Brent prices are forecast to average \$52/b in 2017, unchanged from last month's STEO. Forecast Brent prices average \$58/b in the fourth quarter of 2017, reflecting the potential for more significant inventory draws beyond the forecast period.

Average West Texas Intermediate (WTI) crude oil prices are forecast to be slightly less than Brent prices in 2016 and the same as Brent prices in 2017. The relative price parity of WTI with Brent in the forecast period is based on the assumption of competition between the two crudes in the U.S. Gulf Coast refinery market, because transportation price differentials to move the crudes from their respective pricing points to that market are similar.

The current values of futures and options contracts highlight the heightened volatility and high uncertainty in the oil price outlook ([Market Prices and Uncertainty Report](#)). WTI futures contracts for November 2016 delivery that were traded during the five-day period ending August 4 averaged \$42/b, and implied volatility averaged 42%. These levels established the lower and upper limits of the 95% confidence interval for the market's expectations of monthly average WTI prices in November 2016 at \$29/b and \$61/b, respectively. The 95% confidence interval for market expectations widens over time, with lower and upper limits of \$22/b and \$104/b for prices in December 2017. At this time in 2015, WTI for November 2015 delivery averaged \$47/b, and implied volatility averaged 37%, with the corresponding lower and upper limits of the 95% confidence interval at \$34/b and \$64/b.

U.S. Petroleum and Other Liquid Fuels

Refinery wholesale gasoline margins (the difference between the wholesale price of gasoline and the price of Brent crude oil) averaged 42 cents/gal in July. This level was similar to the previous five-year average for July of 41 cents/gal but lower than the 73 cents/gal average in July 2015, partly because of [higher U.S. gasoline production and inventory levels](#). Higher gasoline inventories have contributed to falling gasoline margins despite gasoline consumption

having been 2.3% higher through the first seven months of 2016 compared with the same period last year according to EIA estimates.

The U.S. average regular gasoline retail price decreased to \$2.24/gal in July, 13 cents/gal lower than in June, reflecting lower crude oil prices and elevated seasonal gasoline inventories. Monthly average retail gasoline prices for July 2016 ranged from a low of \$2.03/gal in the Gulf Coast—[Petroleum Administration for Defense District \(PADD\) 3](#)—to a high of \$2.72/gal in the West Coast (PADD 5). EIA expects that the monthly average price of U.S. regular gasoline reached an annual peak in June of \$2.37/gal, with lower prices expected in the second half of 2016.

Consumption. Total U.S. liquid fuels consumption increased by an estimated 290,000 b/d (1.5%) in 2015. Liquid fuels consumption is forecast to increase by 170,000 b/d (0.9%) in 2016 and by an additional 90,000 b/d (0.5%) in 2017.

Motor gasoline consumption is forecast to increase by 150,000 b/d (1.7%) to 9.31 million b/d in 2016, which would make it the highest annual average gasoline consumption on record, surpassing the previous record set in 2007. The increase in gasoline consumption reflects a forecast 2.3% increase in highway travel (because of employment growth and lower retail gasoline prices) that is partially offset by increases in vehicle fleet fuel economy. EIA forecasts that gasoline consumption in 2017 will be close to the 2016 average.

In 2015, jet fuel consumption increased by an estimated 70,000 b/d (4.7%). Jet fuel consumption is forecast to increase by 30,000 b/d (2.0%) in 2016 and remain unchanged in 2017, with improvements in average airline fleet fuel economy offset by growth in freight and passenger travel.

Consumption of distillate fuel, which includes diesel fuel and heating oil, is expected to fall by 100,000 b/d (2.4%) in 2016, after falling by 60,000 b/d (1.5%) in 2015. Falling distillate consumption in 2016 is the result of relatively warm winter temperatures, reduced oil and natural gas drilling (which uses diesel fuel in its operations), and declining coal production, which has reduced diesel use in rail shipments of coal. Stronger expected economic growth in 2017 contributes to forecast distillate fuel consumption growth of 60,000 b/d (1.6%).

Hydrocarbon gas liquids (HGL) consumption is forecast to remain flat in 2016, and then rise by 50,000 b/d (2.2%) in 2017, as increased ethane consumption more than offsets reduced consumption of other HGL. U.S. ethane consumption is forecast to increase by 60,000 b/d (5.6%) in 2016, as expansion projects at ethylene-producing petrochemical plants increase feedstock demand for ethane. In 2017, forecast ethane consumption increases by an additional 80,000 b/d (7.5%), as five new petrochemical plants and a previously deactivated plant begin operations.

Supply. U.S. crude oil production is projected to decrease from an average of 9.4 million b/d in 2015 to 8.7 million b/d in 2016 and to 8.3 million b/d in 2017. The forecast reflects declining Lower 48 onshore production that is partly offset by growing production in the federal Gulf of Mexico. EIA estimates that total U.S. crude oil production has fallen by 1.1 million b/d since April

2015 to an average of 8.6 million b/d in July 2016. Almost all of the production decline was in the Lower 48 onshore.

Based on the current oil price forecast, EIA expects oil production to continue declining in most Lower 48 onshore oil production regions through mid-2017. The expectation of reduced cash flows in 2016 and 2017 has prompted many companies to scale back investment programs, deferring major new undertakings until a sustained price recovery occurs. The prospect of tighter lending conditions will likely limit the availability of capital for many smaller producers, giving rise to distressed asset sales and consolidation of acreage holdings by firms that are more financially sound. Lower onshore investment is expected to reduce the count of oil-directed rigs and well completions for the remainder of 2016 and 2017.

The current price outlook is expected to limit onshore drilling and well completions, despite continued increases in rig and well productivity and falling drilling and completion costs. The increase in oil prices between February 2016 and June 2016 contributed to active rig counts rising from 404 in late May to 464 for the week ending August 5. However, this total is still down from more than 600 rigs in January 2016. In EIA's forecast, low rig counts continue to limit production through 2017.

EIA expects U.S. crude oil production to decline from 9.2 million b/d in the first quarter of 2016 to an average of 8.2 million b/d in the third quarter of 2017. Production of 8.2 million b/d would be 1.5 million b/d below the April 2015 level, which was the highest monthly production since April 1971. Production is expected to fall most rapidly from April 2016 through September 2016, declining by an average of 150,000 b/d each month. Production is then expected to be relatively flat from October 2016 through July 2017, averaging 8.4 million b/d. EIA's assumption of hurricane-related outages lowers the forecast third-quarter 2017 average to 8.2 million b/d, after which production is expected to begin to rise. Increases in production in late 2017 reflect productivity improvements, lower breakeven costs, and forecast oil price increases. The forecast remains sensitive to actual wellhead prices and rapidly changing drilling economics that vary across regions and operators.

Projected crude oil production during the forecast period [rises in the Gulf of Mexico](#) and falls in Alaska. Production in these areas is less sensitive to short-term price movements than onshore production in the Lower 48 states. These changes reflect anticipated growth from new projects in the Gulf of Mexico and declines from legacy fields in Alaska. Although production in Alaska is expected to decrease in response to BP's recent reduction in drilling rigs in the Alaska North Slope, ConocoPhillips brought two projects online, and ExxonMobil brought another project online in the region that could moderate Alaska's production declines. In the Gulf of Mexico, the April 2016 start of the Julia field and the July 2016 start of the Gunflint field, along with other projects that will begin operations later in 2016 and 2017, are expected to help increase the region's production from an average of 1.5 million b/d in 2015 to 1.9 million b/d in the fourth quarter of 2017. Some projects may start production later than expected, potentially shifting some of the anticipated production gains from late 2017 into early 2018.

EIA projects that [HGL production at natural gas processing plants](#) will increase by almost 0.3 million b/d in both 2016 and 2017. EIA expects higher ethane recovery rates in 2016 and 2017, following [planned increases in demand for petrochemical plant feedstock](#) in the United States and abroad. Planned terminal builds and expansions and a growing ship fleet allow more U.S. ethane, propane, and butanes to reach international markets, with forecast net HGL exports averaging 1.1 million b/d in 2016 and 1.4 million b/d in 2017.

Product Prices. EIA expects the retail price of regular gasoline to average \$2.19/gal during the 2016 summer driving season (April through September), 6 cents/gal lower than projected in last month's STEO and 44 cents/gal lower than the price in summer 2015. EIA expects that the U.S. average retail price of regular gasoline reached a peak of \$2.37/gal in June and will fall to an average of \$2.05/gal in September and to an average of \$1.92/gal in December. The U.S. regular gasoline retail price, which averaged \$2.43/gal in 2015, is forecast to average \$2.06/gal in 2016 and \$2.26/gal in 2017, 6 cents/gal and 2 cents/gal lower, respectively, from the July STEO.

The diesel fuel retail price averaged \$2.71/gal in 2015. Diesel prices are forecast to average \$2.30/gal in 2016 and \$2.70/gal in 2017.

Natural Gas

Working natural gas inventories were 3,288 billion cubic feet (Bcf) as of Friday, July 29, 6 Bcf lower than the previous week, marking the first [draw during the June-August period since 2006](#). Injections during the refill season have fallen short of five-year average levels in most weeks because of the high use of natural gas for electricity generation and because of slight declines in production. However, warm weather last winter left inventories at record high levels going into the injection season, and even low injections this summer could lead to a record-high level of natural gas in storage as the winter season begins.

Natural Gas Consumption. EIA's forecast of U.S. total natural gas consumption averages 76.3 Bcf/d in 2016 and 77.2 Bcf/d in 2017, compared with 75.3 Bcf/d in 2015. In 2016, increases in total natural gas consumption are mainly attributed to increases in electric power sector use. Forecast electric power sector use of natural gas increases by 4.8% in 2016, then declines by 1.7% in 2017, as rising natural gas prices contribute to increasing coal use for electricity generation. Forecast industrial sector consumption of natural gas increases by 2.5% in 2016 and by 1.1% in 2017, as new fertilizer and chemical projects come online.

Natural Gas Production and Trade. EIA's natural gas marketed production in May, the month of the most recent survey data, averaged 78.1 Bcf/d, which is down 2.0 Bcf/d from the record-high daily average production in February 2016. However, EIA expects production to increase in late 2016 and through 2017 in response to forecast price increases and increases in liquefied natural gas (LNG) exports. Forecast natural gas production rises by 0.6% in 2016 and by 2.9% in 2017.

Natural gas pipeline [exports to Mexico](#) have risen in 2016, and EIA expects growth to continue because of growing demand from Mexico's electric power sector and because of flat natural gas

production in Mexico. Gross pipeline exports are expected to increase by 0.7 Bcf/d in 2016 and by 0.1 Bcf/d in 2017 to an average of 5.7 Bcf/d.

EIA projects that LNG gross exports will rise to an average of 0.5 Bcf/d in 2016, with the startup of Cheniere's Sabine Pass LNG liquefaction plant in Louisiana, which [sent out its first cargo](#) in February 2016. EIA projects that gross LNG exports will average 1.3 Bcf/d in 2017, as Sabine Pass ramps up capacity.

With expected growth in gross exports, net imports of natural gas decline from 2.6 Bcf/d in 2015 to a small amount of net exports in 2017. The United States is expected to become a net exporter of natural gas during the second quarter of 2017.

Natural Gas Inventories. Natural gas inventories in March ended at 2,496 Bcf, the highest end-of-withdrawal-season level on record. As of July 29, natural gas inventories were at 3,288 Bcf. Even with lower-than-average storage injections, EIA forecasts natural gas inventories to be 4,042 Bcf at the end of October 2016, which would be a record high level for that time of year.

Natural Gas Prices. The Henry Hub natural gas spot price averaged \$2.82/MMBtu in July, up 24 cents/MMBtu from the June average. Price increases reflected warmer-than-normal temperatures in July, which led to increased demand from the electric power sector. Despite the increase in spot prices, prices still remain low enough to support significant natural gas-fired generation. EIA expects natural gas prices to gradually rise throughout the forecast period. Forecast Henry Hub prices average \$2.41/MMBtu in 2016 and \$2.95/MMBtu in 2017.

Natural gas futures contracts for November 2016 delivery that were traded during the five-day period ending August 4 averaged \$3.01/MMBtu. Current options and futures prices imply that market participants place the lower and upper bounds for the 95% confidence interval for November 2016 contracts at \$2.12/MMBtu and \$4.28/MMBtu, respectively. In early August 2015, the natural gas futures contracts for November 2015 delivery averaged \$2.91/MMBtu, and the corresponding lower and upper limits of the 95% confidence interval were \$2.08/MMBtu and \$4.06/MMBtu.

Coal

Coal Supply. U.S. coal production in July was 65 million short tons (MMst), an 8 MMst (14%) increase from the previous month but 11 MMst (15%) lower than in July 2015. In 2016, coal production is expected to decrease by 163 MMst (18%), which would be the largest decline in terms of both tons and percentage since at least 1949.

In 2016, forecast coal production in the Appalachian region and in the Western region declines by 20%, while Interior region production declines by 11%. In 2017, total U.S. coal production is expected to increase by 32 MMst (4%), with almost all of the increase coming from the Appalachian region and the Interior region. Coal in these two regions has the advantage of lower transportation costs and a higher heat content compared with Western region coal.

According to the most recent data, [electric power sector coal stockpiles](#) were 196 MMst in May, virtually unchanged from April. The end-of-May coal stocks were 22 MMst (13%) higher than the May 2015 level and 26 MMst (15%) higher than the previous 10-year average for the month. Warmer-than-normal winter temperatures and coal's continuing loss of market share to natural gas for electric power generation contributed to the increase in coal stockpiles. EIA expects that coal stockpiles will decrease over the summer, and inventories will end 2016 at 156 MMst.

Coal Consumption. Coal consumption in the electric power sector, which accounts for more than 90% of total U.S. coal consumption, is forecast to decline by 64 MMst (9%) in 2016. The decline is a result of both competition with low-priced natural gas and relatively mild weather in the first half of 2016 that reduced overall electricity generation. Retirements of [coal-fired power plants](#) reduce coal-fired generation capacity in the forecast period, primarily in 2016. The retirements are the result of increased competition with natural gas generation and the industry response to the implementation of the U.S. Environmental Protection Agency's (EPA) [Mercury and Air Toxics Standards](#) (MATS). Coal consumption in the electric power sector is forecast to increase by 17 MMst (3%) in 2017, mostly because of rising natural gas prices coupled with increasing electricity generation.

Coal Trade. [Coal exports](#) of 4.2 MMst in May 2016 were less than 1 MMst (8%) lower than the previous month, but they were almost 3 MMst (38%) lower than the amount exported in May 2015. EIA forecasts U.S. coal exports to decline by 19 MMst (25%) in 2016 to 55 MMst, the lowest level in 10 years. Exports are expected to decline by 4 MMst (8%) in 2017.

Atlantic and Gulf Coast power generators are forecast to maintain their current levels of coal imports, which are primarily from Latin America. Imports are projected to be roughly 11 MMst in both 2016 and 2017.

Coal Prices. EIA estimates that the delivered coal price to electric utilities averaged \$2.23/MMBtu in 2015. Forecast prices are \$2.19/MMBtu in 2016 and \$2.24/MMBtu in 2017.

Electricity

EIA estimates that the amount of electricity generated by U.S. natural gas-fired power plants reached a record high of 4,950 gigawatthours per day (GWh/d) in July, 9% higher than the previous record set in July 2015. Much of this growth in natural gas generation has occurred in the Midwest and South Census regions, where July generation from natural gas grew by an estimated 209 GWh/d (55%) and 313 GWh/d (12%), respectively, from the same month last year. July 2016 natural gas generation in the West Census region was 161 GWh/d (19%) lower than in July 2015 because of increased output from hydroelectric and other renewable sources.

Electricity Consumption. EIA projects that retail electricity sales to the residential sector during the peak summer months of June–August 2016 will be 3% higher than in the same months in 2015. Growth in residential sales reflects warmer summer weather this year, with cooling degree days during June–August 2016 11% higher than in the same months of 2015. For all of 2016, EIA projects residential sales will be 0.6% lower than in 2015, as higher summer

consumption is offset by lower electricity consumption during the mild winter earlier this year. Forecast residential sales grow by 0.9% in 2017. Sales of electricity to the commercial sector grow by 0.3% in 2016 and by 0.9% in 2017. EIA forecasts that industrial electricity sales will decline by 0.5% in 2016, but then rise by 1.2% in 2017.

Electricity Generation. Sustained low natural gas prices have led the power industry to produce record levels of electricity using natural gas in recent months. In 2016, natural gas is expected to supply 34.3% of electricity generation, and coal is forecast to supply 30.3% of electricity generation. Nuclear and renewables (including hydropower) are forecast to supply 19.4% and 14.8% of electricity generation, respectively. Rising projected costs of natural gas encourage more electricity generation from coal-fired power plants during 2017. The natural gas share of electricity generation in 2017 is forecast to fall to 33.3%, and the coal share of generation is expected to rise to 31.1%. In 2017, nuclear and renewables are forecast to supply 19.1% and 15.3% of electricity generation, respectively. The 2015 shares of electricity generation by fuel were 32.7% for natural gas, 33.2% for coal, 19.5% for nuclear, and 13.4% for renewables.

Electricity Retail Prices. The U.S. residential electricity price averaged an estimated 13.0 cents per kilowatt-hour (kWh) in July 2016. For the month, the highest residential electricity price was 17.9 cents/kWh in New England, and the lowest residential electricity price was 10.7 cents/kWh in the East South Central area. EIA expects the annual average U.S. residential electricity price to fall by 0.3% in 2016 and then rise by 3.0% in 2017.

Renewables and Carbon Dioxide Emissions

Electricity and Heat Generation from Renewables. EIA expects total renewables used in the electric power sector to increase by 10.5% in 2016 and by 4.3% in 2017. Forecast hydropower generation in the electric power sector increases by 7.8% in 2016 and then falls by 2.0% in 2017. Consumption of renewable energy other than hydropower in the electric power sector is forecast to grow by 12.9% in 2016 and by 9.6% in 2017.

EIA expects that utility-scale solar capacity will grow by 8.0 gigawatts (GW) (60%) in 2016 and by 5.3 GW (25%) in 2017. The projected amount of solar capacity at the end of next year, 26.7 GW, would be nearly double the amount of capacity existing at the end of 2015. States leading in utility-scale solar capacity additions are California, Nevada, North Carolina, Texas, and Georgia. Forecast utility-scale solar generation averages 1% of total U.S. electricity generation in 2017.

U.S. wind capacity totaled 72.5 GW at the end of 2015, more than five times the amount of solar capacity. Wind capacity is expected to increase by 7.5 GW (10%) in 2016 and by 8.5 GW (11%) in 2017. Forecast wind generation accounts for almost 6% of total generation next year.

Liquid Biofuels. On November 30, 2015, the U.S. Environmental Protection Agency (EPA) finalized a rule setting Renewable Fuel Standard (RFS) volumes for 2014 through 2016. On May 18, 2016, EPA released the proposed RFS volumes for 2017 along with finalized biomass-based diesel volumes for 2017. EIA used both the final and proposed volumes to develop the current STEO forecast through 2017. Ethanol production averaged almost 970,000 b/d in 2015, and it is

forecast to average about 980,000 b/d in 2016 and 2017. Ethanol consumption averaged about 910,000 b/d in 2015, and it is forecast to average about 930,000 b/d in both 2016 and 2017. This level of consumption results in the [ethanol share of the total gasoline pool averaging 10.0%](#) in both 2016 and 2017.

EIA expects that the largest effect of the RFS targets will be on biomass-based diesel consumption, which includes both biodiesel and renewable diesel and helps to meet the RFS targets for use of biomass-based diesel, advanced biofuel, and total renewable fuel. Biodiesel production averaged 82,000 b/d in 2015, and it is forecast to average 99,000 b/d in 2016 and 106,000 b/d in 2017. Net imports of biomass-based diesel are expected to rise from 29,000 b/d in 2015 to 41,000 b/d in 2016 and to 47,000 b/d in 2017. EIA assumes about 10,000 b/d of domestic renewable diesel consumption will be used to help meet the biomass-based diesel and advanced biofuels RFS targets in both 2016 and 2017.

Energy-Related Carbon Dioxide Emissions. EIA estimates that energy-related emissions of [carbon dioxide decreased by 2.7% in 2015](#). Emissions are forecast to decrease by 1.5% in 2016 and then increase by 0.8% in 2017. These forecasts are sensitive to assumptions about weather and economic growth.

U.S. Economic Assumptions

Recent Economic Indicators. The Bureau of Economic Analysis reported that [real gross domestic product \(GDP\)](#) increased at an annual rate of 1.2% in the second quarter of 2016. Real GDP grew by 0.8% in the first quarter of 2016. The increase in real GDP in the second quarter reflected positive contributions from personal consumption expenditures and exports.

Production, Income, and Employment. EIA used the July 2016 version of the IHS macroeconomic model with EIA's energy price forecasts as model inputs to develop the economic projections in the STEO.

Forecast real GDP growth is 1.9% in 2016, the same as forecast in last month's STEO, and it increases to 2.5% in 2017. Real disposable income grows by 3.1% in 2016 and by 2.6% in 2017. Total industrial production falls by 1.5% in 2016, but rises by 1.9% in 2017. Projected growth in nonfarm employment averages 1.7% in 2016 and 1.3% in 2017.

Expenditures. Forecast private real fixed investment growth averages 1.9% and 5.2% in 2016 and 2017, respectively. Real consumption expenditures grow faster than real GDP at 2.8% in 2016 and 2.6% in 2017. Export growth is 0.9% and 3.1% over the same two years, while import growth is 1.3% in 2016 and 4.6% in 2017. Total government expenditures rise by 1.2% in 2016 and by 1.1% in 2017.

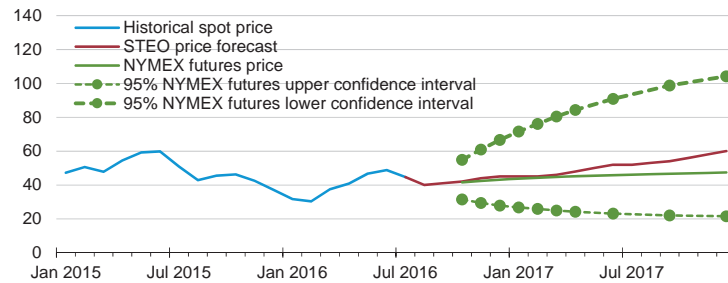
This report was prepared by the U.S. Energy Information Administration (EIA), the statistical and analytical agency within the U.S. Department of Energy. By law, EIA's data, analyses, and forecasts are independent of approval by any other officer or employee of the United States Government. The views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

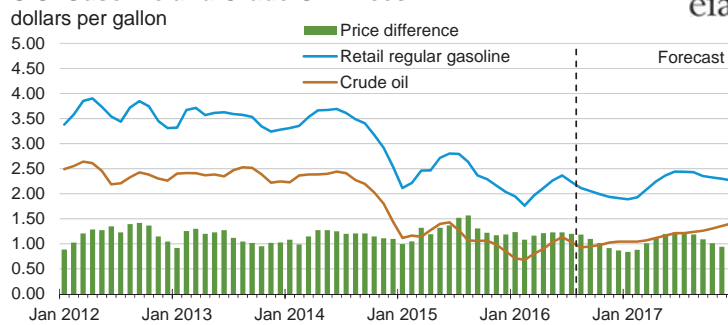
Chart Gallery for August 2016

West Texas Intermediate (WTI) Crude Oil Price
dollars per barrel



Note: Confidence interval derived from options market information for the 5 trading days ending Aug 4, 2016. Intervals not calculated for months with sparse trading in near-the-money options contracts.
Source: Short-Term Energy Outlook, August 2016.

U.S. Gasoline and Crude Oil Prices

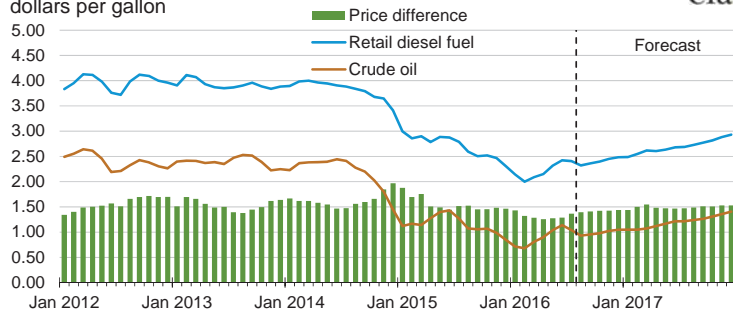


Crude oil price is composite refiner acquisition cost. Retail prices include state and federal taxes.

Source: Short-Term Energy Outlook, August 2016.

U.S. Diesel Fuel and Crude Oil Prices

dollars per gallon

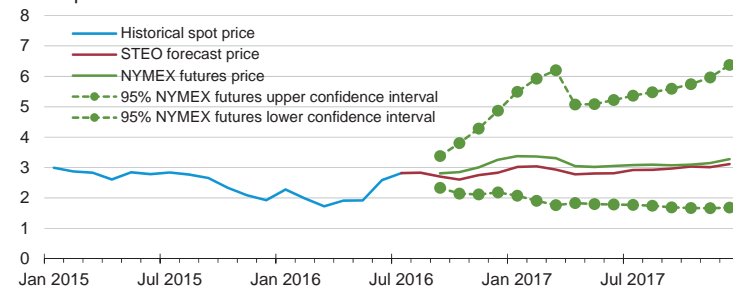


Crude oil price is composite refiner acquisition cost. Retail prices include state and federal taxes.

Source: Short-Term Energy Outlook, August 2016.

Henry Hub Natural Gas Price

dollars per million Btu

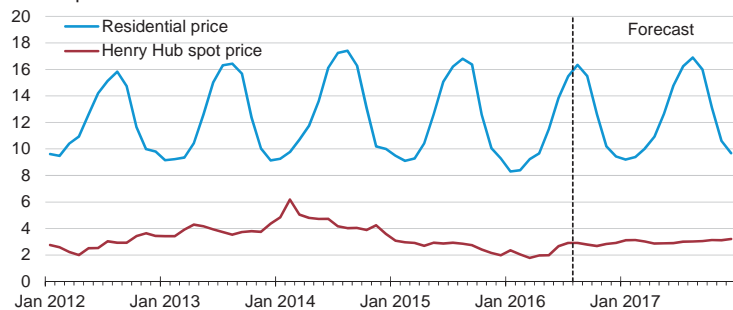


Note: Confidence interval derived from options market information for the 5 trading days ending Aug 4, 2016. Intervals not calculated for months with sparse trading in near-the-money options contracts.

Source: Short-Term Energy Outlook, August 2016.

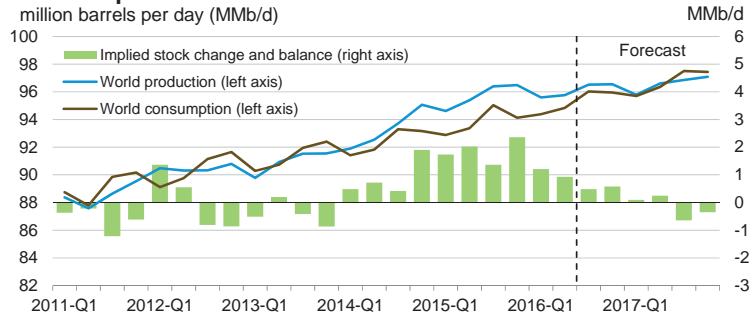
U.S. Natural Gas Prices

dollars per thousand cubic feet



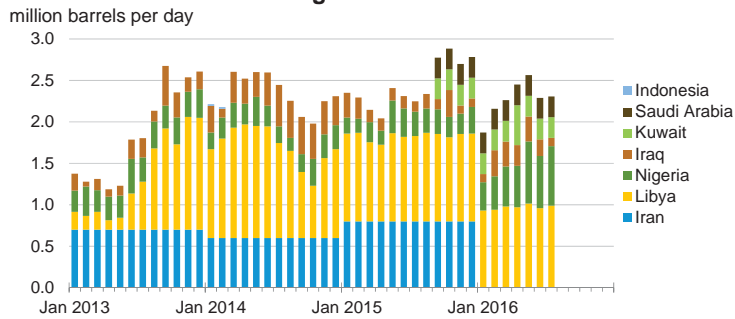
Source: Short-Term Energy Outlook, August 2016.

World Liquid Fuels Production and Consumption Balance



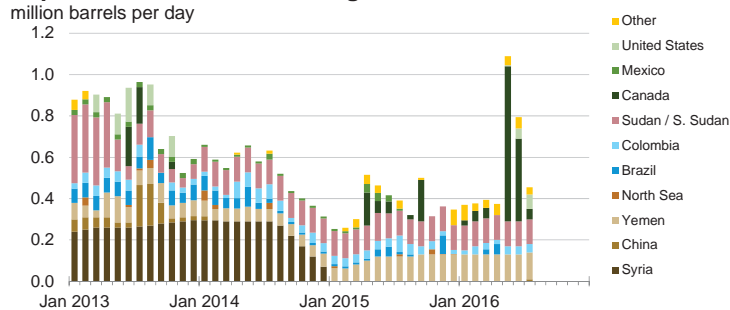
Source: Short-Term Energy Outlook, August 2016.

Estimated Historical Unplanned OPEC Crude Oil Production Outages



Source: Short-Term Energy Outlook, August 2016.

Estimated Historical Unplanned Non-OPEC Liquid Fuels Production Outages

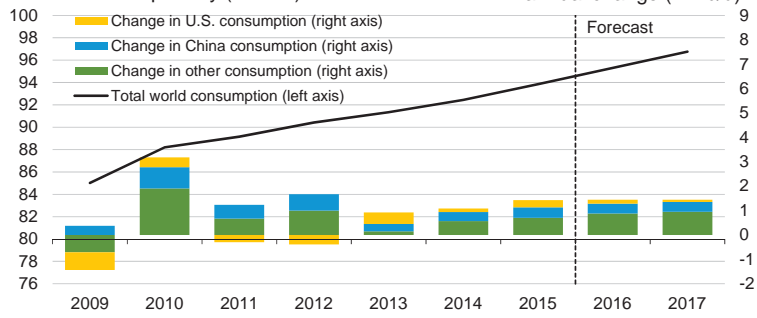


Source: Short-Term Energy Outlook, August 2016.

World Liquid Fuels Consumption

million barrels per day (MMb/d)

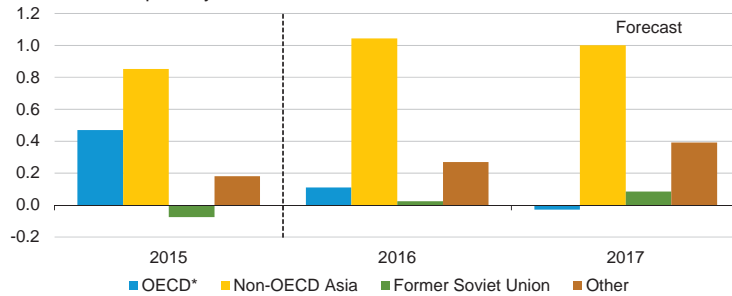
annual change (MMb/d)



Source: Short-Term Energy Outlook, August 2016.

World Liquid Fuels Consumption Growth

million barrels per day

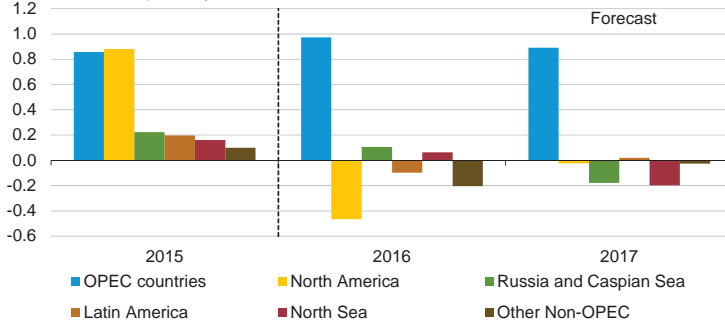


* Countries belonging to the Organization for Economic Cooperation and Development

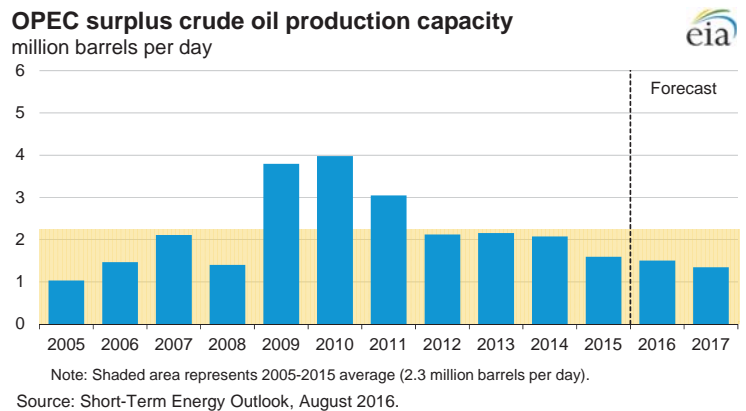
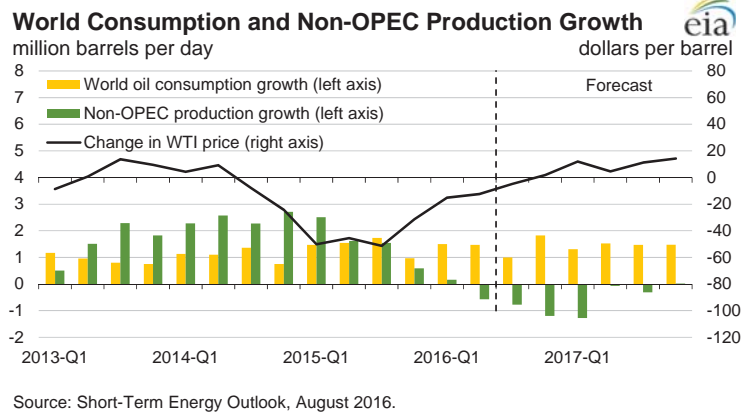
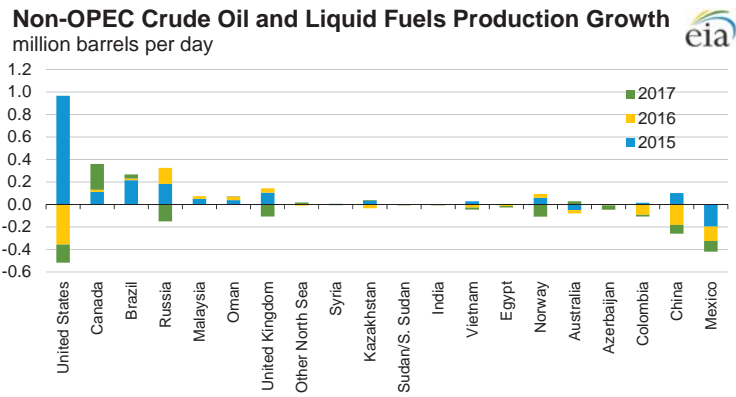
Source: Short-Term Energy Outlook, August 2016.

World Crude Oil and Liquid Fuels Production Growth

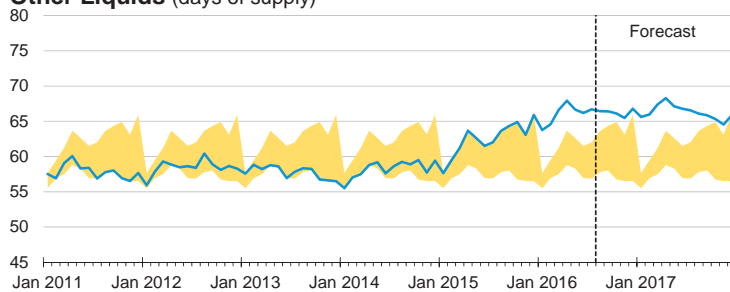
million barrels per day



Source: Short-Term Energy Outlook, August 2016.

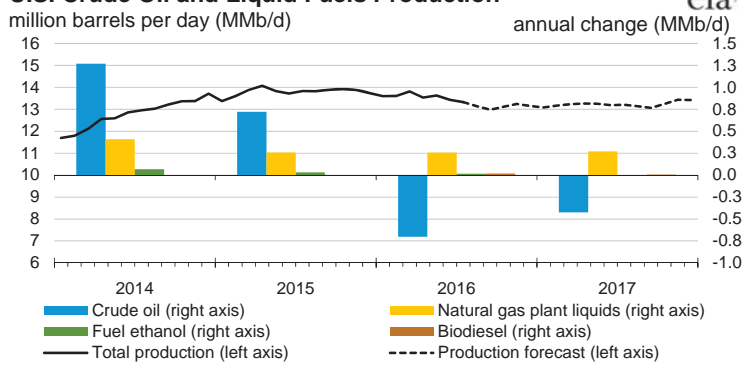


OECD Commercial Stocks of Crude Oil and Other Liquids (days of supply)



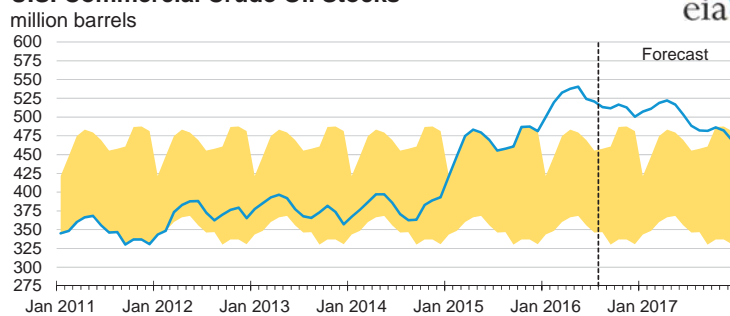
Note: Colored band around days of supply of crude oil and other liquids stocks represents the range between the minimum and maximum from Jan. 2011 - Dec. 2015.
 Source: Short-Term Energy Outlook, August 2016.

U.S. Crude Oil and Liquid Fuels Production



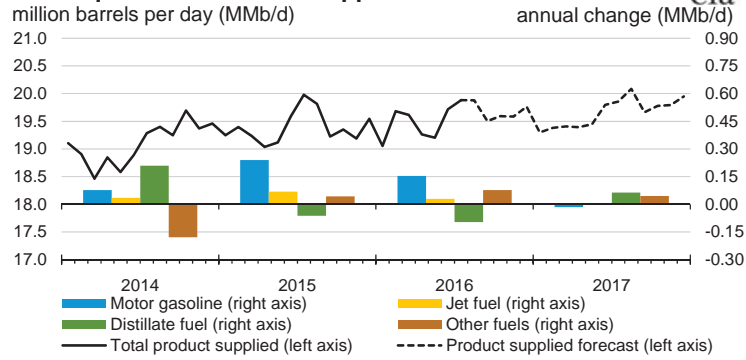
Source: Short-Term Energy Outlook, August 2016.

U.S. Commercial Crude Oil Stocks



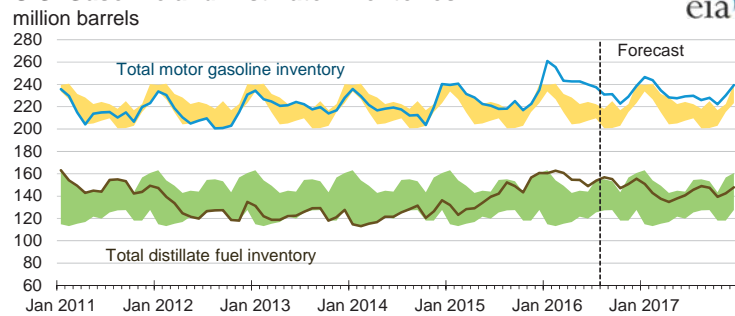
Note: Colored band around storage levels represents the range between the minimum and maximum from Jan. 2011 - Dec. 2015.
 Source: Short-Term Energy Outlook, August 2016.

U.S. Liquid Fuels Product Supplied



Source: Short-Term Energy Outlook, August 2016.

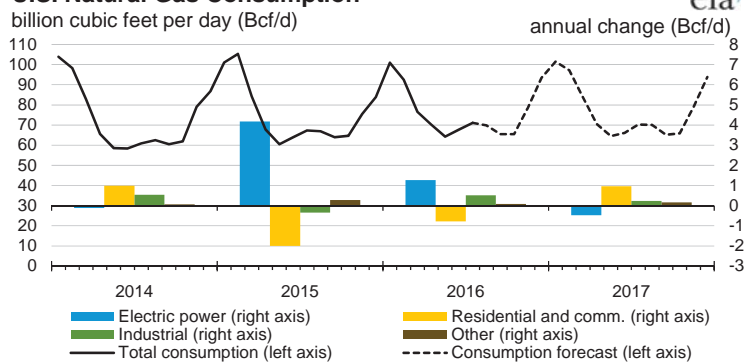
U.S. Gasoline and Distillate Inventories



Note: Colored bands around storage levels represent the range between the minimum and maximum from Jan. 2011 - Dec. 2015.

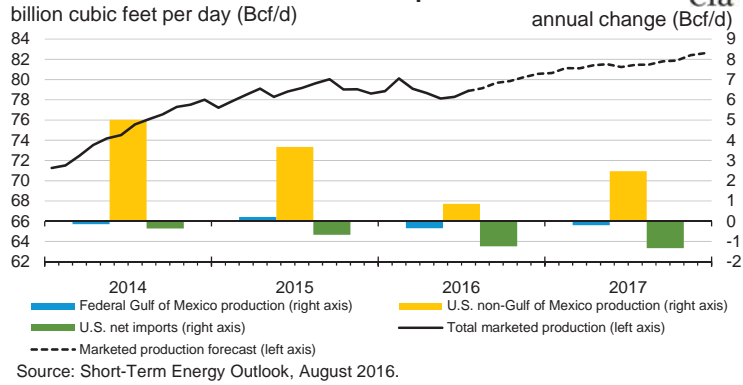
Source: Short-Term Energy Outlook, August 2016.

U.S. Natural Gas Consumption

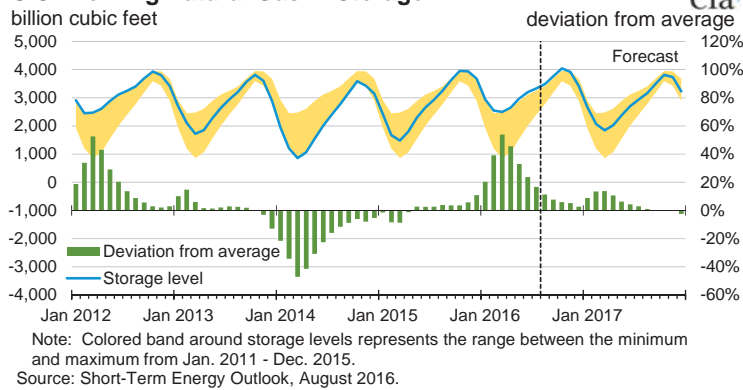


Source: Short-Term Energy Outlook, August 2016.

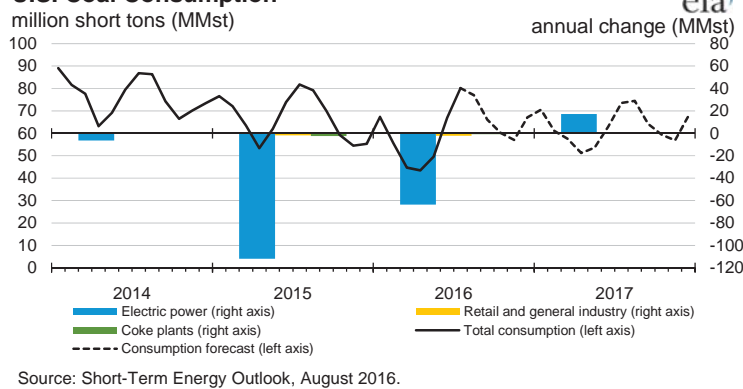
U.S. Natural Gas Production and Imports



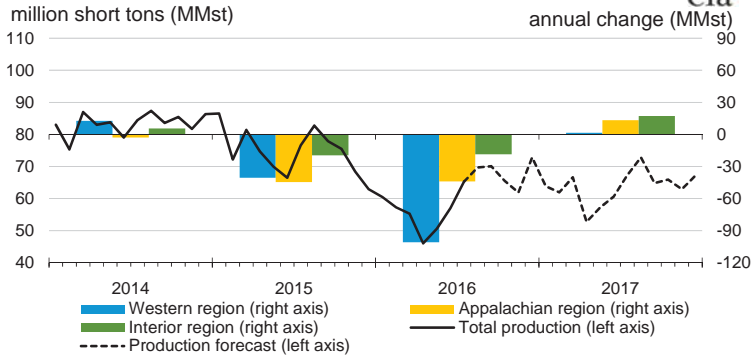
U.S. Working Natural Gas in Storage



U.S. Coal Consumption

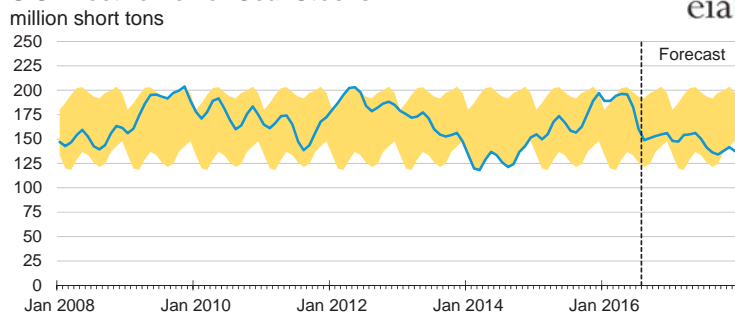


U.S. Coal Production



Source: Short-Term Energy Outlook, August 2016.

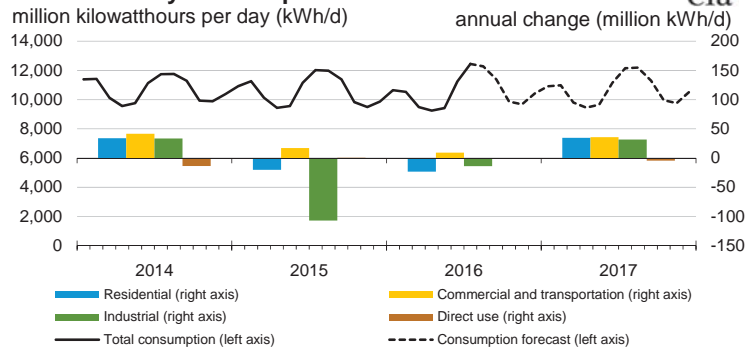
U.S. Electric Power Coal Stocks



Note: Colored band around stock levels represents the range between the minimum and maximum from Jan. 2008 - Dec. 2015.

Source: Short-Term Energy Outlook, August 2016.

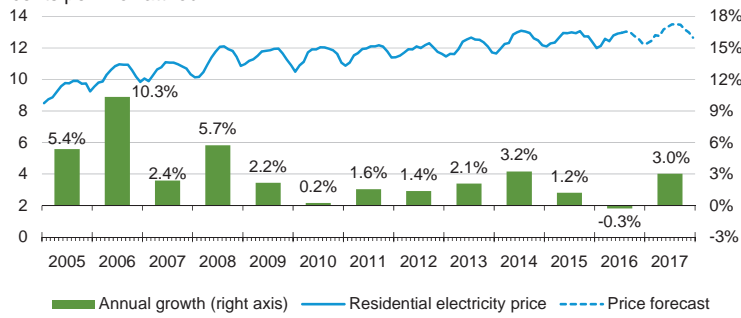
U.S. Electricity Consumption



Source: Short-Term Energy Outlook, August 2016.

U.S. Residential Electricity Price

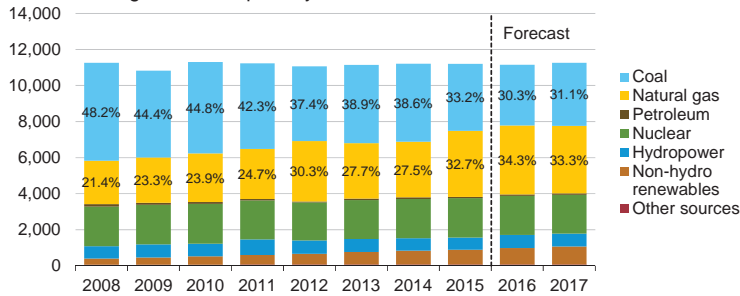
cents per kilowatthour



Source: Short-Term Energy Outlook, August 2016.

U.S. Electricity Generation by Fuel, All Sectors

thousand megawatthours per day

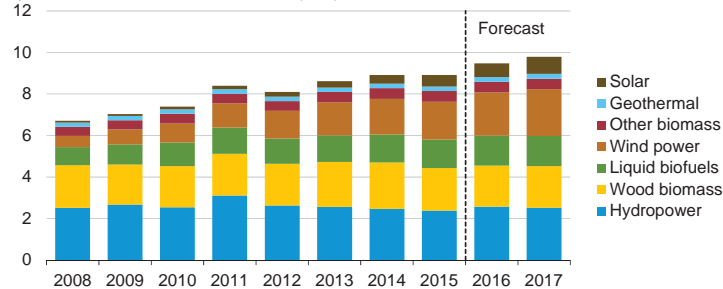


Note: Labels show percentage share of total generation provided by coal and natural gas.

Source: Short-Term Energy Outlook, August 2016.

U.S. Renewable Energy Supply

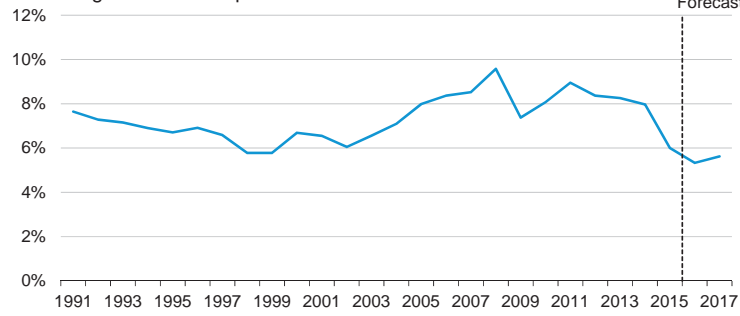
quadrillion British thermal units (Btu)



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

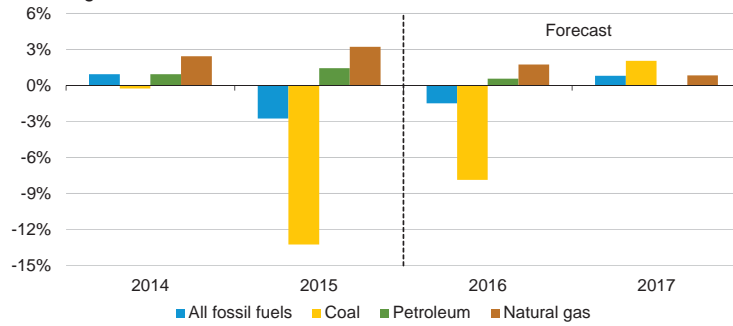
Source: Short-Term Energy Outlook, August 2016.

U.S. Annual Energy Expenditures share of gross domestic product



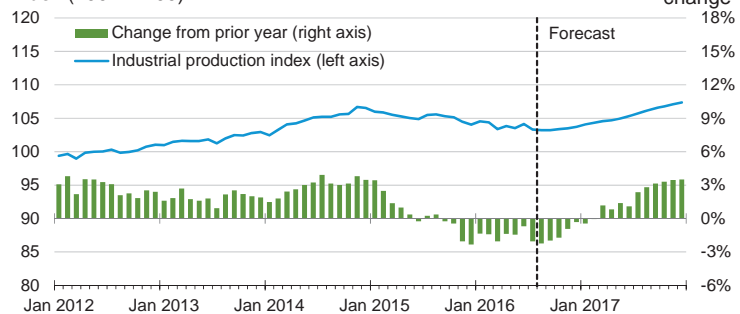
Source: Short-Term Energy Outlook, August 2016.

U.S. Energy-Related Carbon Dioxide Emissions annual growth



Source: Short-Term Energy Outlook, August 2016.

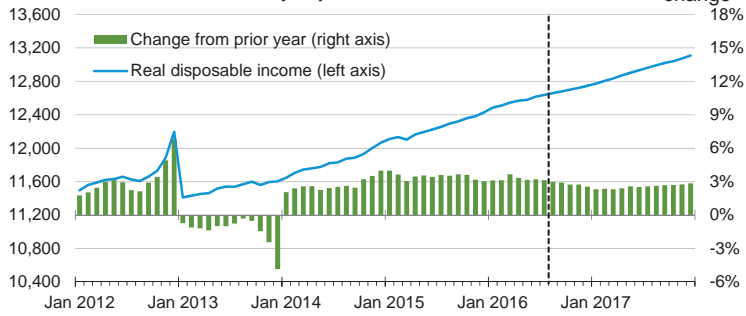
U.S. Total Industrial Production Index index (2007 = 100)



Source: Short-Term Energy Outlook, August 2016.

U.S. Disposable Income

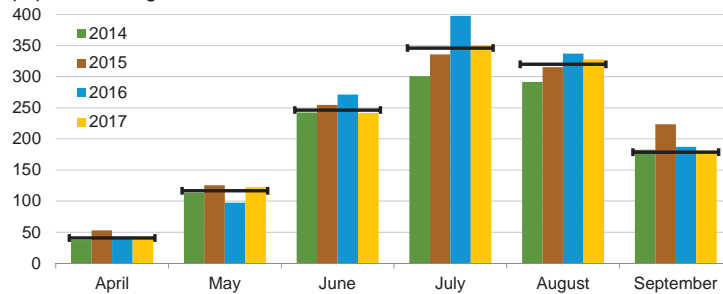
billion 2009 dollars, seasonally adjusted



Source: Short-Term Energy Outlook, August 2016.

U.S. Summer Cooling Degree Days

population-weighted

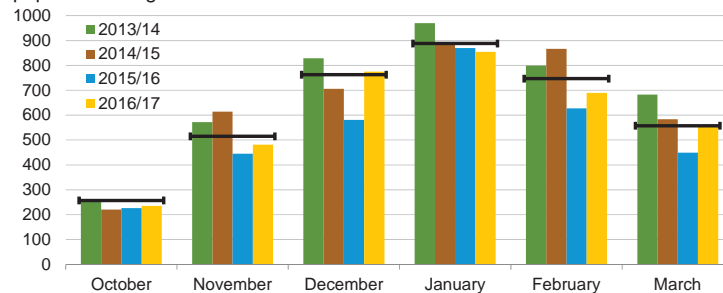


Note: EIA calculations based on from the National Oceanic and Atmospheric Administration data. Horizontal lines indicate each month's prior 10-year average (2006-2015). Projections reflect NOAA's 14-16 month outlook.

Source: Short-Term Energy Outlook, August 2016.

U.S. Winter Heating Degree Days

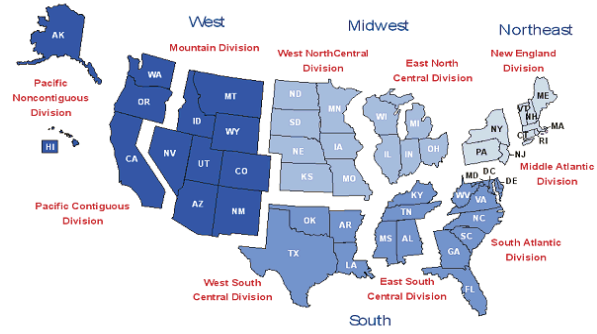
population-weighted



Note: EIA calculations based on National Oceanic and Atmospheric Administration (NOAA) data. Horizontal lines indicate each month's prior 10-year average (Oct 2006 - Mar 2016). Projections reflect NOAA's 14-16 month outlook.

Source: Short-Term Energy Outlook, August 2016.

U.S. Census Regions and Divisions



Source: Short-Term Energy Outlook, August 2016.

Table SF01. U.S. Motor Gasoline Summer Outlook

U.S. Energy Information Administration | Short-Term Energy Outlook - August 2016

	2015			2016			Year-over-year Change (percent)		
	Q2	Q3	Season	Q2	Q3	Season	Q2	Q3	Season
Nominal Prices (dollars per gallon)									
WTI Crude Oil (Spot) ^a	1.38	1.11	1.24	<i>1.08</i>	<i>0.99</i>	<i>1.04</i>	-21.4	-10.3	-16.3
Brent Crude Oil Price (Spot)	1.47	1.20	1.33	<i>1.08</i>	<i>1.01</i>	<i>1.05</i>	-26.1	-15.6	-21.2
U.S. Refiner Average Crude Oil Cost	1.37	1.14	1.25	<i>1.03</i>	<i>0.97</i>	<i>1.00</i>	-25.0	-14.2	-20.1
Wholesale Gasoline Price ^b	2.01	1.84	1.93	<i>1.58</i>	<i>1.39</i>	<i>1.49</i>	-21.5	-24.4	-22.9
Wholesale Diesel Fuel Price ^b	1.89	1.61	1.75	<i>1.40</i>	<i>1.37</i>	<i>1.39</i>	-25.8	-14.9	-20.7
Regular Gasoline Retail Price ^c	2.67	2.60	2.63	<i>2.25</i>	<i>2.14</i>	<i>2.19</i>	-15.5	-17.9	-16.7
Diesel Fuel Retail Price ^c	2.85	2.63	2.74	<i>2.30</i>	<i>2.36</i>	<i>2.33</i>	-19.3	-10.2	-14.8
Gasoline Consumption/Supply (million barrels per day)									
Total Consumption	9.260	9.395	9.328	<i>9.422</i>	<i>9.503</i>	<i>9.463</i>	1.8	1.2	1.5
Total Refinery and Blender Net Supply ^d	8.022	8.305	8.164	<i>8.328</i>	<i>8.487</i>	<i>8.408</i>	3.8	2.2	3.0
Fuel Ethanol Blending	0.919	0.935	0.927	<i>0.921</i>	<i>0.953</i>	<i>0.937</i>	0.2	2.0	1.1
Total Stock Withdrawal ^e	0.115	-0.044	0.035	<i>0.038</i>	<i>0.093</i>	<i>0.066</i>			
Net Imports ^e	0.204	0.200	0.202	<i>0.135</i>	<i>-0.030</i>	<i>0.052</i>	-33.8	-114.9	-74.1
Refinery Utilization (percent)	92.8	93.2	93.0	<i>90.1</i>	<i>92.1</i>	<i>91.1</i>			
Gasoline Stocks, Including Blending Components (million barrels)									
Beginning	231.5	221.0	231.5	<i>243.3</i>	<i>239.9</i>	<i>243.3</i>			
Ending	221.0	225.1	225.1	<i>239.9</i>	<i>231.3</i>	<i>231.3</i>			
Economic Indicators (annualized billion 2000 dollars)									
Real GDP	16,334	16,414	16,374	<i>16,605</i>	<i>16,702</i>	<i>16,654</i>	1.7	1.8	1.7
Real Income	12,194	12,290	12,242	<i>12,588</i>	<i>12,659</i>	<i>12,624</i>	3.2	3.0	3.1

^a Spot Price of West Texas Intermediate (WTI) crude oil.^b Price product sold by refiners to resellers.^c Average pump price including taxes.^d Finished gasoline net production minus gasoline blend components net inputs minus fuel ethanol blending and supply adjustment.^e Total stock withdrawal and net imports includes both finished gasoline and gasoline blend components.

GDP = gross domestic product.

Notes: Minor discrepancies with other Energy Information Administration (EIA) published historical data are due to rounding. Historical data are printed in bold. Forecasts are in italic. The forecasts were generated by simulation of the Short-Term Integrated Forecasting System.

Sources: Historical data: latest data available from: EIA, *Petroleum Supply Monthly*, DOE/EIA-0109; Monthly Energy Review, DOE/EIA-0035; U.S. Department of Commerce, Bureau of Economic Analysis (GDP and income); Reuters News Service (WTI and Brent crude oil spot prices). Macroeconomic projections are based on IHS Global Insight Macroeconomic Forecast Model.

Table SF02 Average Summer Residential Electricity Usage, Prices and Expenditures

U.S. Energy Information Administration | Short-Term Energy Outlook - August 2016

	2011	2012	2013	2014	2015	Forecast 2016	Change from 2015
United States							
Usage (kWh)	3,444	3,354	3,129	3,037	3,153	3,253	3.2%
Price (cents/kWh)	12.06	12.09	12.58	13.04	12.95	12.98	0.2%
Expenditures	\$415	\$405	\$393	\$396	\$408	\$422	3.3%
New England							
Usage (kWh)	2,122	2,188	2,173	1,930	1,993	2,051	2.9%
Price (cents/kWh)	15.85	15.50	16.04	17.63	18.64	18.36	-1.5%
Expenditures	\$336	\$339	\$348	\$340	\$372	\$377	1.3%
Mid-Atlantic							
Usage (kWh)	2,531	2,548	2,447	2,234	2,372	2,431	2.5%
Price (cents/kWh)	16.39	15.63	16.39	16.90	16.52	16.81	1.8%
Expenditures	\$415	\$398	\$401	\$378	\$392	\$409	4.3%
East North Central							
Usage (kWh)	2,975	3,048	2,618	2,505	2,556	2,796	9.4%
Price (cents/kWh)	12.17	12.08	12.57	13.24	13.20	13.58	2.9%
Expenditures	\$362	\$368	\$329	\$332	\$337	\$380	12.6%
West North Central							
Usage (kWh)	3,517	3,547	3,098	3,040	3,054	3,245	6.3%
Price (cents/kWh)	11.16	11.50	12.25	12.42	12.66	13.03	2.9%
Expenditures	\$393	\$408	\$380	\$378	\$387	\$423	9.3%
South Atlantic							
Usage (kWh)	4,277	4,001	3,771	3,776	3,957	4,009	1.3%
Price (cents/kWh)	11.48	11.65	11.76	12.09	12.10	11.87	-1.9%
Expenditures	\$491	\$466	\$443	\$457	\$479	\$476	-0.6%
East South Central							
Usage (kWh)	4,750	4,467	4,078	4,033	4,296	4,433	3.2%
Price (cents/kWh)	10.28	10.36	10.71	11.09	10.90	10.75	-1.3%
Expenditures	\$488	\$463	\$437	\$447	\$468	\$477	1.8%
West South Central							
Usage (kWh)	5,231	4,781	4,507	4,252	4,518	4,588	1.5%
Price (cents/kWh)	10.64	10.27	10.94	11.46	11.05	10.84	-1.9%
Expenditures	\$557	\$491	\$493	\$487	\$499	\$497	-0.3%
Mountain							
Usage (kWh)	3,322	3,440	3,380	3,228	3,304	3,456	4.6%
Price (cents/kWh)	11.29	11.55	11.97	12.32	12.36	12.43	0.6%
Expenditures	\$375	\$397	\$405	\$398	\$408	\$429	5.2%
Pacific							
Usage (kWh)	2,022	2,079	2,036	2,090	2,056	2,048	-0.4%
Price (cents/kWh)	13.22	13.78	14.47	15.17	15.34	15.76	2.7%
Expenditures	\$267	\$286	\$295	\$317	\$315	\$323	2.3%

Notes: kWh = kilowatthours. All data cover the 3-month period of June-August of each year. Usage amounts represent total residential retail electricity sales per customer. Prices and expenditures are not adjusted for inflation.

Source: EIA Form-861 and Form-826 databases, Short-Term Energy Outlook.

Table 1. U.S. Energy Markets Summary

U.S. Energy Information Administration | Short-Term Energy Outlook - August 2016

	2015				2016				2017				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2015	2016	2017
Energy Supply															
Crude Oil Production (a) (million barrels per day)	9.48	9.50	9.43	9.32	9.17	8.87	<i>8.45</i>	<i>8.44</i>	<i>8.42</i>	<i>8.36</i>	<i>8.16</i>	<i>8.29</i>	9.43	<i>8.73</i>	<i>8.31</i>
Dry Natural Gas Production (billion cubic feet per day)	73.41	74.03	74.85	73.96	74.43	73.26	<i>74.06</i>	<i>74.99</i>	<i>75.67</i>	<i>76.09</i>	<i>76.25</i>	<i>76.93</i>	74.06	<i>74.19</i>	<i>76.24</i>
Coal Production (million short tons)	240	211	237	207	173	154	<i>205</i>	<i>200</i>	<i>192</i>	<i>171</i>	<i>205</i>	<i>196</i>	895	<i>732</i>	<i>764</i>
Energy Consumption															
Liquid Fuels (million barrels per day)	19.29	19.25	19.68	19.36	19.45	19.39	<i>19.76</i>	<i>19.65</i>	<i>19.36</i>	<i>19.54</i>	<i>19.87</i>	<i>19.84</i>	19.40	<i>19.56</i>	<i>19.66</i>
Natural Gas (billion cubic feet per day)	96.56	63.99	66.11	74.69	89.99	67.40	<i>68.85</i>	<i>79.19</i>	<i>93.99</i>	<i>67.03</i>	<i>68.57</i>	<i>79.57</i>	75.25	<i>76.34</i>	<i>77.23</i>
Coal (b) (million short tons)	212	189	231	169	168	160	<i>223</i>	<i>184</i>	<i>189</i>	<i>168</i>	<i>212</i>	<i>184</i>	802	<i>735</i>	<i>753</i>
Electricity (billion kilowatt hours per day)	10.75	10.05	11.80	9.73	10.21	9.97	<i>12.04</i>	<i>9.99</i>	<i>10.55</i>	<i>10.07</i>	<i>11.89</i>	<i>10.09</i>	10.58	<i>10.56</i>	<i>10.65</i>
Renewables (c) (quadrillion Btu)	2.43	2.43	2.34	2.47	2.67	2.65	<i>2.48</i>	<i>2.49</i>	<i>2.56</i>	<i>2.80</i>	<i>2.63</i>	<i>2.60</i>	9.67	<i>10.29</i>	<i>10.60</i>
Total Energy Consumption (d) (quadrillion Btu)	26.34	22.98	24.46	23.75	25.38	22.79	<i>24.32</i>	<i>24.31</i>	<i>25.45</i>	<i>22.94</i>	<i>24.31</i>	<i>24.55</i>	97.53	<i>96.80</i>	<i>97.24</i>
Energy Prices															
Crude Oil West Texas Intermediate Spot (dollars per barrel)	48.48	57.85	46.55	41.94	33.35	45.46	<i>41.78</i>	<i>43.69</i>	<i>45.37</i>	<i>50.06</i>	<i>53.00</i>	<i>57.94</i>	48.67	<i>41.16</i>	<i>51.58</i>
Natural Gas Henry Hub Spot (dollars per million Btu)	2.90	2.75	2.76	2.12	2.00	2.14	<i>2.79</i>	<i>2.73</i>	<i>3.00</i>	<i>2.80</i>	<i>2.94</i>	<i>3.06</i>	2.63	<i>2.41</i>	<i>2.95</i>
Coal (dollars per million Btu)	2.27	2.25	2.22	2.15	2.13	2.18	<i>2.22</i>	<i>2.21</i>	<i>2.21</i>	<i>2.24</i>	<i>2.28</i>	<i>2.24</i>	2.23	<i>2.19</i>	<i>2.24</i>
Macroeconomic															
Real Gross Domestic Product (billion chained 2009 dollars - SAAR)	16,177	16,334	16,414	16,471	16,515	16,605	<i>16,702</i>	<i>16,802</i>	<i>16,915</i>	<i>17,021</i>	<i>17,130</i>	<i>17,234</i>	16,349	<i>16,656</i>	<i>17,075</i>
Percent change from prior year	2.9	2.7	2.1	2.0	2.1	1.7	<i>1.8</i>	<i>2.0</i>	<i>2.4</i>	<i>2.5</i>	<i>2.6</i>	<i>2.6</i>	2.4	<i>1.9</i>	<i>2.5</i>
GDP Implicit Price Deflator (Index, 2009=100)	109.1	109.7	110.0	110.3	110.4	110.9	<i>111.4</i>	<i>112.0</i>	<i>112.7</i>	<i>113.1</i>	<i>113.6</i>	<i>114.3</i>	109.8	<i>111.2</i>	<i>113.4</i>
Percent change from prior year	1.0	1.0	0.9	1.1	1.2	1.1	<i>1.2</i>	<i>1.6</i>	<i>2.1</i>	<i>2.0</i>	<i>2.0</i>	<i>2.0</i>	1.0	<i>1.3</i>	<i>2.0</i>
Real Disposable Personal Income (billion chained 2009 dollars - SAAR)	12,115	12,194	12,290	12,390	12,514	12,588	<i>12,659</i>	<i>12,722</i>	<i>12,805</i>	<i>12,902</i>	<i>12,992</i>	<i>13,073</i>	12,247	<i>12,621</i>	<i>12,943</i>
Percent change from prior year	3.6	3.5	3.6	3.3	3.3	3.2	<i>3.0</i>	<i>2.7</i>	<i>2.3</i>	<i>2.5</i>	<i>2.6</i>	<i>2.8</i>	3.5	<i>3.1</i>	<i>2.6</i>
Manufacturing Production Index (Index, 2012=100)	103.2	103.4	103.9	103.7	103.9	103.7	<i>103.7</i>	<i>103.8</i>	<i>104.3</i>	<i>104.7</i>	<i>105.7</i>	<i>106.7</i>	103.6	<i>103.8</i>	<i>105.4</i>
Percent change from prior year	2.1	1.1	0.9	0.1	0.7	0.3	<i>-0.2</i>	<i>0.0</i>	<i>0.4</i>	<i>1.0</i>	<i>2.0</i>	<i>2.8</i>	1.1	<i>0.2</i>	<i>1.5</i>
Weather															
U.S. Heating Degree-Days	2,341	443	49	1,253	1,947	480	<i>63</i>	<i>1,492</i>	<i>2,101</i>	<i>472</i>	<i>71</i>	<i>1,496</i>	4,085	<i>3,981</i>	<i>4,140</i>
U.S. Cooling Degree-Days	46	433	874	133	54	411	<i>922</i>	<i>100</i>	<i>44</i>	<i>406</i>	<i>860</i>	<i>99</i>	1,487	<i>1,487</i>	<i>1,408</i>

- = no data available

Prices are not adjusted for inflation.

(a) Includes lease condensate.

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

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

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

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

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

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

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

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

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

Projections: EIA Regional Short-Term Energy Model. Macroeconomic projections are based on Global Insight 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 - August 2016

	2015				2016				2017				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2015	2016	2017
Crude Oil (dollars per barrel)															
West Texas Intermediate Spot Average	48.48	57.85	46.55	41.94	33.35	45.46	41.78	43.69	45.37	50.06	53.00	57.94	48.67	41.16	51.58
Brent Spot Average	53.91	61.65	50.43	43.55	33.89	45.57	42.56	44.02	45.37	50.06	53.00	57.94	52.32	41.60	51.58
U.S. Imported Average	46.38	56.07	45.59	37.88	28.83	41.21	38.38	40.18	41.85	46.49	49.50	54.51	46.35	37.16	48.25
U.S. Refiner Average Acquisition Cost	47.94	57.46	47.68	40.48	30.84	43.10	40.90	42.69	44.35	49.02	51.98	57.04	48.40	39.44	50.71
U.S. Liquid Fuels (cents per gallon)															
Refiner Prices for Resale															
Gasoline	159	201	184	145	119	158	139	122	128	163	166	156	173	135	154
Diesel Fuel	176	189	161	141	109	140	137	147	153	164	173	188	167	134	170
Heating Oil	178	180	151	129	99	124	129	142	151	154	164	182	157	118	162
Refiner Prices to End Users															
Jet Fuel	172	186	156	138	107	133	133	143	150	159	168	184	162	129	166
No. 6 Residual Fuel Oil (a)	137	154	123	101	69	89	105	106	111	118	128	139	125	91	124
Retail Prices Including Taxes															
Gasoline Regular Grade (b)	227	267	260	216	190	225	214	195	197	235	241	230	243	206	226
Gasoline All Grades (b)	236	275	269	226	200	235	224	206	208	246	251	241	252	217	237
On-highway Diesel Fuel	292	285	263	243	208	230	236	244	255	264	273	288	271	230	270
Heating Oil	288	276	247	224	195	206	217	234	250	250	259	278	265	211	260
Natural Gas															
Henry Hub Spot (dollars per thousand cubic feet)	2.99	2.83	2.84	2.18	2.06	2.21	2.87	2.81	3.09	2.88	3.03	3.15	2.71	2.49	3.04
Henry Hub Spot (dollars per million Btu)	2.90	2.75	2.76	2.12	2.00	2.14	2.79	2.73	3.00	2.80	2.94	3.06	2.63	2.41	2.95
U.S. Retail Prices (dollars per thousand cubic feet)															
Industrial Sector	4.68	3.75	3.72	3.43	3.43	3.00	3.72	3.97	4.40	3.79	3.94	4.29	3.92	3.54	4.12
Commercial Sector	7.94	8.13	8.42	7.38	6.84	7.27	8.30	7.69	7.85	8.26	8.77	8.15	7.88	7.34	8.11
Residential Sector	9.30	11.97	16.45	10.11	8.54	11.01	15.75	10.18	9.48	12.15	16.36	10.51	10.36	9.96	10.66
U.S. Electricity															
Power Generation Fuel Costs (dollars per million Btu)															
Coal	2.27	2.25	2.22	2.15	2.13	2.18	2.22	2.21	2.21	2.24	2.28	2.24	2.23	2.19	2.24
Natural Gas	4.09	3.12	3.09	2.72	2.65	2.62	3.13	3.51	3.87	3.28	3.27	3.88	3.22	2.99	3.54
Residual Fuel Oil (c)	10.82	11.64	10.48	7.76	6.15	8.16	8.83	8.49	8.51	9.50	9.76	10.17	10.36	7.90	9.47
Distillate Fuel Oil	15.61	15.17	13.19	11.74	9.02	11.22	11.27	12.23	12.89	13.44	13.96	15.34	14.43	10.90	13.84
Retail Prices (cents per kilowatthour)															
Industrial Sector	6.79	6.81	7.32	6.63	6.42	6.68	7.27	6.69	6.57	6.83	7.41	6.83	6.90	6.78	6.93
Commercial Sector	10.46	10.54	10.95	10.36	10.08	10.41	11.01	10.42	10.31	10.68	11.33	10.68	10.59	10.51	10.77
Residential Sector	12.24	12.85	12.99	12.59	12.21	12.74	13.00	12.51	12.49	13.11	13.49	12.92	12.67	12.64	13.02

- = 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 - August 2016

	2015				2016				2017				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2015	2016	2017
Supply (million barrels per day) (a)															
OECD	26.64	26.43	26.81	27.07	26.97	25.99	26.09	26.18	26.16	26.12	25.92	26.29	26.74	26.30	26.12
U.S. (50 States)	14.81	15.10	15.13	15.12	14.96	14.87	14.45	14.46	14.41	14.53	14.46	14.69	15.04	14.68	14.52
Canada	4.69	4.16	4.56	4.62	4.73	4.04	4.62	4.70	4.76	4.73	4.75	4.78	4.51	4.52	4.75
Mexico	2.68	2.58	2.62	2.62	2.57	2.51	2.46	2.45	2.43	2.42	2.39	2.37	2.62	2.50	2.40
North Sea (b)	3.00	3.10	2.95	3.20	3.24	3.10	3.08	3.08	3.06	2.95	2.80	2.91	3.06	3.13	2.93
Other OECD	1.46	1.49	1.55	1.52	1.47	1.46	1.48	1.49	1.49	1.50	1.52	1.54	1.50	1.47	1.51
Non-OECD	67.98	68.97	69.58	69.42	68.62	69.78	70.43	70.36	69.64	70.48	70.93	70.80	68.99	69.80	70.47
OPEC	37.59	38.30	38.77	38.60	38.40	39.24	39.66	39.85	39.88	40.15	40.31	40.37	38.32	39.29	40.18
Crude Oil Portion	31.06	31.74	32.20	32.03	31.79	32.41	32.78	32.91	32.82	33.04	33.12	33.12	31.76	32.47	33.03
Other Liquids (c)	6.53	6.56	6.57	6.57	6.61	6.84	6.88	6.94	7.06	7.11	7.19	7.25	6.56	6.82	7.15
Eurasia	14.18	14.02	14.01	14.17	14.37	14.24	14.15	14.08	14.04	14.00	14.02	14.04	14.10	14.21	14.02
China	4.68	4.76	4.73	4.72	4.59	4.47	4.53	4.57	4.44	4.46	4.46	4.49	4.72	4.54	4.46
Other Non-OECD	11.53	11.90	12.07	11.93	11.27	11.83	12.09	11.86	11.28	11.87	12.15	11.89	11.86	11.76	11.80
Total World Supply	94.62	95.40	96.40	96.49	95.59	95.77	96.52	96.54	95.79	96.61	96.86	97.09	95.73	96.11	96.59
Non-OPEC Supply	57.03	57.10	57.63	57.89	57.19	56.52	56.86	56.69	55.91	56.46	56.54	56.71	57.41	56.82	56.41
Consumption (million barrels per day) (d)															
OECD	46.48	45.38	46.73	46.37	46.68	45.50	46.40	46.82	46.53	45.52	46.38	46.86	46.24	46.35	46.32
U.S. (50 States)	19.29	19.25	19.68	19.36	19.45	19.39	19.76	19.65	19.36	19.54	19.87	19.84	19.40	19.56	19.66
U.S. Territories	0.37	0.37	0.37	0.37	0.40	0.40	0.40	0.40	0.42	0.42	0.42	0.42	0.37	0.40	0.42
Canada	2.36	2.26	2.38	2.34	2.31	2.24	2.35	2.33	2.27	2.22	2.32	2.30	2.34	2.31	2.28
Europe	13.42	13.53	14.11	13.66	13.59	13.38	13.84	13.77	13.50	13.27	13.73	13.65	13.68	13.65	13.54
Japan	4.79	3.89	3.94	4.23	4.52	3.82	3.85	4.22	4.45	3.75	3.78	4.14	4.21	4.11	4.03
Other OECD	6.25	6.08	6.24	6.41	6.41	6.26	6.21	6.45	6.52	6.32	6.26	6.51	6.25	6.33	6.40
Non-OECD	46.40	47.98	48.30	47.76	47.71	49.34	49.63	49.14	49.17	50.84	51.12	50.57	47.62	48.95	50.43
Eurasia	4.71	4.65	4.92	4.90	4.73	4.66	4.93	4.92	4.80	4.73	5.01	4.99	4.80	4.81	4.88
Europe	0.71	0.72	0.74	0.74	0.72	0.73	0.75	0.75	0.73	0.74	0.76	0.76	0.73	0.73	0.74
China	10.87	11.46	11.42	11.37	11.25	11.87	11.82	11.77	11.64	12.28	12.23	12.17	11.28	11.68	12.08
Other Asia	12.22	12.44	11.97	12.30	12.87	13.09	12.58	12.99	13.49	13.71	13.16	13.55	12.24	12.88	13.48
Other Non-OECD	17.89	18.71	19.26	18.45	18.14	18.99	19.55	18.71	18.51	19.38	19.96	19.09	18.58	18.85	19.24
Total World Consumption	92.88	93.37	95.03	94.13	94.38	94.84	96.03	95.96	95.70	96.36	97.50	97.44	93.86	95.31	96.76
Total Crude Oil and Other Liquids Inventory Net Withdrawals (million barrels per day)															
U.S. (50 States)	-0.54	-0.69	-0.32	-0.15	-0.41	-0.16	-0.10	0.56	0.25	-0.24	-0.01	0.56	-0.43	-0.03	0.14
Other OECD	-0.31	-0.36	-0.42	-0.29	-0.03	-0.27	-0.13	-0.41	-0.12	0.00	0.23	-0.08	-0.34	-0.21	0.01
Other Stock Draws and Balance	-0.88	-0.98	-0.62	-1.92	-0.76	-0.50	-0.25	-0.74	-0.22	-0.01	0.43	-0.14	-1.10	-0.56	0.02
Total Stock Draw	-1.74	-2.03	-1.37	-2.36	-1.21	-0.93	-0.48	-0.58	-0.10	-0.25	0.65	0.35	-1.87	-0.80	0.17
End-of-period Commercial Crude Oil and Other Liquids Inventories															
U.S. Commercial Inventory	1,217	1,277	1,306	1,320	1,357	1,372	1,381	1,329	1,307	1,328	1,330	1,279	1,320	1,329	1,279
OECD Commercial Inventory	2,797	2,889	2,964	2,997	3,032	3,071	3,093	3,078	3,067	3,089	3,069	3,025	2,997	3,078	3,025

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

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

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

(b) Includes offshore supply from Denmark, Germany, the Netherlands, Norway, and the United Kingdom.

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

(d) 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 - August 2016

	2015				2016				2017				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2015	2016	2017
North America	22.17	21.84	22.32	22.36	22.26	21.42	<i>21.53</i>	<i>21.61</i>	<i>21.60</i>	<i>21.67</i>	<i>21.61</i>	<i>21.85</i>	22.17	<i>21.71</i>	<i>21.68</i>
Canada	4.69	4.16	4.56	4.62	4.73	4.04	<i>4.62</i>	<i>4.70</i>	<i>4.76</i>	<i>4.73</i>	<i>4.75</i>	<i>4.78</i>	4.51	<i>4.52</i>	<i>4.75</i>
Mexico	2.68	2.58	2.62	2.62	2.57	2.51	<i>2.46</i>	<i>2.45</i>	<i>2.43</i>	<i>2.42</i>	<i>2.39</i>	<i>2.37</i>	2.62	<i>2.50</i>	<i>2.40</i>
United States	14.81	15.10	15.13	15.12	14.96	14.87	<i>14.45</i>	<i>14.46</i>	<i>14.41</i>	<i>14.53</i>	<i>14.46</i>	<i>14.69</i>	15.04	<i>14.68</i>	<i>14.52</i>
Central and South America	4.95	5.42	5.65	5.43	4.76	5.37	<i>5.59</i>	<i>5.35</i>	<i>4.80</i>	<i>5.38</i>	<i>5.61</i>	<i>5.36</i>	5.37	<i>5.27</i>	<i>5.29</i>
Argentina	0.70	0.71	0.72	0.72	0.70	0.70	<i>0.73</i>	<i>0.72</i>	<i>0.71</i>	<i>0.70</i>	<i>0.73</i>	<i>0.72</i>	0.71	<i>0.71</i>	<i>0.72</i>
Brazil	2.75	3.23	3.50	3.24	2.65	3.31	<i>3.54</i>	<i>3.29</i>	<i>2.73</i>	<i>3.33</i>	<i>3.56</i>	<i>3.31</i>	3.18	<i>3.20</i>	<i>3.23</i>
Colombia	1.06	1.05	1.00	1.02	0.99	0.93	<i>0.92</i>	<i>0.92</i>	<i>0.95</i>	<i>0.92</i>	<i>0.92</i>	<i>0.91</i>	1.03	<i>0.94</i>	<i>0.93</i>
Other Central and S. America	0.45	0.43	0.43	0.45	0.42	0.43	<i>0.41</i>	<i>0.42</i>	<i>0.41</i>	<i>0.42</i>	<i>0.40</i>	<i>0.42</i>	0.44	<i>0.42</i>	<i>0.41</i>
Europe	3.95	4.05	3.91	4.15	4.19	4.05	<i>4.03</i>	<i>4.03</i>	<i>4.00</i>	<i>3.89</i>	<i>3.75</i>	<i>3.86</i>	4.02	<i>4.07</i>	<i>3.87</i>
Norway	1.94	1.94	1.92	2.03	2.04	1.95	<i>1.99</i>	<i>1.98</i>	<i>1.95</i>	<i>1.90</i>	<i>1.84</i>	<i>1.84</i>	1.96	<i>1.99</i>	<i>1.88</i>
United Kingdom (offshore)	0.88	0.97	0.85	0.99	1.05	0.97	<i>0.92</i>	<i>0.91</i>	<i>0.92</i>	<i>0.86</i>	<i>0.77</i>	<i>0.88</i>	0.93	<i>0.96</i>	<i>0.86</i>
Other North Sea	0.18	0.18	0.18	0.17	0.15	0.18	<i>0.18</i>	<i>0.19</i>	<i>0.19</i>	<i>0.19</i>	<i>0.19</i>	<i>0.19</i>	0.18	<i>0.17</i>	<i>0.19</i>
Eurasia	14.20	14.03	14.03	14.19	14.38	14.25	<i>14.16</i>	<i>14.09</i>	<i>14.05</i>	<i>14.02</i>	<i>14.03</i>	<i>14.05</i>	14.11	<i>14.22</i>	<i>14.04</i>
Azerbaijan	0.89	0.85	0.85	0.83	0.87	0.87	<i>0.83</i>	<i>0.83</i>	<i>0.83</i>	<i>0.82</i>	<i>0.81</i>	<i>0.80</i>	0.86	<i>0.85</i>	<i>0.81</i>
Kazakhstan	1.80	1.76	1.70	1.75	1.79	1.68	<i>1.71</i>	<i>1.69</i>	<i>1.68</i>	<i>1.68</i>	<i>1.73</i>	<i>1.79</i>	1.75	<i>1.72</i>	<i>1.72</i>
Russia	11.00	10.96	11.01	11.14	11.27	11.20	<i>11.13</i>	<i>11.09</i>	<i>11.06</i>	<i>11.04</i>	<i>11.01</i>	<i>10.98</i>	11.03	<i>11.17</i>	<i>11.02</i>
Turkmenistan	0.29	0.27	0.28	0.27	0.27	0.29	<i>0.29</i>	<i>0.28</i>	<i>0.29</i>	<i>0.29</i>	<i>0.29</i>	<i>0.29</i>	0.28	<i>0.28</i>	<i>0.29</i>
Other Eurasia	0.20	0.19	0.19	0.18	0.18	0.21	<i>0.20</i>	<i>0.20</i>	<i>0.20</i>	<i>0.19</i>	<i>0.19</i>	<i>0.19</i>	0.19	<i>0.20</i>	<i>0.19</i>
Middle East	1.18	1.13	1.13	1.13	1.14	1.14	<i>1.14</i>	<i>1.14</i>	<i>1.14</i>	<i>1.14</i>	<i>1.14</i>	<i>1.13</i>	1.14	<i>1.14</i>	<i>1.14</i>
Oman	0.97	0.98	1.00	1.00	1.02	1.03	<i>1.02</i>	<i>1.02</i>	<i>1.03</i>	<i>1.03</i>	<i>1.03</i>	<i>1.02</i>	0.99	<i>1.02</i>	<i>1.03</i>
Syria	0.03	0.03	0.03	0.03	0.03	0.03	<i>0.03</i>	<i>0.03</i>	<i>0.03</i>	<i>0.03</i>	<i>0.03</i>	<i>0.03</i>	0.03	<i>0.03</i>	<i>0.03</i>
Yemen	0.11	0.04	0.02	0.02	0.02	0.01	<i>0.01</i>	<i>0.01</i>	<i>0.01</i>	<i>0.01</i>	<i>0.01</i>	<i>0.01</i>	0.05	<i>0.01</i>	<i>0.01</i>
Asia and Oceania	8.45	8.50	8.48	8.51	8.35	8.20	<i>8.30</i>	<i>8.35</i>	<i>8.21</i>	<i>8.23</i>	<i>8.25</i>	<i>8.29</i>	8.48	<i>8.30</i>	<i>8.24</i>
Australia	0.39	0.39	0.45	0.43	0.39	0.38	<i>0.38</i>	<i>0.40</i>	<i>0.40</i>	<i>0.41</i>	<i>0.42</i>	<i>0.43</i>	0.42	<i>0.39</i>	<i>0.42</i>
China	4.68	4.76	4.73	4.72	4.59	4.47	<i>4.53</i>	<i>4.57</i>	<i>4.44</i>	<i>4.46</i>	<i>4.46</i>	<i>4.49</i>	4.72	<i>4.54</i>	<i>4.46</i>
India	1.01	1.00	1.01	1.02	1.00	1.00	<i>1.02</i>	<i>1.01</i>	<i>1.00</i>	<i>0.99</i>	<i>1.02</i>	<i>1.00</i>	1.01	<i>1.01</i>	<i>1.00</i>
Malaysia	0.77	0.74	0.69	0.73	0.76	0.74	<i>0.76</i>	<i>0.77</i>	<i>0.76</i>	<i>0.76</i>	<i>0.76</i>	<i>0.76</i>	0.74	<i>0.76</i>	<i>0.76</i>
Vietnam	0.36	0.34	0.35	0.36	0.33	0.33	<i>0.32</i>	<i>0.32</i>	<i>0.31</i>	<i>0.31</i>	<i>0.31</i>	<i>0.30</i>	0.35	<i>0.32</i>	<i>0.31</i>
Africa	2.12	2.12	2.12	2.12	2.11	2.09	<i>2.09</i>	<i>2.12</i>	<i>2.10</i>	<i>2.13</i>	<i>2.16</i>	<i>2.17</i>	2.12	<i>2.10</i>	<i>2.14</i>
Egypt	0.71	0.70	0.71	0.70	0.70	0.69	<i>0.69</i>	<i>0.69</i>	<i>0.68</i>	<i>0.68</i>	<i>0.68</i>	<i>0.67</i>	0.71	<i>0.69</i>	<i>0.68</i>
Equatorial Guinea	0.27	0.27	0.27	0.27	0.24	0.25	<i>0.25</i>	<i>0.25</i>	<i>0.23</i>	<i>0.24</i>	<i>0.24</i>	<i>0.24</i>	0.27	<i>0.25</i>	<i>0.24</i>
Sudan and South Sudan	0.26	0.26	0.26	0.26	0.26	0.26	<i>0.26</i>	<i>0.26</i>	<i>0.25</i>	<i>0.25</i>	<i>0.25</i>	<i>0.25</i>	0.26	<i>0.26</i>	<i>0.25</i>
Total non-OPEC liquids	57.03	57.10	57.63	57.89	57.19	56.52	<i>56.86</i>	<i>56.69</i>	<i>55.91</i>	<i>56.46</i>	<i>56.54</i>	<i>56.71</i>	57.41	<i>56.82</i>	<i>56.41</i>
OPEC non-crude liquids	6.53	6.56	6.57	6.57	6.61	6.84	<i>6.88</i>	<i>6.94</i>	<i>7.06</i>	<i>7.11</i>	<i>7.19</i>	<i>7.25</i>	6.56	<i>6.82</i>	<i>7.15</i>
Non-OPEC + OPEC non-crude	63.56	63.66	64.20	64.46	63.80	63.36	<i>63.74</i>	<i>63.63</i>	<i>62.97</i>	<i>63.57</i>	<i>63.74</i>	<i>63.96</i>	63.97	<i>63.63</i>	<i>63.56</i>
Unplanned non-OPEC Production Outages	0.27	0.46	0.40	0.34	0.38	0.76	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	0.37	<i>n/a</i>	<i>n/a</i>

- = no data available

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

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

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

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

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

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

Projections: EIA Regional Short-Term Energy Model.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - August 2016

	2015				2016				2017				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2015	2016	2017
Crude Oil															
Algeria	1.10	1.10	1.10	1.10	1.05	1.05	-	-	-	-	-	-	1.10	-	-
Angola	1.75	1.77	1.82	1.78	1.78	1.79	-	-	-	-	-	-	1.78	-	-
Ecuador	0.55	0.54	0.55	0.57	0.57	0.56	-	-	-	-	-	-	0.55	-	-
Gabon	0.22	0.21	0.22	0.22	0.21	0.21	-	-	-	-	-	-	0.21	-	-
Indonesia	0.67	0.69	0.69	0.69	0.73	0.74	-	-	-	-	-	-	0.68	-	-
Iran	2.80	2.80	2.80	2.80	3.03	3.58	-	-	-	-	-	-	2.80	-	-
Iraq	3.49	3.97	4.30	4.35	4.29	4.38	-	-	-	-	-	-	4.03	-	-
Kuwait	2.57	2.53	2.50	2.45	2.48	2.42	-	-	-	-	-	-	2.51	-	-
Libya	0.40	0.45	0.38	0.39	0.35	0.31	-	-	-	-	-	-	0.40	-	-
Nigeria	2.00	1.83	1.86	1.90	1.77	1.56	-	-	-	-	-	-	1.90	-	-
Qatar	0.68	0.68	0.68	0.68	0.66	0.68	-	-	-	-	-	-	0.68	-	-
Saudi Arabia	9.73	10.07	10.22	10.00	9.98	10.32	-	-	-	-	-	-	10.01	-	-
United Arab Emirates	2.70	2.70	2.70	2.70	2.60	2.57	-	-	-	-	-	-	2.70	-	-
Venezuela	2.40	2.40	2.40	2.40	2.30	2.23	-	-	-	-	-	-	2.40	-	-
OPEC Total	31.06	31.74	32.20	32.03	31.79	32.41	32.78	32.91	32.82	33.04	33.12	33.12	31.76	32.47	33.03
Other Liquids (a)	6.53	6.56	6.57	6.57	6.61	6.84	6.88	6.94	7.06	7.11	7.19	7.25	6.56	6.82	7.15
Total OPEC Supply	37.59	38.30	38.77	38.60	38.40	39.24	39.66	39.85	39.88	40.15	40.31	40.37	38.32	39.29	40.18
Crude Oil Production Capacity															
Africa	5.47	5.36	5.37	5.38	5.16	4.92	5.00	5.28	5.30	5.35	5.39	5.44	5.40	5.09	5.37
South America	2.95	2.94	2.95	2.97	2.87	2.78	2.67	2.69	2.57	2.56	2.50	2.50	2.95	2.75	2.53
Middle East	23.89	24.28	24.53	24.58	25.00	25.43	25.55	25.63	25.67	25.71	25.76	25.80	24.32	25.40	25.74
Asia	0.67	0.69	0.69	0.69	0.73	0.74	0.73	0.73	0.73	0.73	0.73	0.73	0.68	0.73	0.73
OPEC Total	32.97	33.27	33.53	33.63	33.75	33.88	33.96	34.33	34.27	34.35	34.39	34.47	33.35	33.98	34.37
Surplus Crude Oil Production Capacity															
Africa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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
Middle East	1.92	1.53	1.33	1.60	1.96	1.47	1.18	1.42	1.45	1.32	1.27	1.35	1.59	1.51	1.35
Asia	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	1.92	1.53	1.33	1.60	1.96	1.47	1.18	1.42	1.45	1.32	1.27	1.35	1.59	1.51	1.35
Unplanned OPEC Production Outages	2.56	2.66	2.79	2.79	2.10	2.44	n/a	n/a	n/a	n/a	n/a	n/a	2.70	n/a	n/a

- = no data available

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

(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 - August 2016

	2015				2016				2017				2015	2016	2017
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
North America	23.57	23.46	24.11	23.73	23.72	23.62	<i>24.06</i>	<i>23.94</i>	<i>23.60</i>	<i>23.74</i>	<i>24.15</i>	<i>24.11</i>	23.72	<i>23.84</i>	<i>23.90</i>
Canada	2.36	2.26	2.38	2.34	2.31	2.24	<i>2.35</i>	<i>2.33</i>	<i>2.27</i>	<i>2.22</i>	<i>2.32</i>	<i>2.30</i>	2.34	<i>2.31</i>	<i>2.28</i>
Mexico	1.91	1.95	2.04	2.02	1.95	1.97	<i>1.94</i>	<i>1.95</i>	<i>1.95</i>	<i>1.97</i>	<i>1.94</i>	<i>1.95</i>	1.98	<i>1.95</i>	<i>1.95</i>
United States	19.29	19.25	19.68	19.36	19.45	19.39	<i>19.76</i>	<i>19.65</i>	<i>19.36</i>	<i>19.54</i>	<i>19.87</i>	<i>19.84</i>	19.40	<i>19.56</i>	<i>19.66</i>
Central and South America	7.09	7.34	7.36	7.36	7.05	7.37	<i>7.40</i>	<i>7.38</i>	<i>7.11</i>	<i>7.38</i>	<i>7.41</i>	<i>7.39</i>	7.29	<i>7.30</i>	<i>7.32</i>
Brazil	3.00	3.11	3.18	3.17	2.93	3.04	<i>3.11</i>	<i>3.10</i>	<i>2.88</i>	<i>2.99</i>	<i>3.06</i>	<i>3.04</i>	3.12	<i>3.04</i>	<i>3.00</i>
Europe	14.13	14.25	14.85	14.40	14.31	14.11	<i>14.58</i>	<i>14.52</i>	<i>14.23</i>	<i>14.00</i>	<i>14.48</i>	<i>14.41</i>	14.41	<i>14.38</i>	<i>14.28</i>
Eurasia	4.74	4.68	4.95	4.93	4.76	4.69	<i>4.97</i>	<i>4.95</i>	<i>4.84</i>	<i>4.76</i>	<i>5.04</i>	<i>5.03</i>	4.83	<i>4.84</i>	<i>4.92</i>
Russia	3.39	3.34	3.54	3.53	3.35	3.30	<i>3.50</i>	<i>3.48</i>	<i>3.36</i>	<i>3.31</i>	<i>3.51</i>	<i>3.49</i>	3.45	<i>3.41</i>	<i>3.42</i>
Middle East	7.84	8.43	8.99	8.15	8.00	8.64	<i>9.22</i>	<i>8.35</i>	<i>8.27</i>	<i>8.90</i>	<i>9.50</i>	<i>8.59</i>	8.36	<i>8.56</i>	<i>8.82</i>
Asia and Oceania	31.62	31.33	30.94	31.69	32.50	32.39	<i>31.81</i>	<i>32.81</i>	<i>33.46</i>	<i>33.39</i>	<i>32.77</i>	<i>33.74</i>	31.39	<i>32.37</i>	<i>33.34</i>
China	10.87	11.46	11.42	11.37	11.25	11.87	<i>11.82</i>	<i>11.77</i>	<i>11.64</i>	<i>12.28</i>	<i>12.23</i>	<i>12.17</i>	11.28	<i>11.68</i>	<i>12.08</i>
Japan	4.79	3.89	3.94	4.23	4.52	3.82	<i>3.85</i>	<i>4.22</i>	<i>4.45</i>	<i>3.75</i>	<i>3.78</i>	<i>4.14</i>	4.21	<i>4.11</i>	<i>4.03</i>
India	4.19	4.17	3.82	4.13	4.60	4.58	<i>4.20</i>	<i>4.59</i>	<i>5.01</i>	<i>4.99</i>	<i>4.57</i>	<i>4.94</i>	4.08	<i>4.49</i>	<i>4.88</i>
Africa	3.89	3.88	3.84	3.86	4.04	4.03	<i>3.99</i>	<i>4.01</i>	<i>4.20</i>	<i>4.19</i>	<i>4.14</i>	<i>4.17</i>	3.86	<i>4.02</i>	<i>4.17</i>
Total OECD Liquid Fuels Consumption	46.48	45.38	46.73	46.37	46.68	45.50	<i>46.40</i>	<i>46.82</i>	<i>46.53</i>	<i>45.52</i>	<i>46.38</i>	<i>46.86</i>	46.24	<i>46.35</i>	<i>46.32</i>
Total non-OECD Liquid Fuels Consumption	46.40	47.98	48.30	47.76	47.71	49.34	<i>49.63</i>	<i>49.14</i>	<i>49.17</i>	<i>50.84</i>	<i>51.12</i>	<i>50.57</i>	47.62	<i>48.95</i>	<i>50.43</i>
Total World Liquid Fuels Consumption	92.88	93.37	95.03	94.13	94.38	94.84	<i>96.03</i>	<i>95.96</i>	<i>95.70</i>	<i>96.36</i>	<i>97.50</i>	<i>97.44</i>	93.86	<i>95.31</i>	<i>96.76</i>
Oil-weighted Real Gross Domestic Product (a)															
World Index, 2010 Q1 = 100	116.2	116.8	117.5	118.2	118.7	119.4	<i>120.1</i>	<i>120.8</i>	<i>121.6</i>	<i>122.5</i>	<i>123.3</i>	<i>124.2</i>	117.2	<i>119.8</i>	<i>122.9</i>
Percent change from prior year	2.7	2.5	2.4	2.2	2.1	2.2	<i>2.2</i>	<i>2.3</i>	<i>2.5</i>	<i>2.5</i>	<i>2.7</i>	<i>2.8</i>	2.4	<i>2.2</i>	<i>2.6</i>
OECD Index, 2010 Q1 = 100	109.3	109.9	110.4	110.8	111.3	111.7	<i>112.2</i>	<i>112.7</i>	<i>113.2</i>	<i>113.8</i>	<i>114.4</i>	<i>115.0</i>	110.1	<i>112.0</i>	<i>114.1</i>
Percent change from prior year	2.1	2.1	2.1	1.9	1.8	1.7	<i>1.6</i>	<i>1.7</i>	<i>1.7</i>	<i>1.9</i>	<i>2.0</i>	<i>2.1</i>	2.0	<i>1.7</i>	<i>1.9</i>
Non-OECD Index, 2010 Q1 = 100	125.0	125.7	126.5	127.5	128.1	129.2	<i>130.3</i>	<i>131.3</i>	<i>132.4</i>	<i>133.6</i>	<i>134.8</i>	<i>136.1</i>	126.2	<i>129.7</i>	<i>134.2</i>
Percent change from prior year	3.4	2.9	2.7	2.6	2.5	2.8	<i>3.0</i>	<i>3.0</i>	<i>3.3</i>	<i>3.4</i>	<i>3.5</i>	<i>3.7</i>	2.9	<i>2.8</i>	<i>3.5</i>
Real U.S. Dollar Exchange Rate (a)															
Index, January 2010 = 100	119.42	119.72	123.05	124.95	128.77	127.71	<i>129.60</i>	<i>131.15</i>	<i>131.78</i>	<i>132.14</i>	<i>132.23</i>	<i>132.10</i>	121.78	<i>129.31</i>	<i>132.07</i>
Percent change from prior year	10.2	10.8	12.7	9.8	7.8	6.7	<i>5.3</i>	<i>5.0</i>	<i>2.3</i>	<i>3.5</i>	<i>2.0</i>	<i>0.7</i>	10.9	<i>6.2</i>	<i>2.1</i>

- = no data available

OECD = Organisation for Economic Co-operation and Development: Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Finland,

France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal,

Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and 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.

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 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 - August 2016

	2015				2016				2017				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2015	2016	2017
HGL Production															
Natural Gas Processing Plants															
Ethane	1.05	1.10	1.09	1.20	1.20	1.31	1.25	1.30	1.34	1.38	1.44	1.55	1.11	1.26	1.43
Propane	1.07	1.12	1.13	1.15	1.15	1.16	1.19	1.21	1.19	1.23	1.24	1.26	1.12	1.18	1.23
Butanes	0.58	0.62	0.64	0.64	0.63	0.64	0.67	0.67	0.65	0.68	0.69	0.69	0.62	0.65	0.68
Natural Gasoline (Pentanes Plus)	0.39	0.44	0.46	0.43	0.41	0.43	0.46	0.44	0.43	0.46	0.48	0.47	0.43	0.43	0.46
Refinery and Blender Net Production															
Ethane/Ethylene	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.00
Propane/Propylene	0.54	0.58	0.56	0.55	0.58	0.60	0.58	0.56	0.55	0.58	0.57	0.56	0.56	0.58	0.57
Butanes/Butylenes	-0.08	0.27	0.19	-0.19	-0.11	0.26	0.19	-0.17	-0.06	0.25	0.19	-0.17	0.05	0.04	0.05
Renewable Fuels and Oxygenate Plant Net Production															
Natural Gasoline (Pentanes Plus)	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
HGL Net Imports															
Ethane	-0.06	-0.07	-0.06	-0.07	-0.08	-0.10	-0.12	-0.17	-0.22	-0.23	-0.25	-0.29	-0.06	-0.12	-0.25
Propane/Propylene	-0.40	-0.49	-0.56	-0.57	-0.65	-0.69	-0.69	-0.70	-0.76	-0.75	-0.73	-0.77	-0.50	-0.68	-0.75
Butanes/Butylenes	-0.06	-0.09	-0.11	-0.08	-0.07	-0.14	-0.17	-0.16	-0.16	-0.22	-0.22	-0.18	-0.08	-0.13	-0.19
Natural Gasoline (Pentanes Plus)	-0.17	-0.15	-0.21	-0.16	-0.20	-0.21	-0.22	-0.20	-0.22	-0.20	-0.24	-0.22	-0.17	-0.21	-0.22
HGL Refinery and Blender Net Inputs															
Butanes/Butylenes	0.40	0.27	0.32	0.50	0.43	0.29	0.31	0.43	0.37	0.27	0.31	0.44	0.37	0.36	0.35
Natural Gasoline (Pentanes Plus)	0.15	0.14	0.16	0.15	0.14	0.15	0.16	0.16	0.15	0.16	0.16	0.16	0.15	0.15	0.16
HGL Consumption															
Ethane/Ethylene	1.03	1.02	1.02	1.13	1.10	1.07	1.11	1.15	1.12	1.14	1.23	1.28	1.05	1.11	1.19
Propane/Propylene	1.43	0.92	0.96	1.17	1.41	0.90	0.92	1.21	1.31	0.89	0.94	1.21	1.12	1.11	1.09
Butanes/Butylenes	0.16	0.24	0.22	0.20	0.18	0.23	0.18	0.18	0.15	0.19	0.18	0.20	0.20	0.19	0.18
Natural Gasoline (Pentanes Plus)	0.10	0.09	0.09	0.08	0.04	0.05	0.06	0.07	0.05	0.06	0.06	0.07	0.09	0.06	0.06
HGL Inventories (million barrels)															
Ethane/Ethylene	31.38	31.65	31.86	33.79	33.76	44.12	50.66	50.56	49.22	51.46	49.49	49.40	32.18	44.81	49.89
Propane/Propylene	58.10	84.20	100.20	96.67	66.38	82.79	97.25	83.94	54.21	69.05	82.17	67.24	96.67	83.94	67.24
Butanes/Butylenes	32.46	59.42	76.52	46.14	32.39	54.38	72.54	46.23	38.77	61.37	76.36	49.42	46.14	46.23	49.42
Natural Gasoline (Pentanes Plus)	17.16	20.51	19.00	20.54	20.40	20.87	20.98	19.74	18.52	21.00	21.64	20.78	20.54	19.74	20.78
Refinery and Blender Net Inputs															
Crude Oil	15.53	16.48	16.58	16.24	16.00	16.27	16.60	16.31	15.81	16.46	16.78	16.50	16.21	16.30	16.39
Hydrocarbon Gas Liquids	0.54	0.40	0.47	0.64	0.57	0.44	0.47	0.59	0.52	0.43	0.47	0.60	0.52	0.52	0.50
Other Hydrocarbons/Oxygenates	1.12	1.18	1.19	1.17	1.15	1.21	1.25	1.24	1.20	1.26	1.27	1.25	1.16	1.21	1.25
Unfinished Oils	0.24	0.22	0.38	0.27	0.19	0.46	0.35	0.30	0.19	0.34	0.37	0.32	0.28	0.33	0.31
Motor Gasoline Blend Components	0.72	0.91	0.75	0.39	0.31	0.77	0.76	0.48	0.66	0.91	0.74	0.51	0.69	0.58	0.71
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	18.14	19.18	19.38	18.71	18.22	19.15	19.43	18.93	18.38	19.40	19.63	19.18	18.86	18.93	19.15
Refinery Processing Gain															
.....	0.99	1.02	1.08	1.06	1.07	1.11	1.08	1.07	1.03	1.06	1.09	1.08	1.04	1.08	1.06
Refinery and Blender Net Production															
Hydrocarbon Gas Liquids	0.47	0.86	0.76	0.37	0.47	0.86	0.77	0.39	0.50	0.83	0.76	0.39	0.61	0.62	0.62
Finished Motor Gasoline	9.48	9.83	9.97	9.83	9.68	10.02	10.18	10.08	9.78	10.14	10.17	10.15	9.78	9.99	10.06
Jet Fuel	1.50	1.61	1.60	1.63	1.57	1.60	1.63	1.59	1.51	1.61	1.66	1.61	1.59	1.60	1.60
Distillate Fuel	4.82	4.99	5.08	5.00	4.70	4.79	4.92	4.99	4.75	4.92	5.04	5.09	4.97	4.85	4.95
Residual Fuel	0.43	0.44	0.41	0.39	0.40	0.42	0.40	0.40	0.43	0.44	0.41	0.41	0.42	0.40	0.42
Other Oils (a)	2.44	2.48	2.63	2.55	2.47	2.57	2.61	2.55	2.44	2.51	2.67	2.60	2.52	2.55	2.56
Total Refinery and Blender Net Production	19.13	20.20	20.45	19.77	19.29	20.26	20.51	19.99	19.41	20.46	20.71	20.26	19.89	20.01	20.21
Refinery Distillation Inputs															
.....	15.78	16.69	16.85	16.40	16.27	16.49	16.88	16.57	16.09	16.67	17.03	16.73	16.43	16.55	16.63
Refinery Operable Distillation Capacity															
.....	17.88	17.98	18.08	18.16	18.31	18.32	18.33	18.40	18.44	18.44	18.44	18.44	18.03	18.34	18.44
Refinery Distillation Utilization Factor															
.....	0.88	0.93	0.93	0.90	0.89	0.90	0.92	0.90	0.87	0.90	0.92	0.91	0.91	0.90	0.90

- = 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 - August 2016

	2015				2016				2017				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2015	2016	2017
Prices (cents per gallon)															
Refiner Wholesale Price	159	201	184	145	119	158	<i>139</i>	<i>122</i>	<i>128</i>	<i>163</i>	<i>166</i>	<i>156</i>	173	<i>135</i>	<i>154</i>
Gasoline Regular Grade Retail Prices Including Taxes															
PADD 1	228	259	247	211	187	220	<i>206</i>	<i>193</i>	<i>199</i>	<i>232</i>	<i>238</i>	<i>232</i>	236	<i>202</i>	<i>225</i>
PADD 2	216	255	253	210	176	221	<i>206</i>	<i>187</i>	<i>191</i>	<i>232</i>	<i>235</i>	<i>223</i>	234	<i>198</i>	<i>221</i>
PADD 3	204	240	228	190	167	201	<i>191</i>	<i>171</i>	<i>177</i>	<i>212</i>	<i>215</i>	<i>205</i>	216	<i>182</i>	<i>203</i>
PADD 4	207	261	276	218	184	220	<i>219</i>	<i>193</i>	<i>183</i>	<i>223</i>	<i>242</i>	<i>228</i>	241	<i>205</i>	<i>219</i>
PADD 5	271	328	327	264	241	265	<i>262</i>	<i>235</i>	<i>226</i>	<i>271</i>	<i>280</i>	<i>260</i>	298	<i>251</i>	<i>260</i>
U.S. Average	227	267	260	216	190	225	<i>214</i>	<i>195</i>	<i>197</i>	<i>235</i>	<i>241</i>	<i>230</i>	243	<i>206</i>	<i>226</i>
Gasoline All Grades Including Taxes	236	275	269	226	200	235	<i>224</i>	<i>206</i>	<i>208</i>	<i>246</i>	<i>251</i>	<i>241</i>	252	<i>217</i>	<i>237</i>
End-of-period Inventories (million barrels)															
Total Gasoline Inventories															
PADD 1	64.5	61.3	62.6	60.3	65.9	72.5	<i>66.9</i>	<i>63.7</i>	<i>62.4</i>	<i>64.1</i>	<i>62.8</i>	<i>65.0</i>	60.3	<i>63.7</i>	<i>65.0</i>
PADD 2	52.9	50.4	47.0	53.7	56.7	52.0	<i>49.9</i>	<i>51.8</i>	<i>52.3</i>	<i>49.7</i>	<i>49.7</i>	<i>52.0</i>	53.7	<i>51.8</i>	<i>52.0</i>
PADD 3	78.4	74.6	78.1	84.6	83.0	80.2	<i>78.3</i>	<i>82.9</i>	<i>81.9</i>	<i>79.8</i>	<i>80.0</i>	<i>82.8</i>	84.6	<i>82.9</i>	<i>82.8</i>
PADD 4	6.5	6.8	7.1	7.7	8.4	7.4	<i>7.2</i>	<i>7.7</i>	<i>7.1</i>	<i>7.2</i>	<i>7.3</i>	<i>7.9</i>	7.7	<i>7.7</i>	<i>7.9</i>
PADD 5	29.2	28.0	30.3	28.7	29.4	27.9	<i>29.0</i>	<i>32.5</i>	<i>30.9</i>	<i>28.4</i>	<i>28.3</i>	<i>31.8</i>	28.7	<i>32.5</i>	<i>31.8</i>
U.S. Total	231.5	221.0	225.1	235.0	243.3	239.9	<i>231.3</i>	<i>238.6</i>	<i>234.6</i>	<i>229.3</i>	<i>228.1</i>	<i>239.4</i>	235.0	<i>238.6</i>	<i>239.4</i>
Finished Gasoline Inventories															
U.S. Total	26.9	25.7	29.0	28.5	26.5	24.8	<i>25.7</i>	<i>27.8</i>	<i>27.1</i>	<i>25.6</i>	<i>26.6</i>	<i>28.0</i>	28.5	<i>27.8</i>	<i>28.0</i>
Gasoline Blending Components Inventories															
U.S. Total	204.6	195.4	196.1	206.5	216.9	215.1	<i>205.6</i>	<i>210.8</i>	<i>207.5</i>	<i>203.7</i>	<i>201.5</i>	<i>211.4</i>	206.5	<i>210.8</i>	<i>211.4</i>

- = no data available

Prices are not adjusted for inflation.

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

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

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

Historical data: Latest data available from Energy Information Administration databases supporting the following reports: *Petroleum Marketing Monthly*, DOE/EIA-0380; *Petroleum Supply Monthly*, DOE/EIA-0109; *Petroleum Supply Annual*, DOE/EIA-0340/2; and *Weekly Petroleum Status Report*, DOE/EIA-0208.

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

Projections: EIA Regional Short-Term Energy Model.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - August 2016

	2015				2016				2017				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2015	2016	2017
Supply (billion cubic feet per day)															
Total Marketed Production	77.85	78.73	79.60	78.88	79.33	78.36	79.22	80.22	80.95	81.39	81.57	82.30	78.77	79.28	81.55
Alaska	0.99	0.93	0.86	0.98	0.98	0.85	0.75	0.92	0.97	0.82	0.75	0.92	0.94	0.87	0.87
Federal GOM (a)	3.37	3.68	3.95	3.58	3.48	3.33	3.21	3.17	3.22	3.17	3.00	3.03	3.65	3.30	3.10
Lower 48 States (excl GOM)	73.49	74.11	74.79	74.32	74.87	74.18	75.25	76.13	76.76	77.40	77.82	78.34	74.18	75.11	77.59
Total Dry Gas Production	73.41	74.03	74.85	73.96	74.43	73.26	74.06	74.99	75.67	76.09	76.25	76.93	74.06	74.19	76.24
LNG Gross Imports	0.43	0.08	0.26	0.24	0.33	0.15	0.17	0.19	0.27	0.15	0.17	0.22	0.25	0.21	0.20
LNG Gross Exports	0.06	0.06	0.09	0.10	0.15	0.36	0.66	1.00	1.04	1.10	1.35	1.73	0.08	0.54	1.31
Pipeline Gross Imports	8.36	6.69	6.69	7.06	8.06	7.48	6.56	6.76	7.46	6.26	6.50	6.80	7.20	7.21	6.75
Pipeline Gross Exports	4.98	4.36	4.81	5.08	5.64	5.40	5.58	5.63	5.62	5.48	5.61	5.88	4.81	5.56	5.65
Supplemental Gaseous Fuels	0.17	0.16	0.14	0.18	0.17	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.16	0.16	0.17
Net Inventory Withdrawals	18.50	-12.99	-10.48	-0.55	13.08	-7.83	-6.13	3.90	17.35	-9.40	-8.73	2.94	-1.46	0.75	0.48
Total Supply	95.83	63.54	66.56	75.72	90.30	67.47	68.58	79.39	94.25	66.68	67.40	79.45	75.33	76.42	76.88
Balancing Item (b)	0.73	0.45	-0.45	-1.03	-0.30	-0.08	0.27	-0.20	-0.26	0.35	1.17	0.12	-0.08	-0.08	0.35
Total Primary Supply	96.56	63.99	66.11	74.69	89.99	67.40	68.85	79.19	93.99	67.03	68.57	79.57	75.25	76.34	77.23
Consumption (billion cubic feet per day)															
Residential	27.50	6.90	3.47	12.99	22.46	7.14	3.60	15.29	24.76	7.12	3.58	15.29	12.65	12.11	12.64
Commercial	15.99	5.85	4.44	9.01	13.42	5.96	4.56	10.30	14.73	6.12	4.60	10.58	8.79	8.55	8.99
Industrial	22.64	19.55	19.16	20.85	22.57	20.17	19.90	21.60	22.79	20.41	20.05	21.94	20.54	21.06	21.29
Electric Power (c)	23.05	25.28	32.50	25.07	24.27	27.61	34.17	24.98	24.16	26.70	33.59	24.62	26.50	27.77	27.29
Lease and Plant Fuel	4.27	4.32	4.37	4.33	4.35	4.30	4.35	4.40	4.44	4.47	4.48	4.52	4.32	4.35	4.48
Pipeline and Distribution Use	3.02	2.00	2.07	2.34	2.82	2.11	2.16	2.51	3.01	2.10	2.15	2.52	2.36	2.40	2.44
Vehicle Use	0.09	0.09	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.09	0.11	0.11
Total Consumption	96.56	63.99	66.11	74.69	89.99	67.40	68.85	79.19	93.99	67.03	68.57	79.57	75.25	76.34	77.23
End-of-period Inventories (billion cubic feet)															
Working Gas Inventory	1,480	2,656	3,622	3,675	2,496	3,202	3,766	3,407	1,845	2,701	3,503	3,233	3,675	3,407	3,233
East Region (d)	239	573	856	853	436	651	896	743	265	527	789	658	853	743	658
Midwest Region (d)	253	566	973	989	543	761	1,043	902	389	641	993	855	989	902	855
South Central Region (d)	575	1,002	1,206	1,304	1,080	1,247	1,215	1,190	787	990	1,085	1,131	1,304	1,190	1,131
Mountain Region (d)	113	155	203	186	145	201	244	217	141	174	227	202	186	217	202
Pacific Region (d)	276	336	359	320	266	313	342	331	237	340	385	363	320	331	363
Alaska	24	24	25	24	25	29	25	24	25	29	25	24	24	24	24

- = 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 fee)
 U.S. Energy Information Administration | Short-Term Energy Outlook - August 2016

	2015				2016				2017				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2015	2016	2017
Wholesale/Spot															
Henry Hub Spot Price	2.99	2.83	2.84	2.18	2.06	2.21	2.87	2.81	3.09	2.88	3.03	3.15	2.71	2.49	3.04
Residential Retail															
New England	13.09	13.33	16.17	12.55	11.75	12.94	16.36	13.10	12.79	13.97	16.63	13.27	13.19	12.66	13.38
Middle Atlantic	9.53	11.20	16.32	10.99	8.86	10.70	16.21	11.35	10.17	12.59	17.07	11.47	10.52	10.41	11.33
E. N. Central	7.78	10.58	16.71	7.96	6.78	9.31	16.04	8.22	7.90	11.14	16.79	8.70	8.67	8.18	9.05
W. N. Central	8.66	11.94	17.74	9.38	7.38	10.67	16.93	9.18	8.24	10.91	17.47	9.62	9.79	8.95	9.51
S. Atlantic	10.74	16.68	22.48	14.02	10.23	15.32	21.96	12.86	11.13	15.94	21.81	12.52	12.93	12.54	12.78
E. S. Central	9.34	14.36	19.42	11.83	8.54	13.10	18.59	10.99	9.39	13.48	18.99	11.38	10.92	10.43	10.90
W. S. Central	8.47	13.97	19.94	12.10	8.27	14.21	19.23	11.94	9.76	14.38	19.54	12.07	10.77	11.14	11.87
Mountain	9.57	10.87	14.57	8.56	8.19	9.41	13.22	9.13	9.27	10.70	14.28	9.78	9.77	9.08	10.06
Pacific	11.46	11.40	12.05	10.88	10.98	10.66	10.88	9.99	10.51	10.85	11.44	10.57	11.32	10.60	10.71
U.S. Average	9.30	11.97	16.45	10.11	8.54	11.01	15.75	10.18	9.48	12.15	16.36	10.51	10.36	9.96	10.66
Commercial Retail															
New England	10.77	10.13	9.69	9.13	8.75	9.41	9.65	9.95	10.24	10.06	10.28	10.46	10.21	9.30	10.27
Middle Atlantic	7.91	7.48	6.62	7.01	6.87	6.50	6.78	7.63	8.18	7.76	7.50	8.25	7.49	7.02	8.05
E. N. Central	6.95	7.51	8.80	6.30	5.90	6.65	8.52	6.77	6.90	8.14	8.97	7.18	7.01	6.51	7.31
W. N. Central	7.65	8.03	9.10	6.70	6.25	7.09	8.78	7.13	7.28	7.59	8.75	7.37	7.56	6.87	7.46
S. Atlantic	8.48	9.21	9.62	8.92	7.53	8.41	9.54	8.91	8.88	9.27	9.87	9.12	8.83	8.35	9.13
E. S. Central	8.54	9.62	10.00	8.90	7.47	8.47	9.59	8.78	8.36	9.19	9.96	9.23	8.93	8.26	8.90
W. S. Central	7.16	7.17	8.00	7.26	6.23	6.81	7.70	7.22	7.07	7.56	8.04	7.53	7.31	6.83	7.42
Mountain	8.28	8.35	9.03	7.23	6.93	7.02	8.15	7.33	7.52	8.04	9.11	8.11	8.02	7.20	7.96
Pacific	9.22	8.45	8.71	8.16	8.33	7.99	8.50	8.21	8.58	8.54	8.99	8.79	8.64	8.25	8.71
U.S. Average	7.94	8.13	8.42	7.38	6.84	7.27	8.30	7.69	7.85	8.26	8.77	8.15	7.88	7.34	8.11
Industrial Retail															
New England	9.10	7.61	6.10	6.77	7.08	7.03	7.27	8.48	8.73	7.85	7.51	8.44	7.77	7.41	8.27
Middle Atlantic	8.31	7.58	7.11	7.12	7.04	6.27	7.02	7.68	7.98	7.24	7.46	8.01	7.82	7.07	7.79
E. N. Central	6.41	5.65	5.54	5.15	5.08	4.98	5.78	5.80	6.27	6.00	6.19	6.22	5.89	5.38	6.20
W. N. Central	5.81	4.53	4.41	4.37	4.32	3.68	4.07	4.78	5.19	4.51	4.58	5.09	4.87	4.26	4.88
S. Atlantic	5.46	4.51	4.52	4.28	4.37	3.87	4.88	5.00	5.21	4.80	4.95	5.23	4.72	4.53	5.06
E. S. Central	5.15	4.28	4.14	3.84	3.84	3.43	4.43	4.63	4.90	4.44	4.57	4.88	4.39	4.08	4.71
W. S. Central	3.22	2.94	3.09	2.51	2.26	2.26	3.13	3.05	3.25	3.05	3.32	3.38	2.94	2.69	3.25
Mountain	6.62	6.22	6.12	5.67	5.29	5.06	5.57	5.67	5.82	5.47	5.81	5.84	6.18	5.41	5.75
Pacific	7.29	6.54	6.59	6.46	6.68	5.95	6.19	6.37	6.63	6.08	6.44	6.59	6.74	6.32	6.45
U.S. Average	4.68	3.75	3.72	3.43	3.43	3.00	3.72	3.97	4.40	3.79	3.94	4.29	3.92	3.54	4.12

- = 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 - August 2016

	2015				2016				2017				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2015	2016	2017
Supply (million short tons)															
Production	240.2	211.1	237.3	206.8	173.0	153.7	<i>205.0</i>	<i>200.2</i>	<i>192.4</i>	<i>170.5</i>	<i>204.9</i>	<i>196.0</i>	895.4	<i>732.0</i>	<i>763.8</i>
Appalachia	62.3	54.6	56.5	50.6	44.3	36.9	<i>49.4</i>	<i>49.4</i>	<i>49.2</i>	<i>46.2</i>	<i>50.3</i>	<i>47.4</i>	224.0	<i>180.0</i>	<i>193.2</i>
Interior	45.2	38.9	45.2	39.7	36.9	28.6	<i>42.7</i>	<i>42.3</i>	<i>41.1</i>	<i>37.7</i>	<i>44.9</i>	<i>44.0</i>	169.1	<i>150.5</i>	<i>167.7</i>
Western	132.7	117.6	135.5	116.5	91.8	88.2	<i>113.0</i>	<i>108.5</i>	<i>102.1</i>	<i>86.6</i>	<i>109.7</i>	<i>104.5</i>	502.3	<i>401.5</i>	<i>403.0</i>
Primary Inventory Withdrawals	-0.7	0.3	3.1	-1.6	-1.0	3.2	<i>0.4</i>	<i>-1.6</i>	<i>0.2</i>	<i>1.9</i>	<i>-1.3</i>	<i>0.2</i>	1.1	<i>1.0</i>	<i>1.1</i>
Imports	3.0	2.6	3.0	2.7	2.7	2.6	<i>3.3</i>	<i>2.9</i>	<i>2.2</i>	<i>2.4</i>	<i>3.3</i>	<i>2.9</i>	11.3	<i>11.5</i>	<i>10.8</i>
Exports	22.0	19.8	16.9	15.3	14.2	13.8	<i>13.3</i>	<i>14.2</i>	<i>11.2</i>	<i>12.9</i>	<i>13.1</i>	<i>13.9</i>	74.0	<i>55.5</i>	<i>51.1</i>
Metallurgical Coal	13.5	12.7	10.3	9.4	10.2	10.1	<i>8.6</i>	<i>8.5</i>	<i>8.0</i>	<i>9.0</i>	<i>7.9</i>	<i>9.0</i>	46.0	<i>37.4</i>	<i>33.9</i>
Steam Coal	8.5	7.0	6.6	5.9	4.0	3.7	<i>4.7</i>	<i>5.7</i>	<i>3.2</i>	<i>3.9</i>	<i>5.2</i>	<i>4.9</i>	28.0	<i>18.1</i>	<i>17.2</i>
Total Primary Supply	220.5	194.3	226.4	192.6	160.6	145.7	<i>195.4</i>	<i>187.3</i>	<i>183.6</i>	<i>161.9</i>	<i>193.8</i>	<i>185.1</i>	833.8	<i>689.0</i>	<i>724.5</i>
Secondary Inventory Withdrawals	-2.3	-12.8	3.8	-34.8	3.7	10.7	<i>31.6</i>	<i>-5.3</i>	<i>3.0</i>	<i>3.1</i>	<i>15.8</i>	<i>-3.7</i>	-46.1	<i>40.7</i>	<i>18.1</i>
Waste Coal (a)	2.3	2.3	2.3	2.3	2.5	2.5	<i>2.5</i>	<i>2.5</i>	<i>2.6</i>	<i>2.6</i>	<i>2.6</i>	<i>2.6</i>	9.3	<i>9.8</i>	<i>10.2</i>
Total Supply	220.5	183.9	232.5	160.1	166.8	158.8	<i>229.5</i>	<i>184.4</i>	<i>189.2</i>	<i>167.6</i>	<i>212.1</i>	<i>184.0</i>	797.0	<i>739.4</i>	<i>752.9</i>
Consumption (million short tons)															
Coke Plants	4.4	4.4	5.1	5.0	4.2	4.0	<i>5.1</i>	<i>5.0</i>	<i>4.4</i>	<i>4.3</i>	<i>5.0</i>	<i>4.7</i>	18.9	<i>18.2</i>	<i>18.4</i>
Electric Power Sector (b)	196.3	174.6	215.5	153.3	152.4	146.5	<i>208.3</i>	<i>169.0</i>	<i>173.9</i>	<i>153.4</i>	<i>197.2</i>	<i>168.9</i>	739.7	<i>676.2</i>	<i>693.4</i>
Retail and Other Industry	11.4	10.4	10.5	10.8	11.0	9.5	<i>9.9</i>	<i>10.4</i>	<i>10.9</i>	<i>9.9</i>	<i>9.9</i>	<i>10.4</i>	43.0	<i>40.9</i>	<i>41.1</i>
Residential and Commercial	0.8	0.6	0.6	0.7	0.8	0.6	<i>0.5</i>	<i>0.7</i>	<i>0.8</i>	<i>0.5</i>	<i>0.4</i>	<i>0.6</i>	2.7	<i>2.6</i>	<i>2.2</i>
Other Industrial	10.6	9.8	9.9	10.1	10.2	8.9	<i>9.4</i>	<i>9.8</i>	<i>10.1</i>	<i>9.5</i>	<i>9.5</i>	<i>9.8</i>	40.3	<i>38.3</i>	<i>38.9</i>
Total Consumption	212.1	189.4	231.0	169.1	167.6	160.0	<i>223.3</i>	<i>184.4</i>	<i>189.2</i>	<i>167.6</i>	<i>212.1</i>	<i>184.0</i>	801.6	<i>735.3</i>	<i>752.9</i>
Discrepancy (c)	8.4	-5.5	1.5	-9.0	-0.8	-1.2	<i>6.2</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	-4.6	<i>4.2</i>	<i>0.0</i>
End-of-period Inventories (million short tons)															
Primary Inventories (d)	39.6	39.3	36.2	37.8	38.8	35.6	<i>35.2</i>	<i>36.9</i>	<i>36.7</i>	<i>34.7</i>	<i>36.0</i>	<i>35.8</i>	37.8	<i>36.9</i>	<i>35.8</i>
Secondary Inventories	161.2	173.9	170.1	204.9	201.2	190.5	<i>158.9</i>	<i>164.3</i>	<i>161.3</i>	<i>158.2</i>	<i>142.4</i>	<i>146.2</i>	204.9	<i>164.3</i>	<i>146.2</i>
Electric Power Sector	155.0	167.0	162.7	197.1	194.4	183.1	<i>151.0</i>	<i>156.0</i>	<i>154.0</i>	<i>150.3</i>	<i>134.1</i>	<i>137.6</i>	197.1	<i>156.0</i>	<i>137.6</i>
Retail and General Industry	4.1	4.5	5.1	5.5	4.8	5.1	<i>5.7</i>	<i>6.0</i>	<i>5.2</i>	<i>5.4</i>	<i>6.0</i>	<i>6.3</i>	5.5	<i>6.0</i>	<i>6.3</i>
Coke Plants	1.6	1.9	1.9	1.8	1.5	1.9	<i>1.8</i>	<i>1.8</i>	<i>1.5</i>	<i>1.9</i>	<i>1.8</i>	<i>1.8</i>	1.8	<i>1.8</i>	<i>1.8</i>
Coal Market Indicators															
Coal Miner Productivity															
(Tons per hour)	6.11	6.11	6.11	6.11	5.95	5.95	<i>5.95</i>	<i>5.95</i>	<i>5.80</i>	<i>5.80</i>	<i>5.80</i>	<i>5.80</i>	6.11	<i>5.95</i>	<i>5.80</i>
Total Raw Steel Production															
(Million short tons per day)	0.247	0.242	0.248	0.226	0.238	0.247	<i>0.242</i>	<i>0.216</i>	<i>0.216</i>	<i>0.226</i>	<i>0.205</i>	<i>0.175</i>	0.241	<i>0.236</i>	<i>0.205</i>
Cost of Coal to Electric Utilities															
(Dollars per million Btu)	2.27	2.25	2.22	2.15	2.13	2.18	<i>2.22</i>	<i>2.21</i>	<i>2.21</i>	<i>2.24</i>	<i>2.28</i>	<i>2.24</i>	2.23	<i>2.19</i>	<i>2.24</i>

- = no data available

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

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

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

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

Notes: The approximate break between historical and forecast values is shown with historical data printed in bold; estimates and forecasts in italics.**Historical data:** Latest data available from Energy Information Administration databases supporting the following reports: *Quarterly Coal Report*, DOE/EIA-0121; and *Electric Power Monthly*, DOE/EIA-0226.

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

Projections: EIA Regional Short-Term Energy Model.

Table 7a. U.S. Electricity Industry Overview

U.S. Energy Information Administration | Short-Term Energy Outlook - August 2016

	2015				2016				2017				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2015	2016	2017
Electricity Supply (billion kilowatthours per day)															
Electricity Generation	11.36	10.77	12.46	10.21	10.67	10.77	12.62	10.57	11.01	10.84	12.50	10.68	11.20	11.16	11.26
Electric Power Sector (a)	10.93	10.36	12.01	9.78	10.24	10.34	12.18	10.15	10.59	10.42	12.07	10.26	10.77	10.73	10.84
Comm. and Indus. Sectors (b)	0.43	0.41	0.45	0.43	0.43	0.42	0.44	0.42	0.42	0.42	0.44	0.42	0.43	0.43	0.42
Net Imports	0.17	0.20	0.20	0.16	0.19	0.21	0.22	0.14	0.15	0.15	0.19	0.14	0.18	0.19	0.16
Total Supply	11.52	10.97	12.66	10.37	10.87	10.98	12.84	10.71	11.16	10.99	12.69	10.82	11.38	11.35	11.42
Losses and Unaccounted for (c)	0.77	0.92	0.86	0.63	0.65	1.01	0.80	0.72	0.61	0.92	0.80	0.73	0.80	0.80	0.77
Electricity Consumption (billion kilowatthours per day unless noted)															
Retail Sales	10.37	9.69	11.40	9.35	9.83	9.59	11.65	9.62	10.18	9.70	11.50	9.72	10.20	10.18	10.28
Residential Sector	4.20	3.35	4.51	3.29	3.81	3.34	4.66	3.44	4.06	3.36	4.49	3.48	3.84	3.81	3.85
Commercial Sector	3.60	3.65	4.12	3.51	3.51	3.64	4.21	3.57	3.57	3.68	4.20	3.61	3.72	3.73	3.77
Industrial Sector	2.55	2.67	2.76	2.53	2.49	2.60	2.77	2.59	2.53	2.64	2.80	2.60	2.63	2.61	2.64
Transportation Sector	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
Direct Use (d)	0.38	0.36	0.40	0.38	0.38	0.37	0.39	0.37	0.37	0.37	0.39	0.37	0.38	0.38	0.37
Total Consumption	10.75	10.05	11.80	9.73	10.21	9.97	12.04	9.99	10.55	10.07	11.89	10.09	10.58	10.56	10.65
Average residential electricity usage per customer (kWh)	2,924	2,350	3,190	2,323	2,657	2,321	3,268	2,407	2,774	2,316	3,121	2,414	10,787	10,653	10,625
Prices															
Power Generation Fuel Costs (dollars per million Btu)															
Coal	2.27	2.25	2.22	2.15	2.13	2.18	2.22	2.21	2.21	2.24	2.28	2.24	2.23	2.19	2.24
Natural Gas	4.09	3.12	3.09	2.72	2.65	2.62	3.13	3.51	3.87	3.28	3.27	3.88	3.22	2.99	3.54
Residual Fuel Oil	10.82	11.64	10.48	7.76	6.15	8.16	8.83	8.49	8.51	9.50	9.76	10.17	10.36	7.90	9.47
Distillate Fuel Oil	15.61	15.17	13.19	11.74	9.02	11.22	11.27	12.23	12.89	13.44	13.96	15.34	14.43	10.90	13.84
Retail Prices (cents per kilowatthour)															
Residential Sector	12.24	12.85	12.99	12.59	12.21	12.74	13.00	12.51	12.49	13.11	13.49	12.92	12.67	12.64	13.02
Commercial Sector	10.46	10.54	10.95	10.36	10.08	10.41	11.01	10.42	10.31	10.68	11.33	10.68	10.59	10.51	10.77
Industrial Sector	6.79	6.81	7.32	6.63	6.42	6.68	7.27	6.69	6.57	6.83	7.41	6.83	6.90	6.78	6.93

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

Prices are not adjusted for inflation.

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

(b) Generation supplied by CHP and electricity-only plants operated by businesses in the commercial and industrial sectors, primarily for onsite use.

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

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

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

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

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

Projections: EIA Regional Short-Term Energy Model.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - August 2016

	2015				2016				2017				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2015	2016	2017
Residential Sector															
New England	152	112	144	112	133	110	143	119	141	111	139	121	130	126	128
Middle Atlantic	423	321	423	306	367	308	427	321	392	310	411	325	368	356	360
E. N. Central	587	428	556	434	522	440	592	464	559	439	569	470	501	505	509
W. N. Central	325	232	309	243	298	238	320	259	322	238	310	263	277	279	283
S. Atlantic	1,078	889	1,137	809	969	867	1,182	868	1,042	870	1,144	881	978	972	984
E. S. Central	390	275	384	254	337	271	412	281	364	278	388	285	326	326	329
W. S. Central	602	503	782	479	525	511	795	489	557	521	760	492	592	580	583
Mountain	235	240	333	237	240	246	354	238	249	245	345	241	261	270	270
Pacific contiguous	396	337	425	400	406	333	418	387	419	337	409	390	389	386	389
AK and HI	13	12	13	14	13	12	13	13	13	12	12	13	13	13	13
Total	4,202	3,349	4,505	3,288	3,811	3,337	4,656	3,438	4,059	3,360	4,487	3,480	3,835	3,812	3,847
Commercial Sector															
New England	147	139	159	137	141	136	157	138	142	136	154	137	146	143	143
Middle Atlantic	444	417	478	404	424	406	476	406	429	410	472	407	436	428	430
E. N. Central	509	490	544	471	489	496	563	484	499	498	561	489	503	508	512
W. N. Central	281	269	305	265	272	273	315	276	280	274	315	280	280	284	287
S. Atlantic	805	859	939	795	792	846	965	810	802	861	961	820	850	853	861
E. S. Central	235	239	279	222	226	242	289	227	229	243	285	229	244	246	247
W. S. Central	499	534	630	506	485	534	646	513	496	546	647	521	542	545	553
Mountain	240	256	289	246	240	256	298	252	247	263	303	258	258	262	268
Pacific contiguous	424	433	479	449	418	432	480	453	423	435	481	456	447	446	449
AK and HI	16	16	17	17	16	16	17	17	16	16	17	17	16	16	16
Total	3,603	3,651	4,119	3,511	3,505	3,636	4,206	3,574	3,565	3,681	4,196	3,615	3,722	3,731	3,766
Industrial Sector															
New England	49	50	52	49	46	47	51	48	46	47	51	48	50	48	48
Middle Atlantic	198	196	204	188	193	193	201	193	198	196	206	193	197	195	198
E. N. Central	520	525	531	493	504	510	521	497	506	512	523	494	517	508	509
W. N. Central	237	240	252	231	223	230	256	241	232	236	261	245	240	238	243
S. Atlantic	375	406	406	379	362	390	398	377	368	398	402	381	391	382	387
E. S. Central	279	287	290	265	266	270	287	272	274	281	293	275	280	274	280
W. S. Central	433	462	492	458	456	478	506	474	454	474	501	469	461	478	474
Mountain	217	235	251	223	214	231	252	229	222	242	262	236	232	231	240
Pacific contiguous	227	251	266	234	215	239	279	246	219	245	283	248	245	245	249
AK and HI	13	13	15	14	13	14	15	14	13	14	15	14	14	14	14
Total	2,546	2,666	2,757	2,535	2,492	2,600	2,766	2,590	2,532	2,643	2,795	2,602	2,626	2,612	2,644
Total All Sectors (a)															
New England	350	302	357	299	322	295	353	306	331	295	345	308	327	319	320
Middle Atlantic	1,077	944	1,115	909	995	918	1,115	930	1,031	927	1,101	937	1,011	990	999
E. N. Central	1,618	1,444	1,632	1,399	1,516	1,447	1,679	1,447	1,566	1,451	1,654	1,455	1,523	1,522	1,532
W. N. Central	844	742	866	739	793	741	892	776	834	747	887	787	797	800	814
S. Atlantic	2,262	2,158	2,486	1,986	2,127	2,107	2,549	2,058	2,216	2,132	2,510	2,085	2,223	2,211	2,236
E. S. Central	904	801	953	741	830	782	987	780	867	802	966	789	850	845	856
W. S. Central	1,535	1,499	1,904	1,444	1,467	1,522	1,948	1,476	1,507	1,541	1,908	1,481	1,596	1,604	1,610
Mountain	692	731	874	707	695	734	904	719	719	750	910	735	752	763	779
Pacific contiguous	1,050	1,023	1,172	1,085	1,042	1,006	1,179	1,088	1,064	1,019	1,175	1,096	1,083	1,079	1,089
AK and HI	43	41	44	44	42	41	44	44	43	41	44	44	43	43	43
Total	10,374	9,685	11,402	9,354	9,829	9,593	11,650	9,623	10,179	9,705	11,501	9,718	10,204	10,176	10,278

- = 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 - August 2016

	2015				2016				2017				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2015	2016	2017
Residential Sector															
New England	20.43	20.29	18.35	18.62	19.20	19.19	18.33	18.54	19.39	19.52	18.83	18.91	19.43	18.79	19.15
Middle Atlantic	15.77	16.07	16.47	16.04	15.28	16.13	16.87	16.19	15.91	16.81	17.65	16.87	16.09	16.15	16.82
E. N. Central	12.22	13.21	13.16	13.09	12.51	13.48	13.55	13.19	13.04	14.13	14.23	13.80	12.88	13.18	13.78
W. N. Central	10.24	12.16	12.46	11.22	10.62	12.38	12.92	11.33	10.86	12.73	13.30	11.62	11.48	11.82	12.10
S. Atlantic	11.37	11.91	12.14	11.70	11.42	11.76	11.88	11.37	11.59	12.04	12.27	11.71	11.79	11.63	11.92
E. S. Central	10.34	11.15	10.89	10.95	10.36	10.92	10.73	10.84	10.61	11.26	11.16	11.12	10.79	10.70	11.02
W. S. Central	10.67	11.35	11.03	10.81	10.35	10.78	10.91	10.68	10.59	11.17	11.46	11.11	10.96	10.71	11.12
Mountain	11.31	12.21	12.33	11.34	11.03	12.00	12.46	11.53	11.28	12.28	12.78	11.82	11.85	11.83	12.11
Pacific	13.69	13.47	15.76	13.89	14.13	13.88	15.97	13.88	14.21	13.98	16.23	14.22	14.26	14.52	14.70
U.S. Average	12.24	12.85	12.99	12.59	12.21	12.74	13.00	12.51	12.49	13.11	13.49	12.92	12.67	12.64	13.02
Commercial Sector															
New England	16.92	15.21	14.91	14.86	15.30	15.24	16.48	15.87	16.15	15.83	17.10	16.26	15.47	15.75	16.36
Middle Atlantic	13.07	13.04	13.72	12.57	11.92	12.52	13.48	12.39	12.14	12.81	13.80	12.69	13.13	12.61	12.89
E. N. Central	9.72	9.96	10.04	9.81	9.63	9.95	9.98	9.82	9.84	10.20	10.21	10.02	9.89	9.85	10.07
W. N. Central	8.57	9.52	9.95	8.89	8.86	9.65	9.90	8.80	9.09	9.94	10.19	9.03	9.25	9.32	9.58
S. Atlantic	9.66	9.45	9.59	9.35	9.38	9.39	9.86	9.45	9.58	9.69	10.21	9.79	9.52	9.54	9.84
E. S. Central	10.21	10.38	10.27	10.17	9.98	9.95	10.04	10.24	10.23	10.31	10.39	10.49	10.26	10.05	10.36
W. S. Central	8.05	7.89	7.94	7.72	7.65	7.78	8.15	7.91	7.79	7.92	8.36	8.07	7.90	7.89	8.06
Mountain	9.37	9.95	10.21	9.37	9.00	9.74	10.10	9.51	9.07	9.86	10.25	9.64	9.75	9.62	9.74
Pacific	12.23	13.30	15.61	13.44	12.21	13.41	15.60	13.31	12.44	13.70	16.03	13.64	13.71	13.69	14.02
U.S. Average	10.46	10.54	10.95	10.36	10.08	10.41	11.01	10.42	10.31	10.68	11.33	10.68	10.59	10.51	10.77
Industrial Sector															
New England	13.18	11.85	11.87	11.85	12.19	12.15	14.01	13.17	13.57	13.11	14.81	13.73	12.17	12.91	13.83
Middle Atlantic	7.90	7.22	7.36	7.06	7.04	7.09	7.50	7.02	7.20	7.22	7.54	7.13	7.39	7.17	7.28
E. N. Central	6.87	6.77	7.06	6.76	6.74	6.88	7.09	6.85	6.87	7.02	7.20	6.95	6.87	6.89	7.01
W. N. Central	6.49	6.88	7.51	6.48	6.65	6.98	7.36	6.47	6.72	7.09	7.49	6.57	6.85	6.88	6.98
S. Atlantic	6.55	6.38	6.90	6.26	6.16	6.36	6.93	6.44	6.30	6.53	7.07	6.55	6.53	6.48	6.62
E. S. Central	5.78	5.95	6.58	5.74	5.48	5.89	6.83	5.88	5.68	6.09	7.02	6.03	6.02	6.04	6.22
W. S. Central	5.69	5.53	5.73	5.27	5.06	5.10	5.86	5.45	5.31	5.37	6.07	5.67	5.56	5.38	5.62
Mountain	6.16	6.65	7.17	6.00	5.81	6.21	6.97	6.07	5.91	6.35	7.15	6.24	6.52	6.29	6.44
Pacific	8.00	8.94	10.46	9.21	7.98	8.81	9.24	8.64	7.82	8.67	9.20	8.62	9.21	8.71	8.62
U.S. Average	6.79	6.81	7.32	6.63	6.42	6.68	7.27	6.69	6.57	6.83	7.41	6.83	6.90	6.78	6.93
All Sectors (a)															
New England	17.90	16.51	15.83	15.74	16.42	16.19	16.84	16.44	17.14	16.76	17.43	16.87	16.51	16.49	17.06
Middle Atlantic	13.17	12.85	13.58	12.58	12.21	12.57	13.68	12.57	12.60	12.94	14.04	12.97	13.08	12.79	13.17
E. N. Central	9.71	9.76	10.13	9.75	9.66	9.94	10.34	9.88	10.01	10.26	10.64	10.19	9.84	9.97	10.29
W. N. Central	8.63	9.50	10.14	8.89	8.90	9.70	10.25	8.92	9.11	9.93	10.49	9.13	9.30	9.47	9.68
S. Atlantic	9.96	9.89	10.31	9.71	9.76	9.81	10.34	9.70	9.98	10.06	10.65	10.01	9.99	9.93	10.19
E. S. Central	8.90	9.06	9.40	8.85	8.69	8.89	9.40	8.93	8.95	9.16	9.68	9.17	9.07	9.00	9.26
W. S. Central	8.41	8.33	8.64	7.96	7.81	7.95	8.68	8.04	8.08	8.23	8.99	8.32	8.36	8.16	8.44
Mountain	9.02	9.63	10.14	8.96	8.72	9.39	10.15	9.09	8.86	9.52	10.31	9.26	9.48	9.39	9.54
Pacific	11.85	12.28	14.48	12.68	12.08	12.46	14.22	12.45	12.18	12.57	14.44	12.70	12.88	12.85	13.02
U.S. Average	10.27	10.31	10.88	10.13	9.98	10.21	10.92	10.16	10.25	10.47	11.22	10.45	10.42	10.35	10.62

- = 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 - August 2016

	2015				2016				2017				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2015	2016	2017
United States															
Coal	4,091	3,512	4,276	2,988	3,066	2,944	4,146	3,343	3,592	3,117	3,929	3,346	3,715	3,377	3,497
Natural Gas	3,248	3,477	4,392	3,503	3,427	3,772	4,614	3,508	3,386	3,638	4,512	3,459	3,658	3,831	3,751
Petroleum (a)	124	61	72	57	69	66	76	66	80	69	76	67	78	69	73
Other Gases	38	34	40	30	40	36	40	31	41	36	40	31	36	36	37
Nuclear	2,248	2,133	2,286	2,070	2,245	2,159	2,217	2,059	2,219	2,035	2,252	2,110	2,184	2,170	2,154
Renewable Energy Sources:	1,590	1,528	1,373	1,533	1,802	1,765	1,506	1,540	1,669	1,915	1,669	1,648	1,506	1,653	1,725
Conventional Hydropower	803	691	617	644	846	813	680	621	688	821	757	639	688	739	726
Wind	506	534	442	610	665	629	479	620	675	718	526	683	523	598	650
Wood Biomass	118	112	122	112	114	104	118	111	114	108	121	115	116	112	114
Waste Biomass	58	59	61	62	59	60	61	59	58	58	60	59	60	60	59
Geothermal	48	46	45	45	46	46	48	48	48	47	47	47	46	47	47
Solar	57	87	86	60	74	113	120	81	87	163	158	104	73	97	128
Pumped Storage Hydropower	-16	-11	-18	-11	-12	-13	-16	-14	-12	-11	-16	-14	-14	-13	-13
Other Nonrenewable Fuels (b)	33	37	39	37	35	38	39	36	35	37	39	36	36	37	37
Total Generation	11,355	10,770	12,460	10,207	10,671	10,767	12,623	10,571	11,010	10,837	12,502	10,683	11,198	11,160	11,260
Northeast Census Region															
Coal	292	175	203	139	163	141	202	182	255	159	181	194	202	172	197
Natural Gas	483	534	714	543	515	592	710	566	524	569	696	552	569	596	586
Petroleum (a)	46	2	5	2	7	3	6	5	11	5	6	5	14	5	7
Other Gases	2	2	2	1	2	2	2	1	2	2	2	1	2	2	2
Nuclear	545	499	542	499	543	463	510	483	513	468	522	489	521	500	498
Hydropower (c)	93	99	98	102	115	108	106	97	98	110	105	96	98	106	102
Other Renewables (d)	76	65	58	73	78	61	61	72	76	67	64	76	68	68	71
Other Nonrenewable Fuels (b)	11	12	12	12	11	12	12	12	11	12	12	12	12	12	12
Total Generation	1,548	1,388	1,634	1,373	1,436	1,382	1,610	1,418	1,490	1,393	1,588	1,426	1,485	1,462	1,474
South Census Region															
Coal	1,716	1,539	1,908	1,167	1,272	1,292	1,804	1,303	1,406	1,366	1,711	1,275	1,582	1,419	1,440
Natural Gas	1,971	2,075	2,465	1,975	2,004	2,271	2,668	1,937	1,957	2,225	2,580	1,925	2,122	2,220	2,173
Petroleum (a)	42	24	29	22	30	31	33	25	33	29	31	24	29	30	29
Other Gases	15	13	15	14	15	13	15	14	15	13	15	15	14	15	15
Nuclear	974	956	1,001	872	951	1,000	986	915	996	920	1,025	961	951	963	976
Hydropower (c)	122	108	94	145	191	100	110	135	160	103	109	134	117	134	126
Other Renewables (d)	231	267	255	287	326	317	270	321	346	374	307	363	260	308	348
Other Nonrenewable Fuels (b)	14	15	16	15	15	17	17	14	14	16	16	14	15	16	15
Total Generation	5,084	4,999	5,783	4,497	4,804	5,041	5,902	4,664	4,928	5,046	5,795	4,711	5,091	5,104	5,121
Midwest Census Region															
Coal	1,578	1,302	1,578	1,166	1,203	1,087	1,466	1,248	1,324	1,134	1,481	1,273	1,405	1,252	1,303
Natural Gas	300	257	340	285	361	386	489	352	362	356	456	338	296	397	378
Petroleum (a)	12	11	13	9	10	10	13	10	12	11	12	10	11	11	11
Other Gases	14	13	16	8	15	13	16	8	16	14	16	9	13	13	14
Nuclear	553	529	570	547	573	543	557	510	545	495	536	502	550	546	520
Hydropower (c)	44	47	42	37	45	44	45	34	38	46	44	34	43	42	40
Other Renewables (d)	251	218	168	277	280	242	182	271	288	274	197	292	228	244	263
Other Nonrenewable Fuels (b)	4	5	5	5	4	5	5	4	4	5	5	5	5	5	5
Total Generation	2,757	2,382	2,731	2,335	2,493	2,330	2,771	2,439	2,590	2,334	2,748	2,462	2,550	2,509	2,534
West Census Region															
Coal	505	496	587	517	427	425	674	610	607	459	557	603	526	535	556
Natural Gas	494	611	874	699	546	523	747	654	543	488	780	644	671	618	615
Petroleum (a)	23	22	25	23	21	22	24	26	26	25	27	28	23	23	26
Other Gases	7	6	7	7	7	7	7	7	7	7	7	6	7	7	7
Nuclear	176	149	172	152	178	153	165	150	164	152	169	158	162	161	161
Hydropower (c)	527	426	365	348	482	548	404	341	380	551	484	361	416	443	444
Other Renewables (d)	230	287	276	252	273	332	313	256	271	378	343	277	261	293	317
Other Nonrenewable Fuels (b)	4	5	5	5	5	5	6	5	5	5	6	5	5	5	5
Total Generation	1,967	2,002	2,311	2,002	1,938	2,013	2,339	2,049	2,003	2,064	2,372	2,084	2,071	2,086	2,132

(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 - August 2016

	2015				2016				2017				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2015	2016	2017
Fuel Consumption for Electricity Generation, All Sectors															
United States															
Coal (thousand st/d)	2,185	1,922	2,347	1,667	1,678	1,612	2,269	1,841	1,936	1,690	2,149	1,841	2,030	1,851	1,904
Natural Gas (million cf/d)	24,017	26,265	33,602	26,144	25,305	28,674	35,190	25,970	25,087	27,673	34,571	25,620	27,530	28,794	28,257
Petroleum (thousand b/d)	215	108	126	100	122	119	135	117	142	122	134	119	137	123	129
Residual Fuel Oil	76	26	33	26	30	24	33	29	35	31	33	29	40	29	32
Distillate Fuel Oil	66	25	24	25	30	26	31	28	37	28	29	28	35	29	31
Petroleum Coke (a)	61	52	65	46	57	65	67	54	62	59	67	55	56	61	61
Other Petroleum Liquids (b)	13	4	4	3	5	3	5	5	8	4	5	5	6	4	6
Northeast Census Region															
Coal (thousand st/d)	133	82	99	68	82	67	98	87	119	75	88	93	95	84	94
Natural Gas (million cf/d)	3,638	4,102	5,595	4,107	3,888	4,525	5,513	4,259	3,957	4,342	5,400	4,149	4,365	4,548	4,465
Petroleum (thousand b/d)	75	5	9	4	13	6	11	9	19	9	11	9	23	10	12
South Census Region															
Coal (thousand st/d)	888	819	1,023	638	672	689	962	699	735	723	915	688	842	756	766
Natural Gas (million cf/d)	14,399	15,637	18,741	14,727	14,714	17,201	20,222	14,293	14,410	16,890	19,687	14,205	15,885	16,611	16,307
Petroleum (thousand b/d)	79	45	53	41	56	58	63	46	61	54	58	45	54	56	55
Midwest Census Region															
Coal (thousand st/d)	880	742	895	668	680	616	831	708	741	637	835	718	796	709	733
Natural Gas (million cf/d)	2,329	2,014	2,725	2,211	2,729	3,087	3,983	2,722	2,790	2,825	3,741	2,627	2,320	3,132	2,997
Petroleum (thousand b/d)	24	23	26	18	19	21	23	20	21	19	22	20	23	21	21
West Census Region															
Coal (thousand st/d)	285	280	331	293	244	239	378	346	341	255	312	341	297	302	312
Natural Gas (million cf/d)	3,651	4,513	6,541	5,100	3,973	3,860	5,472	4,697	3,930	3,617	5,743	4,639	4,960	4,504	4,488
Petroleum (thousand b/d)	37	36	39	37	34	34	38	41	41	40	43	44	37	37	42
End-of-period U.S. Fuel Inventories Held by Electric Power Sector															
Coal (million short tons)	155.0	167.0	162.7	197.1	194.4	183.1	151.0	156.0	154.0	150.3	134.1	137.6	197.1	156.0	137.6
Residual Fuel Oil (mmb)	10.2	10.5	10.6	12.4	11.9	12.4	12.1	12.5	12.6	12.3	11.9	12.3	12.4	12.5	12.3
Distillate Fuel Oil (mmb)	16.7	16.7	17.2	17.4	16.9	17.3	17.2	17.5	17.5	17.4	17.3	17.5	17.4	17.5	17.5
Petroleum Coke (mmb)	4.1	5.2	5.5	6.7	6.2	5.3	5.3	5.2	5.1	5.0	4.9	4.8	6.7	5.2	4.8

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

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

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

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

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

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

Projections: EIA Regional Short-Term Energy Model.

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

U.S. Energy Information Administration | Short-Term Energy Outlook - August 2016

	2015				2016				2017				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2015	2016	2017
Electric Power Sector															
Hydroelectric Power (a)	0.684	0.594	0.538	0.560	0.728	0.700	0.592	0.540	0.585	0.707	0.660	0.556	2.376	2.560	2.509
Wood Biomass (b)	0.063	0.057	0.067	0.060	0.062	0.050	0.066	0.061	0.063	0.058	0.072	0.066	0.246	0.239	0.258
Waste Biomass (c)	0.067	0.066	0.070	0.071	0.069	0.071	0.071	0.069	0.067	0.068	0.071	0.068	0.274	0.280	0.273
Wind	0.433	0.462	0.386	0.533	0.575	0.544	0.419	0.542	0.577	0.621	0.460	0.597	1.814	2.079	2.255
Geothermal	0.041	0.040	0.039	0.040	0.040	0.040	0.042	0.042	0.041	0.040	0.041	0.041	0.159	0.163	0.163
Solar	0.047	0.073	0.074	0.052	0.062	0.096	0.103	0.070	0.073	0.140	0.137	0.090	0.246	0.332	0.439
Subtotal	1.335	1.292	1.174	1.315	1.536	1.500	1.294	1.323	1.406	1.634	1.440	1.418	5.116	5.653	5.898
Industrial Sector															
Hydroelectric Power (a)	0.004	0.003	0.002	0.003	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.013	0.014	0.013
Wood Biomass (b)	0.324	0.320	0.324	0.321	0.316	0.305	0.316	0.315	0.305	0.301	0.312	0.314	1.290	1.251	1.233
Waste Biomass (c)	0.046	0.049	0.050	0.049	0.047	0.047	0.049	0.048	0.048	0.048	0.049	0.048	0.195	0.191	0.193
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
Biofuel Losses and Co-products (f)	0.189	0.192	0.195	0.200	0.196	0.195	0.200	0.198	0.197	0.198	0.198	0.196	0.776	0.789	0.790
Subtotal	0.568	0.570	0.576	0.578	0.567	0.556	0.573	0.569	0.558	0.555	0.567	0.567	2.292	2.264	2.248
Commercial Sector															
Wood Biomass (b)	0.018	0.018	0.018	0.018	0.018	0.019	0.019	0.019	0.020	0.020	0.020	0.020	0.073	0.076	0.078
Waste Biomass (c)	0.013	0.010	0.010	0.012	0.012	0.011	0.012	0.012	0.012	0.011	0.012	0.012	0.045	0.047	0.047
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
Subtotal	0.038	0.036	0.037	0.038	0.038	0.037	0.038	0.037	0.037	0.037	0.038	0.037	0.148	0.150	0.149
Residential Sector															
Wood Biomass (b)	0.106	0.108	0.109	0.109	0.096	0.101	0.105	0.105	0.106	0.106	0.106	0.106	0.432	0.408	0.426
Geothermal	0.010	0.010	0.010	0.010	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.041	0.044	0.045
Solar (d)	0.074	0.074	0.075	0.075	0.087	0.081	0.078	0.078	0.102	0.094	0.092	0.092	0.298	0.324	0.379
Subtotal	0.190	0.192	0.194	0.194	0.194	0.193	0.195	0.195	0.219	0.212	0.209	0.209	0.770	0.776	0.850
Transportation Sector															
Ethanol (e)	0.266	0.284	0.293	0.285	0.282	0.290	0.297	0.291	0.277	0.293	0.295	0.289	1.128	1.161	1.155
Biomass-based Diesel (e)	0.034	0.058	0.064	0.058	0.050	0.066	0.079	0.078	0.067	0.071	0.081	0.080	0.214	0.273	0.300
Subtotal	0.300	0.342	0.357	0.343	0.332	0.355	0.376	0.369	0.344	0.365	0.376	0.370	1.342	1.433	1.455
All Sectors Total															
Hydroelectric Power (a)	0.687	0.598	0.540	0.563	0.732	0.704	0.596	0.543	0.589	0.711	0.664	0.560	2.389	2.574	2.522
Wood Biomass (b)	0.512	0.503	0.518	0.508	0.492	0.477	0.507	0.501	0.494	0.485	0.510	0.506	2.040	1.976	1.995
Waste Biomass (c)	0.126	0.125	0.130	0.132	0.128	0.130	0.132	0.128	0.126	0.127	0.131	0.128	0.514	0.518	0.513
Wind	0.433	0.462	0.386	0.533	0.575	0.544	0.419	0.542	0.577	0.621	0.460	0.597	1.814	2.079	2.255
Geothermal	0.057	0.056	0.056	0.056	0.057	0.056	0.059	0.059	0.058	0.057	0.058	0.058	0.224	0.231	0.232
Solar	0.122	0.149	0.151	0.128	0.151	0.176	0.183	0.150	0.176	0.235	0.230	0.183	0.550	0.659	0.824
Ethanol (e)	0.271	0.289	0.298	0.290	0.287	0.290	0.304	0.296	0.281	0.298	0.300	0.294	1.147	1.177	1.174
Biomass-based Diesel (e)	0.034	0.058	0.064	0.058	0.050	0.066	0.079	0.078	0.067	0.071	0.081	0.080	0.214	0.273	0.300
Biofuel Losses and Co-products (f)	0.189	0.192	0.195	0.200	0.196	0.195	0.200	0.198	0.197	0.198	0.198	0.196	0.776	0.789	0.790
Total Consumption	2.431	2.432	2.337	2.469	2.666	2.650	2.475	2.493	2.565	2.803	2.631	2.601	9.668	10.285	10.600

- = no data available

(a) Conventional hydroelectric power only. Hydroelectricity generated by pumped storage is not included in renewable energy.

(b) Wood and wood-derived fuels.

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

(d) Includes small-scale solar thermal and photovoltaic energy used in the commercial, industrial, and electric power sectors.

(e) 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.

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

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

U.S. Energy Information Administration | Short-Term Energy Outlook - August 2016

	2015				2016				2017				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2015	2016	2017
Macroeconomic															
Real Gross Domestic Product (billion chained 2009 dollars - SAAR)	16,177	16,334	16,414	16,471	16,515	16,605	16,702	16,802	16,915	17,021	17,130	17,234	16,349	16,656	17,075
Real Personal Consumption Expend. (billion chained 2009 dollars - SAAR)	11,081	11,179	11,262	11,331	11,373	11,497	11,576	11,647	11,720	11,788	11,862	11,933	11,213	11,523	11,826
Real Fixed Investment (billion chained 2009 dollars - SAAR)	2,701	2,736	2,761	2,763	2,761	2,760	2,803	2,842	2,882	2,922	2,956	2,991	2,740	2,792	2,938
Business Inventory Change (billion chained 2009 dollars - SAAR)	127	128	95	87	72	39	8	2	3	19	24	37	109	30	21
Real Government Expenditures (billion chained 2009 dollars - SAAR)	2,839	2,857	2,870	2,871	2,880	2,881	2,901	2,914	2,922	2,927	2,929	2,930	2,859	2,894	2,927
Real Exports of Goods & Services (billion chained 2009 dollars - SAAR)	2,091	2,118	2,121	2,110	2,112	2,121	2,136	2,146	2,161	2,182	2,207	2,227	2,110	2,129	2,194
Real Imports of Goods & Services (billion chained 2009 dollars - SAAR)	2,633	2,652	2,667	2,662	2,659	2,658	2,702	2,729	2,752	2,796	2,827	2,863	2,653	2,687	2,809
Real Disposable Personal Income (billion chained 2009 dollars - SAAR)	12,115	12,194	12,290	12,390	12,514	12,588	12,659	12,722	12,805	12,902	12,992	13,073	12,247	12,621	12,943
Non-Farm Employment (millions)	140.8	141.5	142.2	142.9	143.5	144.0	144.4	145.0	145.6	146.0	146.3	146.6	141.8	144.2	146.1
Civilian Unemployment Rate (percent)	5.6	5.4	5.2	5.0	4.9	4.9	4.8	4.8	4.7	4.7	4.7	4.7	5.3	4.8	4.7
Housing Starts (millions - SAAR)	0.99	1.16	1.16	1.13	1.15	1.16	1.18	1.22	1.28	1.35	1.40	1.44	1.11	1.18	1.37
Industrial Production Indices (Index, 2012=100)															
Total Industrial Production	105.8	105.1	105.5	104.6	104.1	103.8	103.3	103.5	104.3	105.0	106.1	107.1	105.2	103.7	105.6
Manufacturing	103.2	103.4	103.9	103.7	103.9	103.7	103.7	103.8	104.3	104.7	105.7	106.7	103.6	103.8	105.4
Food	103.1	102.6	103.4	103.2	104.4	104.6	104.9	105.4	105.9	106.5	107.1	107.6	103.1	104.8	106.8
Paper	98.9	98.5	97.0	96.6	96.4	95.5	95.1	94.6	94.4	94.3	94.5	94.7	97.7	95.4	94.5
Petroleum and Coal Products	102.4	104.7	105.7	106.9	106.5	105.5	105.8	106.3	107.0	107.6	108.3	108.8	104.9	106.0	107.9
Chemicals	97.9	97.9	97.7	98.5	99.1	98.6	98.8	99.0	99.7	100.7	101.9	103.0	98.0	98.9	101.3
Nonmetallic Mineral Products	111.3	111.7	113.0	116.1	116.7	115.8	116.6	117.3	118.3	119.3	120.4	121.7	113.0	116.6	119.9
Primary Metals	98.2	97.1	96.6	95.0	94.7	95.5	94.8	93.7	93.9	93.8	94.3	94.5	96.7	94.7	94.2
Coal-weighted Manufacturing (a)	102.0	102.1	102.2	102.5	102.7	102.4	102.4	102.2	102.6	103.1	103.9	104.6	102.2	102.4	103.6
Distillate-weighted Manufacturing (a)	104.4	104.5	105.3	106.0	106.2	105.6	105.7	106.0	106.7	107.5	108.4	109.3	105.0	105.9	108.0
Electricity-weighted Manufacturing (a)	102.9	103.1	103.3	103.3	103.5	103.1	103.1	103.0	103.6	104.1	105.1	106.0	103.1	103.2	104.7
Natural Gas-weighted Manufacturing (a)	102.3	103.4	103.5	104.1	104.4	104.0	104.0	104.0	104.8	105.7	107.0	108.2	103.3	104.1	106.4
Price Indexes															
Consumer Price Index (all urban consumers) (index, 1982-1984=1.00)	2.35	2.37	2.38	2.38	2.38	2.39	2.40	2.42	2.43	2.44	2.46	2.47	2.37	2.40	2.45
Producer Price Index: All Commodities (index, 1982=1.00)	1.92	1.92	1.90	1.87	1.83	1.86	1.89	1.90	1.92	1.92	1.93	1.95	1.90	1.87	1.93
Producer Price Index: Petroleum (index, 1982=1.00)	1.71	1.96	1.85	1.53	1.23	1.53	1.49	1.43	1.48	1.68	1.75	1.77	1.76	1.42	1.67
GDP Implicit Price Deflator (index, 2009=100)	109.1	109.7	110.0	110.3	110.4	110.9	111.4	112.0	112.7	113.1	113.6	114.3	109.8	111.2	113.4
Miscellaneous															
Vehicle Miles Traveled (b) (million miles/day)	7,957	8,940	8,862	8,538	8,195	9,135	9,049	8,710	8,321	9,281	9,100	8,745	8,577	8,773	8,864
Air Travel Capacity (Available ton-miles/day, thousands)	517	574	584	560	548	596	603	549	525	587	608	552	559	574	568
Aircraft Utilization (Revenue ton-miles/day, thousands)	322	356	365	343	326	366	380	340	317	370	383	342	347	353	353
Airline Ticket Price Index (index, 1982-1984=100)	286.4	313.0	283.3	286.2	281.8	303.8	288.4	294.5	288.4	312.8	301.0	308.7	292.2	292.1	302.8
Raw Steel Production (million short tons per day)	0.247	0.242	0.248	0.226	0.238	0.247	0.242	0.216	0.216	0.226	0.205	0.175	0.241	0.236	0.205
Carbon Dioxide (CO₂) Emissions (million metric tons)															
Petroleum	561	567	584	572	571	567	581	578	561	573	583	581	2,284	2,297	2,298
Natural Gas	469	313	328	370	442	331	341	393	456	328	340	394	1,480	1,506	1,519
Coal	393	351	428	315	312	300	415	343	351	311	394	341	1,486	1,369	1,397
Total Energy (c)	1,426	1,234	1,342	1,259	1,327	1,200	1,340	1,316	1,372	1,215	1,319	1,319	5,262	5,184	5,226

- = 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. Macroeconomic projections are based on Global Insight Model of the U.S. Economy.

Table 9b. U.S. Regional Macroeconomic Data

U.S. Energy Information Administration | Short-Term Energy Outlook - August 2016

	2015				2016				2017				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2015	2016	2017
Real Gross State Product (Billion \$2009)															
New England	858	869	863	867	869	874	878	883	888	892	896	901	864	876	894
Middle Atlantic	2,399	2,435	2,450	2,455	2,459	2,473	2,487	2,499	2,507	2,519	2,531	2,542	2,435	2,479	2,525
E. N. Central	2,236	2,250	2,269	2,277	2,278	2,288	2,298	2,309	2,322	2,333	2,344	2,353	2,258	2,293	2,338
W. N. Central	1,048	1,055	1,057	1,058	1,060	1,066	1,072	1,078	1,084	1,090	1,096	1,102	1,054	1,069	1,093
S. Atlantic	2,849	2,877	2,902	2,917	2,930	2,947	2,966	2,987	3,008	3,028	3,047	3,067	2,886	2,958	3,038
E. S. Central	732	741	746	750	752	755	758	763	768	772	777	781	742	757	774
W. S. Central	2,003	1,992	2,000	2,003	2,006	2,013	2,025	2,037	2,056	2,075	2,095	2,115	1,999	2,020	2,085
Mountain	1,033	1,042	1,046	1,049	1,054	1,060	1,067	1,076	1,086	1,095	1,104	1,113	1,043	1,064	1,099
Pacific	2,919	2,971	2,978	2,993	3,005	3,025	3,045	3,065	3,091	3,111	3,132	3,152	2,965	3,035	3,122
Industrial Output, Manufacturing (Index, Year 2012=100)															
New England	99.4	99.6	99.9	99.5	99.8	100.2	100.2	100.2	100.6	101.0	101.9	102.8	99.6	100.1	101.5
Middle Atlantic	99.8	99.9	100.2	99.8	100.1	99.7	99.7	99.7	100.1	100.5	101.4	102.3	99.9	99.8	101.1
E. N. Central	105.2	105.4	106.0	106.2	106.4	105.9	105.6	105.8	106.2	106.6	107.4	108.1	105.7	105.9	107.1
W. N. Central	103.3	103.2	103.4	103.1	103.0	102.7	102.7	102.9	103.4	103.8	104.7	105.7	103.2	102.8	104.4
S. Atlantic	104.3	104.9	105.8	106.2	106.5	106.7	106.7	106.7	107.2	107.6	108.5	109.3	105.3	106.6	108.2
E. S. Central	105.5	106.0	107.2	107.5	108.3	108.7	108.6	108.7	109.2	109.6	110.5	111.3	106.6	108.6	110.1
W. S. Central	102.9	101.6	100.9	99.7	99.0	97.7	97.5	97.5	98.1	98.6	99.7	100.9	101.3	97.9	99.3
Mountain	104.7	105.2	106.1	106.7	107.5	107.3	107.6	107.9	108.7	109.4	110.7	112.0	105.7	107.6	110.2
Pacific	103.6	104.1	104.7	104.2	104.1	103.7	103.7	103.9	104.5	105.0	106.1	107.3	104.1	103.9	105.7
Real Personal Income (Billion \$2009)															
New England	741	748	751	762	770	774	778	782	787	792	797	802	751	776	795
Middle Atlantic	1,895	1,913	1,929	1,942	1,958	1,968	1,978	1,988	1,998	2,011	2,023	2,032	1,920	1,973	2,016
E. N. Central	2,015	2,027	2,044	2,070	2,088	2,101	2,111	2,122	2,135	2,150	2,163	2,172	2,039	2,106	2,155
W. N. Central	972	975	978	986	991	1,001	1,006	1,012	1,018	1,025	1,031	1,037	978	1,003	1,028
S. Atlantic	2,617	2,638	2,663	2,692	2,718	2,736	2,754	2,773	2,795	2,818	2,839	2,857	2,652	2,745	2,827
E. S. Central	761	766	773	781	787	789	793	798	804	810	816	820	770	792	812
W. S. Central	1,711	1,706	1,719	1,726	1,737	1,741	1,750	1,762	1,778	1,796	1,813	1,827	1,715	1,748	1,804
Mountain	925	933	938	947	955	962	968	975	984	994	1,002	1,010	936	965	998
Pacific	2,212	2,247	2,265	2,286	2,307	2,322	2,336	2,351	2,369	2,388	2,405	2,421	2,252	2,329	2,396
Households (Thousands)															
New England	5,831	5,838	5,843	5,849	5,858	5,865	5,869	5,875	5,882	5,890	5,898	5,908	5,849	5,875	5,908
Middle Atlantic	15,986	16,005	16,015	16,028	16,049	16,067	16,075	16,084	16,096	16,111	16,129	16,147	16,028	16,084	16,147
E. N. Central	18,606	18,613	18,622	18,639	18,662	18,683	18,696	18,713	18,733	18,752	18,774	18,797	18,639	18,713	18,797
W. N. Central	8,448	8,464	8,478	8,493	8,514	8,533	8,549	8,567	8,588	8,608	8,628	8,649	8,493	8,567	8,649
S. Atlantic	24,611	24,700	24,787	24,879	24,986	25,087	25,175	25,268	25,360	25,455	25,551	25,648	24,879	25,268	25,648
E. S. Central	7,517	7,524	7,532	7,543	7,558	7,574	7,586	7,600	7,615	7,630	7,646	7,663	7,543	7,600	7,663
W. S. Central	14,319	14,373	14,421	14,471	14,530	14,588	14,640	14,693	14,746	14,800	14,856	14,913	14,471	14,693	14,913
Mountain	8,783	8,817	8,850	8,885	8,926	8,964	9,001	9,040	9,078	9,118	9,160	9,202	8,885	9,040	9,202
Pacific	18,402	18,459	18,508	18,560	18,624	18,683	18,731	18,785	18,839	18,896	18,954	19,011	18,560	18,785	19,011
Total Non-farm Employment (Millions)															
New England	7.2	7.2	7.2	7.2	7.3	7.3	7.3	7.3	7.4	7.4	7.4	7.4	7.2	7.3	7.4
Middle Atlantic	18.9	19.0	19.1	19.1	19.2	19.2	19.3	19.3	19.4	19.4	19.4	19.4	19.0	19.3	19.4
E. N. Central	21.4	21.4	21.5	21.6	21.7	21.7	21.8	21.9	21.9	22.0	22.0	22.0	21.5	21.8	22.0
W. N. Central	10.4	10.5	10.5	10.5	10.5	10.5	10.6	10.6	10.6	10.7	10.7	10.7	10.5	10.5	10.7
S. Atlantic	26.7	26.9	27.1	27.3	27.4	27.6	27.7	27.8	27.9	28.0	28.1	28.2	27.0	27.6	28.1
E. S. Central	7.8	7.8	7.8	7.9	7.9	7.9	7.9	8.0	8.0	8.0	8.0	8.1	7.8	7.9	8.0
W. S. Central	16.6	16.6	16.7	16.7	16.8	16.8	16.8	16.9	17.0	17.1	17.1	17.2	16.6	16.8	17.1
Mountain	9.9	10.0	10.0	10.1	10.2	10.2	10.3	10.3	10.4	10.4	10.5	10.5	10.0	10.2	10.5
Pacific	21.6	21.8	22.0	22.1	22.3	22.4	22.5	22.6	22.7	22.8	22.8	22.9	21.9	22.4	22.8

- = 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 Global Insight Model of the U.S. Economy.

Table 9c. U.S. Regional Weather Data

U.S. Energy Information Administration | Short-Term Energy Outlook - August 2016

	2015				2016				2017				Year		
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	2015	2016	2017
Heating Degree Days															
New England	3,853	821	58	1,791	2,838	901	127	2,168	3,196	876	134	2,181	6,524	6,034	6,387
Middle Atlantic	3,578	611	40	1,545	2,663	748	73	1,964	2,931	687	84	1,975	5,774	5,449	5,678
E. N. Central	3,691	660	75	1,741	2,866	752	107	2,206	3,149	720	119	2,217	6,167	5,931	6,205
W. N. Central	3,375	654	95	1,966	2,893	660	123	2,376	3,234	675	147	2,388	6,090	6,052	6,444
South Atlantic	1,671	156	8	662	1,385	212	11	967	1,442	201	14	971	2,497	2,575	2,628
E. S. Central	2,142	185	14	880	1,757	232	16	1,289	1,833	245	20	1,296	3,221	3,294	3,395
W. S. Central	1,401	69	2	615	1,051	78	4	762	1,131	79	4	765	2,086	1,895	1,978
Mountain	1,900	704	123	1,867	2,075	676	115	1,760	2,147	648	133	1,772	4,594	4,625	4,700
Pacific	1,085	524	77	1,198	1,298	461	73	1,083	1,376	518	79	1,082	2,883	2,916	3,055
U.S. Average	2,341	443	49	1,253	1,947	480	63	1,492	2,101	472	71	1,496	4,085	3,981	4,140
Heating Degree Days, Prior 10-year Average															
New England	3,166	838	134	2,147	3,212	824	133	2,105	3,201	831	127	2,130	6,285	6,273	6,288
Middle Atlantic	2,935	666	90	1,976	2,982	651	90	1,926	2,982	660	84	1,947	5,667	5,649	5,673
E. N. Central	3,192	694	123	2,262	3,246	689	125	2,205	3,254	701	120	2,214	6,272	6,266	6,289
W. N. Central	3,273	691	150	2,433	3,298	693	150	2,393	3,302	707	144	2,404	6,546	6,534	6,557
South Atlantic	1,481	196	14	1,013	1,502	185	14	975	1,505	189	13	979	2,704	2,676	2,686
E. S. Central	1,853	236	19	1,358	1,898	225	19	1,308	1,905	231	17	1,306	3,466	3,450	3,459
W. S. Central	1,188	86	5	834	1,221	83	5	814	1,227	88	4	813	2,113	2,123	2,132
Mountain	2,258	730	150	1,873	2,231	724	147	1,880	2,215	733	137	1,867	5,012	4,981	4,952
Pacific	1,534	621	92	1,205	1,495	609	88	1,211	1,461	596	86	1,197	3,453	3,404	3,340
U.S. Average	2,183	493	77	1,567	2,199	483	76	1,535	2,192	487	72	1,536	4,319	4,293	4,287
Cooling Degree Days															
New England	0	70	487	0	0	82	480	1	0	86	414	1	557	563	501
Middle Atlantic	0	186	614	2	0	148	641	7	0	165	564	6	801	796	735
E. N. Central	0	221	500	9	3	231	617	10	0	225	558	9	730	861	792
W. N. Central	3	265	659	13	9	319	733	14	3	282	695	12	940	1,076	992
South Atlantic	137	761	1,156	337	136	649	1,234	240	120	636	1,152	236	2,392	2,258	2,145
E. S. Central	24	581	1,019	98	42	536	1,144	75	29	519	1,054	71	1,722	1,797	1,673
W. S. Central	51	854	1,572	268	122	835	1,572	217	89	875	1,510	210	2,745	2,744	2,684
Mountain	45	431	922	87	34	465	1,004	89	23	452	967	86	1,485	1,593	1,528
Pacific	51	227	677	121	36	233	632	76	32	197	586	76	1,075	977	891
U.S. Average	46	433	874	133	54	411	922	100	44	406	860	99	1,487	1,487	1,408
Cooling Degree Days, Prior 10-year Average															
New England	0	85	420	1	0	81	420	1	0	81	427	1	506	501	509
Middle Atlantic	0	168	557	5	0	168	549	5	0	169	557	6	731	722	732
E. N. Central	3	234	545	6	3	229	528	6	3	234	534	7	787	766	779
W. N. Central	7	282	683	9	7	279	674	9	7	281	675	10	981	969	973
South Atlantic	110	635	1,154	210	114	659	1,144	222	116	664	1,152	226	2,108	2,138	2,158
E. S. Central	33	526	1,053	52	32	541	1,038	56	33	545	1,045	60	1,663	1,668	1,683
W. S. Central	94	883	1,519	184	90	890	1,518	191	90	876	1,525	194	2,679	2,689	2,685
Mountain	17	423	930	75	21	429	931	76	23	425	943	79	1,445	1,457	1,469
Pacific	26	170	601	65	29	180	612	72	30	181	612	74	863	893	898
U.S. Average	40	396	849	83	42	404	845	88	43	405	852	91	1,369	1,379	1,391

- = 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

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](#).

Table a1. Summary of Estimated Petroleum and Other Liquids Quantities

	June 2016	July 2016	June – July 2016 Average	June – July 2015 Average	2013 – 2015 Average
Global Petroleum and Other Liquids (million barrels per day)					
Global Petroleum and Other Liquids Production (a)	96.1	96.5	96.3	96.2	93.3
Global Petroleum and Other Liquids Consumption (b)	95.6	96.0	95.8	94.8	92.5
Biofuels Production (c)	2.5	2.4	2.4	2.4	2.0
Biofuels Consumption (c)	2.1	2.1	2.1	2.0	2.0
Iran Liquid Fuels Production	4.5	4.5	4.5	3.5	3.3
Iran Liquid Fuels Consumption	1.7	1.7	1.7	1.8	1.9
Petroleum and Petroleum Products Produced and Consumed in Countries Other Than Iran (million barrels per day)					
Production (d)	89.1	89.6	89.4	90.3	88.0
Consumption (d)	91.8	92.1	92.0	90.9	88.7
Production minus Consumption	-2.7	-2.5	-2.6	-0.6	-0.8
World Inventory Net Withdrawals Including Iran	-0.5	-0.5	-0.5	-1.4	-0.8
Estimated OECD Inventory Level (e) (million barrels)	3,071	3,085	3,078	2,893	2,737
Surplus Production Capacity (million barrels per day)					
OPEC Surplus Crude Oil Production Capacity (f)	1.1	1.1	1.1	1.3	1.9

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. It also does not include additional capacity that may be available in Iran, but which is currently offline due to the impacts of U.S. and EU sanctions on Iran's ability to sell its oil.

Source: U.S. Energy Information Administration.

Table a2. Crude Oil and Petroleum Product Price Data

Item	June 2016	July 2016	June – July 2016 Average	June – July 2015 Average	2013 – 2015 Average
Brent Front Month Futures Price (\$ per barrel)	49.93	46.53	48.23	60.51	87.25
WTI Front Month Futures Price (\$ per barrel)	48.85	44.80	46.83	55.71	79.91
Dubai Front Month Futures Price (\$ per barrel)	46.62	43.27	44.95	59.14	84.58
Brent 1st - 13th Month Futures Spread (\$ per barrel)	-3.29	-4.97	-4.13	-5.01	0.15
WTI 1st - 13th Month Futures Spread (\$ per barrel)	-3.18	-5.35	-4.27	-3.78	1.52
RBOB Front Month Futures Price (\$ per gallon)	1.56	1.38	1.47	2.00	2.37
Heating Oil Front Month Futures Price (\$ per gallon)	1.50	1.39	1.44	1.79	2.47
RBOB - Brent Futures Crack Spread (\$ per gallon)	0.37	0.27	0.32	0.55	0.29
Heating Oil - Brent Futures Crack Spread (\$ per gallon)	0.31	0.28	0.29	0.35	0.40

(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).