U.S. Energy Information Administration

Frequently Asked Questions
How much electricity does an American home use?

In 2016, the average annual electricity consumption for a U.S. residential utility customer was 10,766 kilowatthours (kWh), an average of 897 kWh per month. Louisiana had the highest annual electricity consumption at 14,881 kWh per residential customer and Hawaii had the lowest at 6,061 kWh per residential customer.

Learn more:
Electric Sales, Revenue, and Average Price (see Table 5.a)
Residential Energy Consumption Survey (RECS) (detailed data on U.S. residential energy consumption for selected years)
Electricity Explained: Use of Electricity

Last updated: November 7, 2017

Other FAQs about Electricity

Case SU-17-11 Supporter Ex 1

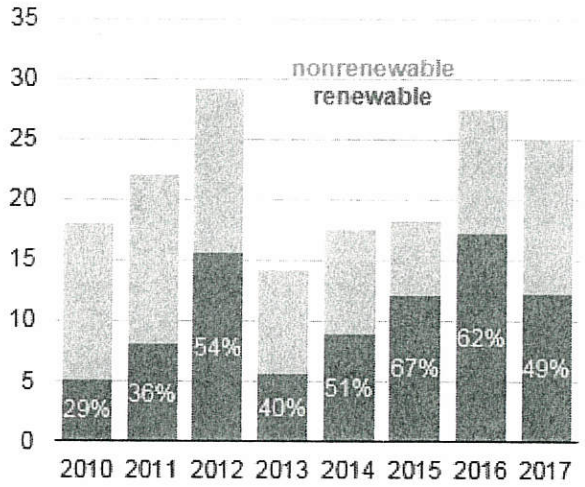
U.S. Energy Information Administration

Today in Energy

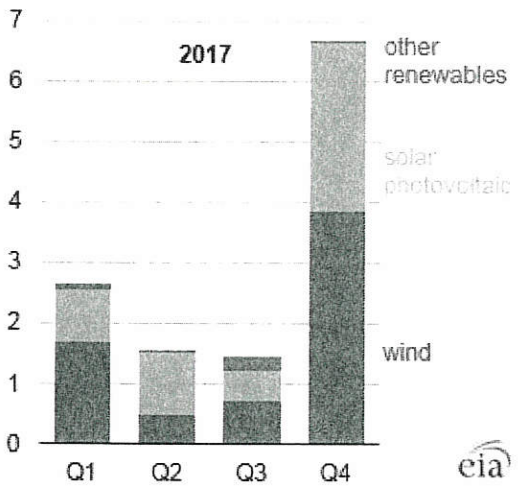
January 10, 2018

Nearly half of utility-scale capacity installed in 2017 came from renewables

Utility-scale capacity additions, 2010-2017
gigawatts



Utility-scale renewable capacity additions
gigawatts



Source: U.S. Energy Information Administration, Form EIA-860M, *Preliminary Monthly Electric Generator Inventory*

Once final data are in, EIA expects about 25 gigawatts (GW) of new utility-scale electric generating capacity to have been added to the power grid during 2017, nearly half of which use renewable technologies, especially wind and solar. Another 3.5 GW of small-scale solar net capacity additions are estimated to have come online in 2017.

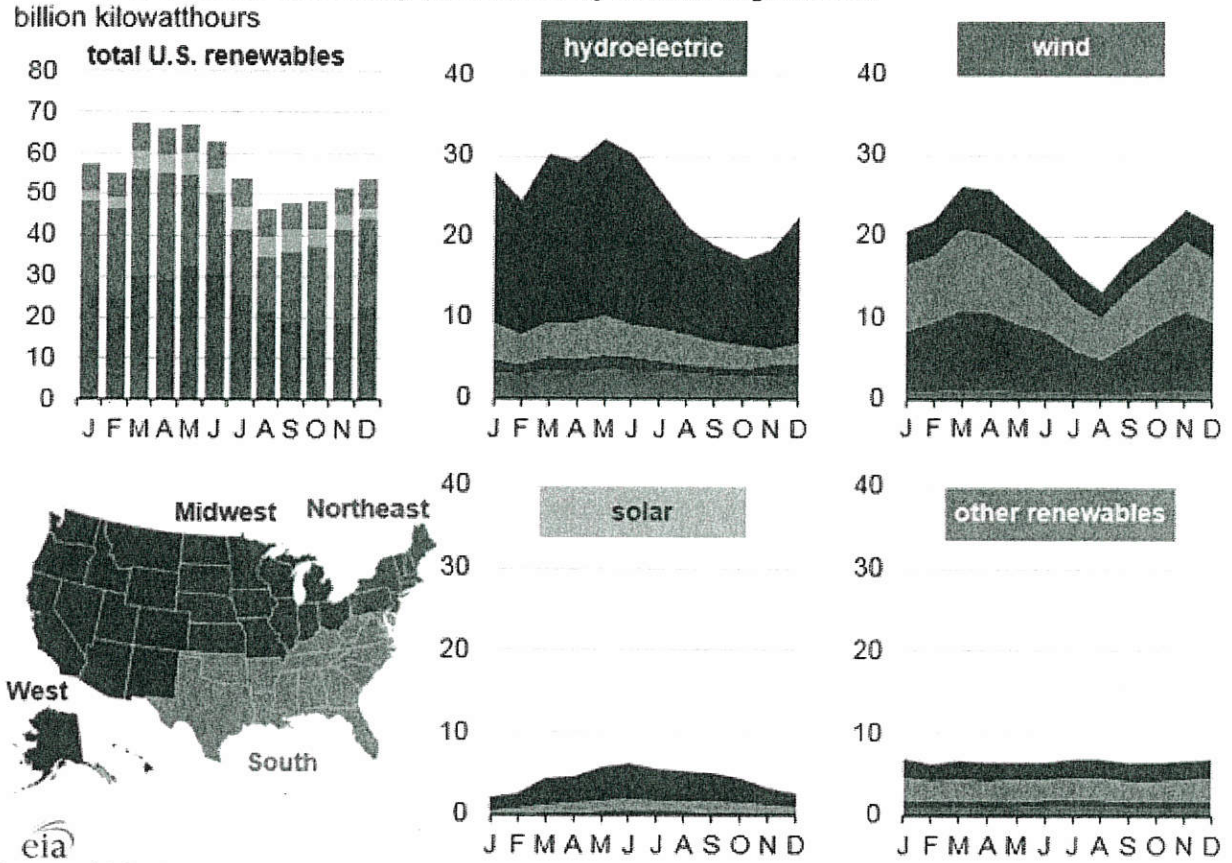
Of the renewable capacity additions in 2017, more than half came online during the fourth quarter. Renewable capacity additions are often highest in the final months of the year, in part because of timing qualifications for federal, state, or local tax incentives. Estimated fourth-quarter capacity additions for 2017 are based on planned additions reported to EIA and are subject to change based on actual project completions.

Monthly U.S. renewable electricity generation peaked in March at 67.5 billion kilowatthours, or 21% of total utility-scale electricity generation. In late spring, the melting snowpack from a winter characterized by higher-than-average levels of precipitation increased hydroelectric generation, while strong wind resources in March also produced a peak in monthly wind generation for the year.

Most renewable generation in 2017 came from the Western census division, which accounted for the majority of the hydroelectric (67%) and solar (69%) generation. Wind generation was more evenly spread across the country in 2017, with 37% occurring in the Midwest, 37% in the South, 21% in the West, and the remaining 4% in the Northeast.

Monthly renewable electricity generation by census region, 2017

billion kilowatthours



Source: U.S. Energy Information Administration, *Electric Power Monthly*

Other renewable electricity highlights in 2017

- In February, Maryland increased the renewables generation target in its renewable portfolio standard (RPS) to 25% of retail electricity sales by 2020, replacing the earlier target of 20% by 2022.
- For the first time, monthly electricity generation from wind and solar (including utility-scale plants and small-scale systems) exceeded 10% of total electricity generation in the United States in March.
- In early spring, California's total solar share of gross electricity demand exceeded 50% during the mid-day hours, resulting in negative pricing.
- From March through May, U.S. monthly electricity generation from utility-scale renewable sources exceeded nuclear generation for the first time since July 1984.
- On August 21, a solar eclipse obscured the sunlight needed to generate electricity at approximately 1,900 utility-scale solar photovoltaic (PV) power plants in the United States. Solar power output in the California Independent System Operator (CAISO) region fell to a low of 3.6 GW during maximum obscuration, about 60% lower than normal.

Principal contributor: Cara Marcy

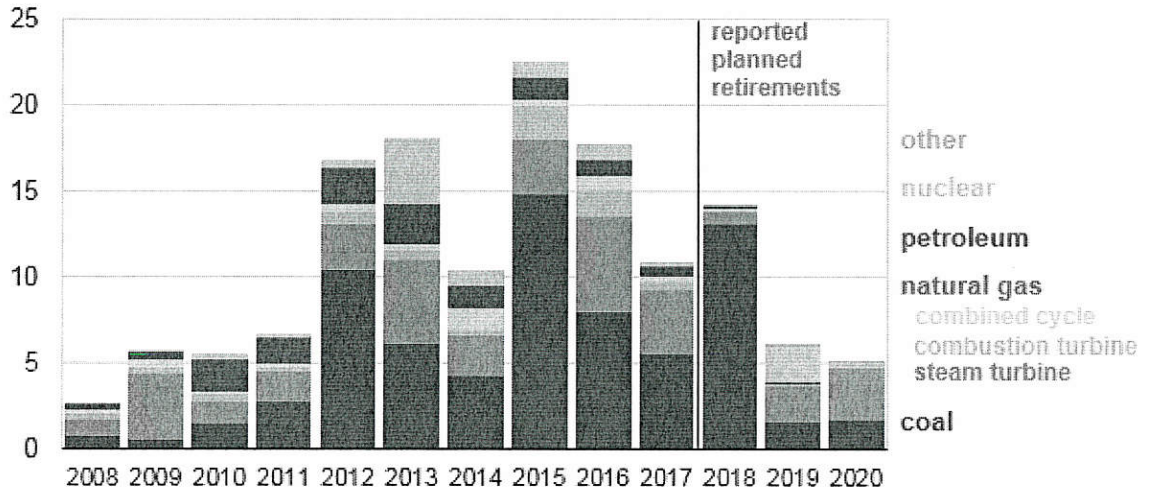
U.S. Energy Information Administration

Today in Energy

January 9, 2018

Almost all power plants that retired in the past decade were powered by fossil fuels

U.S. utility-scale electric generating capacity retirements (2008-2020)
gigawatts



Source: U.S. Energy Information Administration, Form EIA-860M, *Preliminary Monthly Electric Generator Inventory*
Note: Includes reported retirements through October 2017 and reported planned retirements for November and December.

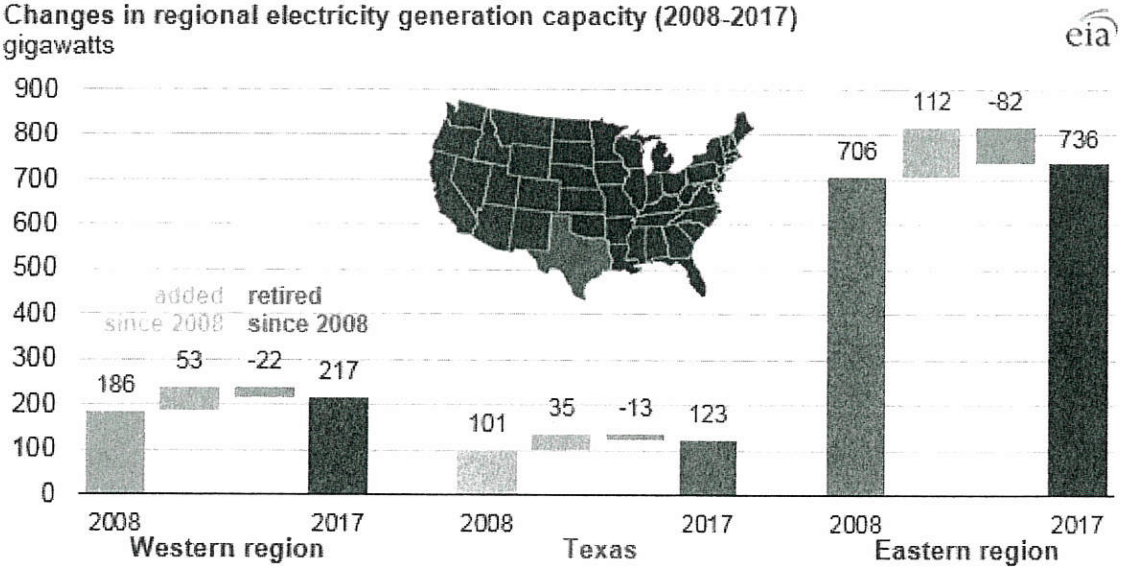
Nearly all of the utility-scale power plants in the United States that were retired from 2008 through 2017 were fueled by fossil fuels. Of the total retired capacity, coal power plants and natural gas steam turbines accounted for the highest percentages, 47% and 26%, respectively. Most of the planned retirements through 2020 will also be coal plants and natural gas steam turbines, based on information reported to EIA.

Various factors influence the decision to retire a power plant. For example, the coal power plants retired since 2008 were relatively old and small, averaging 52 years and 105 megawatts (MW), compared with the fleet of coal plants still operating, at 39 years and 319 MW. Other influential factors include changes in regional electricity use, federal or state policies that affect plant operation, and state policies that require or encourage the use of certain fuels such as renewables.

Improving technologies also play a part in plant retirement decisions but may not change the overall use of any one fuel. For example, older natural gas steam turbine technologies may retire, even as newer, more efficient, and operationally flexible technologies such as natural gas-fired combined-cycle and combustion-turbine capacity are being built.

The Western, Texas, and Eastern interconnections comprise the power grid of the Lower 48 states. The Western Interconnection covers the area from the Rocky Mountains to the Pacific Coast. The Electricity Reliability Council of Texas covers most of Texas. The Eastern Interconnection covers the area east of the Rocky Mountains and includes some parts of Texas. In this analysis, states are grouped to roughly reflect the three interconnections.

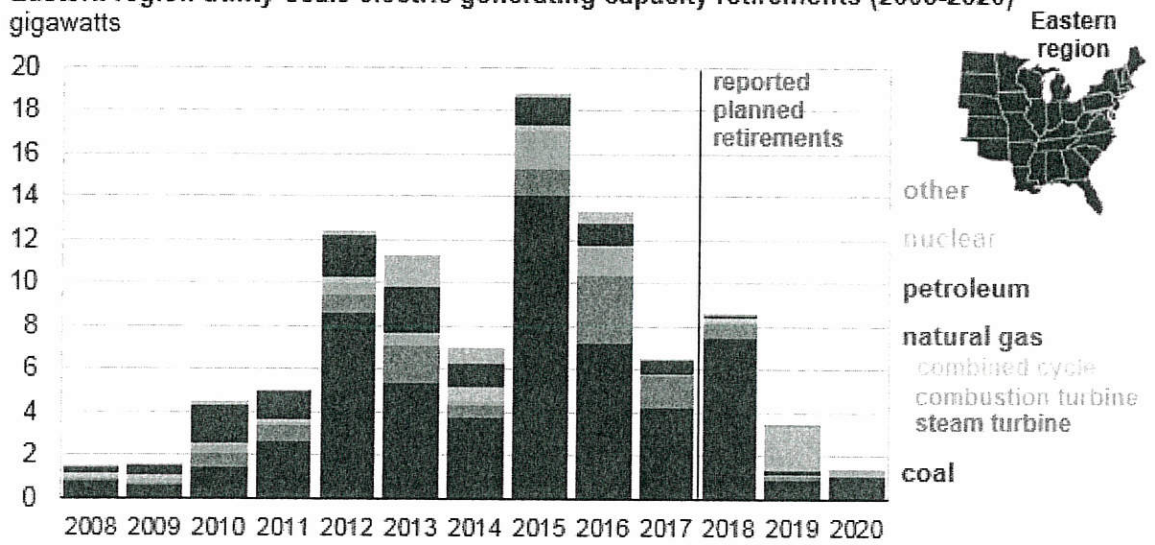
Changes in regional electricity generation capacity (2008-2017)
gigawatts



Source: U.S. Energy Information Administration, Form EIA-860M, *Preliminary Monthly Electric Generator Inventory*

The Eastern region contains most of the U.S. electricity generating capacity—736 gigawatts (GW) of the nation's 1,076 GW, as of October 2017. The East had the largest share of capacity retirements in the past 10 years compared with the Western and Texas regions, at 10% of Eastern region capacity. Coal-fired capacity in particular was disproportionally affected in this region, as 19% of the Eastern region's coal capacity retired in the past decade, compared with 17% of the national coal capacity.

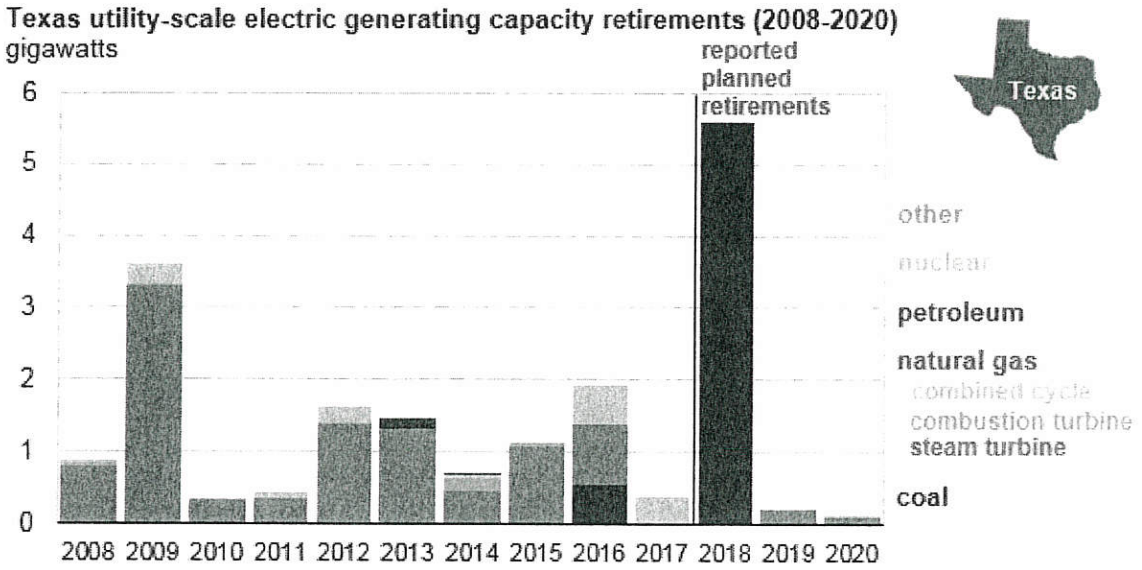
Eastern region utility-scale electric generating capacity retirements (2008-2020)
gigawatts



Source: U.S. Energy Information Administration, Form EIA-860M, *Preliminary Monthly Electric Generator Inventory*

Of the three regions in the U.S. power grid, Texas has the least amount of generating capacity, totaling 123 GW as of October 2017. Since 2008, most retirements in Texas were generators that used natural gas steam and petroleum technologies. During that period, a total of 35% of Texas natural gas-fired steam turbine capacity and 66% of petroleum capacity retired. Coal retirements totaling 532 megawatts (MW) accounted for 2% of total installed coal capacity in Texas. However, Texas is expected to have 5,583 MW of coal retirements in 2018, based on planned retirement dates reported to EIA.

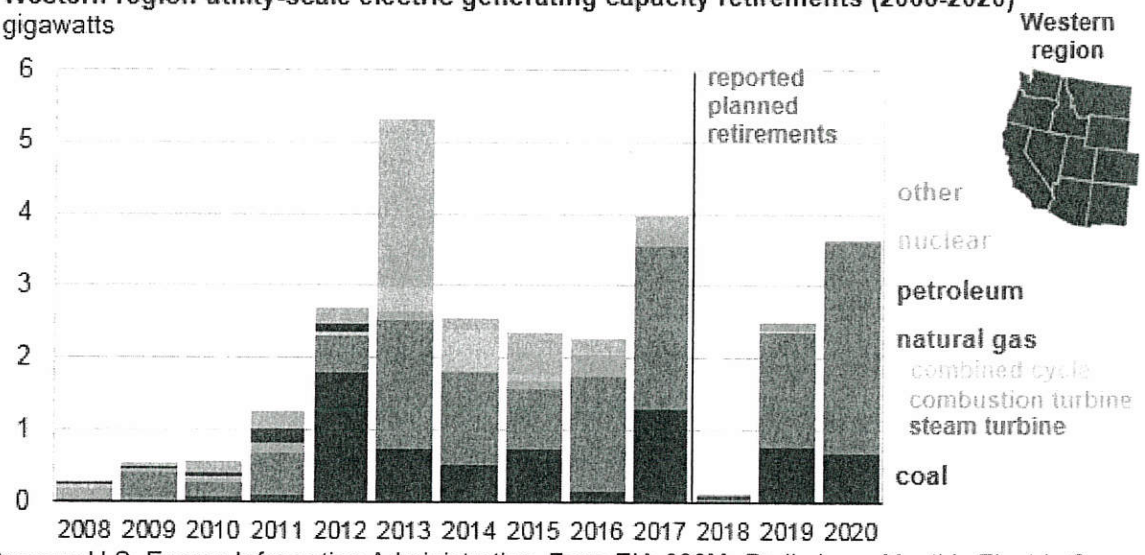
Texas utility-scale electric generating capacity retirements (2008-2020)



Source: U.S. Energy Information Administration, Form EIA-860M, *Preliminary Monthly Electric Generator Inventory*

The Western region of the United States has about 217 GW of operating capacity. San Onofre Nuclear Generating Station Units 2 and 3 provided 2.1 GW (23%) of the Western region's nuclear capacity before their retirement in 2013. Since 2008, natural gas steam turbine retirements accounted for 46% of the region's installed natural gas steam capacity.

Western region utility-scale electric generating capacity retirements (2008-2020)



Source: U.S. Energy Information Administration, Form EIA-860M, *Preliminary Monthly Electric Generator Inventory*

Principal contributors: Scott Jell, Michelle Bowman