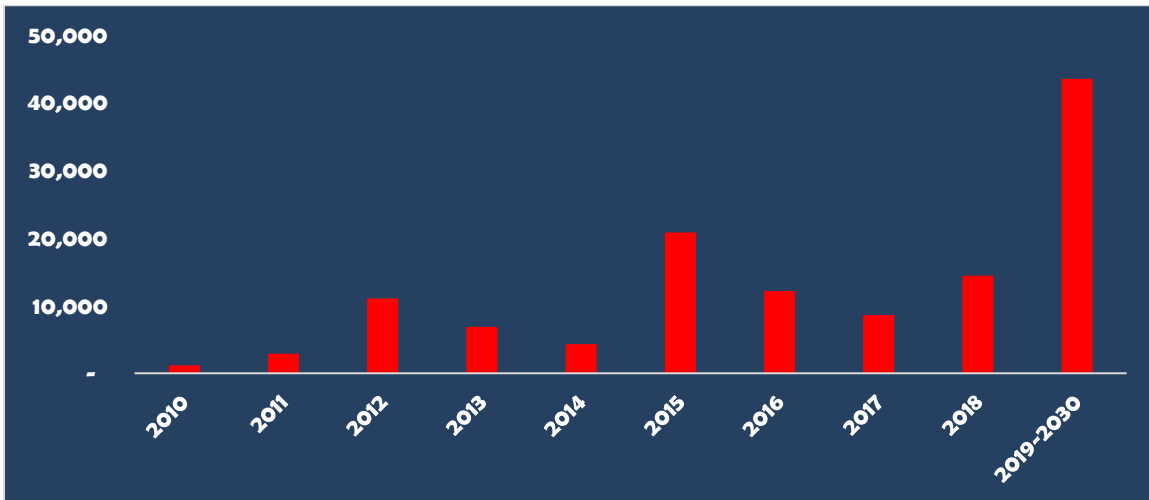


Retirements of Coal-Fired Electric Generating Units¹

As of June 30, 2019

Total Coal Retirements

Since 2010, U.S. power plant owners have announced either the retirement or conversion to other fuels of a large number of coal-fired electric generating units.² The table on the following pages summarizes all publicly announced retirements through 2030. The table shows that 664 coal-fired generating units in 43 states—totaling nearly 125,700 megawatts (MW) of electric generating capacity—have retired or announced plans to retire through 2030. Retirements are approaching 40 percent of the coal fleet that was operating in 2010. Through the end of 2018, approximately 82,200 MW of coal-fired generating capacity had retired. In 2019 and 2020, an additional 16,600 MW are expected to retire, bringing total retirements to 98,800 MW by the end of 2020. The chart below shows annual coal retirements in MW over the period 2010-2030.



Retirements Attributed to EPA Policies

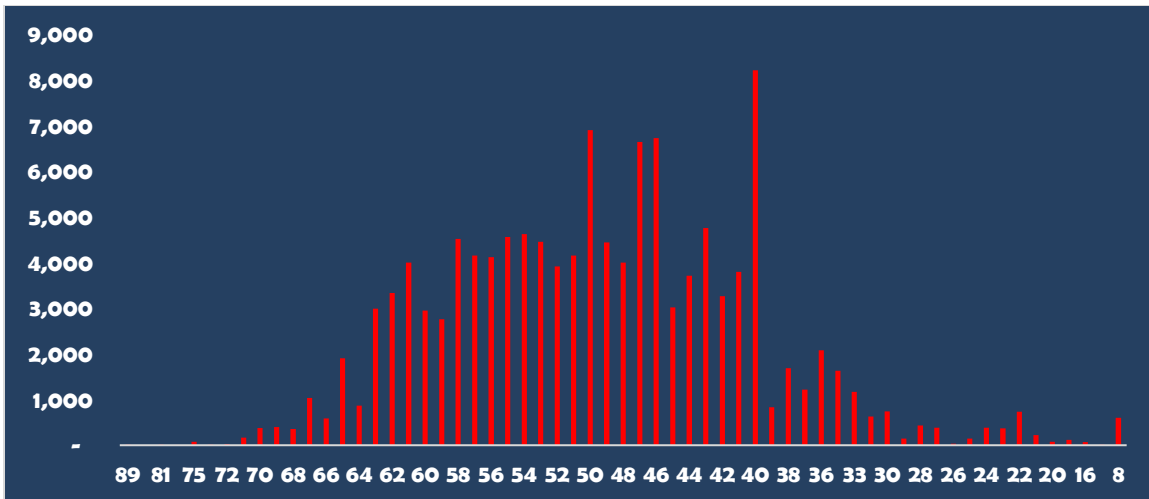
The table also includes retirements that have been explicitly attributed to EPA regulations and policies. These EPA-caused retirements through 2030 total 465 units in 37 states and represent over 78,000 MW of coal-fired generating capacity. Of this total, nearly 60,000 MW had already retired by the end of 2018.

Retirements by Age

The chart below shows the amount in MW of coal-fired generating capacity according to the age at which retirements have happened so far or will happen based on announcements. So far, the average age of a coal unit at retirement is 49 years.

¹ Retirements and conversions are based primarily on public announcements by the owners of the coal units. We also use other information sources that are reliable. These retirements and conversions are not based on modeling projections. We do not include small (less than 25 MW) cogeneration units. Since most of these units are retiring, not converting to another fuel, we use the term “retirements” in this paper to characterize units that may be either retiring or converting.

² In 2010, according to EIA, the U.S. coal fleet was comprised of 1,396 electric generating units located at 580 power plants for a total electric generating capacity of approximately 317,000 MW.



Retirements in ISO/RTO Regions

There are seven ISO/RTO regions in the U.S.: California ISO (CAISO), Texas ISO (ERCOT), Midcontinent ISO (MISO), ISO New England (ISONE), New York ISO (NYISO), PJM Interconnection (PJM) and Southwest Power Pool (SPP). Over 56,600 MW of coal-fired generating capacity in these regions had retired by the end of 2018. An additional 10,400 MW are expected to retire in these regions in 2019 and 2020, 8,600 MW of which are due to wholesale electricity market conditions. The result is that a total of over 67,000 MW will have retired in these regions between 2010 and the end of 2020. The regions with the most retirements from 2010 through 2020 are PJM (36,200 MW), MISO (14,800 MW), ERCOT (5,800 MW) and SPP (5,000 MW).

	MW Retiring	# of Units Retiring
Ohio	14,345 ³ / 6,390 ⁴	63 / 40
Pennsylvania	8,501 / 5,504	42 / 30
Indiana	6,532 / 6,092	39 / 34
Texas	6,291 / 1,368	11 / 3
Kentucky	5,424 / 3,741	23 / 18
Alabama	5,166 / 5,166	26 / 26
Illinois	5,065 / 3,091	20 / 14
Michigan	5,054 / 4,046	46 / 31
Florida	4,649 / 1,465	14 / 7
North Carolina	4,519 / 2,713	37 / 20
West Virginia	4,063 / 2,737	21 / 18
Virginia	3,765 / 2,349	35 / 16

³ Total coal retirements.

⁴ Coal retirements attributed to EPA regulations and policies.

Georgia	3,730 / 3,228	17 / 15
Minnesota	3,678 / 2,153	19 / 15
Tennessee	3,521 / 2,651	18 / 17
Arkansas	3,293 / 3,293	4 / 4
Arizona	3,277 / 3,277	7 / 7
Wisconsin	2,836 / 1,222	27 / 16
Nevada	2,657 / 0	8 / 0
Oklahoma	2,401 / 2,401	5 / 5
Colorado	2,393 / 1,687	19 / 16
Missouri	2,339 / 2,324	24 / 23
New Mexico	2,244 / 2,244	7 / 7
Montana	2,224 / 130	5 / 1
Utah	2,072 / 272	7 / 5
Iowa	1,823 / 1,571	33 / 29
South Carolina	1,759 / 1,759	14 / 14
New York	1,708 / 475	14 / 3
Massachusetts	1,598 / 1,346	8 / 6
New Jersey	1,479 / 259	6 / 2
Washington	1,340 / 0	2 / 0
Mississippi	1,066 / 706	4 / 2
Nebraska	726 / 611	6 / 5
Maryland	618 / 115	5 / 2
Oregon	585 / 585	1 / 1
Louisiana	575 / 575	1 / 1
Connecticut	564 / 0	2 / 0
Kansas	538 / 477	7 / 6
Wyoming	375 / 375	5 / 5
Delaware	359 / 0	4 / 0
California	317 / 0	6 / 0
North Dakota	187 / 0	1 / 0
South Dakota	22 / 22	1 / 1
43 / 37 States	125,675 / 78,418 MW	664 / 465 Units