

In a First, Renewable Energy Is Poised to Eclipse Coal in U.S.

The coronavirus has pushed the coal industry to once-unthinkable lows, and the consequences for climate change are big.

<https://www.nytimes.com/2020/05/13/climate/coronavirus-coal-electricity-renewables.html?action=click&module=Top%20Stories&pgtype=Homepage>



The Kintigh Generating Station in Somerset, N.Y., the state's last coal-burning plant, just before it was shut down in March.
Credit...

Libby March for The New York Times

By **Brad Plumer**
May 13, 2020

WASHINGTON — The United States is on track to produce more electricity this year from renewable power than from coal for the first time on record, new [government projections show](#), a transformation partly driven by the coronavirus pandemic, with profound implications in the fight against climate change.

It is a milestone that seemed all but unthinkable a decade ago, when coal was so dominant that it provided [nearly half the nation's electricity](#). And it comes despite the Trump administration's three-year push to try to revive the ailing industry by weakening pollution rules on coal-burning power plants.

Those efforts, however, failed to halt the powerful economic forces that [have led electric utilities to retire hundreds of aging coal plants](#) since 2010 and run their remaining plants less frequently. The cost of building large wind farms has declined [more than 40 percent](#) in that time, while solar costs have dropped [more than 80 percent](#). And the price of natural gas, a cleaner-burning alternative to coal, [has fallen to historic lows](#) as a result of the fracking boom.

Now the coronavirus outbreak is pushing coal producers into their deepest crisis yet.

As factories, retailers, restaurants and office buildings have shut down nationwide to slow the spread of the coronavirus, [demand for electricity has fallen](#) sharply. And, because coal plants often cost more to operate than gas plants or renewables, many utilities are cutting back on coal power first in response.

"The outbreak has put all the pressures facing the coal industry on steroids," said Jim Thompson, a coal analyst at IHS Markit. In just the first four and a half months of this year, America's fleet of wind turbines, solar panels and hydroelectric dams have produced more electricity than coal on 90 separate days — shattering last year's record of 38 days for the entire year. On May 1 in Texas, wind power alone supplied nearly three times as much electricity as coal did.

The [latest report](#) from the Energy Information Administration estimates that America's total coal consumption will fall by nearly one-quarter this year, and coal plants are expected to provide just 19 percent of the nation's electricity, dropping for the first time below both nuclear power and renewable power, a category that includes wind, solar, hydroelectric dams, geothermal and biomass. Natural gas plants, which supply 38 percent of the nation's power, are expected to hold their output steady thanks to low fuel prices.

The decline of coal has major consequences for climate change.

Coal is the dirtiest of all fossil fuels, and its decline has already helped drive down United States carbon dioxide emissions 15 percent since 2005. This year, the agency [expects America's emissions to fall by another 11 percent](#), the largest drop in at least 70 years. While the pandemic has made these projections uncertain, the decline is expected to come partly because Americans aren't driving as much, but mainly because coal plants are running less often.



Invenergy's Stanton Wind Energy Center in Texas.
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Brandon Thibodeaux for The New York Times

Even if coal does manage to beat expectations and rebound later this year, experts say that the dramatic shift in the nation's electricity system is unlikely to be just a blip.

Utilities and large technology companies, major consumers of electricity, are increasingly turning to wind and solar farms for their power, both because renewables keep getting cheaper as technology improves but also because of concerns over air pollution and climate change. Large power companies, including Duke Energy in the Southeast and Xcel Energy in the Midwest, [are currently planning to retire at least four dozen large coal plants](#) by 2025, and no utility is currently planning to build a new coal facility. "The grid is changing so much faster than anyone expected," said Daniel Cohan, an associate professor of civil and environmental engineering at Rice University. "A decade ago, I was teaching my students that coal was the 'baseload' source that runs all the time, and solar was something you might sprinkle in if you want to pay more. Now coal's been pushed to the margins and it's wind and solar that are the cheapest options."

At the same time, electric companies used to worry that using more than just a tiny fraction of wind and solar would make it difficult to keep the nation's lights on, since the sun isn't always shining and the wind isn't always blowing. But since then, utilities have discovered ways to tackle this problem by using technologies like natural-gas plants that can be quickly turned on to meet spikes in demand, better weather forecasting and, increasingly, vast battery storage projects such as those planned in [Nevada](#) and [California](#). The Energy Information Administration expects wind and solar generation to increase this year, although the Covid-19 outbreak is likely to put many projects on hold as supply chains are disrupted. For instance, Pacificorp, a major utility in the Northwest, said it was facing challenges in completing a large 503-megawatt wind farm under construction in Wyoming, though a spokesman said the company was trying to find "creative solutions" in order to meet a November deadline.

Last week, the Internal Revenue Service [signaled that it would provide some flexibility](#) for wind and solar developers at risk of missing deadlines for finishing projects this year in order to qualify for a key federal tax subsidy.

The decline of coal power has created turmoil across the industry. Mining companies [have laid off hundreds of workers](#) in states like Wyoming and Montana. In April, Longview Power, which operates one of the nation's youngest and most advanced coal power plants, in West Virginia, [filed for Chapter 11 bankruptcy protection](#), citing the pandemic as a factor.



Truckers blocked a highway in Cumberland, Ky., in solidarity with unpaid miners in August.

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Kristian Thacker for The New York Times

Analysts said that coal power could see a moderate rebound next year if natural gas prices rise from their current lows. Still, even under that scenario, the E.I.A. does not currently see coal overtaking renewable energy.

For now, it is often cheaper for many utilities to generate electricity from natural gas than coal because of a nationwide gas glut, thanks in part to a warm winter that reduced demand for gas heating, combined with the boom in hydraulic fracturing. In places like Texas, natural gas is frequently an abundant side product produced by drillers that use fracking to extract crude oil.

More recently, however, the coronavirus has caused oil prices to crash worldwide. Many oil drillers [are now being forced to shut down their wells](#), which could mean less natural gas next year and potentially higher gas prices, helping coal recover.

There is a wild card, however: If the financial pain caused by the pandemic leads utilities to speed up their decisions to retire more coal plants, the industry would have a much harder time bouncing back in the years ahead. Once a coal-burning plant is closed, it is difficult to restart.

“I wouldn’t be surprised if we do see some companies accelerate their plans to retire more coal plants,” said Manan Ajuha, a power industry analyst at S&P Global Platts.

One danger sign for many coal plants is that they are running less frequently. Back in 2010, the average U.S. coal plant ran at about 67 percent of its capacity. Last year, that fraction dipped below one-half for the first time in decades and is slipping further this year.

“The less you use these plants, the more expensive they are to keep around,” said Seth Feaster, a data analyst at the Institute for Energy Economics and Financial Analysis. His group [recently estimated](#) that, by 2025, coal could make up 10 percent or less of the electricity generated in the United States.

The latest example: This month Great River Energy, a cooperative based in Minnesota, [said it planned](#) to close its giant Coal Creek Station, a 1.1 gigawatt coal plant in North Dakota, by 2022. While a utility official attributed the decision to long-term economic trends, not the pandemic, the closure is notable for what will replace it: The utility plans to add 1.1 gigawatts of new wind capacity, a small amount of gas, as well as [a first-of-its-kind battery](#) that can store wind power for long periods.



The Coal Creek Station in North Dakota, which will close by 2022.
Credit...
Brandon Thibodeaux for The New York Times

The coal industry, for its part, says that many of these retirements may prove shortsighted. Michelle Bloodworth, the chief executive of America's Power, an industry trade group, argued that coal plants remained a critical pillar of the nation's electricity mix and a valuable hedge in case natural gas prices rise, as they have done in the past during particularly severe winter storms when demand for gas heating can spike.

"The coal fleet is not dead," Ms. Bloodworth said. "There is still a significant amount of coal that's going to be needed in the future to make sure we don't risk and threaten the reliability of the grid."

While President Trump came into office vowing to save the coal industry and revive mining jobs, he has so far been unable to do so. His push to relax costly air pollution rules on coal plants has not stopped the plant closures. And [several plans by the administration](#) to indirectly subsidize coal plants, on the grounds that they can improve grid reliability, have gone nowhere.

The United States is not yet at the point reached in Britain, which [now goes for weeks at a time](#) without using any coal power at all. But some parts of the United States are now getting an early preview of life where coal is on the decline and renewables are soaring. "In some parts of the country, we're now seeing renewable penetration hit 60 or 70 percent on some days," said Nat Kremer, chief executive of Advanced Energy Economy, a clean-energy business group, "and no one's screaming that they can't do that."