Three signal flares went up for the American coal industry recently, all illuminating an inescapable conclusion: Despite President Trump's campaign promise, coal-fired power is in trouble and in all likelihood won't be reasserting itself in the United States. Nor should it.

The first signal, from the medical community, should give champions of “beautiful, clean coal” like Mr. Trump and his energy secretary, Rick Perry, pause. A research letter published in the Journal of the American Medical Association on Feb. 6 said that health professionals in Appalachian coal country were now finding the highest levels of black lung disease in coal miners ever reported.

The Coal Workers’ Health Surveillance Program, administered by the National Institute for Occupational Safety and Health, or Niosh, has offered regular chest radiographs for coal miners since 1970. By the late 1990s, black lung disease was “rarely identified” among miners participating in the program, researchers wrote. But a spike in cases in 2014, first reported by National Public Radio, prompted the federal agency to take a closer look at patients at three federally funded black lung clinics in southwest Virginia.

The agency was stunned by what it found. Black lung cases in Appalachia coal miners in those three clinics had skyrocketed. The disease was more severe. And coal miners were dying much younger than they had been two decades ago.

From January 2013 to February 2017, the Niosh researchers documented 416 coal miners among about 11,200 observed during the study with the most deadly form of the disease, progressive massive fibrosis, an advanced stage of black lung disease caused by inhalation of coal and silica dust at underground and surface coal mines. Miners with this advanced disease gradually lose the ability to breathe.

“We are seeing something that we haven’t seen before,” Ron Carson told NPR. He directs the black lung program for Stone Mountain Health Services, which treats coal miners from Kentucky, Virginia and West Virginia. The program went from seeing five to seven cases a year when it first opened in 1990 to 154 cases in the past year.
The reasons behind this sharp rise are complicated. But according to an NPR investigation, the most likely causes are the miners’ working longer hours and their exposure to deadlier silica dust from cutting into rock to extract coal from thinner, harder-to-reach seams. The days of mining for readily available coal are long gone. It’s more difficult, and seemingly more costly to miners’ health, to extract coal in Appalachia now.

In 2014, a federal rule went into effect to improve protections for miners, including decreased allowable dust concentrations, but as the researchers noted, “Whether these added protections will decrease severe occupational lung disease in coal miners requires continued surveillance.”

The second signal is subtle, but more damning. Despite the president’s oft-repeated claim that coal-fired electricity generation is making a comeback, there is likely to be a significant number of retirements of coal plants this year, according to an assessment by the consulting firm S&P Global Marketplace Intelligence.

“Troubling economics have proven difficult to overcome, with low wholesale power and natural gas prices being the main contributing factors squeezing margins,” S&P Global’s assessment said. It added, “Coupling this unfavorable operating environment with an increasingly gas-, wind- and solar-focused resource mix going into the future will likely only continue to lower the need for an aging coal fleet.”

Many of the coming coal retirements this year will happen in states President Trump won in 2016. A notable example is the Texas utility Vistra Energy, which said in October 2017 that it planned to retire three coal-fired power plants with a combined capacity of more than 4,000 megawatts. In Florida, the 1,252-megawatt St. Johns River plant shut down in early January, mainly because of market conditions. The utility plans to replace the coal plant’s output with nuclear, natural gas and solar resources.

This development is in line with the findings of a report published last fall by the Union of Concerned Scientists, which concluded that “coal-fired power has become increasingly uneconomic and is the main factor driving the U.S. electricity sector to rapidly transition away from coal.”

The third signal came from Mr. Trump’s Energy Department. After the Federal Energy Regulatory Commission rejected a proposal from Mr. Perry, the energy secretary, last month to subsidize struggling coal and nuclear plants, he has apparently been exploring a new route to bail out coal companies like Murray Energy Corporation, whose owner, Bob Murray, is an important donor to the president.

Bloomberg reported recently that Mr. Perry was considering Energy Department payments to utilities like First Energy (which buys coal from Mr. Murray’s company) to store coal reserves; that suggests that some coal companies might not survive without a federal bailout. A department spokesman said the report was not accurate, but when asked whether the agency
could take its own action to keep coal and nuclear plants from retiring, the energy under secretary, Mark Menezes, told Bloomberg: “We have authorities that we can use when the need arises. They’re well known. And we’ll use them if we need to.”

What seems clear from all three cases is that the coal industry isn’t coming back. At best, Mr. Trump’s administration can keep it on life support with taxpayer-funded bailouts. He should be embracing a clean, renewable energy future instead.

Jeff Nesbit is the executive director of Climate Nexus, a nonprofit communications group focused on climate change and clean energy, and author of the forthcoming book “This Is the Way the World Ends.”

*Follow The New York Times Opinion section on Facebook and Twitter (@NYTopinion), and sign up for the Opinion Today newsletter.*

A version of this article appears in print on Feb. 19, 2018, on Page A19 of the New York edition with the headline: Coal's Continuing Decline