

UNDER CONTROLLED

How Federal Rules Could Curb Coal Plant Pollution

SUMMARY FOR POLICYMAKERS AND THE PUBLIC



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AUTHORS & ACKNOWLEDGEMENTS

AUTHOR: Sierra Club's Beyond Coal Communications Department

ANALYSIS: Daniel Prull, PhD

DATA VISUALIZATION AND MAPPING: Noah Ver Beek

EDITING AND ADDITIONAL VISUALIZATIONS: Mini Saraswati, PhD

CONTACTS:

Jessica King, jessica.king@sierraclub.org

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Finally, thanks to the enduring dedication of the Beyond Coal Campaign.



I am proud to introduce a new report from the Sierra Club's Beyond Coal Campaign, which features personal stories from communities across the country impacted by coal plants and highlights from new research about the effect federal air quality standards can have on these polluters.

When the Sierra Club launched the Beyond Coal Campaign in 2011 with a goal of closing all remaining coal plants, some laughed. Many said it was impossible. Just over a decade later, what once seemed impossible is now recognized as inevitable. In almost every circumstance, it's [more economical](#) to replace coal plants with clean energy than keep them running, and more than 370 coal plants have retired or announced plans to retire.

But the stories in this report remind us that the fight for clean air and healthy communities is far from over. The coal plants highlighted here are just a few examples of the countless polluters across our country that are still putting profits over public health. These stories also serve as a reminder of the power of community organizing and the effect individuals can have when they come together to demand change.

In solidarity,

Ben Jealous

Sierra Club Executive Director



EXECUTIVE SUMMARY

Combustion of coal results in the emission of various pollutants - including sulfur dioxide (SO₂), nitrogen oxides (NO_x), and directly emitted particulate matter (PM_{2.5}). These emissions are all harmful to public health on their own, and also contribute to ambient PM_{2.5} pollution.

Our previous report, [“Out of Control: The Deadly Impact of Coal Pollution”](#) found that exposure to PM_{2.5} from remaining¹ coal-fired power plants in the United States causes an estimated 3,800 premature deaths per year. Modern pollution controls, when optimized and operated consistently, significantly reduce the level of emissions from coal combustion; namely, flue-gas desulfurization (FGD) to control SO₂, selective catalytic reduction (SCR) to control NO_x, and a baghouse (BH) to control direct PM_{2.5} emissions. However, of the 160 coal plants remaining today, only 19% have all three controls installed. We estimate that on average, units which lack SCR controls for NO_x and/or BH controls for PM are twice as deadly per energy generated as those that are fully controlled. Moreover, units which lack FGD controls for SO₂ are over three times as deadly.

There are a number of existing federal air pollution rules which present near-term opportunities for the Environmental Protection Agency to reduce harmful pollution from coal-fired power plants under the Clean Air Act - namely, amendments to the Mercury and Air Toxics Standards; attainment status updates for the 2008 and 2015 Ozone National Ambient Air Quality Standards (NAAQS); enforcement of the final Federal Good Neighbor Plan for the 2015 Ozone NAAQS; enforcement of the 2010 SO₂ NAAQS; and requirements for strong and comprehensive Round 2 Regional Haze state plans. In this report, we analyze the extent to which each of these rules could require upgrades to existing pollution controls, require emission reductions commensurate with retrofit of new pollution controls, or ensure retirement announcements are enforceable.

Our analysis shows that 53% of remaining coal-fired power plants will face a decision point on retrofitting with pollution controls or retiring one or more generating units to comply with these rules. An additional 11% of remaining coal-fired power plants will need to improve existing pollution controls. Many of these plants will require multiple pollution control improvements which could impose untenable costs leading to additional decision points on retrofitting or retiring to comply. In total, generating units impacted by these rules account for 68% of SO₂ emissions, 65% of NO_x emissions, and 66% of premature deaths from PM_{2.5} pollution. Furthermore, as designed, these rules would have the greatest impact on the worst polluters. By generating capacity, over 50% of remaining coal units that lack one or more pollution controls,² and 80% of units that are totally uncontrolled³ would face a decision point on retrofitting with pollution controls or retiring to comply. Together, if properly enforced, these rules can work in concert to force utilities to account for the true cost of their undercontrolled coal plants.

Read the full report, [Under Controlled: How Federal Rules Could Curb Coal Plant Pollution](#).

¹ Throughout this report, we use the term 'remaining' to indicate coal-fired plants with at least one unit lacking firm plans to retire by the end of the decade, as determined by Sierra Club.

² Referring to generating units which have some combination of SCR, FGD and BH controls installed, but not all three.



³ Referring to generating units which lack all SCR, FGD and BH controls

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AIR POLLUTION CHEAT SHEET



OZONE POLLUTION

-  **What is ozone?** Ozone, also known as smog, is harmful air pollution that forms when emissions from vehicles, factories, and power plants react with heat and sunlight.
-  **What are we doing about it?** To protect public health and the environment, the EPA sets standards that limit the amount of ozone and other pollution allowed in the air, and require state governments to reduce ozone pollution in areas that have too much. Sierra Club is advocating that EPA require coal plants to clean up if they are polluting these areas.

MERCURY AND OTHER HAZARDOUS AIR POLLUTANTS

-  **What is mercury pollution?** Coal plants release heavy metals like mercury and other dangerous toxins that can expose communities to contaminated fish, air, and water.
-  **What are we doing about it?** In [April 2023](#), EPA proposed strengthening protections against mercury and other hazardous air pollutants. In the proposal, EPA indicated that coal plants can install readily available pollution controls to meaningfully reduce their release of heavy metals like mercury, chromium, and arsenic. We will advocate for EPA to adopt strong limits for toxic pollutants from coal plants.



CROSS-STATE OZONE POLLUTION


-  **What is cross-state ozone pollution?** Air pollution doesn't stop at state lines and can travel hundreds of miles from its source, creating cross-state ozone pollution.
-  **What are we doing about it?** In [March 2023](#), EPA finalized the [Good Neighbor Plan](#) for the 2015 ozone standards. This new federal plan will protect residents in dozens of states who are unknowingly and unwillingly breathing in ozone pollution from power plants and industrial facilities in other states, often hundreds of miles away. We will advocate that coal plants — even those that have announced retirements — meet the plan's emissions limits and timeline.

REGIONAL HAZE POLLUTION

-  **What is regional haze pollution?** Like ozone, regional haze pollution occurs when tiny particles and gasses from vehicles, coal and gas plants, and dirty industries react with sunlight. Regional haze pollution creates smoggy skies and reduces visibility in cities and scenic areas. Reducing it can restore beautiful views and protect public health.
-  **What are we doing about it?** Since EPA created the Regional Haze Rule in 1999, visibility has improved in some national parks and wilderness areas. However, 12 states whose pollution continues to produce unacceptable levels of regional haze have failed to submit adequate plans on how they will reduce this pollution. EPA can take action to ensure that all states are doing their part to improve visibility and public health. We will advocate that EPA only approves and enforces strong state plans calling for pollution controls on coal plants or steps in with a strong federal plan.

SULFUR DIOXIDE

-  **What is sulfur dioxide pollution?** Sulfur dioxide is a dangerous chemical that can harm the lungs, worsen asthma attacks, and put sensitive groups like those with heart disease at extreme risk for more health complications. Even short-term exposure to sulfur dioxide for as little as five minutes has negative health impacts.
-  **What are we doing about it?** Stronger national air quality standards for sulfur dioxide would have a real impact on communities near coal plants and could lead big polluters to install controls. We will advocate for EPA to require states to develop strong plans to address sulfur dioxide pollution and encourage EPA to step in and develop federal plans for states that fail to do so.

Keep reading to learn about some super-polluting coal plants around the country, the people they impact, and what we can do to protect our communities and the planet. 

Pollution Impacts on Fenceline Communities



Photo by Ed Smith, Sierra Club Deputy Press Secretary

THE NEW MADRID POWER PLANT | *New Madrid, Missouri*

THE POLLUTER: The New Madrid Power Plant, owned by Associated Electric Cooperatives Inc. (AECI) and the City of New Madrid, is one of several big polluters in New Madrid [creating some of the dirtiest air in America](#). Although soot pollution from this plant is responsible for 90 premature deaths every year, AECI has no plans to add additional pollution controls or retire this super polluter. Despite having controls in place to reduce smog-forming nitrogen oxide pollution, this plant still exceeds limits set by the Good Neighbor Plan. New Madrid releases more nitrogen oxides (NO_x) than any other coal plant in the country, while the Thomas Hill coal plant, also owned by AECI, is second in total NO_x emissions. New Madrid is missing modern pollution controls for sulfur dioxide and directly emitted particulate matter, both of which are harmful to public health. A stronger EPA rule addressing dangerous sulfur dioxide and soot pollution could require AECI to clean up its act and install and operate proven pollution-prevention measures.

THE PEOPLE: “It’s maddening that AECI owns and operates the top two coal plants for nitrogen dioxide emissions in the country, yet it refuses to operate its pollution control systems. AECI is actively choosing to spew massive amounts of harmful pollution into Missouri and downwind communities in other states from its Thomas Hill and New Madrid coal-burning power plants. Clearly AECI needs to be told to reduce its pollution because utility leaders refuse to protect public health voluntarily.”

—Brian Smith, Missouri Organizing Representative focusing on rural areas with the Beyond Coal Campaign



The Martin Lake coal plant. Photo by Al Braden

THE MARTIN LAKE POWER PLANT | *Tatum, Texas*

THE POLLUTER: Tatum, Texas, is a small East Texas town with about 1,300 residents. It has a Dairy Queen and a beautiful football stadium and modest streets beset with pines and oaks. It's also home to Luminant's giant Martin Lake coal plant, one of the deadliest coal plants in the country. Martin Lake releases massive amounts of pollution every year, impacting Tatum, nearby small towns and cities like Longview, and the Dallas Fort Worth Metroplex, where many neighborhoods – particularly communities of color – are overburdened by dirty industries like concrete and asphalt plants. Martin Lake has outdated and improperly-sized pollution controls that fail to meet modern standards despite how sick it is making people – and it even kills people as far away as Houston and across state lines. But several EPA rules could be strengthened to require the company to install pollution controls, which would improve air quality for Texans and neighboring states. Strong rules would also require other industries to decrease their pollution, multiplying the benefits for marginalized communities surrounded by unhealthy air.

THE PEOPLE: “I’ve lived in this area my whole life, and a lot has been lost due to the coal plant. I use a personal air monitor every day to figure out if I should spend much time outdoors. I miss going to the lake, and I miss sitting outside every evening. I also miss being surrounded by the sound of crickets and cicadas in the summertime, but now the insects are gone. The air quality is also affecting our kids, elderly residents, and residents with health conditions. It just isn’t right, and EPA needs to do better. It’s too late for me and my generation, but we need to improve the air for our younger generations.”

—Paulette Goree, a Tatum resident. Paulette says that Martin Lake’s constant pollution gave her husband breathing problems, and her father and sister died of COPD.



The Gavin Power Plant. Photo copyright Kvaka9/Dreamstime.com

THE GENERAL JAMES M. GAVIN POWER PLANT | *Cheshire, Ohio*

THE POLLUTER: Soot pollution from the General James M. Gavin Power Plant cuts 244 lives short every year, making this [Cheshire, Ohio polluter](#) the deadliest coal plant in the United States. Despite being the largest and most polluting plant remaining in the state, the Ohio Environmental Protection Agency did not assess improving pollution controls at Gavin in its plan to address Regional Haze. Gavin was also shown to contribute unacceptable levels of ozone pollution to downwind states in the Good Neighbor Plan, and high levels of toxics to nearby residents in the MATS rule. Sierra Club will continue to advocate that these federal rules are fully enforced to ensure that plants like Gavin no longer cause pollution in their own communities, downwind states, or the national parks and wilderness areas we all enjoy.

THE PEOPLE: “Gavin and its piles of coal ash tower over the village of Cheshire, a community that Gavin’s previous owners infamously [bought out and bulldozed](#) because pollution from the plant was so bad. This plant poisons the air, destroyed the local community, and continues to send that same pollution to more communities downwind to this day. While stronger EPA air pollution standards could make Gavin slightly less deadly, this new data is a sobering reminder that the only true path to clean air is through the equitable and efficient development of clean energy.”

— Neil Waggoner, an Ohio resident and Sierra Club Federal Deputy Director, Energy Campaigns

Sierra Club National
2101 Webster Street, Suite 1300
Oakland, CA 94612
(415) 977-5500

Sierra Club Legislative
50 F Street, NW, Eighth Floor
Washington, DC 20001
(202) 547-1141

facebook.com/SierraClub
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