

MEMO

TO: White House Climate Policy Office
FROM: Sierra Club and National Parks Conservation Association
SUBJECT: Action on Regional Haze Will Deliver Significant Climate and Health Co-benefits
DATE: December 7, 2021

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This memo discusses actions necessary from the administration to reduce haze-causing pollution from coal-fired plants under the Regional Haze Rule. Significant opportunities exist to codify emission reductions under both the outstanding round 1 plans for five states as well round 2 plans that are currently in process for all states around the nation.

Final Regional Haze action is required now on outstanding round 1 plans. Significant emissions reductions can be secured that would not otherwise be achieved under any other existing rulemaking.

The 1990 Clean Air Act amendments require states and EPA to remedy the degraded visibility caused by human-made air pollution -- primarily sulfur dioxide (“SO₂”), nitrogen oxide (“NO_x”), and particulate matter from industrial sources -- at treasured national parks and wilderness areas designated as “Class I” areas. EPA subsequently issued the Regional Haze Rule, which required states to submit state implementation plans by 2007, and then every 10 years after. The plans outline compliance schedules and measures, and emissions limits for polluting facilities that will make *reasonable progress* toward the goal of correcting visibility issues in Class I areas. The first round of plans required the oldest and dirtiest polluters to install the best available retrofit technology, or “BART”, to reduce pollution from some of the worst offenders. More than 13 years later, several states’ plans have yet to fully comply with round 1 BART requirements.

In June 2021, Sierra Club and National Parks Conservation Association along with four other conservation organizations submitted a request¹ to EPA Administrator Michael Regan highlighting the need for complete and rigorous implementation of BART requirements, highlighting a range of state plan deficiencies or a lack of final action state implementation plans for Texas, Utah, Wyoming, Nebraska and Pennsylvania.

¹ The coal units described in this letter (excluding those with firm retirement dates) are: Gerald Gentleman 1-2 (NE), Hunter 1-3 (UT), Huntington 1-2 (UT), Jim Bridger 1-2 (WY), Limestone 1-2 (TX), Martin Lake 1-3 (TX), Naughton 1-2 (WY), Tolk 1-2 (TX), WA Parish 5-6 (TX), Wyodak 1 (WY). Sierra Club, Environmental Defense Fund, Powder River Basin Resource Council, Earthjustice, National Parks Conservation Association and HEAL Utah, “Re: Regional Haze: Outstanding Obligations from the First Planning Period,” Letter to EPA Administrator Regan, June 8, 2021.

Full compliance with the BART program and final round 1 actions will lead to long overdue, significant improvement to air quality and visibility in places like (but not limited to) Big Bend, Zion, Grand Canyon, Bryce Canyon, Arches, Rocky Mountain and Shenandoah National Parks. In addition, this action will have substantial co-benefits of reducing greenhouse gas emissions and improving public health. This memo highlights these important co-benefits and the need for prompt action by EPA.

Climate and health impacts of coal plants subject to Regional Haze action

The Conservation Organizations' letter highlighted 21 units at coal-fired power plants² in these five states which would be required to make significant capital expenditures in pollution controls like selective catalytic reduction ("SCR") or flue gas desulfurization ("FGD") to meet BART requirements at aging, polluting coal plants. Many of these plants, however, are expensive to continue operating and increasingly uneconomic relative to renewable energy like wind and solar, energy storage, and customer energy efficiency programs that avoid the need for expensive power plants. While modern pollution controls would reduce air pollution from these plants, in many cases it is more cost effective to simply replace these polluting power plants with clean energy resources.

These 21 coal units consist of 12,579 MW of generating capacity. In 2019, they collectively emitted 63 million metric tons of CO₂, nearly 4% of total U.S. electric sector emissions. While modern air pollution controls on their own may not reduce this climate pollution, many of these units are already uneconomic, and additional capital expenditures on aging and expensive power plants may not be economically rational in the face of lower cost clean energy options.

The 21 coal units described in this letter collectively emitted 233 million pounds of SO₂ and 112 million pounds of NO_x in 2019. This includes some of the largest sources of pollution in the country. For example, the Martin Lake power plant in Texas was the single largest source of SO₂ emissions nationwide in the power sector in 2019, and was also the 7th largest power sector source of NO_x pollution. W.A. Parish, outside of Houston, Texas was the third largest source of SO₂ in the U.S. power sector in 2019, polluting communities that are already burdened with particulate matter pollution worse than three-quarters of the country. Gerald Gentleman in Nebraska was the 5th largest SO₂ emitter in the power sector in 2019. The Hunter power plant in Utah is 5th in the nation for NO_x pollution, and due to its proximity to several iconic national parks, is the second largest contributor to pollution in national parks.³

² These totals exclude four Texas electricity generating units that have proposed retirement / gas conversion dates, as well as two cement plants in Pennsylvania which are identified in the letter for which the state implementation plan has significant deficiencies.

³ NPCA, as referenced in Sierra Club et al letter to EPA Administrator Regan.

Reducing SO₂ and NO_x emissions from these coal units to the level of plants with modern, fully functional pollution controls would reduce NO_x emissions by 41 million pounds and SO₂ by 180 million pounds.⁴ Shutting these plants and replacing the electricity and grid services with clean energy resources could eliminate this pollution altogether.

The air pollution from these coal units does not just impair visibility in national parks. SO₂ and NO_x are dangerous pollutants, both directly and through the formation of particulate matter and ozone in the atmosphere. The pollution from these 21 coal units contributes to at least 435 premature deaths from air pollution each year. In addition, dirty emissions from these plants contribute to an estimated 5,400 asthma attacks and 173 heart attacks per year.⁵ Reducing air pollution from these plants will significantly reduce the health burden they place on surrounding communities, many already overburdened by pollution, and regions.

Replacing these coal plants with clean energy will drive over \$45 billion in clean energy investment and deliver jobs

These aging coal plants are increasingly uneconomic compared to renewable energy resources, which have seen significant and sustained cost reductions in recent years. In many cases, clean energy portfolios that provide the same electricity output and capacity value as a coal plant may be less costly than the cost of necessary retrofits and continued operations of those coal plants. In fact, our preliminary, internal analyses indicate that for most of the coal units at issue, retiring and replacing these plants with clean energy resources would lower costs and emissions, relative to investing additional capital in these aging and already expensive fossil generation resources.

Finally, replacing the 21 coal units with cost-saving portfolios of clean energy resources would result in over \$45 billion in investment, including approximately 22 GW of solar, 10 GW of wind, and 11 GW of energy storage. These investments can deliver economic benefits to rural communities⁶, including local tax revenues, income for landholders, and an estimated 300,000 cumulative job-years over a 15 year time horizon.⁷ These much needed economic development benefits will support communities as they transition away from coal.

⁴ Based on 2019 NO_x and SO₂ emissions rates per MMBtu. Assuming fully controlled units have a NO_x emissions rate of 0.05 lbs/MMBtu and SO₂ emissions rate of 0.06 lbs/MMBtu, and that units in Texas and Nebraska control SO₂ emissions while plants in Utah and Wyoming control NO_x emissions.

⁵ Based on analysis of 2019 emissions data by Clean Air Task Force, published at [https://www.tollfromcoal.org/#/map/\(title:none//detail:none//map:none/US\)](https://www.tollfromcoal.org/#/map/(title:none//detail:none//map:none/US)). Pro-rated from plant-level to unit-level proportionally using total NO_x and SO₂ emissions.

⁶ For more on the rural economic development benefits of renewable energy projects, see RMI, “Seeds of Opportunity”, 2021, <https://rmi.org/insight/seeds-of-opportunity/>

⁷ Calculation based on average job-years per MW and investment per MW for solar, wind and storage from the UC Berkeley, Energy Innovation and Gridlab “2035 Report”.

Public Engagement

Public engagement on regional haze has been robust and longstanding. Since 2016, Sierra Club members and supporters have submitted more than 108,000 individual comments to state and federal agencies requesting stronger NO_x pollution controls be installed on the coal plants listed in this memo. The National Parks Conservation Association has extensively worked on and led regional haze advocacy to engage tens of thousands of residents calling for strong action to address Utah's haze pollution since the beginning of Round 1 planning. Together, our groups formed a coalition of more than 200 businesses from Utah, Colorado, and Arizona that raised their voices to decry the effects of uncontrolled NO_x emissions from regional sources, like Hunter and Huntington, and called on EPA to ensure pollution reduction.

In 2015, the National Park Service, including Superintendents from Arches, Canyonlands, Zion, Bryce Canyon and Capitol Reef National Parks, identified these coal plants as the largest contributors to visibility impairment in regional Class I areas and called on EPA to require NO_x reductions. Over the years, local municipal and county elected officials from National Park gateway communities have made personal appeals to EPA leadership to require pollution controls and clean up the skies and views their communities rely on for economic development. As recent as last month, a County Commissioner in Utah renewed those calls⁸. And still, these coal plants remain uncontrolled.

Recommendations

The Regional Haze Rule's BART requirement for Texas, Utah, Wyoming, Nebraska, and Pennsylvania is nearly fifteen years overdue. Because those states have refused to comply with the Clean Air Act's mandate, EPA must finally complete the BART process from the first planning period and put these important obligations to rest. In our letter, we proposed a nationwide rulemaking to be completed as expeditiously as possible that would fully correct all deficiencies and satisfy the remaining first round regional haze obligations in the five states. We are also open to other options that would quickly achieve the same goal. Either way, **EPA must finally ensure that all states have fully complied with the Clean Air Act's Regional Haze Rule's BART requirements for the first round and require emission reductions to achieve reasonable progress towards the national goal of restoring natural visibility to America's treasured Class I national parks and wilderness areas.**

The actions of the Biden Administration on these five outstanding state regional haze requirements are of consequence even beyond the sharp reductions they must produce. With

⁸ "Sarah Stock: Regional Haze Rule is important for our community and must be enforced to do the most good," Salt Lake Tribune, October 21, 2021. <https://www.sltrib.com/opinion/commentary/2021/10/21/sarah-stock-regional-haze/>

all state regional haze plans in the midst of the planning and implementation process for the second round, actions on these outstanding obligations will inform the Administration's regard and approach for standards to ensure reasonable progress for emission reductions in all states. EPA, in its July 2021 [Clarification Memo](#) on Regional Haze made plain that it expects states' haze plans for the second planning period to result in meaningful, additive reductions in SO₂ and NO_x pollution by 2028. Thousands upon thousands of tons of haze pollution remain unchecked at facilities of all kinds, and at coal-fired power plants in particular. We urge the Biden Administration to act swiftly on our request to resolve the five state round 1 BART obligations once and for all and send a clear signal to all states that the agency is taking the mandate of this Clean Air Act program seriously.

Appendix: Coal power plants subject to Regional Haze action

State	Plant	Unit	Nameplate Capacity (MW)	2019 Capacity Factor (%)	2019 CO2 (MMT)	2019 SO2 (million lbs)	2019 NOx (million lbs)
NE	Gerald Gentleman	1	681	67%	3.59	20.93	7.76
NE	Gerald Gentleman	2	681	73%	4.34	25.89	7.19
TX	Limestone	1	910	54%	3.90	5.08	6.26
TX	Limestone	2	957	64%	5.06	6.29	8.68
TX	Martin Lake	1	793	54%	4.06	27.90	6.24
TX	Martin Lake	2	793	54%	4.00	30.19	6.22
TX	Martin Lake	3	793	62%	4.54	35.01	6.52
TX	Tolk	1	568	24%	1.14	5.73	1.98
TX	Tolk	2	568	35%	1.76	8.72	2.99
TX	W A Parish	5	734	50%	2.78	16.00	1.88
TX	W A Parish	6	734	57%	3.60	22.15	2.15
UT	Hunter	1	488	72%	2.88	2.35	6.38
UT	Hunter	2	488	75%	2.76	2.34	5.96
UT	Hunter	3	496	72%	2.82	2.41	8.69
UT	Huntington	1	498	71%	2.79	2.75	6.03
UT	Huntington	2	498	52%	2.07	1.54	4.39
WY	Jim Bridger	1	578	58%	2.75	4.14	5.59
WY	Jim Bridger	2	578	61%	2.90	4.87	5.38
WY	Naughton	1	163	87%	1.31	2.21	2.92
WY	Naughton	2	218	84%	1.56	2.53	3.58
WY	Wyodak	1	362	62%	2.22	3.50	5.28
	Total		12,579		62.83	232.52	112.06

Source: Sierra Club Analysis of EIA and EPA data.

Note: Excludes Coletto Creek, Harrington 1-2, Welsh 1 in TX, which have proposed retirement dates. In addition, Conservation Organizations' letter from June 8, 2021 identifies two cement plants in PA (Lafarge Whitehall and Lehigh Evansville) as facilities with significant deficiencies in the 2019 state BART plan.