

**Comments of the Natural Resources
Defense Council on EPA's Advance
Notice of Proposed Rulemaking:
State Guidelines for Greenhouse
Gas Emissions from Existing Electric
Utility Generating Units**

Docket No. EPA-HQ-OAR-2017-0545

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The Natural Resources Defense Council (NRDC) submits the following comments on EPA's *Advance Notice of Proposed Rulemaking: State Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units*, 82 Fed. Reg. 61,507 (Dec. 28, 2017). NRDC has also submitted joint comments on this ANPR with other environmental and public health organizations.

NRDC is a national nonprofit environmental organization representing more than three million members and online activists. NRDC uses law, science, and the support of its members to ensure a safe and healthy environment for all living things. One of NRDC's top priorities is to reduce emissions of the air pollutants that are causing climate change.

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1. Bloomberg New Energy Finance, Sustainable Energy in America: 2018 Factbook (Feb. 15, 2018).
2. Charles T. Driscoll, et al., US Power Plant Carbon Standards and Clean Air and Health Co-Benefits, Nature Climate Change (June 2015).
3. Jonathan J. Buonocore, et al., An Analysis of Costs and Health Co-Benefits for a U.S. Power Plant Carbon Standard, PLOS ONE (June 7, 2016).
4. Kathy Fallon Lambert, et al., Air Quality, Ecosystem, and Health Impacts of Power Plant Carbon Standards, Science Briefing, House Sustainable Energy & Environment Coalition (Feb. 6, 2018).
5. National Renewable Energy Laboratory, 2017 Standard Scenarios Report: A U.S. Electricity Sector Outlook (Oct. 2017).
6. National Renewable Energy Laboratory, 2017 Annual Technology Baseline.

Attachments, continued

7. American Lung Association, et al., Comments on EPA's Proposed Supplemental Notice of Proposed Rulemaking for Prevention of Significant Deterioration and Nonattainment New Source Review: Emissions Increases for Electric Generating Units, 72 Fed. Reg. 26,202 (May 7, 2007).
8. American Lung Association, et al., Comments on EPA's Proposed Prevention of Significant Deterioration, Nonattainment New Source Review, and New Source Performance Standards: Emissions Test for Electric Generating Units, 70 Fed. Reg. 61,081 (October 20, 2005).
9. U.S. EPA Air Enforcement Division, Comments on Draft New Source Review Clean Air Interstate Rule (Aug. 25, 2005).
10. U.S. EPA Air Enforcement Division, Comments on Draft New Source Review Clean Air Interstate Rule, Attachment A (Case Studies) (Aug. 30, 2005).

I. Introduction

NRDC has long supported the Clean Power Plan¹—a critical step toward reducing the threat of climate change to our communities by placing sensible limits on emissions of dangerous carbon pollution from our nation’s existing power plants.² NRDC opposes EPA Administrator Scott Pruitt’s ongoing efforts to dismantle the Clean Power Plan and replace it with weak limits on power plant carbon pollution, if anything at all.

Power plants are the nation’s largest stationary source of the carbon pollution that contributes to climate change, putting public health and welfare at risk in the United States and worldwide. Climate change is already having major impacts across the country: recent wildfires have raged across the western states, hurricanes have pummeled the east and gulf coasts, and extreme heat has baked the south.³ These and other harmful effects of a changing climate are growing increasingly severe, and are disproportionately affecting children, the elderly, communities of color, low-income communities, and indigenous populations both in the United States and worldwide.

We need to take action now to dramatically reduce climate-changing pollution, including emissions of carbon pollution from the power sector. Instead, Administrator Pruitt has proposed an outright repeal of the Clean Power Plan,⁴ and initiated this Advance Notice of Proposed Rulemaking (ANPR) proceeding to consider whether to issue a replacement for the Clean Power Plan at all. NRDC strongly opposes the repeal of the Clean Power Plan or adoption of a replacement standard that does not achieve significant carbon pollution reductions in line with what the industry has already demonstrated is readily attainable.

This ANPR is premised on the faulty legal theory that underlies the Repeal Proposal. Its limited consideration of only a narrow set of policy options ignores the extensive information and

¹ Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,662 (Oct. 23, 2015).

² *See, e.g.*, NRDC Comments on Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (Dec. 1, 2014), Docket No. EPA-HQ-OAR-2013-0602-26818; NRDC Comments on Federal Plan Requirements for Greenhouse Gas Emissions from Electric Utility Generating Units (Jan. 21, 2016), Docket No. EPA-HQ-OAR-2015-0199-0863.

³ U.S. Global Change Research Program, Climate Change Impacts in the United States: The Third National Climate Assessment (2014), <https://nca2014.globalchange.gov/report>; U.S. Global Change Research Program, Climate Science Special Report: Fourth National Climate Assessment (2017), https://science2017.globalchange.gov/downloads/CSSR2017_FullReport.pdf.

⁴ Proposed Rule: Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Source: Electric Utility Generating Units, 82 Fed. Reg. 48,035 (Oct. 16, 2017) (hereinafter “Repeal Proposal”).

analysis the Agency already has as a result of the Clean Power Plan rulemaking, and seems intended to produce only minor reductions in carbon pollution, if any at all.

In these comments we first discuss in Part II the faulty legal assumption on which this ANPR is premised and the unreasonably narrow scope of this ANPR's requests for comment. In Part III we address the many additional on-site measures that EPA must evaluate as part of its determination of the best system of emission reduction. In Part IV we explain that EPA must implement the remaining useful life provision in a way that ensures meaningful emissions reductions. And in Part V we describe why no changes to the New Source Review program are justified. In separately submitted joint comments with other public health and environmental groups, we address: EPA's mandatory Clean Air Act duty to regulate carbon pollution from existing power plants; EPA's obligation to ensure that the best system of emission reduction achieves the maximum feasible emissions reductions; the necessity that any Clean Power Plan replacement reflect recent developments in both climate science and rapidly declining costs of options for reducing carbon pollution; and EPA's responsibility to set binding emissions limits with which state plans must comply.

NRDC urges Administrator Pruitt to withdraw this ANPR and the Repeal Proposal, and focus EPA's efforts on implementing and strengthening the Clean Power Plan.

II. The ANPR is Premised on a Faulty Legal Assumption.

The ANPR assumes that the best system of emission reduction must be “focused on technological or operational measures that can be applied to or at a single source”—as EPA has proposed to interpret Clean Air Act section 111 in the Repeal Proposal—and requests comment only on how such an approach could be implemented. 82 Fed. Reg. at 61,513. But the narrow interpretation in the Repeal Proposal is just that—a *proposal*—and we will demonstrate in our comments on the Repeal Proposal that EPA's proposed interpretation is neither compelled by the Clean Air Act nor a permissible or reasonable construction.

As we argue in our joint ANPR comments with other environmental and public health organizations, for EPA now to embark on a new rulemaking process on the assumption that the CPP Repeal proposal is valid is ill-advised. That EPA has issued an advance notice of proposed rulemaking so constrained to a new statutory construction on which EPA is still taking comment indicates that EPA is not really open to public input on ways to implement section 111 and reduce greenhouse gas emissions, but instead is looking for ways of doing as little as possible.

Clean Air Act section 111 and its longstanding implementing regulations require EPA to issue emission guidelines reflecting the degree of emission reduction achievable by existing power plants through application of *the best system of emission reduction* that the Administrator determines is adequately demonstrated, considering costs, energy requirements, and other enumerated factors. 42 U.S.C. § 7411(a)(1), 7411(d)(1); 40 C.F.R. § 60.22(b)(5). This

Administration now proposes that “system of emission reduction” is statutorily limited to emission reduction measures that can be applied to or at an individual source—that is, integrated into its physical design or operation. 82 Fed. Reg. at 48,039. But the statutory justifications advanced in the Repeal Proposal are deeply flawed, and both the Repeal Proposal and this ANPR fail to consider the implications of this new interpretation. In the Repeal Proposal, Administrator Pruitt is attempting to adopt an interpretation that would preclude the Clean Power Plan. The legal interpretation fails to do so because the emission rates established under the CPP do in fact “appl[y] to” and “at” each individual plant. To the extent that Administrator Pruitt’s interpretation achieves his goals, it arbitrarily excludes the wide variety of means that the affected sources already use to reduce their CO₂ emissions on a routine basis, and arbitrarily excludes regulatory approaches that EPA has relied on in multiple past rulemakings.

A. The Clean Power Plan Approach Remains the Best System of Emission Reduction.

As we will demonstrate in detail in our comments on the Repeal Proposal, the means of reducing emissions considered in developing the Clean Power Plan remain the best system of emission reduction for the power sector. The definition of BSER adopted in the Clean Power Plan is an entirely reasonable exercise of EPA’s section 111(d) authority, and the Clean Power Plan BSER reflects the most common-sense approach to reducing carbon pollution from existing power plants.

The Clean Power Plan’s “chief regulatory requirement” consists of two national emission performance rates—one for fossil steam plants (primarily coal units) and one for combined cycle natural gas plants—expressed in pounds of CO₂ emissions per megawatt-hour of generation, and phased in gradually between 2022 and 2030. 80 Fed. Reg. at 64,811-12. These emission limits reflect EPA’s determination of the carbon dioxide emission reductions achievable applying the best system of emission reduction, taking into account cost and the other factors enumerated in Clean Air Act section 111(a)(1).

To define the “best system of emission reduction” in the CPP, EPA took account of the unique characteristics of CO₂ pollution and the electric power industry. 80 Fed. Reg. at 64,723-24, 64,733-35. Because CO₂ mixes evenly in the atmosphere, a ton of emission reductions from any plant provides equal climate benefit. *Id.* at 64,725-26. Power plants—both those that emit CO₂ and those that do not—are part of an interconnected electric grid and are jointly operated to supply exactly the amount of electricity demanded at any given time. *Id.* at 64,691-93. To meet a given level of electricity demand, increased generation by one plant necessarily causes decreased generation by other plants. Power companies and grid operators routinely shift generation among facilities to meet demand subject to economic and environmental constraints. *Id.* at 64,728-29. See also *Fed. Energy Regulatory Comm’n v. Elec. Power Supply Ass’n*, 136 S. Ct. 760, 768 (2016) (“[E]lectricity flows...through an interconnected grid of near nationwide scope.”).

Based on these characteristics, EPA concluded that the CO₂-emitting electric generating units covered by the CPP can achieve meaningful and cost-effective emission reductions through a

combination of emission-reducing actions taken at the units themselves and use of credits for emission-reducing actions taken across the electric grid. All of these actions (which EPA called “building blocks”) were already in widespread use in the power sector: improving coal unit efficiency (heat rate) (building block 1); increasing generation by existing lower-emitting units (natural gas combined cycle plants) (building block 2); and increasing generation by new zero-emitting units (e.g., wind turbines and solar plants) (building block 3). 80 Fed. Reg. at 64,745. Because power plants are interconnected and the amount of electricity produced in any hour is determined by market demand, expanding generation by lower- or zero-emitting facilities cuts emissions from higher-emitting regulated units by reducing their generation. *Id.* at 64,677-78.

EPA determined that affected coal- and gas-fired units could achieve their respective applicable performance rate by improving thermal efficiency (building block 1) and using “emission rate credits” from expanded lower-emitting or new zero-emitting generation (building blocks 2 and 3) to reduce their “adjusted CO₂ emission rate” to the limit. 80 Fed. Reg. at 64,811-12; 40 C.F.R. § 60.5790(c). EPA explained that each unit has multiple ways to acquire emission rate credits: by shifting generation within a company’s portfolio, building eligible facilities, contracting for credits from another company, or purchasing credits in a trading market. 80 Fed. Reg. at 64,752; EPA, Legal Memorandum Accompanying Clean Power Plan for Certain Issues at 137-48 (hereinafter “CPP Legal Memo”).

The CPP is fully in line with effective and lower-cost regulatory approaches EPA has employed for decades in the power industry and other sectors. For example, EPA has repeatedly used such programs to curb power plants’ interstate pollution that worsens downwind violations of public health standards. The Cross-State Air Pollution Rule established state-wide budgets for power plants’ sulfur dioxide and nitrogen oxides emissions, based in part on “increased dispatch of lower-emitting generation.” 76 Fed. Reg. 48,208, 48,252 (Aug. 8, 2011). The Supreme Court found this a “permissible, workable, and equitable interpretation” of section 110(a)(2)(D)(i). *EPA v. EME Homer City*, 134 S. Ct. 1584, 1610 (2014).

Likewise, EPA established limitations for power plant nitrogen oxides emissions based on a region-wide emissions trading program, and accounted for changes in dispatch. *See* CPP Legal Memo 96, 106-08; 63 Fed. Reg. 57,356, 57,362 (Oct. 27, 1998). Similarly, EPA’s Regional Haze Rule allowed states to replace source-specific emission standards with trading programs, “[i]n recognition of the control and cost efficiencies that can be achieved through trading programs,” 64 Fed. Reg. 35,714, 35,739 (July 1, 1999); *see also Util. Air Regulatory Grp. v. EPA*, 471 F.3d 1333, 1336 (D.C. Cir. 2006) (affirming this approach).

B. The ANPR Scope is Impermissibly Narrow.

By assuming that the legal interpretation in the Repeal Proposal is correct, this ANPR seeks public comment only on a narrow set of possible policy designs that ignores the reality of power sector operations and emission reduction options. The ANPR limits its focus to coal-fired EGU efficiency or heat-rate improvements that will deliver only minimal reductions (if any) in

greenhouse gas emissions. This option was already thoroughly considered in the Clean Power Plan rulemaking process. There, EPA determined that improving the heat rate of individual coal-fired EGUs would at best reduce those plants' carbon pollution emission rate by only several percent and could even result in an overall increase in carbon dioxide emissions because those plants would likely be used more than before. *See* 80 Fed. Reg. at 64,727 n.370, 64,745, 64,748. It would be unreasonable and arbitrary and capricious for EPA to interpret the “*best* system of emission *reduction*” in a manner that could lead to an overall emissions increase.

If EPA is going to propose a Clean Power Plan replacement, it must analyze the emission reductions that could be achieved by applying the full range of emission reduction techniques that are reasonably encompassed in the terms “best system of emission reduction,” including those used by EPA in the Clean Power Plan. Moreover, EPA must conduct that analysis taking into account current energy market conditions and reflecting updated costs of emission reduction techniques.⁵ Any proposed replacement for the Clean Power Plan must account for the rapidly declining costs of emission reduction credits obtained from lower-emitting sources of energy and the accompanying market shifts that have occurred in recent years.

Because section 111 requires the standard to reflect the degree of emission reduction achievable by the BSEER taking into account cost, EPA must engage in a factual assessment of the costs of reduction and the magnitude and benefits of possible reductions—including both direct benefits and co-benefits of reducing power plant emissions. *See Sierra Club v. Costle*, 657 F.2d at 326 (quantity of emission reductions is an important factor in determining “best” system of emissions reduction); *see also Michigan v. EPA*, 135 S. Ct. 2699, 2707 (2015) (“reasonable regulation ordinarily requires paying attention to the advantages *and* the disadvantages of agency decisions”). We strongly disagree with the cost-benefit approaches put forth in the CPP Repeal Proposal RIA, which we will address in greater detail in comments on that rulemaking, and summarize briefly here.

The necessary consideration of costs and benefits requires a rational analysis. The proposed recalculations in the Regulatory Impact Analysis for Repeal Proposal⁶ grossly misrepresent the Clean Power Plan's costs, while distorting the science and economics of assessing the climate and health benefits of curbing pollution from power plants. The Repeal Proposal RIA ignores scientific consensus to posit that the health benefits of reducing particulate matter no longer exist

⁵ For example, the Department of Energy's National Renewable Energy Laboratory (NREL) releases a set of cost projections for new electricity generation technologies annually, available at: <https://atb.nrel.gov/>. NREL also analyzes a wide range of electricity sector futures using the most recent available information, available at: <https://www.nrel.gov/docs/fy18osti/68548.pdf>.

⁶ U.S. EPA, Regulatory Impact Analysis for the Review of the Clean Power Plan: Proposal (Oct. 2017), https://www.epa.gov/sites/production/files/2017-10/documents/ria_proposed-cpp-repeal_2017-10_0.pdf (hereinafter “Repeal Proposal RIA”).

below a certain threshold, despite the long-held conclusion of health experts that there are no levels of particulate matter that do not have dangerous impacts on human health. The RIA also deflates the benefits of climate action by disregarding the global impacts of climate change and discounting the well-being of future generations—ignoring the 2003 guidance from the Office of Management and Budget on properly considering intergenerational impacts.⁷ The Repeal Proposal RIA manipulates the numbers on both sides of the benefit-cost balancing, and relying on those faulty recalculations for the determination of the best system of emission reduction would be irrational and unreasonable.

As EPA demonstrated in the Clean Power Plan, there are a wide range of well-established means of reducing carbon pollution already in use by the electric generating industry. *See, e.g.*, 80 Fed. Reg. at 64,725, 64,785, 64,803-04. Using these very approaches, the power sector has reduced its carbon pollution by 28 percent since 2005.⁸ Ongoing progress in the power sector means that the costs of these emission reduction approaches have declined considerably even in the few years since EPA finalized the rule. EPA itself notes in the Repeal Proposal RIA that more recent modeling efforts “indicate that the CPP would have had a more modest impact at lower cost than projected at the time the CPP was finalized.”⁹ The finalization of a BSER that ignores both the measures actually used in the power sector and the reductions that are actually achievable will be both legally and factually unsound.

Even as emissions have declined, the potential to achieve cost-effective emissions reductions by shifting generation to lower-emitting sources continues to grow. If EPA is to undertake any replacement of the Clean Power Plan, it should do so by updating the methodology used in the CPP and building on the progress that has occurred since it was finalized. We estimate that by updating the same building blocks EPA used and applying them to a 2016 baseline, the Clean Power Plan could be strengthened considerably and the targets could be set at 40 percent below a 2016 baseline, equivalent to 55 percent below 2005 levels. In order to meet the Clean Air Act’s mandate, any CPP replacement promulgated today must achieve reductions of at least this magnitude.

⁷ Office of Management and Budget, Circular A-4 (Sept. 17, 2003), <https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/circulars/A4/a-4.pdf>.

⁸ Bloomberg New Energy Finance, Sustainable Energy in America: 2018 Factbook Executive Summary (Feb. 15, 2018), http://www.bcse.org/wp-content/uploads/2018-Sustainable-Energy-in-America-Factbook_Executive-Summary.pdf.

⁹ Repeal Proposal RIA at 80.

Updating the Clean Power Plan Targets		
	CPP Targets	Updated Targets ¹⁰
National Emissions (million short tons)	1812	1194
Reductions below:		
2005	-32%	-55%
2012	-19%	-47%
2016	-10%	-40%

The core purposes of the Clean Air Act “include protecting public health and welfare by comprehensively addressing air pollution, and, particularly, protecting against urgent and severe threats.” 80 Fed. Reg at 64,773. To advance these purposes, section 111 gives EPA wide discretion to identify an emission reduction system that relies on demonstrated solutions—the *best* system of emission reduction—to maximize environmental performance and ensure cost-effectiveness. EPA will violate the statutory mandate to identify the “best system” if it limits its consideration to heat rate measures and does not pursue more significant emissions reductions.

C. Treatment of Target Setting and Compliance Must Be Symmetrical.

In any replacement rule, the emission limit reflecting the degree of emission reduction achievable through the BSER must be based on the same options that are permitted for compliance. Consideration of the compliance options in determining the emission limit is required by the Act’s command that the adopted emission limits must reflect the best system of emission reduction that is *achievable*. Determining the reductions that are achievable is inextricably tied to the allowable means of compliance with the limit.¹¹ If a guideline allows compliance through a given method of reducing emissions, then EPA must consider that compliance method when determining the level of reductions that the standard of performance or target requires. In other words, the statute requires symmetry. Accordingly, it would be legally impermissible for EPA to set a target based on a reasonably foreseeable emission reduction technique but not allow that technique to be used for compliance purposes. Likewise, it would be legally impermissible to allow the use of a reasonably foreseeable emission reduction technique

¹⁰ For the updated targets, the national emissions estimate refers to covered emissions under a set of mass-based targets applied to existing and new sources. Power sector modeling would be needed to determine the final emissions outcome.

¹¹ See, e.g., *Portland Cement Association v. Ruckelshaus*, 486 F.2d 375, 397 (D.C. Cir. 1973) (“a significant difference between techniques used by the agency in arriving at standards, and requirements presently prescribed for determining compliance with standards, raises serious questions about the validity of the standard”).

for compliance purposes but exclude it from consideration when setting the target. The first standard would over-represent what is achievable; the second would under-represent it. Neither standard would represent the degree of emission reduction achievable at reasonable cost through the best system of emission reduction.

As noted in the ANPR, EPA recognizes that states may wish to provide for “compliance flexibilities” in developing state plans, including emissions averaging or mass-based trading, and requests comment on how such trading might be facilitated. 82 Fed. Reg. 61,512. Such measures, if available for compliance, must also be considered in identifying the BSER and setting the emission reductions achievable through the application of that system.

III. EPA Must Evaluate the Emission Reductions Achievable Through Other On-Site Measures.

NRDC urges EPA to pursue an approach to the best system emission reduction as described above in Part II. It would be arbitrary and capricious for the Agency to exclude from consideration the reductions that can be achieved through the use of emission reduction credits from activities described above, and to consider only emission reduction measures that can be physically applied at individual facilities.

Even if there were a legal basis to limit consideration to measures that can be physically applied at affected facilities, EPA cannot rationally limit itself to considering minor heat rate improvements. Rather, the agency must analyze the potential reductions achievable from the full suite of such measures, including the following options.

A. Co-firing Natural Gas in Steam Units or Converting Steam Units to Natural Gas

The potential to reduce the carbon pollution from steam boilers by using natural gas in lieu of coal is well demonstrated and should be evaluated in any proposed replacement of the Clean Power Plan. Combustion of natural gas emits almost half the quantity of carbon dioxide per unit of energy as coal.¹² This means that replacing a portion or all of the fuel used in a steam boiler can lower a steam generator’s emissions of carbon pollution dramatically. For the reasons described in Part II above, we do not agree that the Clean Air Act precludes use of a system-based approach. But using natural gas to replace a portion of the heat input at a steam plant (co-firing) or replacing all of the coal with natural gas (conversion) is an option that meets the limitations asserted in Administrator Pruitt’s proposed repeal of the Clean Power Plan.

¹² Different types of coal emit between 228.6 and 205.7 pounds of carbon dioxide per BTU and combustion of natural gas emits 117 pounds of carbon dioxide. U.S. EIA, Frequently Asked Questions, <https://www.eia.gov/tools/faqs/faq.php?id=73&t=11>.

Approximately eighteen percent of steam generating plants already co-fire natural gas and coal,¹³ and the use of co-firing continues to rise. For example, in its 2017 Integrated Resource Plan, Great River Energy reports that it “began utilizing natural gas combined with coal at Spiritwood Station, lowering fuel costs and reducing carbon dioxide emissions.”¹⁴ Similarly, Alabama Power recently converted four units at the Gaston Electric Generating Plant to operate primarily on natural gas.¹⁵ Utilities have found it economical to convert to gas even when doing so required the construction of more than thirty miles of pipeline.¹⁶ The cost of conversion is minimal for units that are already designed to burn gas,¹⁷ but even where up-front costs are more substantial, some utilities have projected net savings for electricity consumers, as the result of reductions in a unit’s fixed and variable operating costs.¹⁸

In addition to reducing carbon dioxide emissions, co-firing also results in significant operational advantages. Co-firing can allow for faster ramp-up and down, allowing for more cost-effective operation of the plants.¹⁹ It can also provide significant reductions of criteria air pollutants

¹³ S&P Market Intelligence, Power Plant Unit Screener Tool, Data from EIA Form 923 monthly and annual filings (subscription required).

¹⁴ Great River Energy, 2018-2032 Integrated Resource Plan at 11 (Apr. 28, 2017), <http://greatriverenergy.com/wp-content/uploads/2017/04/GRE-2017-IRP-Final.pdf>.

¹⁵ Scott Disavino, *Southern to Repower Three Alabama Coal Power Plants with Natgas*, REUTERS (Jan. 16, 2014), <http://www.reuters.com/article/2014/01/16/utilities-southern-alabama-idUSL2N0KP1WA20140116>.

¹⁶ Thomas Spencer, *Alabama Power to Connect Shelby Plant to Natural Gas Line*, BIRMINGHAM NEWS (May 12, 2012), http://blog.al.com/businessnews/2012/05/alabama_power_to_connect_shelb.html.

¹⁷ See Ameren Missouri, 2014 Integrated Resource Plan at 4-18 (2014), <http://www.ameren.com/sitecore/content/Missouri%20Site/Home/environment/renewables/ameren-missouriirp> (noting that the cost to convert Meramec Energy Center Units 1 & 2 from coal to natural gas was less than \$2 million, because these units were designed with the capability to operate on natural gas); First Energy, Mon Power/PE 2015 Integrated Resource Plan at 38-41 (Dec. 29, 2015), <http://www.psc.state.wv.us/scripts/WebDocket/ViewDocument.cfm?CaseActivityID=441858&NotType=%27WebDocket%27> (evaluating potential to co-fire Mon Power’s existing coal-fired units and noting the potential reduction in emissions and operating benefits).

¹⁸ See Direct Testimony of Alan Mihm before the Wisconsin Public Service Commission (Aug. 20, 2013), <http://apps.psc.wi.gov/pages/viewdoc.htm?docid=189756> (estimating that conversion of Wisconsin Electric Power Company’s Valley Power Plant would cost \$62 million, reduce CO₂ emissions by 80 percent, and cause “rates for electric customers [to] go down by .31%, for a net savings of \$10.2 million in 2016”).

¹⁹ Notice of Data Availability: Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Generating Units, 79 Fed. Reg. 64,543, 64,550 (Oct. 30, 2014).

including nitrogen oxides, sulfur dioxide, particulate matter, and of hazardous air pollutants, including mercury. These reductions could allow co-firing power plants to reduce the pollution control equipment operating costs. *Id.*

Finally, the costs of conversion and co-firing are within an acceptable range. EPA may select any system that satisfies the other requirements of BSER as long as the system's costs are not "exorbitant."²⁰ The costs of both conversion and co-firing easily meet this standard. The number of existing and planned conversion projects already taken, absent any regulatory carbon pollution mandate, is strong evidence that the costs are reasonable. Moreover, allowing inter-unit emissions averaging would enable conversion to be implemented with lowest system costs. Additionally, during the Clean Power Plan rulemaking EPA evaluated co-firing and found it comparatively more expensive than the system-based approach, but did not determine that the cost of co-firing exceeded the Clean Air Act's thresholds. 80 Fed. Reg. at 64,755. Given the continued decline in projected natural gas prices, co-firing is now expected to be even less expensive than EPA anticipated during the rulemaking.

For the reasons explained in Part II.C., there must be symmetry between the range of options that EPA considers available when determining the BSER and for compliance, whether under a state or federal implementation plan. If, despite the legal impediments described above, EPA chooses to limit the BSER to physical changes effected at each individual plant, then compliance options must be similarly limited. Conversely, if EPA chooses to allow crediting or emission rate averaging between affected facilities that over and under comply with the standards—such as averaging emission rate among units that convert to or co-fire with natural gas and units that do not—then EPA must treat such cost-minimizing measures as available emission reduction measures when setting the target. To the extent that EPA has not finally determined its legal position, EPA should evaluate and seek comment on both options in any notice of proposed rule for a CPP replacement.

B. Carbon Capture and Sequestration

EPA must evaluate the potential to reduce emissions through application of carbon capture and sequestration (CCS) at existing steam generating plants and existing natural gas combined cycle plants. Carbon capture and sequestration is a well demonstrated technology for both new and existing plants. In setting standards for new power plants, EPA thoroughly evaluated carbon capture and sequestration technology and determined that it was adequately demonstrated and that geologic sequestration was available in most of the U.S.²¹ In the CPP, EPA recognized that CCS was an available method of emission reduction but chose to rely on the system-based

²⁰*Essex Chem. Corp. v. Ruckelshaus*, 486 F.2d 427, 433-34 (D.C. Cir. 1973); *Lignite Energy Council v. EPA*, 198 F.3d 930, 933 (D.C. Cir. 1999).

²¹ Standards of Performance for Greenhouse Gas Emissions from New, Modified and Reconstructed Stationary Sources: Electric Generating Units, 80 Fed. Reg. 64510, 64548-58, 64,662 (Oct. 23, 2015).

approach as that allowed for lower cost emission reductions.²² EPA did not determine that CCS was too costly for existing plants.²³ Since the CPP was published, SaskPower's Boundary Dam Carbon Capture Project has continued to operate successfully and has captured 1,920,343 metric tons of carbon dioxide since CCS facility operations began in 2014.²⁴ Additionally, since finalization of the CPP the Petra Nova Carbon Capture Project at NRG's existing W.A. Parish coal plant in Texas has been completed and is operating successfully.²⁵

EPA should evaluate the emission reductions that might be achieved by requiring partial or full carbon capture and sequestration at all or a portion of existing steam generating units and existing natural gas combined cycle plants. In conducting its evaluation, EPA should consider the potential cost reductions as CCS is deployed widely and through existing tax incentives. EPA should also evaluate whether a system that permitted trading of emission credits and/or emission rate averaging could allow greater deployment of CCS at lower costs and, if EPA determines that such a system would be allowed for compliance purposes, then EPA must consider such flexible options when determining the degree of emission reduction achievable.

C. On-Site Solar and Other Zero Carbon Generation

EPA should also evaluate the potential to add solar or other on-site zero-emitting generation at existing power plants. We expect that the emission reductions available from the addition of such renewables would not, on its own, provide a sufficient level of emission reduction to qualify as the best system of emission reduction. But this means of reducing emissions could be deployed in combination with other strategies such as co-firing or CCS.

D. Heat-Rate Improvements at Steam Generating Units and NGCC Plants

In the Advanced Notice, EPA indicates that it intends to evaluate the potential for heat rate improvements at existing steam generating units and NGCC Plants. EPA also notes the potential for heat rate improvements at higher emitting fossil plants could lead those plants to be dispatched more and thereby result in greater total emissions. EPA must thoroughly evaluate this potential rebound effect from heat rate improvements at steam generating units and consider the potential for total emissions to increase when evaluating any rule based on heat-rate improvements. Recent studies by a group of researchers led by Dr. Charles Driscoll of Syracuse

²² 80 Fed. Reg. at 64,755; Reconsideration Denial, Appendix 3 – Non-BSER CPP Flexibilities (January 2017) at p. 16, Table 5.

²³ *Id.*

²⁴ SaskPower, Boundary Dam Carbon Capture Project, <http://www.saskpower.com/our-power-future/carbon-capture-and-storage/boundary-dam-carbon-capture-project/>; SaskPower, BD3 Status Update: January 2018, (Feb. 9, 2018), <http://www.saskpower.com/about-us/blog/bd3-status-update-january-2018/>.

²⁵ NRG, Petra Nova, <http://www.nrg.com/generation/projects/petra-nova/>.

University found that a standard based on heat rate improvements alone would lead to worse air quality compared to no standard at all and dramatically worse outcomes compared to implementation of the Clean Power Plan.²⁶

It would be arbitrary for EPA to either fail to analyze the potential for overall power plant emissions to increase as a result of a rule based on heat rate improvements or to adopt a rule based on heat rate improvements knowing that this was a likely result. EPA should also evaluate how the rebound impact and total emissions outcomes may differ for standards that require high levels of heat rate improvements versus modest levels.

Finally, we note again the need for symmetry between EPA's evaluation of BSER for target setting and for compliance. If EPA allows flexible compliance, it must evaluate how such options would allow adoption of a more ambitious standard. EPA should also evaluate how the level of flexibility permitted may affect the total emissions from existing steam units subject to the standard.

IV. The Remaining Useful Life Provision Must Be Implemented in a Way that Is Faithful to the Statutory Purpose of Meaningfully Reducing Dangerous Emissions.

Congress added the remaining useful life ("RUL") provision to section 111(d) in 1977 after the Supreme Court's decision in *E. I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112 (1977). In that case, the Supreme Court upheld a Clean Water Act effluent standard that set a uniform effluent standard for an entire category so long as EPA allowed a variance for facilities with "fundamentally different factors," e.g., fundamentally different marginal costs of compliance.

As EPA has previously explained, the purpose of the RUL variance provision is "to provide a mechanism for states to avoid the imposition of unreasonable retrofit costs on existing sources with relatively short remaining useful lives, a scenario that could result in stranded assets." 80 Fed. Reg. at 64,872. Retrofit costs could be considered unreasonable if the marginal cost of compliance with a standard were fundamentally different for an older facility because it had less time over which to spread the cost of a capital equipment retrofit. As EPA found, however, that rationale does not apply when the standard is flexible and equalizes the marginal cost of control across all sources through the availability of emission reduction credits or allowance trading. 80 Fed. Reg. at 64,870-72. If a state could write sources weaker emission limits through RUL variances even though they face the same marginal costs of compliance, then such variances

²⁶ See Syracuse University Health & Society, Study: Clean Power Plan Replacement Worse than Nothing, Costs More than 3,500 Lives and \$33B Yearly (Oct. 10, 2017), <https://news.syr.edu/2017/10/study-clean-power-replacement-worse-than-nothing-costs-more-than-3500-lives-and-33b-yearly/>; Kathy Fallon Lambert, et al., Air Quality, Ecosystem, and Health Impacts of Power Plant Carbon Standards, Science Briefing, House Sustainable Energy & Environment Coalition (Feb. 6, 2018), https://science-policy-exchange.org/sites/default/files/documents/House%20Briefing%20Slides_6%20Feb%202018_0.pdf.

would unjustifiably exempt sources from making reasonable emission reductions and weaken the overall emission reduction achieved.

The CPP, like numerous other power sector rules issued under the Clean Air Act, provides compliance flexibilities such as emissions credit trading that equalize the marginal cost of compliance across all sources, regardless of their age. 80 Fed. Reg. at 64,870–71. These flexible provisions allow sources with a short remaining useful life to comply at reasonable cost – at the same marginal cost of compliance that other plants face – without installing retrofit technology. *Id.* The CPP does permit states to issue weaker standards for certain plants provided the state ensures that other plants within the state make up the difference. But it does not allow a state to water down the overall reduction by issuing RUL variances.

If a replacement standard allows flexible compliance, then no adjustment in the standards for any individual plant based on its remaining useful life is needed or appropriate. To the extent that a state may wish to reduce the standards for certain plants, the state must ensure that other plants within the state make up the difference.

We have already registered our disagreement with Administrator Pruitt’s proposed interpretation of section 111(a)(1) to preclude emission standards that reflect the emission reductions achievable at reasonable cost by using a combination of physical measures at each affected facility and emission reduction credits from physical actions undertaken elsewhere on the electric grid. We disagree with this interpretation of section 111 and reaffirm that the emission rates established under the CPP do in fact “appl[y] to” and “at” each individual plant. Further, we re-emphasize that if Administrator Pruitt were correct that emission reduction credits or trading cannot be considered when setting standards, then they also may not be permitted for compliance purposes.

To summarize, if EPA allows flexible compliance mechanisms, then it must take the emission reduction potential of such mechanisms into account when setting the standards, and under such standards there would be no need or justification for RUL variances. If EPA could validly adopt a standard and compliance system that barred use of flexible compliance methods, then and only then would it be possible that older plants would face a different marginal cost of compliance due to limited time for amortizing capital investments. In that event, any state-issued remaining useful life variances would need to satisfy the following criteria. First, they would need to be approved by EPA as part of the state plan approval process. Second, they would need to be consistent with the statutory purpose of achieving reductions in dangerous pollutants, and thus must be narrowly circumscribed both with respect to the types of plants that qualified and the duration of the period a plant could operate under such a variance.

V. Changes to New Source Review Provisions are Unwarranted.

The ANPR expresses interest “in actions that can be taken to harmonize and streamline the [new source review] applicability and/or the NSR permitting process with a potential new rule.” 82 Fed. Reg. at 61,519. As the ANPR summarizes, “The NSR program applies both to new construction and to modifications of existing sources. New construction and modifications that emit air pollutants over certain thresholds are subject to major NSR requirements, while smaller emitting sources and modifications may be subject to minor NSR requirements.” 82 Fed. Reg. at 61,518. In its ANPR, EPA invites comments on a series of questions relating to application of the NSR requirements, major and minor, to existing sources rather than new, greenfield sources:

Under what scenarios would EGUs be potentially subject to the requirements of the NSR program as a result of making physical or operational changes that are part of a strategy for regulating existing sources under CAA section 111(d)? Do the scenarios differ depending on site specific factors, such as the size or class of EGU, how the EGU operates (e.g., baseload, intermediate, load following), fuel(s) the EGU burns, or the EGU’s existing level of pollution control? If so, please explain the differences.

82 Fed. Reg. at 61,519. Our comments respond to these questions accordingly; additional background on the NSR program is provided in an appendix to these comments.

An existing EGU is subject to NSR requirements when it undertakes “any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted.” 42 U.S.C. § 7411(a)(4). As the D.C. Circuit held in its *New York II v. EPA* decision, 443 F.3d 880 (D.C. Cir. 2006):

- Because Congress used the word “any,” EPA must apply NSR whenever a source conducts an emission-increasing activity that fits within one of the ordinary meanings of “physical change.”
- Read naturally, the word ‘any’ has an expansive meaning, that is, ‘one or some indiscriminately of whatever kind....’
- [T]he term ‘modification’ [in section 111(a)(4)] is nowhere limited to physical changes exceeding a certain magnitude.
- Congress defined the phrase “physical change” in terms of increases in emissions. After using the word “any” to indicate that “physical change” covered all such activities, and was not left to agency interpretation, Congress limited the scope of “any physical change” to changes that “increase [] the amount of any air pollutant emitted by such source or which result [] in the emission of any air pollutant not previously emitted.” 42 U.S.C. § 7411(a)(4). Thus, only physical changes that do not result in emission increases are excused from NSR.

- Reliance on the *de minimis* doctrine invokes congressional intent that agencies diverge from the plain meaning of a statute only so far as is necessary to avoid its futile application. Thus, the court in *Alabama Power* acknowledged that “EPA does have discretion, in administering the statute’s ‘modification’ provision, to exempt from PSD review some emission increases on grounds of *de minimis* or administrative necessity.” 636 F.2d at 400. As applied, the court explained that *de minimis* standards served to alleviate “severe” administrative and economic burdens by lifting requirements on “minuscule” emission increases. See *id.* at 405.
- [T]he court in *New York I* rejected industry’s contention that Congress ratified the New Source Performance Standards (“NSPS”) regulations on “modification” in the 1977 amendments.
- EPA cannot show any incoherence in Congress requiring NSR for equipment replacements that increase emissions while allowing replacements that do not increase emissions to avoid NSR.
- Accordingly, we hold that the [equipment replacement provision, or ERP] violates section 111(a)(4) of the Clean Air Act in two respects. First, Congress’s use of the word “any” in defining a “modification” means that all types of “physical changes” are covered. Although the phrase “physical change” is susceptible to multiple meanings, the word “any” makes clear that activities within each of the common meanings of the phrase are subject to NSR when the activity results in an emission increase. As Congress limited the broad meaning of “any physical change,” directing that only changes that increase emissions will trigger NSR, no other limitation (other than to avoid absurd results) can be implied. The definition of “modification,” therefore, does not include only physical changes that are costly or major. Second, Congress defined “modification” in terms of emission increases, but the ERP would allow equipment replacements resulting in non-*de minimis* emission increases to avoid NSR. Therefore, because it violates the Act, we vacate the ERP.

See generally 443 F.3d 880-890. As the D.C. Circuit decisions in *New York II v. EPA* and *New York I v. EPA*, 413 F.3d 3 (D.C. Cir. 2005), make clear, EGUs are potentially subject to the requirements of the NSR program as a result of making physical or operational changes *independent of* the “the size or class of EGU, how the EGU operates (*e.g.*, baseload, intermediate, load following), fuel(s) the EGU burns, or the EGU’s existing level of pollution control.”

First, based on the expansive term “any physical change in, or change in the method of operation of, a stationary source,” the Act and controlling court rulings make clear that:

all types of “physical changes” are covered. Although the phrase “physical change” is susceptible to multiple meanings, the word “any” makes clear that activities within each of the common meanings of the phrase are subject to NSR when the activity results in an

emission increase. As Congress limited the broad meaning of “any physical change,” directing that only changes that increase emissions will trigger NSR, no other limitation (other than to avoid absurd results) can be implied. The definition of “modification,” therefore, does not include only physical changes that are costly or major.

New York II, 443 F.3d at 890. And second, concerning the ‘emissions increase’ prong of the NSR modification test, “Congress defined ‘modification’ in terms of emission increases,” and permissible increases are limited to only “*de minimis* emission increases to avoid NSR.” *Id.*

The ANPR next asks: “What rule or policy changes or flexibilities can the EPA provide as part of the NSR program that would enable EGUs to implement projects required under a CAA section 111(d) plan and not trigger major NSR permitting while maintaining environmental protections?” 82 Fed. Reg. at 61,519.

EPA must follow the NSR requirements in the Clean Air Act, as interpreted by controlling federal court decisions. “Absent clear congressional delegation, however, EPA lacks authority to create an exemption from NSR by administrative rule. *See Sierra Club v. EPA*, 129 F.3d 137, 140 (D.C. Cir. 1997). Indeed, ‘this court has consistently struck down administrative narrowing of clear statutory mandates.’ *Id.*” *New York I*, 413 F.3d at 41. “[O]nly physical changes that do not result in emission increases are excused from NSR.” *New York II*, 443 F.3d at 887. “EPA does have discretion, in administering the statute’s ‘modification’ provision, to exempt from PSD review some emission increases on grounds of *de minimis* or administrative necessity,” but only if *de minimis* standards “lift[] requirements on ‘minuscule’ emission increases.” *Id.* at 884.

Next, the ANPR asks, “What actions can sources take—*e.g.*, through the minor NSR program, agreeing to a PAL—when making heat rate improvements or co-firing with a lower emitting fuel that would allow them to continue to serve the demand of the grid while not having excessive permitting requirements?” 82 Fed. Reg. at 61,519. As the Act and above passages make clear, “only physical changes that do not result in emission increases are excused from NSR.” *New York II*, 443 F.3d at 887. Actions taken through the minor NSR program or otherwise that do not result in emissions increases may properly avoid NSR permitting requirements.

The ANPR then asks, “What approaches could be used in crafting CAA section 111(d) plans so as to reduce the number of existing sources that will be subject to NSR permitting? Do compliance measures, such as inter- and intra-state trading systems, rate-based or mass-based standards, or generation shifting to lower- or zero-emitting units, offer favorable solutions for air agencies and sources with regard to NSR permitting?” 82 Fed. Reg. at 61,519. Approaches that comply with the Act’s NSR requirements and controlling judicial decisions, discussed in part in these comments, may be deployed as compliance measures in crafting CAA section 111(d) plans. Those that do not, may not. Some of the compliance measures mentioned by EPA may well be permissible, so long as this does not mean, for example, that any physical or operational

changes, or other activities related to the described compliance measures, do not result in emission increases that are unlawfully excused from NSR requirements.

Finally, the ANPR asks, “What other approaches would minimize the impact of the NSR program on the implementation of a performance standard for EGU sources under CAA section 111(d)?” 82 Fed. Reg. at 61,519. This question is too open-ended and vague to comment on meaningfully, but the bottom line point remains that any approach(es) proposed or taken by EPA must comply fully with the Act’s NSR requirements and controlling judicial rulings. We are prepared to comment in the future on any specific approaches that EPA identifies and describes for public comment.

VI. Conclusion

By pursuing his present course of revoking the Clean Power Plan and failing to replace it sufficient limits on power plant carbon pollution, Administrator Pruitt is abandoning his Clean Air Act duty to protect the public from these harmful emissions. NRDC urges Administrator Pruitt to withdraw this ANPR and the Repeal Proposal and instead implement—and strengthen—the Clean Power Plan

The foregoing comments are respectfully submitted on behalf of NRDC.

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Dated: February 26, 2018

Appendix – New Source Review Program Background

For NSR requirements in attainment areas (Prevention of Significant Deterioration) and nonattainment areas (nonattainment NSR)²⁷ applicable to existing sources, “the term ‘modification’ means any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted.” 42 U.S.C. § 7411(a)(4). In its 2005 *New York I v. EPA* decision, the U.S. Court of Appeals for the D.C. Circuit held, “the CAA unambiguously defines ‘increases’ in terms of actual emissions.” 413 F.3d 3, 39 (D.C. Cir. 2005). Specifically, after reviewing the various ways that the 1977 Congress chose to modify the terms “emit” and “emitted, the Court concluded that Congress was “conscious of the distinction between actual and potential emissions,” and “use[d] the term ‘emitted’ to refer to actual emissions.” *Id.*

The Court further explained that “[i]f Congress had intended for ‘increases’ in emissions to be measured in terms of potential or allowable emissions, it would have added a reference to ‘potential to emit’ or ‘emission limitations.’ The absence of such a reference must be given effect.” *Id.* at 40. The Court added, “even if the word ‘emitted’ does not by itself refer to actual emissions, the phrase ‘the amount of any air pollutant emitted’ plainly refers to actual emissions.” *Id.* (emphasis in original). See also *Alabama Power v. Costle*, 636 F.2d 323, 353 (D.C. Cir. 1979) (holding that the term “emit” is a “reference to some measure of actual emissions.”).

In a 2005 rulemaking proposal, and 2007 supplemental proposal, EPA sought comment on an unlawfully weak method of determining emissions “increases” for modifications under the NSR program.²⁸ EPA then proposed to adopt one of two new options, each including six “alternative” subparts, for determining whether a physical or operational change to an EGU would increase emissions, thereby triggering NSR as a “modification” under CAA § 111(a)(4). 72 Fed. Reg. at 26,205. In the 2007 supplemental proposal, EPA said its purpose in seeking to adopt one of these tests was to “promote the safety, reliability, and efficiency of EGUs.” *Id.* at 26,204. Notably, as was true with its 2005 proposal, EPA did not and could not claim that the 2007 rulemaking proposal would have promoted the protection of air quality, public health, the environment, national parks and wilderness areas, or any of the clean air objectives of the PSD/NSR programs or Clean Air Act, generally.

²⁷ For purposes of these comments, we will refer to the PSD and nonattainment NSR preconstruction permitting requirements for major sources and major modifications as “NSR.” We will refer to “minor NSR” requirements with that term.

²⁸ See 70 Fed. Reg. 61,081 (October 20, 2005) & 72 Fed. Reg. 26,202 (May 8, 2007).

Both of these options failed to measure increases based on actual emissions, as the Clean Air Act and controlling D.C. Circuit precedent require. Instead, the proposals measured increases based on “maximum” emissions, which means what the source is *able* to emit—measures of its potential or allowable emissions:

[A]s a practical matter, for most, if not all EGUs, the hourly rate at which the unit is actually *able* to emit is substantively equivalent to that unit’s historical *maximum* hourly emissions. That is, most, if not all EGUs will operate at their *maximum* actual physical and operational *capacity* at some point in a 5-year period. In general, highest emissions occur during the period of highest utilization. As a result, both the maximum achievable and maximum achieved hourly emissions increase tests allow an EGU to utilize *all of its existing capacity*, and in this respect the hourly rate at which the unit is actually *able* to emit is substantively equivalent under both tests.

72 Fed. Reg. at 26,219 (emphases added).

As the italicized words and phrases in this passage reveal, EPA’s 2005 and 2007 maximum achieved and achievable hourly emissions alternatives in Options 1 and 2 were potential or allowable-based tests rather than actual emissions tests. What an EGU is “able” to emit or “capable” of emitting at its “maximum” capacity are just synonymous terms for the same concept—for its potential or allowable emissions rather than its actual emissions. (Similarly, the concept of “achievability” is no more a reflection of actual emissions than a unit’s potential or allowable emissions or what it is capable of emitting.) EPA could not change these conclusions by clumsily placing the word “actually” before “able.” One could have accomplished the same evasion by placing the word “actual” before “potential” or “allowable”—an EGU is “actually able” to emit at its “potential to emit” or “allowable” emissions level. But that stratagem would not have changed the nature of those tests or the D.C. Circuit’s holding in *New York I*.

Indeed, EPA’s reasons for advancing the 2005 and 2007 proposals were essentially the same ones advanced by the agency on behalf of the Clean Unit exemption vacated by the D.C. Circuit in *New York I*: because EGUs allegedly will be “clean enough” as a result of other rules (“in light of the substantial EGU emission reductions from more efficient air quality programs promulgated after 1980,” 72 Fed. Reg. at 26,204), EPA considered resorting to a potential, allowable, capacity-based emissions increase test to radically reduce and eliminate the instances in which NSR would be triggered, thereby eviscerating the program’s applicability to modifications, and violating the Act. The court’s description of the Clean Unit exemption bears an uncanny resemblance to the rationale advanced by the agency in its 2005 and 2007 rulemaking proposals:

To maximize source flexibility and to encourage sources to install state-of-the-art pollution control technology, the 2002 rule establishes “an innovative approach to NSR applicability” that measures “increases” in terms of “Clean Unit” status instead of actual

emissions. 67 Fed. Reg. at 80,222. Under this approach, a change does not “increase” emissions and thus does not trigger NSR as long as it does not alter the unit’s Clean Unit status, *even if the change increases the source’s net actual emissions. Id.* A unit automatically qualifies for Clean Unit status if it has installed “state-of-the-art” pollution control technology (LAER or BACT) as a result of major NSR within the last ten years. *See id.* at 80,279-80 (codified at 40 C.F.R. § 52.21(x)(3)). A unit that has not undergone major NSR can also qualify for Clean Unit status if it demonstrates that its pollution control technology is “comparable” to LAER or BACT and that its allowable emissions will not violate national ambient air quality standards or new source performance standards. *See id.* at 80,281-83 (codified at 40 C.F.R. § 52.21(y)).

Slip op. at 61 (emphasis added). EPA’s 2005 and 2007 proposals were even more irresponsible and illegal, however, in that they would not have required individual EGUs to be controlled at all, certainly not equipped with “state-of-the-art” pollution control technology, as under the Clean Unit exemption. Instead, EPA justified the two proposals in terms of EGUs being controlled *nationally* as a group. And then only to levels that EPA deemed acceptable as a policy matter, not to levels corresponding to BACT or LAER today, and certainly not over the course of the period—forever—in which EPA proposed that its radically weaker test should govern.²⁹ Indeed, as discussed at length in comments submitted previously by some of today’s commenters,³⁰ EPA readily admitted that vast numbers of individual EGUs—over 50% at any given time over the next decade—would lack advanced controls for SO₂ or NO_x, or both.

The D.C. Circuit’s reasoning for vacating the Clean Unit exemption is equally controlling to show the unlawfulness of the approaches in EPA’s 2005 and 2007 proposals. As the court wrote:

It is a “cardinal principle of statutory construction that a statute ought, upon the whole, to be so construed that, if it can be prevented, no clause, sentence, or word shall be superfluous, void, or insignificant.” *TRW Inc. v. Andrews*, 534 U.S. 19, 31 (2001) (quoting *Duncan v. Walker*, 533 U.S. 167, 174 (2001)) (internal quotation marks omitted). Moreover, “when Congress includes particular language in one section of a statute but omits it in another section of the same Act, it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion.”

²⁹ In this respect too, the 2005 and 2007 proposal were even more irresponsible and illegal than the Clean Unit exemption, since EPA allowed the effective exemption from NSR under that 2002 exemption to last only for a period of 10 years. Those proposals’ effective exemption from NSR controls for modifications lasted forever, essentially rendering the NSR program inapplicable to EGU modifications.

³⁰ We are attaching to today’s comments those comments submitted previously on EPA’s May 7, 2007 supplemental NSR proposal by the American Lung Association, Earthjustice, Environmental Defense Fund, Natural Resources Defense Council and Sierra Club.

Barnhart v. Sigmon Coal Co., 534 U.S. 438, 452 (2002) (quoting *Russello v. United States*, 464 U.S. 16, 23 (1983)) (internal quotation marks omitted).

In the 1977 amendments to the CAA, Congress defined “major emitting facilit[ies]” as “stationary sources of air pollutants which *emit*, or have the *potential to emit*, one hundred tons per year or more of any air pollutant.” 42 U.S.C. § 7479(1) (emphasis added). The juxtaposition of the terms “emit” and “potential to emit” indicates that when Congress enacted the NSR program in 1977, it was conscious of the distinction between actual and potential emissions, using the term “emit” to refer to actual emissions and the term “potential to emit” to refer to potential emissions. Indeed, the court stated in *Alabama Power* that the use of the term “emit,” as opposed to “potential to emit,” is a “reference to some measure of actual emissions.” 636 F.2d at 353. Similarly, in the same section of the 1977 amendments to the CAA, Congress defined “best available control technology” as “an *emission limitation* based on the maximum degree of reduction of each pollutant . . . *emitted* from any major emitting facility.” 42 U.S.C. § 7479(3) (emphasis added). Again, the juxtaposition of the terms “emission limitation” and “emitted” indicates that Congress was conscious of the distinction between actual and allowable emissions, using the term “emitted” to refer to actual emissions and the term “emission limitation” to refer to allowable emissions.

In the same section of the 1977 amendments to the CAA, Congress applied NSR to “the modification (as defined in section 7411(a) of this title) of any source or facility.” 42 U.S.C. § 7479(2)(C). Section 7411(a) defines a “modification” as any physical or operational change that “increases the amount of any air pollutant *emitted* by [the] source.” 42 U.S.C. § 7411(a)(4) (emphasis added). As noted, when Congress enacted the 1977 amendments to the CAA, it distinguished between actual, potential, and allowable emissions. If Congress had intended for “increases” in emissions to be measured in terms of potential or allowable emissions, it would have added a reference to “potential to emit” or “emission limitations.” The absence of such a reference must be given effect. *See Barnhart*, 534 U.S. at 452; *TRW*, 534 U.S. at 33. Moreover, even if the word “emitted” does not by itself refer to actual emissions, the phrase “the *amount* of any air pollutant *emitted* by [the] source” plainly refers to actual emissions. 42 U.S.C. § 7411(a)(4) (emphasis added). EPA itself came to the same conclusion in the preamble to the 1980 rule. *See* 45 Fed. Reg. at 52,700.

Slip op. at 62-64.

The terms “achievable” and “achieved” are used throughout the Act, *e.g.*, §§ 111(a)(1), 111(b)(1)(B), 112(d)(3), yet Congress did not apply those terms or concepts to calculation of actual emissions increases under section 111(a)(4), just as Congress failed to add references to “potential to emit” or “emission limitations.” *Id.* Equally, section 111(a)(1) nowhere uses the terms “capacity” or “maximum achievable” or “maximum achieved” emissions rates, despite

those concepts being well understood as a matter of industry and regulatory practice by the time Congress authored the 1977 amendments. Finally, nowhere do parts C and D of Title I mention major stationary sources, modifications, or emissions increases being measured in terms of hourly emissions rates; in contrast, Congress identified annual emissions as the only relevant metric in all instances in which parts C and D identify an amount of emissions for regulatory purposes.³¹

The unlawfulness of using “potential” or “allowable” emissions as the measure of emissions increases for NSR modification purposes shared the following dispositive characteristic with the various options in EPA’s 2007 proposal (see 72 Fed. Reg. at 26,205, Table 1): each reflects the artificial, outer limits of some approach different from, and at odds with, measuring actual emissions increases resulting from a modification. For example, “potential to emit” represents not actual emissions but what a source’s maximum potential emissions might be. Similarly, allowable emissions correspond to the outer limits of source emissions bounded by an “emission limitation,” with no necessary relationship to actual emissions. See *New York I* slip op. at 63.

In this same fashion, the “maximum” emissions test put forward in the 2005 and 2007 proposals by definition reflected not actual emissions but the outer limits of emissions by reference to some theoretical or historic artificiality. A “maximum achievable” emissions test compounded that distance from actual emissions even further by linking the “maximum” framework to a concept, “achievability,” that is a virtual synonym for “potentiality” and that the D.C. Circuit has already renounced. EPA did not and could not explain how a maximum achievable emissions test differs materially or legally from potential or allowable emissions. Instead, EPA offered an explanation that is both conclusory and damning confirmation: “We believe that a test based on maximum actual hourly emissions is a reasonable measure of actual emissions. It measures actual emissions at peak, or close to peak, physical and operational capacity.” 72 Fed. Reg. at 26,219. This explanation was conclusory to the extent that EPA simply slapped the word “actual” between “maximum” and “hourly emissions,” and then followed that maneuver with unjustified “belief” that the test measures actual emissions. The damning confirmation came from resort to the use of peak or close to peak “capacity,” a concept inextricably linked by common understanding and industry usage to the degree to which an EGU is capable of operating—a reference point as far from actual emissions as potential or allowable emissions.

Indeed, as discussed *infra*, EPA well knew that maximum achievable emissions tests are a function of potential emissions. “The ‘achievable’ test is a measure of the ‘potential’ emissions of a source ... in the classic and historic sense of the use of that term.”³² An earlier version of

³¹ See attached environmental group comments on May 7, 2007 EPA proposal.

³² Memorandum from Adam M. Kushner, Director of EPA’s Air Enforcement Division, Office of Enforcement and Compliance Assurance, to William Harnett, dated August 25, 2005, at 9 (hereinafter “OECA Mem.”). We attach a copy of this EPA memorandum to today’s comments.

EPA's 2005 proposal in fact refers to maximum hourly emissions tests as a potential-based test. See EPA-HQ-OAR-2005-0163-0045, at 71 ("We believe the *potential-to-potential test* as proposed in the form of a maximum hourly emissions test considering controls for CAIR Units is particularly well suited for striking the required balance between effective environmental protection at a cost that is not detrimental to economic growth.") (emphasis added); see also 68 Fed. Reg. at 61,272 ("The NSPS program requires a change to result in an increase in the hourly potential to emit of the facility. 40 CFR 60.14(a)-(b). In contrast, under NSR, we require an increase in annual emissions. E.g., 40 CFR 51.165(a)(1)(x).") (emphasis added).

EPA's response brief in *New York I* freely described the Clean Unit exemption as being based upon a "maximum hourly emissions rate" test, just the test that the D.C. Circuit vacated for being based upon potential emissions: "The proposed test would allow facilities to make any change to a 'Clean Unit' as long as the change did not increase the unit's maximum hourly emissions rate (*i.e.*, the NSPS test)." Brief of Respondent EPA, No. 02-1387 and consolidated cases (Aug. 9, 2004), at 22. EPA attempted to defend that potential-based increase test by resorting to the same argument employed here: as "an exercise of EPA's *Chevron* discretion to interpret the ambiguous statutory term 'increase.'" *Id.* at 31. But the court has found no ambiguity concerning the statute's obligation to measure emissions increases in actual emissions rather than potential or allowable emission, notwithstanding EPA's "respectful disagree[ment]" with the D.C. Circuit's opinion (70 Fed. Reg. at 61,091) that animated the agency's 2007 supplemental proposal and rulemaking long after EPA declined to seek *cert.* of the *New York I* decision with the Supreme Court.

In defense of the Clean Unit exemption, EPA argued in its response brief in *New York I* that it had discretion to establish the "baseline" for measuring emissions "increases" by reference to some artificial framework and emissions level not corresponding to actual emissions. In that case the artificiality was a source's emissions limitations in its permit:

The question the Act leaves unanswered, and that EPA addressed in creating the Clean Unit test, is how an "increase" in emissions is to be measured. For units qualifying as Clean Units, EPA reasonably determined that an "increase" can be measured with reference to the emissions limitations or work practice requirements contained in their permits. 67 Fed. Reg. 80228/2. In other words, the terms of the permit establish the Clean Unit's baseline.

Id. at 111. In the 2005 and 2007 proposals, EPA simply resorted to different artificialities to establish a baseline for measuring emission increases that do not correspond to actual emissions: maximum achieved or maximum achievable hourly emissions, with variations that do not cure the non-actual nature of the tests.

EPA was unsuccessful in persuading the court that the Clean Unit exemption measured actual emission increases, even though those emission limitations or work practice requirements could

be said in some sense to be a measure of actual emissions. The court recognized rightly that establishing such an artificial baseline would not measure actual emission increases. And EPA's brief in that case already conceded that a maximum hourly emissions rate test suffers from the same flaw, representing as it does a measure of potential, not actual, emissions. *Id.* at 22.

The Joint Brief of Industry Petitioners and Joint Brief of Industry Intervenors in the *New York I* NSR case confirmed that the proposal(s)' capacity-based maximum achievable and maximum achieved hourly tests are illegal "potential"-based emissions increase tests, contrary to the D.C. Circuit's decision in *New York I*. See Joint Brief of Industry Petitioners, *New York I*, at 6 (characterizing an increase in a facility's maximum hourly emissions rate as an increase in its existing capacity to emit, and recognizing that to be a modification under NSPS regulations); at 8 (the NSPS modification provision applies to "activities that increase a unit's 'potential' emission rate"); at 9 (for a project to "create 'new' capacity to emit," it "must first increase an existing facility's maximum achievable emissions rate"); *id.* ("Activity that increases an existing facility's maximum achievable emissions rate is referred to hereinafter as 'NSPS modification activity.'"); at 10-11 (equating "potential to emit" with a facility's "existing design capacity."); at 23 (equating a unit's "maximum emissions rate" with its "capacity to emit"); at 26 (NSPS regulatory "'modification' is a physical or operational-method change that creates new pollution capacity—*i.e.*, that increases an existing unit's *maximum emissions rate*) (emphasis in original); *id.* (equating the preceding test to a change that "increases the *potential emission rate*" of a regulated pollutant") (emphasis in original); see also Joint Brief of Industry Intervenors, *New York I*, at 3 (alleging that "EPA established a regulatory definition of "modification" [under NSPS], which provided that the determination of whether an emissions increase occurs is made by reviewing whether maximum emissions after a change would be greater than maximum emissions at full capacity before the change, *i.e.*, a "*potential-to-potential*" test. 40 C.F.R. § 60.14; see 67 FR 80,199 (2002)." (emphases added)); & at 11 ("potential-to-potential' test" compares "maximum emissions before a change to maximum emissions after a change.") & 12 (linking increases in potential emissions rate to operation at full design capacity) & 13 ("increase in a major source's "potential" emissions, *i.e.*, in the source's maximum pre-change emissions level.")

As EPA knew then, industry and certain States rejected its contention that the NSPS hourly rate test measures actual emissions. They held the view, instead, that the NSPS hourly test is one triggered only when a source's capacity, or potential to emit, is increased. Indeed, although camouflaged through the years in different language, industry was fairly plain in making the claim that an hourly rate test measures potential to emit, not actual emissions.

This view was on display in *Environmental Defense v. Duke Energy*, 127 S. Ct. 1423 (U.S. 2007), where a variety of industries, utilities and associated trade groups filed briefs characterizing the hourly test as one that measures capacity to emit. See, *e.g.*, Nat'l Env. Development Ass'n Br. at 3 (stating increase in "maximum achievable hourly emissions" typically does "not occur unless a manufacturer makes a change that increases production

capacity") (emphasis added), 10 (projects "that do not increase production capacity . . . do not increase maximum achievable hourly emissions"); State of Alabama, et al., Br. at App. A (Grusnick Decl.) ("maximum hourly rate of emissions" triggered when projects "would increase unit capacity")(emphasis added); Electric Util. Indus. Br. at 3 (NSPS test captures "a change that increases a unit's intrinsic capability to emit pollution (*i.e.*, its hourly emissions rate), not one that maintains the unit's ability to operate in the future as it was constructed and permitted to do") (emphasis added); Manufacturers Assoc. Work Group Br. at 11-12 (equating "permitted and constructed capacity" and "maximum capacity" with "actual emitting capability") (emphasis added); & 24 (favoring "capacity" netting for units within source).

Duke Energy itself dressed the "design capacity" test in various garbs throughout the years. Before the Supreme Court, Duke Energy described the NSPS hourly rate test as capturing "actual emissions capabilities," Br. 5, and unveiled the new, oxymoronic phrase "actual emissions capacity" to characterize the test, Duke Energy Br. at 22, 32 n.13, as if "actual capacity" were something other than . . . actual capacity.

Aware that it isn't, Duke Energy elsewhere admitted this test measures "basic emissions capacity," "basic capacity to emit pollutants," and "physical and operating capacity." Duke Energy Br. 2, 6. The company was more frank with the Fourth Circuit, equating the test with "designed emitting capacity" and "maximum emissions rate," Ct. Ap. Br. 8, 10, and with the district court, where it spoke of changes in "capacity rating," Reply to U.S. SJM at 8, and increased "capacity beyond original design," *id.*, n. 11.

With the electric utility industry and EPA having vigorously opposed the D.C. Circuit's holding in *New York I* that it is unlawful to measure emissions increases under PSD/NSR based upon potential emissions rather than actual emissions, and with the Supreme Court not having granted *cert.* in response to the *New York I* ruling, it was unlawful for EPA to disregard that ruling in the 2005 and 2007 proceedings. As industry rightly realized in their briefs—prior to the D.C. Circuit striking down the Clean Unit exemption and soundly rejecting their NSPS-incorporation arguments—a potential-based emissions increase test has gone by many labels, all deviating unlawfully from actual emissions: maximum hourly emissions, increase in capacity to emit, creation of “new” capacity, increases in maximum achievable emissions rate, existing design capacity, comparing whether maximum emissions after a change would be greater than maximum emissions at full capacity before the change, source's maximum pre-change emissions level.

These formulations all corresponded to EPA's 2005-proposed maximum achievable hourly emissions rate tests. And with EPA's necessary admission that the maximum achieved hourly emissions test is effectively the same as the maximum achievable hourly emissions test, 72 Fed. Reg. at 26,219, both proposed tests had to fall under the weight of the D.C. Circuit's decision in

New York I, which invalidated potential emissions as a lawful metric for measuring emissions increases under PSD/NSR.³³

EPA's earlier proposals also shared important similarities with the pollution control project (PCP) exclusion vacated in *New York I*. EPA argued that these changes should not trigger NSR, despite being conceded "physical changes" and resulting in conceded net actual annual emissions increases, because such projects were "environmentally beneficial." The D.C. Circuit struck down the PCP exclusion—including a 1992 PCP exemption adopted for EGUs—because they unlawfully exempted physical changes that increased emissions of a regulated air pollutant. Slip op. at 64.

As with the PCP exclusion, EPA argued in its earlier proposals that it need not subject EGU modifications to NSR when actual annual emissions increase, because other regulatory programs over the subsequent two years would adequately control "primary" emissions of concern. The D.C. Circuit rejected this similar argument, holding that "there is nothing inherently 'absurd' about increasing the regulatory cost of projects that increase collateral emissions, and EPA does not demonstrate otherwise. Congress could reasonably conclude, for example, that tradeoffs between pollutants are difficult to measure, and thus any significant increase in emissions of any pollutant should be subject to NSR." Slip op. at 65. And just as environmental petitioners argued in that case, *id.* at 66, had Congress wished to exclude EGUs from the protective, actual annual emissions increase test that has always governed NSR, and that forms the basis for statutory definitions and other provisions (see *infra*, and in attached comments on May 7, 2007 proposal), Congress could have done so explicitly, as it did for clean coal technology, 42 U.S.C. § 7651n, and for PCPs in extreme nonattainment areas, *id.* § 7511a(e)(2). See generally Slip op. at 64-67.

Of particular significance to EPA's earlier unlawful 2005 and 2007 proposals (and any similar exemption attempts now) is the court's holding that "[a]bsent clear congressional delegation, however, EPA lacks authority to create an exemption from NSR by administrative rule. See *Sierra Club v. EPA*, 129 F.3d 137, 140 (D.C. Cir. 1997). Indeed, 'this court has consistently struck down administrative narrowing of clear statutory mandates.' *Id.*" EPA's earlier proposals amounted to attempts to create a total exemption from NSR controls for EGU modifications that increase actual emissions by amounts that dwarf the *de minimis* thresholds, and even major source thresholds, under the NSR program.

³³ See also EPA-HQ-OAR-2005-0163-0045, at 71 ("We believe the *potential-to-potential test as proposed in the form of a maximum hourly emissions test* considering controls for CAIR Units is particularly well suited for striking the required balance between effective environmental protection at a cost that is not detrimental to economic growth.") (emphasis added); *id.* at 68-69 ("We do not believe that a *potential-to-potential approach* is acceptable for major NSR applicability as a general matter. Nonetheless, we believe that in circumstances where use of highly efficient units ensure air quality, such as those for CAIR Units, a '*potential-to-potential*' approach would be acceptable.") (emphasis added).

“Absent clear congressional delegation,” Congress could not have meant to allow EPA to interpret “increases” in section 111(a)(4) to allow constructive activity at existing EGUs to escape control when net actual annual emissions exceed hundreds, thousands or even tens of thousands of tons per year, while the statute imposes BACT on *new* major sources of 100 or 250 tons *per year*, 42 U.S.C. § 7479(1), and LAER and offsets on new major sources at even lower thresholds in nonattainment areas. Revealingly, neither EPA’s 2005 proposal nor 2007 supplemental proposal offered any rational explanation for allowing this outcome, nor an explanation or legislative history justification why Congress would make such an absurd choice to allow air quality to degrade in this fashion from existing sources, but not from new sources.

EPA does not deny, cannot deny, and never has denied that the concepts in its 2005 and 2007 proposals would allow actual annual emissions increases to exceed the statutory major source thresholds in attainment and nonattainment areas, and regulatory “significant emissions increase” thresholds for modifications, at both controlled and uncontrolled EGUs, by as much as hundreds or thousands of tons per year. Nor has EPA denied, nor could it, that these earlier proposals would have allowed actual annual emissions increases from EGU modifications to exceed the post-control emissions increases from even *new EGUs* that remain subject to the more protective actual, annual emissions increase test: in attainment areas, post-control emissions from new sources of regulated air pollutants subject to BACT, would be less than the actual, annual emissions increases that EPA’s proposals would have allowed from existing source modifications. And that would be even more true in nonattainment areas, where new EGUs must fully offset emissions increases remaining after LAER. This means that EPA’s 2005 and 2007 proposals would have allowed existing EGUs in nonattainment areas to experience emissions increases thousands of tons above the emissions levels of brand new power plants many times the size and generation capacity of the modified units at the existing facility.

Finally, of course, EPA’s 2005 and 2007 proposals would have allowed existing EGUs (controlled or uncontrolled) in attainment and nonattainment areas to escape BACT, LAER and offsets when modifications increased actual, annual emissions wildly in excess of emissions from new sources and modifications in all other industry sectors not eligible for the EGU-centered proposals’ indefensible deregulation.

All of these outcomes confirm that the approaches described in EPA’s earlier proposals are arbitrary, capricious and an abuse of discretion. The approaches were unlawful when proposed. They remain unlawful today. The outcomes allowed by the proposals would fly in the face of the statutory structure; the equitable treatment of industries under the Act; the basic fact that a ton of NO_x or SO₂ is just as harmful as any other ton; and the fact that Congress expected NSR modifications to be regulated *more* stringently, that is at lower emissions and construction levels, than new sources (as evidenced by the “any physical change” language in section 111(a)(4)), with only *de minimis* emissions increases able to escape control).