HAL QUINN
*President & CEO*

October 31, 2018

The Honorable Andrew Wheeler
Acting Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Attn: Docket ID No. EPA-HQ-OAR-2017-0355-21117

**RE: Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units; Revisions to Emission Guideline Implementing Regulations; Revisions to New Source Review Program – 83 Fed. Reg. 44746 (Aug. 31, 2018)**

Dear Acting Administrator Wheeler:

The National Mining Association (NMA) strongly supports the U.S. Environmental Protection Agency's (EPA) proposal to replace the 2015 Clean Power Plan (CPP) with the Affordable Clean Energy (ACE) rule. As explained in detail in the attached comments, EPA's replacement rule is a welcome return to the lawful framework that was the hallmark for regulation of power plant emissions for decades prior to the promulgation of the unlawful CPP. Furthermore, the proposal reestablishes the cooperative federalism framework Congress intended when crafting the Clean Air Act's (CAA) system of shared authority by EPA and the states.

NMA is a national trade association whose members include producers of most of the nation's coal, metal, industrial and agricultural minerals; the manufacturers of mining and mineral processing machinery, equipment and supplies; owners and operators of electric generating units; and engineering and other firms serving the mining industry. NMA's members produce and use electricity as well as supply the products that are essential for finding, producing and delivering all forms of energy essential to our nation's well-being. NMA has been engaged in each phase of the agency's rulemaking efforts to dismantle and replace the CPP.

**The ACE Proposal Correctly Recognizes the Limits of CAA Section 111**

In stark contrast to the CPP, the ACE proposal recognizes that section 111 is not a tool for restructuring the entire electric grid by forcing adoption of politically preferred sources of power. Rather, the proposal adheres to the text and purpose of section 111 by basing the determination of the standards of performance upon reasonably achievable measures that can be implemented at individual sources. This at-the-source approach is consistent with more than 40 years of EPA precedent and is mandated by the statute.

The ACE proposal correctly concludes heat rate improvements (HRIs) are the best system of emission reduction (BSER) for coal-fired power plants. HRIs represent the only adequately demonstrated means of reducing greenhouse gas emissions that can be applied in a cost-effective manner to the coal-fired power plants that have long served as the backbone of the electricity grid upon which all Americans depend. In determining that HRIs are the BSER for existing power plants, EPA appropriately rejects other alternatives as not achievable by or at an individual unit. The proposal properly excludes generation shifting, fuel-switching, co-firing with other fuels or reducing the utilization of a coal unit as proper measures for setting standards. Such measures cannot qualify as standards of performance as they necessitate *nonperformance*.

EPA's return to its longstanding at-the-source approach also dictates how compliance with BSER can be accomplished. While states are appropriately given needed flexibility to demonstrate compliance, certain compliance methods that cannot be implemented by the source – such as trading programs or state mass-based limits on coal generation or $CO_2$ emissions – are not authorized. Similarly, to ensure consistency with this efficiency-based BSER, the ACE rule mandates that measurement of the efficiency with which a unit produces energy relative to the amount of $CO_2$ emitted per unit of energy is pounds of $CO_2$ emitted per megawatt-hour (lb/MWh).

**The ACE Proposal Marks a Necessary Return to Cooperative Federalism**

In the CPP, EPA attempted to deprive states of their proper role under the statute by dictating both the BSER and the standards of performance that reflect the BSER. States were left only with the largely ministerial role of implementing EPA's mandates. The ACE rule rejects such federal overreach and specifically mandates that while EPA determines the nationally applicable BSER, states will determine the standards in the first instance and how to implement those standards.

By honoring the CAA's system of shared authority, the ACE rule respects the infrastructure and economic realities that are unique to each state and allows for state-driven solutions rather than top down federal mandates. Importantly, the ACE approach provides the necessary flexibility to states to set standards based upon what is

reasonably achievable at each power plant upon consideration of costs, remaining useful life and other factors.

**The ACE Proposal Provides Tangible Environmental Benefits Without Damaging Economic Growth**

The CPP was a symbolic, but costly gesture that would have imposed severe economic harm in pursuit of a theoretical reduction in global temperatures by a mere 0.02°C by 2100. Conversely, the ACE rule will provide meaningful environmental benefit while lowering compliance costs, ensuring affordable and reliable energy, and preserving high-wage jobs. In fact, $CO_2$ emissions from the electricity sector under ACE will be roughly the same as projected under the CPP with the difference too miniscule to make a real-world difference. However, ACE will reduce the compliance burden by up to $400 million annually when compared to CPP.

Independent of either rule, the industry significantly reduced emissions in recent years and continues to do so. Emissions per kilowatt-hour (kWh) of sulfur dioxide (SO2), nitrogen oxides (NOx) and particulate matter (PM) from the coal fleet have been reduced by more than 93 percent over the period 1970-2017. The industry has invested almost $122 billion into emissions controls through 2017 and is expected to spend an additional $5 billion through 2020.

The ACE rule will also better ensure affordable energy prices. An analysis of the CPP by Energy Ventures Analysis (EVA) forecast that the plan would have forced the closure of 41,000 MW of coal-based generating capacity – an amount capable of serving 24 million homes – costing consumers an estimated additional $214 billion for electricity between 2022 and 2030, and an additional $64 billion for the construction of replacement generating capacity. Studies conducted by IHS Markit document that the current diversity in electricity supply anchored by coal saves consumers $114 billion a year or 27 percent lower as compared to a less diverse supply portfolio without coal.

**The ACE Proposal Promotes Upgrades of Coal-fired Power Plants**

The ACE rule recognizes the importance of New Source Review (NSR) reform by removing barriers to efficiency improvements at coal plants. Without NSR reform, the full benefits of ACE will not be realized. As acknowledged in the proposal, the complexities of current NSR law disincentivize upgrades that would improve safety, increase energy efficiency and reduce emissions of regulated air pollutants. The ACE proposal to adopt an hourly emission rate test is a necessary step to avoiding a regulatory “catch-22” whereby investments in beneficial efficiency improvements resulting in lower emission rates are thwarted simply because the improvements will also allow a power plant to generate and dispatch electricity more economically.

In addition to the inclusion of the hourly test, EPA should take further steps to strengthen its NSR proposal. Specifically, EPA needs to address certain flaws in approach, such as the failure of the statistical approach for the hourly test to properly reduce the influence of outliers and the failure to include a causation provision. Currently, EPA's NSR proposal does not address causation at all. But as EPA, states, federal courts, and the regulated community have understood for decades, a project triggers NSR permitting requirements only if the project causes an emissions increase. Thus, if a coal plant undertakes an efficiency project today and there is a post-project increase in emissions tomorrow, NSR permitting should not be required for the efficiency project if the increase is the result of other independent factors, such as an increase in electric demand or a change in coal characteristics. To address causation, EPA should include a provision recognizing that post-project emission increases do not constitute a "major modification" unless they are caused by a project that is subject to review.

Also problematic is EPA's statistical approach for determining whether an efficiency project would increase hourly emissions at a unit beyond the rate that the unit has actually "achieved" in the past. For any statistical test to be workable, it must properly reduce the influence of outliers and minimize the possibility of "false positives" – that is, the possibility that the test would suggest an increase when none in fact occurred. Unfortunately, EPA's proposed statistical analysis would result in a "false positive" in nearly every case. To remedy this flaw, EPA should avoid relying on a single hourly measurement as a mandatory point of comparison. Regardless of whether used as the pre-project baseline or as the post-project projection and evaluation, a single data point will not suffice. Thus, to ensure hourly data is utilized properly in determining NSR applicability, EPA must develop a statistical analysis for both the pre-project baseline and the post-project evaluation that is capable of determining when a statistically significant emissions increase actually occurs.

NMA appreciates the opportunity to submit the attached comments in support of the ACE proposal. The proposal makes clear that advancing the nation's environmental protections does not have to come at the expense of American families, risking the reliability of our nation's power supply and sidestepping the law. We urge EPA to expeditiously finalize its proposal.

Sincerely,

Hal Quinn

**ENVIRONMENTAL PROTECTION AGENCY**

**EMISSION GUIDELINES FOR GREENHOUSE GAS EMISSIONS FROM EXISTING ELECTRIC UTILITY GENERATING UNITS; REVISIONS TO EMISSION GUIDELINE IMPLEMENTING REGULATIONS; REVISIONS TO NEW SOURCE REVIEW PROGRAM**

**83 Fed. Reg. 44746 (Aug. 31, 2018)**

**EPA–HQ–OAR–2017–0355**

# COMMENTS OF THE NATIONAL MINING ASSOCIATION

**October 31, 2018**

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# I. INTRODUCTION

The National Mining Association (NMA) submits these comments on the proposed Affordable Clean Energy (ACE) rule[1] issued by the Environmental Protection Agency (EPA or Agency) under Section 111(d) of the Clean Air Act (CAA). NMA is a nonprofit incorporated national trade association whose members include the producers of most of America's coal, metals, and industrial and agricultural minerals; manufacturers of mining and mineral processing machinery, equipment, and supplies; and engineering and consulting firms that serve the mining industry.

NMA previously commented on EPA's proposal to repeal the Clean Power Plan (CPP)[2] and on its advance notice of proposed rulemaking (ANPR) regarding the Section 111(d) rule it is now proposing.[3] While EPA indicates that it is not necessary to resubmit comments on the proposed CPP repeal, NMA is attaching those comments (with exhibits) here for EPA's convenience. NMA is also attaching its comments on EPA's ANPR.

NMA strongly endorses the ACE proposal. As set forth in depth in NMA's comments on repealing the CPP and as reiterated below, the CPP was an agenda-driven regulation devoid of a basis in Congressionally-enacted law. In contrast, ACE is a welcome return to the rule of law and to the proper balance between state and federal authority under the Constitution and the CAA. Moreover, unlike the CPP, ACE is consistent with more than forty years of EPA precedent limiting Section 111 systems of emission reduction to measures that can be

[1] *Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units; Revisions to Emission Guideline Implementing Regulations; Revisions to New Source Review Program*, 83 Fed. Reg. 44746 (Aug. 31, 2018).
[2] *Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units*, 82 Fed. Reg. 48035 (Oct. 16, 2017).
[3] *State Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units*, 82 Fed. Reg. 61507 (Dec. 28, 2017).

implemented at the source. NMA's overall recommendation is that EPA proceed expeditiously to finalize its proposal.

Though fully in support of ACE, NMA offers the following recommendations:

- EPA should strengthen its discussion of the legal rationale for repealing the CPP and returning to its longstanding "at-the-source" approach. EPA should explain in more detail both why an at-the-source approach is legally compelled and, alternatively, is reasonable in the circumstances here, even if EPA (as it maintained in the CPP) has authority under Section 111 to go beyond the source.
- Relatedly, EPA should strengthen its analysis of the Social Cost of Carbon and co-benefits in its Regulatory Impact Analysis (RIA) and the regulatory preamble. Some members of the press and public have seized on certain information in the RIA, which they have taken out of context, to claim that ACE, as compared with the CPP, will result in thousands of deaths and significantly increase $CO_2$ emissions. Neither assertion is true, but an expanded discussion of these issues, as set forth below, would help assure the public that ACE will not impair the public health or welfare.
- An expanded discussion of how ACE will achieve nearly the same $CO_2$ reductions as the CPP would also bolster EPA's legal rationale for the rule. EPA's only justification for the CPP's novel "generation shifting" approach was the asserted need to achieve significantly more $CO_2$ emission reductions than it determined would be available under EPA's historic inside-the-fence approach. That justification was specious when EPA adopted it, and it is even more so now given changes in the utility industry. According to the Energy Information Administration, power sector $CO_2$ emissions, which have been falling for years, are now 28 percent below 2005

emissions.[4] NMA's comments below provide additional information to further demonstrate that the difference between ACE and the CPP with respect to the nation's $CO_2$ emissions will be too minuscule to make any meaningful real-world impact on global climate, human health, or the environment.

- EPA should further emphasize that ACE will not allow states to make their own state law-based programs federally-enforceable if those programs, like the Regional Greenhouse Gas Initiative and state mass-based limitations on power sector $CO_2$ emissions, are inconsistent with the principles underlying Section 111.
- EPA should clarify that its emission guidelines do not establish any particular level of stringency for the efficiency-based standards that states must adopt under ACE, but rather provide "information" to guide the states in establishing standards consistent with EPA's Best System of Emission Reduction (BSER) determination that are both cost-effective and achievable for each individual source. EPA should further make clear that it will not second-guess how states apply the BSER factors in determining performance standards and will limit its review to ensuring that states applied those factors in a non-arbitrary way.
- EPA should strengthen its New Source Review (NSR) proposal to address certain flaws, including the failure to include a causation requirement and the failure of EPA's proposed statistical approach for the hourly test to properly reduce the influence of outliers. NMA wholeheartedly agrees with EPA that reforming the NSR program is necessary to obtain the full benefits of the ACE rule, but, as NMA's comments below explain further, important changes need to be made.

[4] Energy Information Administration, U.S. Energy-Related Carbon Dioxide Emissions, 2017.

## II. STATE AND EPA AUTHORITY UNDER SECTION 111(d)

At the outset of the ACE preamble, EPA confirms that it has "the authority and responsibility to determine a nationally applicable BSER, while the states have the authority and responsibility to establish and apply existing source standards of performance, in consideration of source-specific factors."[5] This succinct summary of Section 111 is refreshing in its faithfulness to the statutory text. In the CPP, EPA attempted to deprive states of their proper role under the statute by dictating *both* the BSER and the standards of performance that reflect the BSER. States were left with only the largely ministerial role of implementing EPA's mandates. In welcome contrast, and in conformity with the statutory system of shared federal-state authority, ACE provides that states will determine the standards in the first instance and then decide how to implement those standards. NMA fully supports this plain reading of Section 111.

NMA also agrees with EPA that its long-standing at-the-source approach under Section 111 is legally compelled by the statute. NMA's reasoning in this regard is set forth at great length in its comments on EPA's proposal to repeal the CPP and in the briefs of industry and state petitioners in the CPP litigation and will not be discussed further in these comments. However, NMA urges EPA to expand its discussion of why it is now abandoning the legal interpretation it used to support the CPP. Specifically, NMA urges EPA to incorporate more fully the detailed arguments made by NMA and others in their comments on the proposed repeal of the CPP and in the CPP litigation briefing. Given the issues involved and the background of the CPP litigation, a reviewing court is likely to scrutinize EPA's changed reasoning closely. As EPA acknowledges, federal court precedent fully authorizes EPA to reevaluate prior statutory interpretations—and that precedent would certainly apply to an EPA decision to return to its

[5] 83 Fed. Reg. at 44748.

historical, plain-language interpretation of Section 111(d)—but EPA must fully explain that change.[6]

NMA also asks EPA to clearly set forth, as an alternative line of reasoning, why it believes that returning to its longstanding at-the-source approach is warranted, even assuming EPA does have the authority to go beyond the source (which NMA does not believe EPA has). EPA's ACE preamble notes that, even if Congress authorized it to regulate beyond the source, the agency would have discretion to decline to exercise that power.[7] And the preamble explains why, as a policy matter, returning to an at-the-source approach is preferable to the CPP approach, again, even assuming for the sake of argument, that EPA could regulate beyond the source. Notably, the ACE preamble confirms that "EPA is not the expert agency with regard to electricity management," and therefore should not base its BSER determination for electric utilities on "generation shifting," particularly in light of the "tremendous strain" the industry is under due to the dramatic market changes already underway (which could unexpectedly reverse).[8] EPA also explains in the regulatory preamble and the RIA why the difference in $CO_2$ emission between ACE and the CPP is now extremely small, given those changes in the industry. Thus, a "generation shifting" approach would result in significant risk without any real benefit, in that it would "further challenge the nation's electricity system" and yet provide no better environmental protection than what the at-the-source approach in ACE will provide.[9]

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[6] 84 Fed. Reg. at 44751 ("The authority to reconsider prior decisions exists in part because EPA's interpretations of statutes it administers '[are not] instantly carved in stone,' but must be evaluated 'on a continuing basis.' *Chevron U.S.A. Inc. v. NRDC*, Inc., 467 U.S. 837, 863–64 (1984). This is true when, as is the case here, review is undertaken 'in response to . . . a change in administrations.' *Nat'l Cable & Telecom. Ass'n v. Brand X Internet Services*, 545 U.S. 967, 981 (2005). Indeed, '[a]gencies obviously have broad discretion to reconsider a regulation at any time.' *Clean Air Council v. Pruitt*, 862 F.3d 1, 8–9 (D.C. Cir. 2017)."

[7] 83 Fed. Reg. at 44753 ("[T]o the extent that the Agency, due to the fact that Congress did not expressly forbid such an approach, does possess that discretion, today it proposes not to exercise it.").

[8] 83 Fed. Reg. at 44753-54.

[9] *Id*.

NMA strongly recommends that EPA expand its preamble discussion to further address these critical points. In adopting the CPP, EPA justified its decision to depart from its historical at-the-source approach based on the need to obtain greater $CO_2$ emission reductions than an at-the-source approach would create.[10] This policy justification was erroneous when EPA adopted it and, given changes in the generation mix, is even more erroneous today. Because the supposed need for dramatic $CO_2$ reductions was EPA's only reason for departing from its long-time at-the-source interpretation of Section 111, NMA urges EPA explain in more detail than it did in the proposed preamble why EPA concludes that concerns about possible climate change do not justify the novel interpretation of Section 111 underlying the CPP. To aid in this expanded discussion, NMA sets forth in detail below why neither the CPP nor ACE will meaningfully affect overall global (or even U.S.) $CO_2$ emissions and why the minor differences in emission reductions between the two rules will not have the slightest effect on global climate. Adopting this information into EPA's rationale for rejecting the CPP's beyond-the-source approach would, NMA believes, strengthen the record support for the rule.

NMA also supports the policies EPA has set forth in ACE regarding the types of measures EPA and the states cannot require within the fenceline of a source. Specifically, EPA has expressly confirmed that the BSER must not require "reduced utilization" or "redefining the source." NMA agrees that these limitations on EPA's BSER-selecting authority are critical to a lawful and reasonable implementation of Section 111(d). Without these limitations, Section 111 "standards of performance" would become "standards of *non*-performance," by forcing certain kinds of facilities either to shut down or convert into a completely different type of facility. That approach would result in a rule that, like the CPP, would unlawfully authorize EPA to pick

[10] *Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, Proposed Rule*, 79 Fed. Reg. 34830, 34845 (June 18, 2014).

winners and losers in the energy marketplace (despite EPA's acknowledged lack of expertise in such matters).

In particular, NMA appreciates EPA's recognition of the critical importance of these limitations on its authority in the context of coal-fired power plants. In the ACE preamble, EPA explains that "it is reasonable to focus on a 'BSER' limited to consideration of emission control measures that can be applied at or to coal-fired units, ensuring that regardless of how much coal-fired generation remains, that generation is operated to minimize $CO_2$ emissions."[11] NMA agrees. Any other reading of the statute would allow EPA the authority to force coal plants into early retirement or to become gas, oil, or biomass plants—a power that Congress did not delegate to EPA under any reasonable reading of Section 111(d).

While fully supportive of EPA's overall approach, NMA recommends that EPA clarify certain aspects of ACE regarding state and federal authority. First, EPA should be clear that states have the discretion to select any reasonable approach in setting its standards, so long as those standards satisfy the requirements of Section 111(d). Although EPA has recognized in ACE that states should have that flexibility, for that discretion to be properly respected, EPA must be prepared to fully approve any reasonable plan submitted by a state, even if EPA would reach a different conclusion based on the information available. In the past, EPA has failed to approve similar state plans in other contexts, such as the regional haze program, by disputing a state's reasonable judgment and supplanting it with EPA's own policy preferences. Since EPA's opinions carry significant weight with federal judges, that practice has typically gone unchecked. As a result, the discretion promised to states has often vanished at the approval stage of the process.

[11] 83 Fed. Reg. at 44754.

Disapproving a reasonable state plan and replacing it with a federal plan, as has happened in other contexts, is tantamount to allowing EPA to write the plan in the first instance. If Congress had intended for EPA to set the standards under Section 111(d), that section would look no different than Section 111(b), but it does—states, not EPA, must set the standards, and EPA's procedure must not allow the approval process to nullify that Congressional design. Accordingly, NMA asks EPA to reaffirm in even more absolute and unqualified terms that EPA will defer to reasonable state decisions and approve all reasonable state plans and the performance standards they contain. EPA's role is to assure that states applied the BSER factors in determining performance standards in a non-arbitrary way.

Second, and conversely, EPA should clarify that it will not approve state plans that attempt to shoehorn into ACE's state performance-standard approval process state law programs that are not the product of the BSER that EPA has selected and which are not authorized under Section 111(d). While states deserve, and should receive in practice, significant discretion in applying the BSER to specific facilities, EPA should not allow states to adopt a completely different and far more onerous emission reduction program and then seek to make that program "federally enforceable" via approval from EPA. Otherwise, states could conscript the authority and power of the federal government to impose regulatory burdens that far exceed those contemplated by Congress. Certainly, states may, under their own state law authority, develop their own emission reduction programs, and many have already done so. But state programs that are not authorized under Section 111(d)—such as emission trading programs like the Regional Greenhouse Gas Initiative, limits on coal generation, or mass-based limits on electric utility $CO_2$ emissions—cannot be used to comply with ACE. Only state programs that are adopted pursuant to ACE and which are consistent with that rule should be federally enforceable.

In the ACE preamble, EPA recognizes this important limitation on state authority—that a Section 111(d) state plan should not "federalize" what Section 111(d) does not itself authorize—but only in a footnote.[12] NMA asks EPA to more fully develop and explain this restriction on state plans in the final ACE preamble. At a minimum, EPA should make clear that, if a state program contains provisions that are authorized under Section 111 as well as provisions that go beyond Section 111, it will only grant a limited approval of those provisions that are consistent with Section 111(d). State requirements that go beyond EPA's selected BSER must remain state enforceable only.

## III. EPA'S BSER & EMISSION GUIDELINES

In its ACE proposal, EPA has respected the principles outlined above by focusing on heat rate improvements (HRIs) for coal-fired power plants. Until far more significant advances can be made with other technologies, HRIs represent the only adequately demonstrated means of reducing greenhouse gas emissions that can be applied in a cost-effective manner to the coal-fired power plants that have long served as the backbone of the electricity grid upon which all Americans depend.

NMA supports EPA's decision to establish only a limited set of HRIs as the BSER. A more open-ended definition of the BSER would be ripe for abuse by allowing anti-coal interests to demand a nearly endless review of all potential HRI possibilities, regardless of potential feasibility or cost-effectiveness. EPA's defined list of HRIs is far more appropriate than a more generic statement—it inherently recognizes that, in establishing a standard of performance based on the BSER, a state's analysis must at some point come to an end. By limiting the HRI

[12] 83 Fed. Reg. at 44767, n.37 ("While CAA section 116 allows for states to adopt more stringent state laws, and provides that the CAA does not preempt such state laws, it does not provide that those more stringent standards are federalized.").

candidate technologies list to those most likely to be available, feasible, or cost-effective, EPA has appropriately asked states to focus on the options most likely to provide the improvements ACE is intended to achieve, without chasing options unlikely to make any real difference.

**A. CCS and Co-Firing Are Not the BSER.**

In determining that HRIs are the BSER for existing power plants, EPA appropriately rejected other alternatives that cannot be the BSER. First, EPA rightly rejected carbon capture and sequestration (CCS) because it has not been sufficiently demonstrated. (C-17). NMA provided detailed comments on the many reasons why CCS cannot be the BSER in its comments on the CPP, which were also provided as comments on EPA's ANPR, and NMA incorporates and attaches those comments once again here.[13] In brief, the various components of CCS have never been successfully implemented individually in practice, much less together as a functioning system, absent highly unique circumstances and significant financial support from the government. Accordingly, NMA supports EPA's reaffirmation that CCS is not sufficiently demonstrated or cost-effective to constitute the BSER.[14]

NMA also supports EPA's decision to reject "co-firing" as part of its BSER determination, notwithstanding the fact that the practice has been demonstrated at some facilities. (C-17). NMA agrees with the many reasons provided in EPA's preamble that justify rejecting co-firing as the BSER. First, co-firing may not be available in all areas of the country with units that are subject to ACE. Many areas do not have sufficient biomass or access to natural gas pipelines for co-firing to be reasonably feasible. Second, co-firing is likely too costly to be the

[13] Comments of National Mining Association on Advanced Notice of Proposed Rulemaking on State Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units, 82 Fed. Reg. 61507 (Dec. 28, 2017), EPA-HQ-OAR-2017-0545-0174, at 6-7 & Attachment A.

[14] 83 Fed. Reg. at 44761 ("EPA has previously determined that CCS (or partial CCS) should not be a part of the BSER for existing fossil fuel-fired EGUs ….").

BSER for most sources. Before co-firing can be implemented, extensive work is typically needed to modify the boiler by installing new fuel delivery, processing, and combustion equipment, and by altering any other components of the boiler that might be negatively affected by changes in firing temperature, combustion byproducts, and any other characteristics of the new fuel. Third, the rejection of co-firing is consistent with EPA's determination that the BSER should not "redefine the source," since co-firing essentially amounts to a partial fuel conversion. That well-understood concept underlies many other CAA programs, and EPA was right to respect that principle in ACE as well. Fourth, even at units where it could be implemented, co-firing would likely reduce the efficiency of those units, which would counteract the far more effective (and cost-effective) HRI measures that EPA has determined to be the BSER.

**B. A Presumptive Methodology Would Be More Limiting than Helpful.**

NMA agrees with EPA's decision not to adopt a presumptive standard or methodology for states to follow in formulating standards of performance. (C-14). While a formulaic and presumptively approvable methodology might provide the benefit of certainty, it would inevitably come at the cost of the very flexibility and state discretion that ACE and Section 111(d) are designed to preserve. EPA is right to worry that a presumptive methodology would "ultimately be more limiting than helpful,"[15] as that is exactly the result that has occurred in similar contexts. In the regional haze context, for example, EPA adopted a presumptive methodology to assist states in identifying the "best available retrofit technology," but later treated those "BART guidelines" (and even other uncodified documents cited in those "guidelines") as if they were mandatory—even for units that the "guidelines" were not intended

[15] 83 Fed. Reg. at 44764 ("EPA believes that such a presumptive standard could be viewed as limiting a state's ability to deviate from the prescribed methodology and that the approach could ultimately be more limiting than helpful.").

to cover. EPA then used any minor variance from those "guidelines" as an opportunity to supplant the state's judgment with its own policy choices, often imposing billions of dollars in additional control costs that the states had deemed unwarranted. Presumptive methodologies also arguably could contravene the statute by determining the degree of emission limitation a unit could achieve only by examining past performance, instead of examining the potential for improving that performance via the BSER.

EPA's list of seven "candidate technologies" in ACE is preferable to a presumptive methodology in that it tells states *what* to consider as the BSER, not *how* to apply that BSER. The approach is an appropriate reflection of EPA and state roles under the Section 111(d) program—EPA selects the BSER; states apply the BSER. The approach is particularly appropriate in the context of efficiency-based standards for electric generating units (EGUs), given the wide diversity of efficiency levels among EGUs and the wide range of factors that can affect those efficiency levels, many of which are beyond the control of the source. Even if some consistent methodology could be developed for identifying an EGU's HRI potential (which does not appear to be possible), states would still have to consider other source-specific factors, including HRI projects the EGU has previously undertaken, remaining useful life, and other relevant economic considerations, which would significantly reduce the potential utility of any presumptively approvable methodology.

For much the same reason, NMA supports EPA's rejection of both the CPP "building block 1" approach to HRIs[16] and the "best historical rate" approach for "modified" EGUs subject to Subpart TTTT.[17] Both rely on assumptions that may not apply to all EGUs—"building block

[16] 83 Fed. Reg. at 44756 ("EPA believes that building block 1, as constructed in CPP, does not represent an appropriate BSER, and ACE better reflects important changes in the formulation and application of the BSER in accordance with the CAA.").
[17] 40 C.F.R. Part 60 Subpart TTTT, Table 1.

1" of the CPP was based on assumptions accumulated at the interconnection level (and ultimately ignored two of the three interconnections), while the "best historical rate" approach assumes that an EGU can do no better than, and must do no worse than, what the unit has done in the past regardless of the unit's current or future circumstances. While historical performance is undoubtedly relevant, BSER must be forward-looking. Thus, although some units may be unable to do any better than past or current performance, states should at least examine whether better performance is possible in the future with the BSER. Moreover, both the CPP "building block 1" approach and the Subpart TTTT "best historical rate" approach would fail to leave room for a state to consider the remaining useful life of an EGU or other source-specific factors, as Section 111(d) not only permits but requires. Thus, the assumptions inherent in either one of those approaches would severely limit the state authority and discretion that Section 111(d) promises and ACE, as proposed, finally delivers.

**C. An Efficiency-Based Standard is Needed to Implement the Efficiency-Based BSER.**

NMA agrees with EPA that states should implement the standards they set with a single, common metric that reflects the underlying purpose of the standard itself. Since the focus of EPA's BSER determination is reduced $CO_2$ emissions through improved efficiency, the best metric for the job is what EPA proposed: pounds of $CO_2$ per megawatt-hour (lb/MWh). (C-15). EPA's chosen metric of lb/MWh directly measures the efficiency with which a unit produces energy relative to the amount of $CO_2$ emitted, and therefore measures exactly what ACE is designed to do—reduce emissions per unit of electricity produced. Allowing standards to be crafted in any other metric would almost certainly have unintended consequences that are inconsistent with ACE.

For example, if states were allowed to impose a standard in the metric of tons of $CO_2$ per year (tpy), the standard would function as an annual cap on operations and provide no basis for

determining whether the unit's level of efficiency has improved, degraded, or stayed the same. As an annual cap on operations, a tpy metric would be directly inconsistent with EPA's recognition that "reduced utilization is not a valid system of emission reduction for purposes of establishing a standard of performance" for existing coal-fired power plants.[18] While an annual cap on emissions and operations *might* encourage greater efficiency, it might not, since a significant economic incentive for efficiency already exists, and the many other factors that affect tpy may confound efforts to evaluate efficiency levels (*e.g.*, overall demand for electricity). On the other hand, EPA's chosen lb/MWh metric would focus on how well a unit is actually achieving the improvement targeted by the BSER in ACE.

Although some state law-based programs already regulate $CO_2$ in terms of tpy, such as the Regional Greenhouse Gas Initiative, the requirements of such programs are simply incompatible with the BSER that EPA has identified in ACE. Programs based on tpy are designed for and intended to cap and reduce emissions, even at the cost of reduced fossil fuel generation, rather than identify a reasonable "standard of performance," which is all Section 111(d) authorizes and requires. Regardless of any existing or future state law programs that require what Section 111(d) cannot, EPA should implement Section 111(d) in a manner consistent with the statutory text, as proposed in ACE. Thus, EPA should reject the likely calls from states with tpy-based programs asking EPA to approve those programs as part of an ACE plan. Approval of such programs under ACE would "federalize" state programs that are not consistent with the mandates of Section 111(d). While EPA must be careful not to override state decisions, EPA must also guard against the reverse—allowing states to override EPA's selection

[18] 83 Fed. Reg. at 44754.

of the BSER by seeking approval of plans that completely ignore the authority EPA has properly exercised under the statute.

In sum, NMA supports EPA's proposed procedure of requiring states to begin with the "menu" of seven "candidate technologies" and end with a standard of performance in lb/MWh. NMA agrees that everything in between should remain within each state's discretion, so long as the policy choices made are consistent with the statute and reasonable under the facts and circumstances specific to each unit, and so long as states are not permitted to federalize state and regional cap-and-trade programs.

### D. EPA Should Codify ACE in Subpart UUUU, Overwriting the CPP.

EPA has proposed to codify ACE in a new Subpart UUUUa instead of truly replacing the CPP by codifying ACE in the Subpart UUUU, where the CPP currently resides. EPA's repeal proposal also failed to include proposed changes to any regulatory text. Thus, EPA's actions, if finalized as proposed, could leave two conflicting regulations on the books—the CPP in Subpart UUUU, and ACE in Subpart UUUUa. To avoid confusion, EPA should either codify ACE in Subpart UUUU, thus overwriting the CPP, or separately confirm that the CPP provisions in Subpart UUUU will be deleted and replaced with "Reserved." There exists no logical or legal basis for leaving the CPP in place, given that ACE is intended to "replace" the CPP.

## IV. REQUIREMENTS FOR STATE PLANS

In general, NMA supports EPA's decision to return to states the full authority assigned to them under Section 111(d) with respect to the development of the state plans to implement the BSER chosen by EPA. As noted above, that authority is not unbounded and is subject to important statutory constraints. Within those constraints, however, states should have free reign to reasonably determine what standards are appropriate for the EGUs within their borders based on the source-specific characteristics of each individual EGU.

### A. State Plan Development and Approval Timeframes

As an initial matter, NMA supports EPA's decision to extend the timeframes for developing and seeking approval of a state plan through its proposed revisions to Subpart B. (C-52, 53). The previous timeframes, first set decades ago, are far too short for the more complex analyses needed today. The new timeframes proposed are more appropriate, as they reflect the planning time typically afforded states to address new air quality requirements, which have only grown more and more complex over time. Particularly in light of limited state (and EPA) resources, the new timeframes will ensure the analysis is not rushed, which should reduce the risk that mistakes will be made that would later require even more work to correct.

However, NMA asks EPA to clarify that state plans are not effective until EPA approval. Thus, the compliance timeframes included in each state plan—which may be up to or, in some circumstances exceeding, 24 months—should not begin until EPA's approval is final and published in the Federal Register. Otherwise sources may be forced to comply with a standard that EPA may find to be in need of revision, resulting in wasted effort to comply with what could be the wrong standard. Given the significant expense associated with some of the upgrades recommended in ACE, EPA should give states and sources greater certainty by requiring compliance only after approval of each state's plan.

### B. EPA Should Not Allow Averaging or Trading Across Sources.

NMA agrees with EPA's decision to allow averaging across affected units within a single stationary source. (C-28, 29). Because Section 111(d) regulates at the individual source level, individual sources should be free to determine how best to comply with the standards applicable to the units within the source. Intra-source averaging is also consistent with the *Chevron*

decision, in which the Supreme Court approved EPA's use of the "bubble concept" in air quality regulations.[19]

For the same reason, however, NMA also agrees with EPA's decision to disallow averaging or trading across multiple stationary sources. (C-32). Trading is inconsistent with the source-by-source approach of the rule. Under ACE, consistent with Section 111, each source must make whatever cost-effective efficiency improvements are justified under the BSER, eliminating any need for trading or averaging across sources. Thus, unlike more generic and broadly applicable standards commonly found under the CAA, it should not be possible, at least on a cost-effective basis, for a source either to under- or over-achieve its own individually-tailored ACE standard. Under these circumstances, trading or averaging seems not only inappropriate but infeasible because there should be no credits available and no source should need them.

Of course, credits would be generated if a source shuts down, but that fact further serves to demonstrate the inappropriateness of trading under ACE. As EPA says, Section 111(d) does not authorize EPA to curtail a source's operations; EPA therefore should not create incentives for that result. Conversely, sources that buy credits from a shut-down source would not make the efficiency improvements Section 111(d) requires. That result is contrary to the source-by-source approach of the rule.

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[19] *See Chevron, U.S.A., Inc. v. Natural Resources Defense Council*, 467 U.S. 837 (1984) (upholding EPA's use of the bubble concept because the statute "simply does not compel any given interpretation of the term 'source'"). EPA has applied the term "source" in the manner best suited to the policy task at hand, an approach recently endorsed twice more by the Supreme Court in the context of CAA regulations. *See Environmental Defense v. Duke*, 549 U.S. 561 (2007) (upholding EPA's different interpretation of the term "modification" in the CAA based on the principle that "[a] given term in the same statute may take on distinct characters from association with distinct statutory objects calling for different implementation strategies." *See also UARG v. EPA*, 134 S.Ct. 2427 (2014) ("a statutory term 'may take on distinct characters from association with distinct statutory objects calling for different implementation strategies'").

## C. EPA Should Confirm that ACE Does Not Establish a Mandatory Stringency Level.

In the ACE preamble, EPA refers to the possibility that some standards adopted by a state might be "less stringent" than EPA's emission guidelines, to the extent that EPA grants the state a "variance" from an otherwise more stringent standard.[20] In order to qualify for a variance allowing a "less stringent" standard, EPA notes that a variance procedure will apply, requiring the submission of additional information justifying the need for the standard to be "less stringent."[21] Those statements are potentially confusing because they could possibly be read as assuming that ACE establishes a particular level of stringency.

NMA does not read ACE as requiring any predetermined level of stringency for any particular source. Instead, states, in applying the BSER factors and considering remaining useful life and other relevant factors, must determine an appropriate standard of performance on a source-by-source basis. (C-23, 57). Nevertheless, while NMA understands what EPA means when it refers to "variances" and "less stringent" standards, NMA believes that these references could be confusing. Therefore, NMA asks EPA to clarify that its reference to "less stringent" standards does not mean that EPA has a predetermined notion as to how stringent state standards need to be. Instead, EPA's role will be to ensure that states reasonably apply the BSER factors and establish achievable standards consistent with the statute.

Relatedly, NMA is concerned that the cost and efficiency improvement percentages provided in the preamble for each candidate technology could be misinterpreted as a benchmark

[20] 83 Fed. Reg. at 44764 ("[S]tates may take into consideration other factors, including remaining useful life, when applying unit-specific standards of performance. Consideration of these factors may result in the application of the standard of performance in a less stringent manner than would otherwise be suggested by strict implementation of the BSER technologies.").

[21] 83 Fed. Reg. at 44766 ("Other factors specific to the facility (or class of facilities) that make application of a less stringent standard or final compliance time significantly more reasonable. … Accordingly, EPA proposes that these factors are the types that are specific to the facility (or class of facilities) that make a variance from the emission guideline significantly more reasonable, as allowed under proposed 40 C.F.R. 60.24a(e)(3).").

to define the level of stringency set by the emission guidelines. (C-7). For example, the preamble indicates that a steam turbine blade path upgrade for a 500 MW unit is expected to cost $44.6 per kilowatt of capacity (which would amount to $22,300,000) and result in a HRI of 2.9 percent (the most of any of EPA's candidate technologies). NMA understands the values to be estimates of what EPA has identified to be available, not benchmarks to meet in demonstrating that a standard is as "stringent" as ACE. NMA requests that EPA clarify this intent.

**D. To Be Achievable, Standards Need A Compliance Margin.**

EPA should specify in the final rule that states will be allowed to provide sources with some margin for compliance with the standards of performance they will adopt under ACE. A margin of compliance is needed to ensure the standards states set will be achievable due to the unique circumstances facing coal EGUs in trying to operate as efficiently as possible. (C-25).

First, compliance margins are often applied under other CAA programs, including both site-specific emission limitations (*e.g.*, "best available control technology") and in EPA's own federal standards for specific source types (*e.g.*, "maximum achievable control technology"). For example, EPA's $CO_2$ standard for new gas-fired combined cycle units of 1000 lb/MWh included what EPA described as a "very significant compliance margin."[22] In addition, EPA recognized the importance of compliance margins in its "Mercury and Air Toxics Standards" for EGUs.[23] A similar margin is needed under ACE.

[22] *Standards of Performance for Greenhouse Gas Emissions From New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units, Final Rule*, 80 Fed. Reg. 64510, 64618 (Oct. 23, 2015) ("[T]he final emission standard includes a very significant compliance margin to account for any potential future degradation of large units.").

[23] *See, e.g.*, 76 Fed. Reg. 24976, 25066-68 (May 3, 2011) ("[T]he numerical standard should account for variability in today's $SO_2$ control technologies and provide sufficient *compliance margin* …. Proposing a more stringent standard might not provide sufficient *compliance margin* to account for expected variability in the long term performance of $NO_x$ controls. … Due to the limited availability of CO CEMS data and to account for potential variability we are not aware of, we have concluded it is appropriate in this case to propose a standard with sufficient *compliance margin* to not inhibit the ability of owner/operators of EGUs to comply.") (emphasis added).

Second, without a sufficient compliance margin, the natural variability of a unit's efficiency levels could result in a violation through no fault of the source owner. This concern, while common to all not-to-exceed standards and limits, is of particular concern for ACE because not all of the efficiency projects selected as the BSER will actually achieve the benefits they are intended to achieve. HRI projects are not like traditional air emission control technologies in that they don't directly control $CO_2$ emissions from the unit. Instead, they are designed to improve heat rate, which is impacted by numerous other factors at the unit, some controllable and others uncontrollable. Inevitably, some projects are likely to fall short of the expected improvement. While equipment vendors may make optimistic promises, based on their experience in developing the upgrades they sell in a controlled research and development setting, the promised benefits often fail to materialize. Even when vendors make binding guarantees that result in significant financial penalties if missed, misses still occur. And even where an upgrade may initially provide the improvements sought, those benefits often fade over time with natural equipment degradation and can entirely disappear within a matter of years. Those benefits may also disappear if something unexpectedly and uncontrollably reduces efficiency just as an equipment upgrade seeks to improve efficiency.

Third, at least some of the projects EPA has selected as the BSER promise efficiency improvements too small to make a meaningful difference capable of being reliably measured. For example, the preamble indicates that air heater upgrades may achieve only a tenth of a percent of improvement, which would be only 10 British thermal units per kW for a unit with a typical heat rate of around 10,000 btu/kW, an amount that would almost certainly be swamped by the natural variability of the unit's efficiency level.

Given these issues, states need flexibility to include a compliance margin in establishing an ACE standard for individual units in the first instance. For example, the standard identified could be increased by a reasonable amount to allow for natural variability and unforeseen impacts to efficiency levels. In addition, states need the flexibility to adjust the standards of performance they impose on a unit if, even after installing the BSER, the state determines that compliance is no longer achievable because of causes not attributable to the source owner. If a source exceeds the standard because of factors over which the owner had no control (such as natural degradation of equipment, a change in fuel quality, or some other unforeseen and unavoidable factor), an exceedance of the standard should not be deemed a violation. Instead, EPA and states should recognize a revision of the standard is needed for it to remain achievable.

EPA's ACE preamble contains several statements that could be misconstrued as prohibiting any compliance margin under ACE. Specifically, in discussing the standard for units that have already installed all of the BSER technologies, EPA states the following: "EPA would expect that a state set a standard of performance that would reflect an emission rate that is at least as stringent as 'business as usual' for that source without allowing for any backsliding on performance."[24] NMA agrees with the overall intent of this statement. At the same time, however, EPA must recognize that natural variability and degradation in efficiency levels are unavoidable and therefore "business as usual" for the units that ACE will cover. In fact, efficiency levels tend to rise and fall in concert with the periodic outages EGU owners use to maintain the performance of their units, most of which are scheduled on one to two-year intervals. That unavoidable ebb and flow, in additional to natural variability and unavoidable degradation, is common to all of the sources to which ACE will apply. Thus, a compliance

[24] 83 Fed. Reg. at 44766.

margin would in fact be "as stringent as 'business as usual'" for EGUs, though EPA's statement gives the opposite impression.

To address this issue, NMA asks EPA to allow states to measure compliance over a longer period of time to smooth out unexpected and unexplainable variations in efficiency levels. But even that flexibility would not go far enough because variability is not the only concern. While longer averaging times smooth out variability, they do not address natural degradation. If future efficiency levels truly drop below where they were in the past, no amount of averaging will bring the efficiency level back to where it was expected to be. Therefore, EPA should clarify that states are authorized to, and should, consider including appropriate compliance margins to ensure the standards they set are achievable by the units to which they apply.

**E. NMA Supports EPA's Other Revisions to the General Regulations.**

In ACE, EPA has proposed to make a wide variety of other changes to Subpart B by adopting a new Subpart Ba with clarified terms and procedures.[25] NMA supports those proposed revisions because they provide a much needed update to the current regulations that pre-date key amendments to the CAA and thus do not reflect the statute as it stands today. The revisions also ensure the regulations are more clearly in line with EPA's historical interpretation of Section 111, reaffirmed in ACE, which recognizes Congress intended for BSER to be applied at a source. In particular, NMA supports EPA's decision to clarify the terms and definitions in Subpart Ba, such as "guideline document" and "standard of performance" to clarify that no presumptive standard is necessary for Section 111(d) emission guidelines. NMA also supports EPA's decision to eliminate the unnecessary and unjustified distinction between health-based and welfare-based pollutants, for which there is no basis in the statute.

[25] 83 Fed. Reg. at 44770-71.

## V. NEW SOURCE REVIEW REFORM

ACE includes a proposal to revise EPA's test for determining whether electric generating unit projects trigger NSR pre-construction permitting requirements.[26] NMA heartily supports the general concept underlying EPA's proposed NSR reform. As EPA states, the NSR program has long served as a significant disincentive for coal-fired EGUs to make efficiency improvements, and, without NSR reform, the full benefits of ACE will not be realized. NMA also agrees that that NSR permitting costs are real and must be considered in any realistic cost-effectiveness analysis for the equipment upgrades that ACE requires states to consider. (C-60). In the following sections, NMA further explains its support for NSR reform, but asks EPA to make certain changes to the proposal to better accomplish the intended objective.

### A. Support for NSR Reform

NMA agrees NSR reform is needed, not just because of ACE, but because the program has caused significant uncertainty and controversy for so many years. Ever since EPA began using NSR as a tool for forcing significant emission reductions (which the program was never intended to do[27]), NSR has been the most heavily litigated program under the CAA.[28]

At a high level, NSR may seem simple—it requires those either constructing or modifying a major source of emissions to demonstrate that the project will not significantly degrade air quality and install the best available control technology. In practice, however, the program has become unreasonably complex. Compliance with NSR can take three years or

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[26] 83 Fed. Reg. at 44773-83.

[27] *See, e.g.*, *Prevention of Significant Deterioration, Nonattainment New Source Review, and New Source Performance Standards: Emissions Test for Electric Generating Units*, 70 Fed. Reg. 61081, 61,083 (Oct. 20, 2005) ("The central policy goal [of the major NSR program] is not to limit productive capacity of major stationary sources, but rather to ensure that they will install state-of-the-art pollution controls at a juncture where it otherwise makes sense to do so.").

[28] Since 1999, there have been at least 42 federal district court decisions, ten appellate court decisions, and two U.S. Supreme Court decisions involving NSR enforcement actions or rulemaking challenges, and several cases remain currently active.

more,[29] and the cost of the required "cost-effective" controls can exceed the cost of the project under review itself. Thus, determining the applicability of these onerous permitting requirements has become a critical question in the project planning process, particularly for coal plants, nearly all of which are "major sources" under the statute.[30]

Like EPA, NMA believes that NSR has discouraged coal-fired power plants from undertaking beneficial efficiency, reliability, and safety projects for many years. Unfortunately, the current test discourages such projects because an emissions increase, and therefore the applicability of onerous permitting requirements, is determined by comparing a source's actual pre-project and post-project annual emissions. This annual test is problematic for coal unit efficiency projects in particular because, as EPA notes, an increase in a coal unit's efficiency that lowers a unit's hourly $CO_2$ emissions per MWh could, at least theoretically, result in an increase in the unit's annual $CO_2$ emissions if the unit operates more during a year due to its lower operating costs. If this were to occur, the more efficient plant would most likely displace generation from less-efficient coal plants, resulting in lower emissions overall on both an annual and hourly basis, but that offsetting effect is ignored in determining NSR applicability. EPA has stated many times in the past that NSR should not discourage beneficial projects,[31] but the current annual emissions test for applicability, and the uncertainty surrounding that test, continues to have that effect.

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[29] 83 Fed. Reg. at 44776.

[30] Because the term "major source" is defined to include fossil-fuel fired steam electric plants with a capacity of more than 250 million British thermal units per hour (mmBtu/hr) heat input that emit more than 100 tons per year (tpy) of any air pollutant, nearly all coal-fired power plants constitute a "major source." *See* 42 U.S.C. § 7479(1) *and* 40 C.F.R. § 52.21(b)(2).

[31] *See, e.g.*, 70 Fed. Reg. at 61093 ("We do not want to discourage plant owners or operators from engaging in activities that are important to restoring, maintaining, and improving plant safety, reliability, and efficiency. Uncertainties inherent in the current major NSR permitting approach can exacerbate the reluctance to engage in these activities.").

To reduce the negative incentives associated with the annual test, NMA supports adding a maximum hourly emission rate applicability test, as EPA originally proposed in 2005, re-proposed in 2007, and has now re-proposed again within ACE. (C-61, 67). An hourly applicability test would allow coal plants to perform efficiency projects that do not increase maximum hourly emissions, regardless of whether such projects might create an incentive to operate the more-efficient unit more often than other less-efficient units over the course of a year. With a new hourly test option, NSR would no longer discourage projects that actually reduce an EGU's emissions on an hourly basis, including the very kinds of projects that ACE will require.

Without NSR reform, NMA agrees with EPA that the benefits of ACE could be less than they otherwise would be.[32] The costs of complying with NSR are significant and would likely swamp the costs of the BSER projects themselves. (C-59). Even just the possibility that an HRI project might trigger NSR would add cost and complexity to the process. To be complete, each state's analysis of the seven candidate technologies that comprise the BSER would need to include an NSR applicability determination and, for any projects that arguably could trigger NSR permitting, an analysis of the additional cost likely to result. Failure to account for those costs would result in an unrealistic evaluation of whether the BSER technologies are cost-effective and therefore appropriate for a particular EGU. Under the current annual test, the applicability determinations would add unnecessary burden to the states' planning processes and would likely result in rejection of some of the candidate technologies on the basis of cost, thus foregoing the benefits they might otherwise generate. EPA is right to identify these concerns.

[32] *See* 83 Fed. Reg. 44783-790 (comparing potential costs and improvements with and without NSR reform).

An hourly test, on the other hand, would resolve many of these concerns. First, if crafted properly, an hourly test would be easier to apply and would simplify the process for states and sources in determining whether ACE projects must account for NSR compliance costs. (C-60). Second, the test would eliminate the disincentive against efficiency projects that the annual applicability test creates. Since operating more efficiently, by definition, would improve overall environmental performance (a fact inherent in the design of ACE itself), efficiency projects should be encouraged, not discouraged.

Contrary to the arguments of those likely to be critical of NSR reform generally, an hourly test would be just as protective of air quality. (C-65). There is no reason why an annual emission rate is any more protective than an hourly emission rate. Even though annual values are often referred to as "total" emissions, and hourly values are often referred to as an emission "rate," that distinction is entirely semantic and misleading. In truth, both are emission "rates," in that they reflect mass emitted per unit of time (either per hour or per year). The only real question then is whether the unit of time upon which the metric is based is an appropriate reflection of potential environmental impacts. Given that most national ambient air quality standards (NAAQS) are defined by units of time that are far shorter than a year (*e.g.*, 1-hour nitrogen dioxide, 1-hour sulfur dioxide, 8-hour ozone, and 24-hour fine particulate matter),[33] an hour is at least as relevant in evaluating potential health and environmental impacts as a year.[34]

[33] *See* https://www.epa.gov/criteria-air-pollutants/naaqs-table (providing the averaging time, level, and form for each NAAQS). Only two NAAQS are based on an annual averages, and both of those have already been fully met in nearly every area of the country. *See* https://www.epa.gov/green-book (containing maps indicating the vast majority of the country has attained the annual standards for fine particulate matter and indicating that all areas have attained the annual standard for nitrogen dioxide).

[34] Whether the NSR applicability test is based on an hour or a year of time is of course irrelevant with respect to $CO_2$ emissions because the Supreme Court has held that increases in greenhouse gases alone do not trigger NSR. *UARG v. EPA*, 134 S.Ct. 2427 (2014) ("[EPA] may not treat greenhouse gases as a pollutant for purposes of defining a "major emitting facility" (or a "modification" thereof)").

That said, NMA also agrees with EPA's decision to retain the current annual emissions test. The annual test will continue serve an important purpose by ensuring that the *de minimis* thresholds[35] and netting procedures[36] that EPA has already adopted, and that the courts have approved,[37] remain in place. NMA believes the two tests will work well together—NSR permitting should only be required if *both* (1) the project increases hourly emissions, which are relevant to most of the ambient air quality standards and reflect significant change in the actual emissions profile of an individual unit, *and* (2) the sum total of all of the contemporaneous source-wide emission changes result in an increase that is significant enough to warrant an NSR permit. Only through the combination of both tests will NSR permitting truly serve its intended purpose.

### B. NMA Supports EPA's Maximum Achieved Hourly Rate Test, But EPA Must Revise Its Proposal to Account for Causation and Data Variability.

Since an hourly test will facilitate implementation of beneficial projects, including those required by ACE, and since an hourly test aligns well with the metrics EPA has used to define most of the ambient standards for clean air, NMA fully supports EPA's effort to reform the NSR program by adopting an hourly test. However, for the reasons explained below, the specific options that EPA has proposed in ACE will not work absent changes. Both the preamble discussion and the regulatory text of the ACE NSR reform proposal are taken largely verbatim from a 2007 supplemental notice of proposed rulemaking, which offered twelve different alternatives. ACE includes only three of those alternatives, but all three are likely to be

[35] 40 C.F.R. § 52.21(b)(23).
[36] 40 C.F.R. § 52.21(b)(3).
[37] *Alabama Power Co. v. Costle*, 606 F.2d 1068, 1081 (D.C. Cir. 1979) ("EPA has authority to exempt from scrutiny De minimis emission increases caused by 'modification' of a stationary source. … [G]iven a concept of 'stationary source,' the 'modification' of the source has two components: (1) there must be a physical change in or a change in the method of operation of a stationary source; and (2) there must be a net increase in the potential to emit any air pollutant. A series of contemporaneous changes in the source does not qualify as a "Modification" within the meaning of the PSD part if it does not result in a net increase in the source's potential to emit any air pollutant. ").

problematic. Thus, NMA recommends that EPA revise the proposed test to better assess whether an increase in maximum hourly emissions actually will occur, or has occurred, as a result of the project.

**1. Causation is Critical.**

The most significant concern presented by EPA's proposed hourly test alternatives is the absence of any provision requiring EPA, states, and source to consider whether a project under review will result in, or cause, an emissions increase. As EPA, states, federal courts, and the regulated community have understood for decades, a project triggers NSR permitting requirements *only* if the project *causes* an emissions increase.[38] Thus, if a coal plant undertakes an efficiency project today and there is a post-project increase in emissions tomorrow, NSR permitting should not be required for the efficiency project if the increase in emissions is the result of other independent factors, such as a change in coal characteristics.

EPA's proposed hourly test alternatives, however, do not directly address causation at all. To justify this omission, EPA repeats statements made in its 2007 notice that claim causation is less likely to be relevant under a maximum hourly emission rate test. This justification is misguided. Just like annual emission rates, maximum hourly emission rates could increase after a project for a variety of reasons entirely unrelated to any project. For example, if the coal utilized by a power plant contains slightly higher sulfur levels after an efficiency project than before, the EGU's maximum hourly $SO_2$ emissions rate might rise incrementally, but not because of the project. Even more concerning is the potential effect of a monitor recalibration that might cause the data recorded by continuous monitors to appear higher than before, even

[38] *See* 42 U.S.C. § 111 & 169 (defining "construction" and "modification" as a change that "increases" emissions). *Accord New York v. EPA*, 413 F.3d 3, 32 (D.C. Cir. 2005) (noting that even the petitioners challenging EPA's "demand growth exclusion" did not challenge EPA's fundamental interpretation of the statute as requiring a "causal link between the proposed change and any post-change increase in emissions").

though no actual change in emissions has occurred. To be consistent with the statute, EPA's reform rule must be revised to make clear that maximum hourly emission rate increases will only trigger NSR if they are caused by a project. Without a provision on causation, the hourly test will be of little use.

To address causation, EPA must include a provision recognizing that post-project emission increases do not constitute a "major modification" unless they are caused by a project that is subject to review. Just as the current regulations do not automatically assume that any increase that actually occurs after a project is necessarily attributable to that project,[39] so too must the proposed NSR reform regulations require a causal link between any actual emissions increase and a project preceding that increase.

The concept of causation is also critically important in determining, before a project is constructed, whether that project is likely to result in an emissions increase once it is installed. Before a project is completed, no post-project data are available to compare against pre-project data to identify possible emissions implications. Instead, a prediction must be made. In making that prediction, the source should focus on the impact of the project under review by assuming all other factors will remain constant but for those cause by the project. Otherwise, any projected increase in emissions would trigger permitting for every proposed project, regardless of the reason for the increase, which would be inconsistent with the statute and long-standing EPA policy. Thus, EPA must recognize that causation is critical in both projecting emissions pre-project and evaluating emissions post-project.

[39] *See, e.g.*, 40 C.F.R. § 52.21(a)(2(iv)(a) ("The project is not a major modification if it does not *cause* a significant emissions increase. If the project *causes* a significant emissions increase, then the project is a major modification only if it also *results in* a significant net emissions increase.") (emphasis added) *and* 40 C.F.R. § 52.21(r)(6)(v)(c) (requiring an "*explanation* as to why the emissions differ from the preconstruction projection") (emphasis added).

### 2. NMA Supports a Maximum "Achieved" Hourly Test.

The first of EPA's three NSR reform alternatives in ACE would measure an increase in emissions by examining whether a project could increase the maximum hourly emission rate that is "achievable" by a unit, while the other two alternatives examine whether the project would increase hourly emissions at the unit beyond the rate that the unit has actually "achieved" in the previous five years. While the "achieved" test quite clearly relies on emissions data actually recorded by continuous emissions monitors or other measurements at the source, the "achievable" test could be viewed by some as inconsistent with certain statements contained within the D.C. Circuit's 2005 *New York* opinion.[40]

Recognizing this concern, EPA attempts to characterize its "achievable" test as a test based on what a unit is "*actually* able to emit."[41] EPA also suggests the achievable test is similar to an "achieved" test because EGUs are likely to have actually "achieved" whatever was "achievable" during the baseline period.[42] NMA believes these arguments gloss over important differences between an "achievable" and "achieved" test and the fact that the latter at least appears more consistent with the D.C. Circuit's *New York* opinion. Accordingly, NMA asks EPA to recognize those differences instead of ignoring them (C-63, 64).

That said, NMA believes that an "achievable" test is lawful under the statute. The relevant statements in the *New York* opinion referenced above are dicta. That case concerned whether EPA may use a particular "status" (*i.e.*, "Clean Unit") to determine NSR applicability; the question whether EPA may define NSR applicability based on "achievable" or "achieved" emissions was not before the court. Contrary to the dicta in *New York*, nothing in the CAA

[40] *See New York*, 413 F.3d at 38-40.
[41] 83 Fed. Reg. at 44779 (emphasis added).
[42] *Id*.

clearly constrains EPA's authority to adopt an "achievable" applicability test for NSR. Numerous federal court decisions have held that EPA has significant discretion in deciding how to determine whether an "emissions increase" has occurred.[43] With that discretion, EPA has previously adopted an "achievable" test for EGUs under Section 111 that has worked well for decades.[44] Since the NSR applicability provision in the CAA is really nothing more than a cross-reference to the applicability provisions of Section 111, the Supreme Court has likewise recognized EPA's discretion to define what emission increases result in a "modification" and implicitly endorsed EPA's authority to define NSR applicability via "achievable" emissions.[45]

Nevertheless, an "achievable" test is likely to be controversial in light of the dicta in *New York*. The legal battles sure to arise over any NSR reform rule suggest that EPA should select the option that will be the most easily defended, provided it will still accomplish the intended objective of removing unnecessary impediments to beneficial projects, like the efficiency projects required by ACE. While the "achievable" and "achieved" options are quite different, both will serve EPA's intended goal of facilitating efficiency, reliability, and safety projects, since those projects should not increase maximum hourly emission rates under either alternative. Under these circumstances, NMA asks EPA to adopt an "achieved," not an "achievable," test.

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[43] *See, e.g., New York v. EPA*, 413 F.3d 3, 22-24 (D.C. Cir. 2005) ("While the CAA defines a 'modification' as any physical or operational change that 'increases' emissions, it is silent on how to calculate such 'increases' in emissions. … Congress did not specify how to calculate 'increases' in emissions, leaving EPA to fill in that gap while balancing the economic and environmental goals of the statute.") (citations omitted).

[44] 40 C.F.R. § 60.14(h) ("No physical change, or change in the method of operation, at an existing electric utility steam generating unit shall be treated as a modification for the purposes of this section provided that such change does not increase the maximum hourly emissions of any pollutant regulated under this section above the maximum hourly emissions *achievable* at that unit during the 5 years prior to the change.") (emphasis added).

[45] *Envtl. Def. v. EPA*, 549 U.S. 561, 576 (2007) (recognizing "EPA's construction [of the statutory term "modification"] need do no more than fall within the limits of what is reasonable, as set by the Act's common definition," and suggesting that it would "sound[ ] right" for EPA to first require a project to be a "modification" under NSPS before it can be a "major modification" under NSR).

### 3. Both of the Proposed "Achieved" Tests Have Significant Flaws.

The other two hourly tests offered in ACE are based on "achieved" emissions because they rely on recorded data from continuous emission monitors and other measurements. Both begin with a "baseline" maximum hourly emission rate but differ with respect to how sources must determine that "baseline." One of those "achieved" tests focuses on the single highest hour of emissions in the five years preceding the project. The other requires the following analysis:

(1) collect hourly data from a 365-day period in the five years preceding the project;
(2) remove unrepresentative data (*e.g.*, startups, shutdowns, and malfunctions);
(3) extract the data for the 10 percent of hours corresponding to highest heat input;
(4) calculate the average of the extracted data;
(5) calculate the standard deviation of the extracted data;
(6) use the average and standard deviation to calculate the 99.9 percentile upper tolerance limit (UTL) at a 99 percent confidence level.[46]

This statistical approach is intended to identify a baseline value that is higher than 99.9 percent of the individual data points in the dataset. Stated in the converse, only one out of every 1,000 thousand data points in the dataset would be expected to exceed the result of the test.

Once the baseline has been identified or calculated (depending on the alternative), both options contain the same requirements for evaluating post-project emissions. Before construction may begin on the project, the source must predict whether emissions will increase above the baseline after the project, and that prediction is used to determine whether a permit is required. Then, after the project is completed, the source must also compare every hour of post-project emissions to the baseline to determine whether an increase has occurred. Specifically, the proposed rule text contains the following provision:

> Regardless of any preconstruction projections, an emissions increase has occurred if the hourly emissions rate actually achieved in the 5 years after the change exceeds the pre-change maximum actual hourly emissions rate.[47]

[46] 40 C.F.R. § 52.25 (proposed).
[47] 40 C.F.R. § 52.25 (proposed).

Because EPA has proposed to determine NSR applicability based on the highest emission rate during a single hour after the project, neither of these proposed "achieved" tests will accomplish the desired result. The single highest data point is almost certain to be an anomaly that is unrepresentative of the unit's actual maximum hourly emission rate, even after clearly invalid data has been excluded. Thus, a single-hour approach would require permitting authorities and regulated sources to determine whether each individual data point is "real" or anomalous, which can be a difficult and time-consuming task that is unlikely to provide any certainty in the end.

EPA's first proposed option of a single hour baseline would therefore devolve into a comparison of two anomalous data points. Since neither the single highest pre-project data point nor the single highest post-project data point is likely to be representative, either one is just as likely to be greater than the other, resulting in a 50 percent chance that the test will predict an increase if a unit's actual emissions remain exactly the same after the project. Thus, the test would predict an increase half of the time when emissions remain exactly the same, and it could also predict an increase even if emissions actually decrease. Such results are untenable.

EPA's second "achieved" option, which compares a single post-project data point to a statistical baseline, fares no better. Statistics, by design, are intended to reduce the influence of outliers, which means the highest point in any dataset will almost always exceed the result of any statistical test, unless the statistics applied are appropriate for the size of the dataset under review. That is where EPA's chosen statistical method fails. As noted above, the statistical analysis proposed by EPA would predict that at least one out of a thousand data points would be higher than the result of the test. However, under EPA's proposal, that value would then be compared to every single hour of emissions for the next five years, which could contain as many

as 43,800 data points. Therefore, *even if emissions remain exactly the same*, the proposed test would predict more than 40 exceedances of the statistical baseline. In fact, the chance of any unit predicting *no* increase under the test would be infinitesimal, even with identical emissions.

### C. Alternatives for a Workable "Achieved" Maximum Hourly Emission Rate Test

As indicated above, both of EPA's proposed maximum achieved hourly emission rate tests have two key flaws: (1) the lack of a "causation" provision, and (2) the use of a single hour of data in comparing baseline and future emission rates. Accordingly, NMA asks EPA to address those two flaws before finalizing its NSR reform proposal.

Causation could be addressed by adding a provision that confirms causation must be demonstrated for a project to constitute a "major modification." The current rules contain relatively general language that provides flexibility for demonstrating causation,[48] and similar flexibility would be appropriate for the proposed hourly test, since the specific circumstances will vary from source to source and from project to project. In doing so, EPA should confirm in clear and certain terms that causation is a critical part of the definition of "major modification," not just an exception to that definition. Considering causation in both pre-project projections and post-project evaluations should resolve most of the concerns identified above with respect to EPA's proposed maximum hourly emission rate tests.

To address the second flaw, EPA should avoid relying on a single hourly measurement as a mandatory point of comparison. Regardless of whether used as the pre-project baseline or as the post-project projection and evaluation, a single data point will not suffice. Thus, to ensure

[48] 40 C.F.R. § 52.21(b)(41) (allowing sources to "exclude, in calculating any increase in emissions that results from the particular project, that portion of the unit's emissions following the project that an existing unit could have accommodated during [the baseline] and that are also unrelated to the particular project, including any increased utilization due to product demand growth"). *See also* EPA Memorandum from Scott Pruitt to Regional Administrators, *Project Emissions Accounting under the New Source Review Permitting Program* (Mar. 13, 2018).

hourly data is utilized properly in determining NSR applicability, EPA must develop a statistical analysis for both the pre-project baseline and the post-project evaluation that is capable of determining when a statistically significant emissions increase actually occurs. Accordingly, EPA's proposed Alternative 2, which compares a single data point baseline to every single data point after a project, must be abandoned.

In contrast, EPA's proposed Alternative 1 already contains a statistical approach for determining a pre-project baseline. As such, that alternative could work if EPA also adopts an appropriate statistical method for evaluating post-project emissions. For example, EPA could establish a statistical means of eliminating outliers and anomalies in the post-project hourly data by authorizing sources to exclude a percentage of the data that reflects the statistical approach used to set the baseline. That is, since the baseline would be set based on a 99.9% UTL based on a year's worth of data, sources should be able to exclude 0.1% of the post-project hourly data recorded each year in determining whether an increase has actually occurred. Alternatively, EPA could develop a different statistical means for evaluating post-project data, such as calculating the "confidence interval" of a subset of the data that is likely to reflect the actual post-project maximum hourly emission rate in a way that is comparable to the baseline. In coordination with other stakeholders, NMA understands that EPA has used such statistical methods in the past when determining whether a new set of data is higher than a baseline set of data.[49] Other statistical approaches may also warrant consideration, such as the "Student's t-test" that is currently codified in Appendix C to Part 60, which evaluates whether an increase in the average of a three-run stack test completed after a project is statistically significant when

[49] *See, e.g.*, EPA Office of Resource Conservation and Recovery, *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance*, at iv (March 2009) (identifying the "confidence interval" as a "key statistical procedure" that "may be appropriate for compliance evaluation depending on the circumstances").

compared to a three-run stack test completed before the project.[50] That statistical method is described as one that is "used to make inferences from small samples," so the same concept theoretically could be applied to a "small sample" of the highest hourly monitoring data that is likely to represent a unit's actual maximum hourly emission rate before and after a project.

Additional analysis will be needed to determine which of these options, or any others, may be the best approach from both a policy and practical perspective. Regardless of the method chosen, NMA encourages EPA to adopt a test that focuses on statistical significance to avoid the vagaries inherent in the single data point comparison relied upon in its ACE proposal, and then only require NSR permitting for projects that actually cause an emissions increase at the source.

## VI. ASSESSMENT OF COSTS AND BENEFITS

In the RIA for the ACE proposal and in the discussion of the RIA in the regulatory preamble, EPA notes the uncertainties behind its monetized estimates of the benefits of both the ACE rule and the CPP in reducing greenhouse gas (GHG), $PM_{2.5}$, and ozone emissions. This discussion should be improved to eliminate certain misconceptions that have arisen in statements by the press and public to the effect that EPA is conceding that replacing the CPP with ACE will harm public health and the environment.

Read closely, the RIA and preamble do not conclude that ACE will negatively impact public health and the environment. Nevertheless, an expanded explanation of the uncertainties behind EPA's monetized estimates, and further discussion of the background and context in which EPA is making these estimates, would be useful both to improve public understanding of the ACE rule and to create a better record for judicial review. EPA should also make clear that,

[50] 40 C.F.R. Part 60 App. C.

considering these uncertainties and given this background and context, EPA does not believe that replacing the CPP with ACE will materially impair public health or welfare.

Because EPA's monetized estimates of GHG and non-GHG costs and benefits raise different issues, NMA discusses them separately below.

## A. GHG Estimates

NMA recommends that EPA make four changes in its discussion of the relative benefits of the CPP and the three ACE scenarios that EPA modeled. First, EPA should expand its discussion of the uncertainties inherent in its Social Cost of Carbon (SCC) estimates and conclude that, given these uncertainties, the SCC has little practical value in determining the respective GHG emission-reduction benefits of ACE versus the CPP. Second, EPA should expand its discussion of the relative GHG emission reductions that ACE will produce, as compared with the CPP, to show that the differences are vanishingly small in the context of the U.S. power sector and overall domestic and international GHG emissions. Third, EPA should model the actual climate impacts (temperature and sea level rise) of the ACE and CPP scenarios to show that there is no meaningful difference. Fourth, EPA should explain *in the regulatory preamble* its conclusion that repealing the CPP and adopting ACE will not meaningfully affect overall GHG emissions or the climate.

### 1. Social Cost of Carbon

The RIA concludes that the difference in monetized benefits in reducing GHG emissions between the CPP and the alternative ACE scenarios that EPA modeled are either zero or extremely small.[51] This appears to be the case for two reasons. First, given industry trends, the CPP is no longer projected to reduce power sector GHG emissions as compared with a business-

[51] RIA Tables 6.3 to 6.6.

as-usual case as much as when EPA adopted the CPP. As a result, the difference in power sector GHG emissions under the CPP and under the ACE scenarios is very small.[52] Second, EPA has now appropriately restricted its SCC values to reflect domestic rather than international impacts.

Nevertheless, on a present-value basis, EPA includes scenarios in which the monetized benefit of reducing GHG emissions under the CPP case is materially higher than under the ACE cases. As a consequence, there are cases where the overall *net* benefit of retaining the CPP is higher than replacing it with ACE, even excluding $PM_{2.5}$ and ozone co-benefits.[53]

It is important to note, however, that apparent benefit of keeping the CPP in place in these scenarios is not real. NMA and others have provided EPA with a great deal of information about why the SCC estimates that EPA used in the CPP RIA are so uncertain as to be useless in assessing real-world regulatory policies.[54] EPA's previous reliance on international GHG-reduction benefits, which the agency has appropriately eliminated, is only one of the failings that NMA and others identified. There are many others that EPA has not identified in the ACE RIA. To summarize:

- The SCC values were derived in a nontransparent manner, without being subject to notice-and-comment rulemaking;
- The government's choice of inputs to the Integrated Assessment Models ("IAMs"), and the choice of IAMs themselves, that were used to derive the SCC estimates did not undergo peer review or public comment and are highly uncertain.
- There is no rational connection between the inputs and assumptions in the IAMs and the conclusions drawn from the results of the model runs;
- The IAMs and SCC cannot account for threshold effects or nonlinear changes that might be ascribed to additional emissions or emission reductions;

[52] RIA Table 3-4.
[53] RIA Table 6-7.
[54] *See* February 26, 2014 letter by 15 trade associations, including NMA, on the Office of Management and Budget's Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12866, (attached).

- The wide range of SCC values that the U.S. government developed is too broad to be useful, but still does not reflect the full range of uncertainty associated with measuring the impacts (both positive and negative) of climate change;

- There are serious questions regarding the usefulness of a single dollar amount to represent the asserted climate benefits of rulemakings, particularly given the severe limitations of climate science and the associated uncertainties with estimating the future costs and benefits of a regulation's impact on climate change;

- It is impossible to measure accurately the effect of a single regulation on climate change in isolation, as if one could realistically hold other emissions and change factors constant; and

- The IAMs do not recognize the possibility that humans will adapt to climate change, or that a reduction in GHG emissions in the United States might result in an increase in GHG emissions elsewhere.

NMA also refers EPA to the study performed by NERA Economic Consulting that is included with the comments of the Utility Air Regulatory Group on EPA's proposal to repeal the CPP. NMA endorses the findings of that study.

NMA strongly urges EPA to adopt and include these critiques in the RIA. The RIA's discussion of the uncertainties of the SCC[55] mainly relies on the discussion of those uncertainties set forth in the 2015 CPP RIA. In the 2015 RIA, the uncertainties EPA identified skew strongly towards possibly higher climate impacts than are reflected in the SCC numbers. But, in reality, considering the information that NMA and others have provided, the uncertainties behind the SCC estimates do not support a conclusion that those values are too low or too high. The magnitude of the uncertainties lead to the inevitable conclusion that the SCC estimates are too speculative to rely on as drivers of important regulatory policy.

NMA recognizes the need for EPA to at least consider SCC values in analyzing its proposal to repeal the CPP and replace it with ACE. Nevertheless, EPA must address *all* the

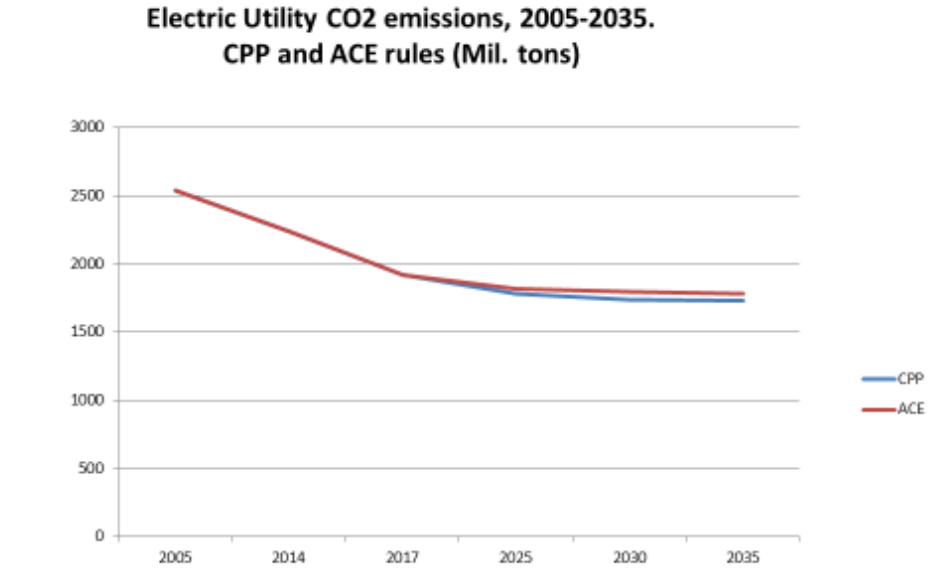
[55] RIA at 4-5.

uncertainties in those SCC values. Based on that more fulsome discussion, EPA should explain that these values cannot be relied on to conclude that substituting ACE for the CPP will impair the climate by the monetized amount shown or otherwise.

**2. EPA Should Provide More Context to the Relative Emission Reductions that ACE and the CPP Would Produce.**

Discounting the SCC analysis in the way NMA suggests does not leave EPA without tools in assessing the relative GHG-reduction merits of ACE as compared with the CPP. As indicated, the RIA shows that the difference in GHG emission reductions in the CPP case and the ACE cases is extremely small. One way of examining whether replacing the CPP with ACE would impair the climate would be to highlight and provide greater context to this conclusion.

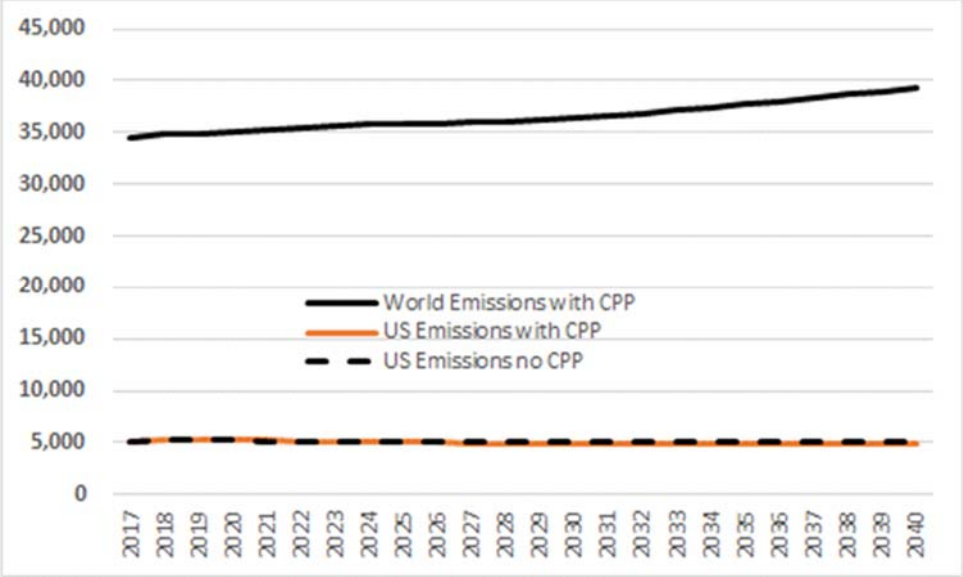
First, EPA should highlight that the difference in power sector emissions between the two rules is negligible, given both total power sector GHG emissions and the trend line of those emissions. EPA could do so by including the following graph or similar visual depiction:




Source: EPA ACE RIA (2018) and EPA CAMD Database (all units, all programs).

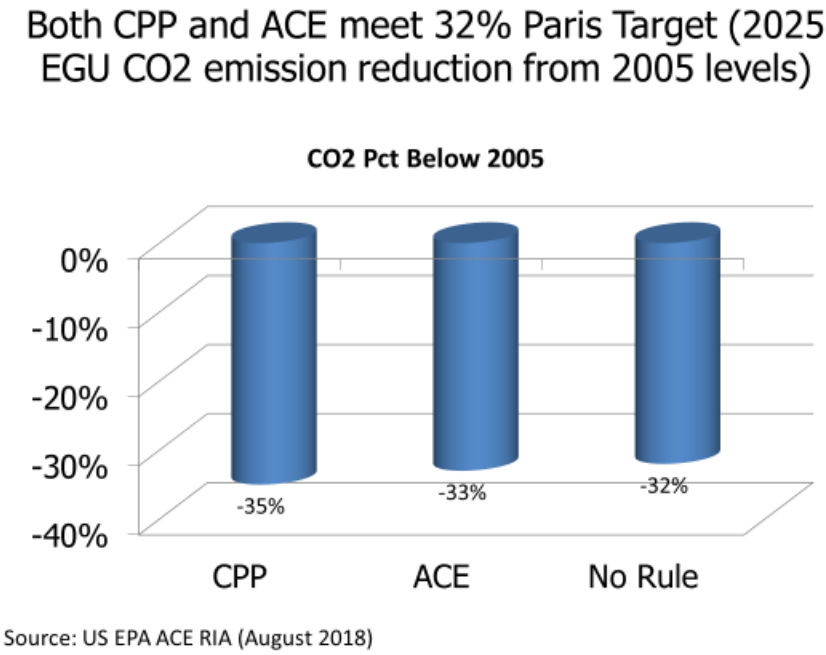
Second, EPA should further illustrate the minuscule difference between the two cases by including in the comparison all domestic and international sources of GHG emissions. NMA's comments on the repeal rule included a great deal of information concerning emissions trends both domestically and internationally.[56] The following chart from the Energy Information Administration is illustrative. In the context of overall international emissions, the reductions that would have been achieved with the CPP are meaningless.

**World Carbon Dioxide Emissions from All Sources (million metric tons)**[57]




Third, EPA should compare the CPP and ACE in terms of meeting the United States' "Intended Nationally Determined Contributions" under the Paris Accords. While the United States withdrew from that agreement, it would still be useful to examine whether replacing the CPP with ACE would have impeded the country's ability to meet its Paris target had it not withdrawn. As the following chart illustrates, the United States is currently one of the few countries projected to meet its Paris target and would remain so even if ACE replaces the CPP.

[56] NMA repeal rule comments at 79-85.
[57] EIA, International Energy Outlook 2017 browser; World Carbon Dioxide Emissions.




Source: US EPA ACE RIA (August 2018)

**3. EPA Should Model the Difference in Climate Impacts under the Two Rules.**

Another way of assessing the relative GHG impacts of ACE versus the CPP is to estimate the difference in projected climate impacts under the two rules. This comparison is particularly important given that, in adopting the CPP, EPA stated it was rejecting its historical interpretation of Section 111(d) in favor of its new "generation-shifting" approach because the historical approach would not yield sufficient emission reductions.[58] Of course, reducing emissions was not EPA's ultimate point in promulgating the CPP. EPA's objective was to improve the climate in some meaningful fashion as compared with a business-as-usual scenario.

In adopting the CPP, however, EPA did not release to the public any modeling results to demonstrate the climate benefits that it claimed would be achieved by the emission reductions required by the CPP. The reason EPA did not do so was because it wanted to avoid the

[58] *See* 80 Fed. Reg. at 64,751 ("Given EGUs' large contribution to U.S. GHG emissions, any attempt to address the serious public health and environmental threat of climate change must necessarily include significant emission reductions from this sector… Imposing only the lower cost reduction measures in building block 1 would not achieve sufficient reductions given the scope of the problem and EGUs' contribution to it.").

embarrassment associated with its prior efforts to model the climate impact of its first major GHG rule in 2012 for light-duty motor vehicles. EPA's RIA for that rule projected that the rule would reduce atmospheric $CO_2$ by one part per million in 2050, which EPA estimated would reduce global temperatures by 0.006 degree Celsius and sea level rise by 0.2 millimeters.[59]

Regardless of how miniscule the results may be, EPA should now to model the impact in temperature change and sea level rise associated with the differences in $CO_2$ emissions under the CPP and ACE. NMA does not believe that the models that are available for making this comparison truly reflect climate impacts, but the exercise would be appropriate nonetheless, given that the sole focus of the rule is to address climate change. Running the model and displaying the projected impacts should further illustrate that the GHG impacts of ACE and the CPP are virtually indistinguishable.

#### 4. EPA Should Expand Its Regulatory Preamble to Include a Greater Discussion of Costs and Benefits and the Conclusions EPA Reaches.

As discussed, NMA believes the RIA shows that (a) replacing the CPP with ACE will result in only a small difference in power sector emissions and (b) that small difference in emissions, when viewed in context of total domestic and international GHG emissions and possible climate impacts, is virtually indistinguishable.

This conclusion and a detailed summary of the supporting analysis should be presented in the regulatory preamble. EPA maintains that its rejection of generation-shifting and proposed return to its long-standing view of the scope of Section 111(d) is "reasonable."[60] Under applicable administrative law, EPA must explain why it thinks ACE is a reasonable exercise of

[59] U.S. EPA, *Regulatory Impact Analysis: Final Rulemaking for 2017-2025 Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards*, at 6-115 (Aug. 2012).
[60] *See* 83 Fed. Reg. at 44,753. As discussed above, NMA urges EPA to be more explicit that it believes that its proposed interpretive approach is mandated under Section 111(d) and, alternatively, represents a reasonable exercise of EPA discretion. Under relevant precedent, of course, an agency's claim that it is acting reasonably must be explained.

regulatory discretion, and, under the Supreme Court's decision in *Michigan v. EPA*, 135 S. Ct. 2699 (2015), this explanation should include a discussion of relative costs and benefits. In the preamble, EPA simply sets forth the monetized costs and benefits of the RIA and summarizes some of the leading uncertainties without reaching an overall conclusion. NMA believes that this somewhat cursory discussion of costs and benefits can and should be strengthened.

To more fully justify the rule, EPA should expand its discussion of the GHG costs and benefits and state its ultimate conclusions more clearly. In doing so, EPA should more plainly state that repealing and replacing the CPP with ACE will not yield meaningfully different GHG emissions and climate change outcomes, a conclusion that further supports EPA's proposal.

## B. Non-GHG Estimates (Co-Benefits).

The scenarios depicted in Table 6-7 that show that retaining the CPP would yield net benefits as compared with ACE are also influenced by EPA co-benefits estimates for to $PM_{2.5}$ and ozone. While it is appropriate for EPA to depict the impact that adopting ACE will have on non-GHG emissions, EPA should make clear that these non-GHG impacts have no relevance to adopting a GHG rule under Section 111(d). In addition, given the possibility that a court might conclude that co-benefits are legally relevant, EPA's discussion of the uncertainties in its co-benefit estimates needs to be strengthened and placed in context. Doing so will eliminate the implication that replacing the CPP with ACE could result in detrimental public health impacts. EPA should also fully explain, in the regulatory preamble, that it does not conclude that adopting ACE will in any way impair the public health or welfare because of alleged lost co-benefits.

### 1. EPA Should Explain That, While It Is Depicting the Impact of ACE on Non-GHG Emissions, These Impacts Are Not Relevant in Formulating the Rule.

EPA improperly used co-benefits in justifying the CPP. The purpose of the CPP was to address $CO_2$ emissions, not other emissions. Section 111(d), moreover, applies only to

pollutants that are not regulated under the NAAQS program and therefore cannot be transformed into a vehicle for reducing NAAQS-regulated pollutants.

EPA has other means under the CAA—indeed it is commanded by the statute—to reduce emissions of other pollutants to levels that are protective of human health and welfare. Indeed, given the CAA mandate that EPA must reduce pollutant emissions to safe levels, the assumption that EPA will fail to comply with that mandate is a necessary premise to the argument that either the CPP or ACE will yield co-benefits by reducing $PM_{2.5}$ and ozone. Under the CPP, EPA must have assumed that it would be significantly derelict in its duty, given EPA's view that the co-benefits of the CPP would run into the tens of billions of dollars.

But air quality has been improving for decades, and EPA is well on its way to implementing programs that will ensure attainment of the latest NAAQS for all criteria pollutants. Given that EPA and the states will ultimately perform their obligations under the CAA to bring all areas of the country into attainment, the CPP would not have resulted in *any* co-benefits and neither will ACE. Certainly, neither rule should be justified based on the notion that EPA cannot be trusted to carry out its responsibility to ensure clean air under the programs Congress designed for that purpose.

NMA agrees that EPA should show in its RIA and summarize in the preamble the relative impact of the CPP, ACE, and a business-as-usual scenario on non-GHG emissions. NMA also does not oppose, subject to our comments below, EPA attempting to monetize these differences under the theory that *theoretically* non-threshold pollutants could cause injury even below the level of the NAAQS. But EPA should explain that co-benefits are not relevant to EPA's decision to replace the CPP with ACE because EPA is regulating GHG emissions, not other emissions. EPA should also make clear that any co-benefits created by either the CPP or

ACE will reflect elimination of impacts occurring below the level of the NAAQs and that these impacts necessarily will not rise to the level of a material public health concern; otherwise, EPA would be required to adopt separate rules under other CAA programs to eliminate these impacts.

### 2. EPA Should Fully Explain the Weaknesses in EPA's Monetized Estimates of $PM_{2.5}$ and Ozone Impacts Occurring at Levels Below the National Ambient Air Quality Standards.

Turning to the question of possible co-benefits at pollutant levels below the NAAQS, the RIA and the regulatory preamble appropriately indicate that EPA is "more confident in the size of the risks estimated from simulated $PM_{2.5}$ concentrations that coincide with the bulk of the observed PM concentrations in the epidemiological studies that are used to estimate these benefits." EPA also cites the preamble to the 2012 PM NAAQS that "it is not appropriate to place as much confidence in the magnitude and significance of the associations over the lower percentiles of the distributions in each study as at and around the long-term mean concentrations."[61] EPA goes on to state that effects "may occur over the full range of concentrations observed in the epidemiological studies,"[62] but points out that "[l]ess than 1% of the estimated premature deaths occur above the annual mean $PM_{2.5}$ NAAQS of 12 $\mu g/m^3$."[63]

These statements, while true, do not go far enough in explaining the unreliability of premature mortality estimates for $PM_{2.5}$ and ozone at levels below the NAAQS. By assuming that impacts *could* occur in a linear fashion all the way down to background levels, EPA opens itself to the false criticism that repealing the CPP and adopting ACE *could* result in more than one thousand deaths and tens of thousands of illnesses, most of which would result from air quality that meets the NAAQS.[64]

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[61] 83 Fed. Reg. at 44,790.
[62] RIA at 4-21.
[63] 83 Fed. Reg. at 44,790.
[64] *See, e.g.*, RIA Table 4-7.

EPA must do more than simply point out that it has less confidence in impact predictions below the NAAQS and confirm that those predictions comprise nearly all of the calculated impacts. EPA must also explain in more detail why, while these impacts are *theoretically* possible given that $PM_{2.5}$ and ozone are non-threshold pollutants, EPA has very low confidence in such estimates. As set forth above, NMA does not believe co-benefits are relevant to EPA's decision to adopt a Section 111(d) GHG rule, but EPA must clarify the record in this respect to avoid giving the public the false impression that EPA's NAAQS and other CAA are substantially failing to protect the public health with a margin of safety.

NMA and others have provided EPA with a wealth of information as to why impacts below the NAAQS are highly unlikely. The problems with EPA's co-benefit estimates are comprehensively explored by analyst Dr. Anne E. Smith in her article "Inconsistencies in Risk Analyses for Ambient Air Pollutant Regulations," which evaluates the methodological issues in EPA's estimates of $PM_{2.5}$ benefits even at the level of the NAAQS.[65] NMA also endorses the findings on this subject in the report by NERA Economic Consulting that is attached to the comments filed by the Utility Air Regulatory Group in the CPP repeal docket. NMA strongly urges EPA to incorporate this information in its co-benefits discussion, since it comprehensively shows that widespread impacts below the NAAQS are highly unlikely.

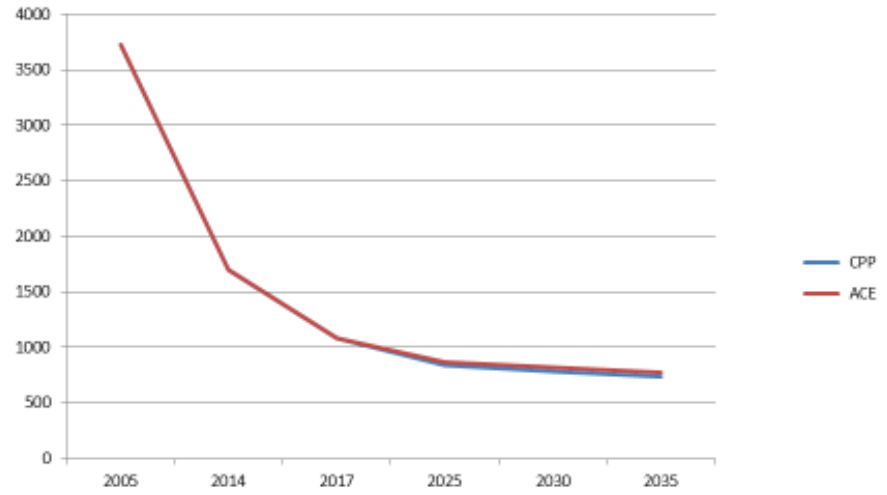
### 3. EPA Should Provide Additional Context to Its Discussion of Non-GHG Emission Reductions.

Lost in EPA's discussion of co-benefits are two simple facts: (a) power-sector emissions have been on a long-term downward trend and are now very low and (b) replacing the CPP with

[65] Smith, Anne E., "Inconsistencies in Risk Analyses for Ambient Air Pollutant Regulations," *Risk Analysis* 36/9 (Sept. 2016).

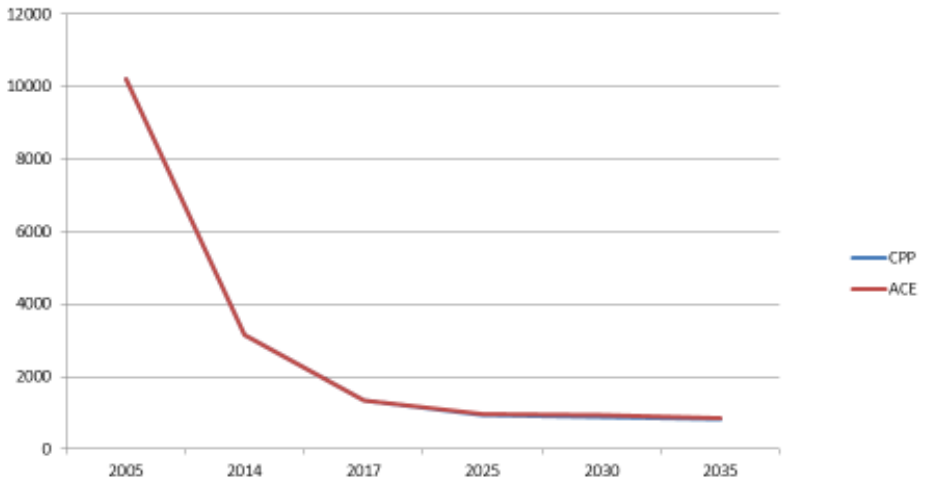
ACE will make virtually no difference in future emissions. This is shown in the charts below. EPA should highlight these facts in its discussion of the costs and benefits of adopting ACE.

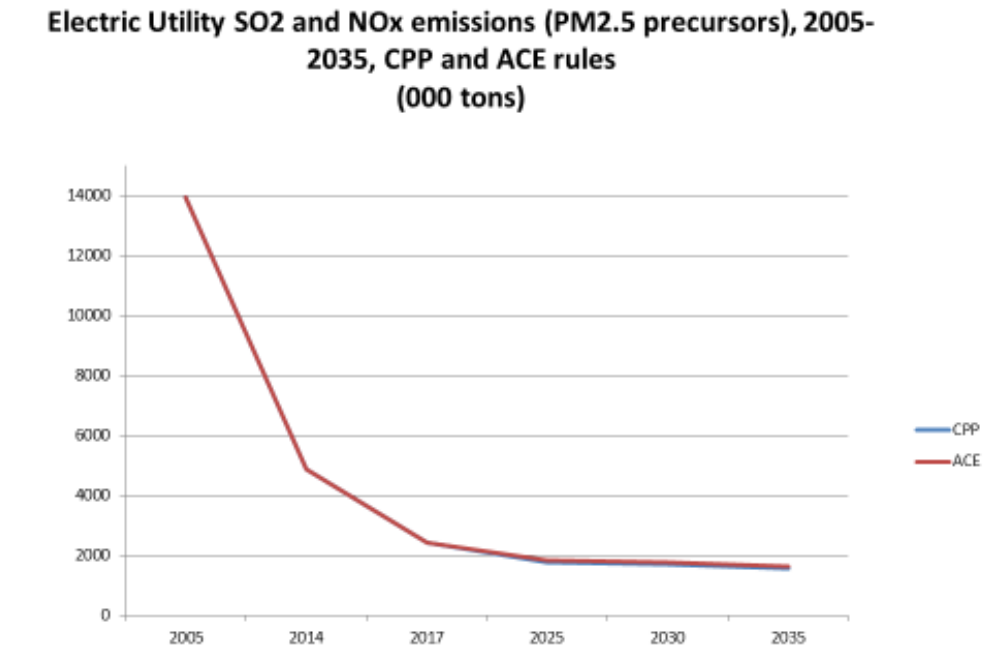
**Electric Utility NOx emissions, 2005-2035, CPP and ACE rules (000 tons)**




Source: US EPA ACE RIA (2018) and EPA CAMD Database (all units, all programs)

**Electric Utility SO2 emissions, 2005-2035, CPP and ACE rules (000 tons)**






Source: EPA ACE RIA (2018) and EPA CAMD Database (all units, all programs)

### 4. EPA Should Expand Its Discussion of Co-Benefits in the Regulatory Preamble and Explain that Replacing the CPP with ACE Will not Impair the Public Health of Welfare.

For the same reasons articulated above with respect to GHG impacts, EPA should set forth clearly *in the regulatory preamble* the conclusion that the public health and welfare outcomes of ACE and the CPP are virtually identical. There is no need for EPA to fully jettison the type of monetized co-benefits analysis it provided in the CPP, in other rules, and in ACE, but EPA needs to explain why asserted health impacts below the NAAQS are not only less certain than impacts below the NAAQS, but considerably less certain. Given these facts, EPA should conclude, based on a detailed explanation, that concerns about non-GHG emission impacts would not justify retaining the CPP instead of ACE.

## VII. CONCLUSION

NMA endorses ACE and urges EPA to adopt it, with the few clarifications and changes recommended above, as expeditiously as possible.