

**Joint Comments of Environmental and Public Health Organizations on the Best System of Emission Reduction and Other Issues in EPA’s Proposed Emission Guidelines for Greenhouse Gas Emissions From Existing Electric Utility Generating Units; Revisions to Emission Guideline Implementing Regulations; Revisions to New Source Review Program**

**Docket No.  
EPA-HQ-OAR-2017-0355**

*Submitted via  
regulations.gov*

*October 31, 2018*

Environmental and public health organizations<sup>1</sup> Appalachian Mountain Club, Center for Biological Diversity, Clean Air Council, Clean Air Task Force, Clean Wisconsin, Coalition to Protect America’s National Parks, Conservation Law Foundation, Earthjustice, Environmental Defense Fund, Environmental Law & Policy Center, Minnesota Center for Environmental Advocacy, National Parks Conservation Association, National Wildlife Federation, Natural Resources Defense Council, Sierra Club, and Union of Concerned Scientists hereby submit the following comments on the “best system of emission reduction” and other issues relevant to EPA’s proposed rule “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. 44,746 (Aug. 31, 2018).

Many of the sources cited in these comments are being submitted in an appendix to this docket, or were submitted to this docket on Apr. 20, 2018, in the “Joint Appendix of Environmental and Public Health Organizations and States Regarding the Proposed Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units.”

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## I. INTRODUCTION

EPA has a statutory mandate to reduce carbon dioxide (“CO<sub>2</sub>”) emissions from existing power plants “to the greatest degree practicable.”<sup>2</sup> As Joint Environmental Commenters laid out in detailed comments to this docket, the Clean Power Plan (“CPP”) <sup>3</sup> is consistent with this mandate and is a legal and rational means to limit CO<sub>2</sub> from existing power plants.<sup>4</sup> EPA may not repeal and replace the CPP, particularly with a framework that achieves minimal pollution reduction, based on the Agency’s flawed interpretation of section 111 of the Clean Air Act.

The Clean Power Plan builds upon market trends and the very measures the power sector continues to utilize to reduce carbon emissions. In fact, since the Clean Power Plan was finalized the costs of implementing it have decreased dramatically and emissions continue to decline. Instead of building on this progress and revising the Clean Power Plan to make it *stronger*, the misnamed Affordable Clean Energy Proposal<sup>5</sup> (“ACE,” “Proposal,” or “Proposed Rule”) abandons EPA’s statutory duty and proposes to effectively eliminate any carbon pollution reduction obligations for fossil fuel-fired power plants in an effort to favor aging, highly polluting, coal-fired plants.

The Proposal has multiple shortcomings. First, it would unlawfully require states to establish carbon pollution standards of performance based on a narrow list of heat rate improvement (“HRI”) measures, while giving states virtually unfettered discretion to make those standards as weak as they wish. Indeed, the Proposal fails to establish *any* emission limit to ensure *any* pollution reductions or protect public health. Section 111(d) was designed to “force meaningful action”<sup>6</sup> and demands that EPA set an emission limit that state plans must meet. But as Assistant Administrator Bill Wehrum described the Proposal, “At the end of the day, there is no floor, there is no maximum.”<sup>7</sup> The Proposal’s attempt to turn section 111(d) guidelines for carbon pollution into a meaningless exercise flies in the face of the Clean Air Act’s language and purpose and cannot stand.

Next, the Proposal’s list of minor “candidate” heat rate improvements does not represent a “system” of emission reduction—much less the “best system of emission reduction” that section 111 demands. They do not provide a degree of emission reduction that reflects the relevant statutory factors in section 111(a)(1). Because heat rate improvements provide only trivial emission reductions—or even increases—especially as compared to the alternative emission

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<sup>2</sup> *Essex Chem. Corp. v. Ruckelshaus*, 486 F.2d 427, 434 n.14 (D.C. Cir. 1973) (citing S. Rep. No. 1196, 91<sup>st</sup> Cong., 2<sup>nd</sup> Sess. 16 (1970)); *see also* State Plans for the Control of Certain Pollutants From Existing Facilities, 40 Fed. Reg. 53,340, 53,342 (Nov. 17, 1975) (“1975 Implementing Regulations”) (requiring “maximum feasible control of pollutants” from designated sources).

<sup>3</sup> EPA, Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,662 (Oct. 23, 2015).

<sup>4</sup> Comments of Appalachian Mountain Club, et al., Doc. No. EPA-HQ-OAR-2017-0355-20656 (Apr. 26, 2018) (“Joint Environmental Comments on Proposed Repeal”).

<sup>5</sup> EPA, 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. 44,746 (proposed Aug. 31, 2018).

<sup>6</sup> 1975 Implementing Regulations, 40 Fed. Reg. at 53,343.

<sup>7</sup> Niina Heikkinen & Nick Sobczyk, *Trump Kicks Off Next Big Climate Battle*, Greenwire (Aug. 21, 2018), <https://www.eenews.net/stories/1060094871>.

reduction measures that EPA hastily discarded or disregarded, they fail to address the source category's contribution to climate change as section 111 requires.

Not only is the Proposal unreasonable on its face, it also fails to engage EPA's prior record. EPA previously and correctly concluded in the Clean Power Plan that limiting the best system of emission reduction to heat rate improvements "would be unreasonable and contrary to the [Clean Air Act]," because the quantity of emission reductions that any given system would achieve is a critical factor that EPA must consider when determining the *best* system.<sup>8</sup> Heat rate improvements alone "would be grossly insufficient to address the public health and environmental impacts from CO<sub>2</sub> emissions" and will likely lead to net emission increases.<sup>9</sup> EPA's Proposal is unlawful because the Agency has failed to overcome these prior findings and the "[A]gency cannot simply disregard contrary or inconvenient factual determinations that it made in the past."<sup>10</sup>

There are multiple other available systems of emission reduction that meet the statutory requirements and are better suited to reduce emissions "to the greatest degree practicable" from power plants. These include the best system of emission reduction underlying the Clean Power Plan, which is vastly superior to the Proposal with respect to all of the pertinent statutory factors. But even under EPA's flawed and unlawfully narrow interpretation of the best system of emission reduction, EPA arbitrarily rejected available systems such as natural gas co-firing and reduced utilization that would achieve far greater reduction in carbon pollution without unreasonable cost. EPA's rejection of these alternatives is based on a faulty statutory construction and neglects the record before it, rendering the Proposal both unlawful and arbitrary and capricious.

Indeed, at every possible turn the Proposal presents dubious legal interpretations and arbitrary technical judgments that all lead towards removing any meaningful obligation for fossil fuel power plants to reduce carbon pollution—and even facilitating modifications to power plants that could *increase* health-harming pollution. The unlawfully narrow interpretation of the best system of emission reduction, the absence of any mandatory carbon pollution limit, and the proposed New Source Review ("NSR") revision have a common aim: to provide old, dirty coal plants with a new lease on life at the expense of our climate and the health of our communities. *See* Joint Environmental Comments on NSR Issues. EPA's "climate rule" is in fact a Trojan horse for a long sought-after loophole to NSR protections allowing these old, dirty coal plants to undertake life extension projects without installing or operating modern pollution controls, while failing to

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<sup>8</sup> EPA, *Basis for Denial of Petitions to Reconsider and Petitions to Stay the CAA section 111(d) Emission Guidelines for Greenhouse Gas Emissions and Compliance Times for Electric Utility Generating Units*, at 55 n.75 (Jan. 11, 2017) ("CPP Reconsideration Denial"); *see also* CPP, 80 Fed. Reg. at 64,787.

<sup>9</sup> CPP Reconsideration Denial, at 55 n.7; *see also* CPP, 80 Fed. Reg. at 64,787; EPA, Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 82 Fed. Reg. 48,035, 48,039 n.5 (proposed Oct. 16, 2017) ("Proposed Repeal") (acknowledging that the Clean Power Plan building block one cannot stand on its own).

<sup>10</sup> *Fed. Comm'n's Comm'n v. Fox Television Stations*, 556 U.S. 502, 537 (2009) (internal citation omitted) (Kennedy, J., concurring) ("*Fox Television*"). If an agency changes course, it must "provide a more detailed justification than would suffice for a new policy...when, for example, its new policy rests upon factual findings that contradict those which underlay its prior policy... It would be arbitrary and capricious to ignore such matters." *Id.* at 515-16 (opinion of the Court).

fulfill the Agency's statutory obligation to mitigate dangerous climate pollution from existing power plants.

EPA's proposal to adopt an extraordinarily weak rule for the largest stationary sources of greenhouse gases is all the more arbitrary and unlawful given the overwhelming evidence that the hazards of climate change are imminent and urgent—so that decisive action must be taken in the next decade to avoid the massively destructive and destabilizing harm that would avoid exceeding 1.5°C of warming from pre-industrial levels. EPA's Proposal includes no serious discussion of how adopting weak or even emissions-increasing standards fits with what the record overwhelmingly shows concerning the hazard of climate change; fails to explain how such a choice can be reconciled with the incontrovertible scientific evidence showing only a narrow window for action to avoid severe harms; and fails to provide any explanation of how it plans to address the threat of climate change if not by reducing emissions from the largest sources of climate pollution. In the face of a serious threat, the very agency that has been charged by Congress with protecting health and welfare must do much better, must confront the science, must explain its choices, and cannot bury its head in the sand.

The Clean Air Act demands the *best* system of emission reduction, not minimal efficiency improvements combined with an exemption from installing the pollution controls that the Act's NSR program requires when a plant increases its actual emissions. This statutory requirement is all the more important in the face of the dramatically changing climate and its associated harms to public health and the environment. The Proposal is fatally flawed and must be withdrawn.

## **II. EPA'S PROPOSAL TO EFFECTIVELY REPEAL THE CPP IS ARBITRARY AND UNLAWFUL.**

### **A. EPA Has Unlawfully and Arbitrarily Rested Its Proposal on an Error of Law and Has Failed to Undertake Reasoned Decisionmaking.**

In issuing this Proposal, EPA continues to rely on its flawed position asserted in the Proposed Repeal,<sup>11</sup> namely that the Clean Power Plan is illegal because a section 111 “system of emission reduction” must be limited to “measures that apply at and to, and can be carried out at the level of, individual facilities.”<sup>12</sup> As Joint Environmental Commenters explained in comments submitted to this docket, that interpretation of section 111 is both legally incorrect and unsupported.<sup>13</sup> EPA cannot legally repeal or replace the Clean Power Plan based on a misreading of the statute that excludes multiple reasonable alternatives to the blinkered definition of “system” set forth in the Proposed Repeal and ACE.

EPA repeatedly claims that the Clean Power Plan “exceeds the EPA's statutory authority,” and therefore *must* be repealed.<sup>14</sup> In the Proposed Repeal EPA argues that the text, structure, and history of the statute all clearly preclude the system of emission reduction underlying the Clean Power Plan. This is simply wrong. “One does not need to open up a dictionary to realize the

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<sup>11</sup> Proposed Repeal, 82 Fed. Reg. at 48,038-43.

<sup>12</sup> ACE, 83 Fed. Reg. at 44,748.

<sup>13</sup> Joint Environmental Comments on Proposed Repeal, at 12-28.

<sup>14</sup> Proposed Repeal at 48,036-38, 48,048.

capaciousness of”<sup>15</sup> the term “system.” “Congress” uses “capacious terms when it wishes to enlarge [] agency discretion.”<sup>16</sup> “The broad language reflects an intentional effort to confer the flexibility necessary to forestall . . . obsolescence.”<sup>17</sup> Here, however, the Agency has concluded that it has no choice but to repeal the Clean Power Plan because the meaning of “system” is plain.<sup>18</sup> As that is “an erroneous view of the law,”<sup>19</sup> any repeal on that basis would be arbitrary and unlawful.

In this Proposal, EPA attempts to add two more out-of-context quotes from the Clean Air Act’s legislative history to bolster its rationale that the term “system” precludes the best system of emission reduction underlying the Clean Power Plan.<sup>20</sup> First, EPA insists its reading of section 111 is supported by a committee report statement that “new stationary sources are designed, built, equipped, operated and maintained so as to reduce emissions.”<sup>21</sup> Leaving aside the quote’s applicability to *new* sources instead of the relevant *existing* sources, the Clean Power Plan easily fits within this definition as an operational system to reduce emissions. Furthermore, EPA omits the very next sentence from the legislative history it has cited, which reflects Congress’s intent that section 111 standards would require “maximum” control of air pollution, including through a broad range of “means of preventing” air pollution: “The performance standards should be met through application of the latest available emission control technology or through other means of preventing or controlling air pollution. The maximum use of available means of preventing and controlling air pollution is essential . . . .”<sup>22</sup>

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<sup>15</sup> *Michigan v. EPA*, 135 S. Ct. 2699, 2705 (2015).

<sup>16</sup> *City of Arlington v. Fed. Commc’ns Comm’n*, 133 S. Ct. 1863, 1868 (2013).

<sup>17</sup> *Massachusetts v. EPA*, 549 U.S. 497, 532 (2007).

<sup>18</sup> *See Sec. & Exchange Comm’n v. Chenery*, 318 U.S. 80, 95 (1943) (“[A]n administrative order cannot be upheld unless the grounds upon which the agency acted in exercising its powers were those upon which its action can be sustained.”).

<sup>19</sup> *Prill v. Nat’l Labor Relations Bd.*, 755 F.2d 941, 947 (1985); *see also id.* at 948 (“An agency regulation must be declared invalid, even though the agency might be able to adopt the regulation in the exercise of its discretion, if it was not based on the [agency’s] own judgment but rather on the unjustified assumption that it was Congress’ judgment that such [a regulation is] desirable.” (internal citations omitted)); *U.S. Postal Serv. v. Postal Regulatory Comm’n*, 640 F.3d 1263, 1264 (D.C. Cir. 2011) (remanding the Commission’s interpretation of the Postal Accountability and Enhancement Act of 2006 because it incorrectly concluded the plain meaning of the statutory language required a particular result); *NextEra Desert Ctr. Blythe v. Fed. Energy Regulatory Comm’n*, 852 F.3d 1118, 1122 (D.C. Cir. 2017) (remanding order to Commission because its decision rested “on an erroneous assertion that the plain language of the relevant wording is unambiguous”); *Order, Regents of the Univ. of Cal. v. Dep’t of Homeland Sec.*, N.D. Cal. No. 17-05211, Doc. No. 234, at 29, 38 (Jan. 9, 2018) (enjoining repeal of Deferred Action for Childhood Arrivals because the repeal “was based on a flawed legal premise (citing *Massachusetts*, 549 U.S. at 532)); *see generally* Daniel J. Hemel & Aaron L. Nielson, *Chevron Step One-and-a-Half*, 84 U. Chi. L. Rev. 757 (2017) (analyzing cases holding that agency errors about the nature of their own authority must be rejected and subject to remand).

<sup>20</sup> In addition to these snippets of legislative history, EPA further argues that the “redefining the source” policy it has applied under the Prevention of Significant Deterioration program—a completely distinct permitting program that has nothing to do with section 111(d)—supports its decision to repeal the CPP. EPA also argues that it lacks the expertise to adopt the CPP while simultaneously expressing concern that trends in the power sector warrant repeal of the CPP. ACE, 83 Fed. Reg. at 44,752-53. Both of these arguments are addressed in section IV.D of these comments.

<sup>21</sup> ACE, 83 Fed. Reg. at 44,753 (citing S. Comm. Rep. to accompany S. 4358 (Sept. 17, 1970), 1970 CAA Legis. Hist., at 415-16).

<sup>22</sup> S. Comm. Rep. to accompany S. 4358 (Sept. 17, 1970), 1970 CAA Legis. Hist., at 415-16.

Next, EPA cites a Senate report “recogniz[ing] that certain old facilities may use equipment and processes which are not suited to the application of control technology.”<sup>23</sup> That in some instances the best system of emission reduction may be “control technology,” does not mean that it must always be. In fact, as EPA *just* explained, the system broadly consists of measures to ensure that affected sources are “designed, built, equipped, operated and maintained so as to reduce emissions.”<sup>24</sup> Other aspects of the legislative history of the Clean Air Act supports the conclusion that a “best system” is not limited to control technologies: in its report on the 1977 Clean Air Act amendments, the House Committee on Interstate and Foreign Commerce explained that, under the proposed language that ultimately became enacted into law, “the standards in the section 111(d) state plan would be based on the best available means (*not necessarily technological*) for categories of existing sources to reduce emissions.”<sup>25</sup>

The alleged need to replace the Clean Power Plan is premised on the unsupported proposal to repeal it, and nothing in this Proposal remedies EPA’s improper interpretation of section 111(d). In fact, the legislative history cited in the Proposal supports the system underlying the Clean Power Plan.

As described in previous comments,<sup>26</sup> the Proposed Repeal, despite its claim that the Clean Power Plan exceeded statutory authority, did not clearly indicate whether the Agency’s position was that 1) the Clean Air Act unambiguously precluded the Clean Power Plan; 2) the statute is ambiguous but the Clean Power Plan was an unreasonable interpretation; or 3) the statute is ambiguous but the Agency, as a matter of policy, is changing positions. But whichever of these scenarios describes EPA’s position, the Agency is wrong: as stated in our comments on the proposed repeal, the Clean Power Plan is within EPA’s statutory authority. Accordingly, under *Prill* and similar precedent, EPA has committed an error of law that undermines its Proposal.

Moreover, in reaching its conclusions about authority, EPA has improperly refused to grapple with the record underlying the Clean Power Plan’s “best system.” The traditional tools of statutory interpretation (applicable at both steps of *Chevron*) require considering “the problem Congress sought to solve.”<sup>27</sup> Likewise, the second step of *Chevron* (the subject of options 2 and 3 above) asks whether an agency interpretation is “arbitrary or capricious in substance,”<sup>28</sup> and whether the agency has explained how its interpretation fits with the statutory purposes and

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<sup>23</sup> ACE, 83 Fed. Reg. at 44,753.

<sup>24</sup> *Id.* (citing S. Comm. Rep. to accompany S. 4358 (Sept. 17, 1970), 1970 CAA Legis. Hist., at 415-16).

<sup>25</sup> H.R. Rep. No. 95-294, at 195 (1977) (emphasis added).

<sup>26</sup> Joint Environmental Comments on Proposed Repeal, at 12.

<sup>27</sup> *Financial Planning Ass’n v. Sec. & Exchange Comm’n*, 482 F.3d 481, 487 (D.C. Cir. 2007) (emphasis added).

<sup>28</sup> *Judulang v. Holder*, 565 U.S. 42, 53 n.7 (2011) (citations and internal quotation marks omitted).



policies.<sup>29</sup> These determinations necessarily require grappling with relevant facts and circumstances.<sup>30</sup>

Moreover, that analysis must consider the Clean Power Plan record, for several reasons. First, section 111(a)(1) requires EPA to select the “best” system—which necessarily means that the system EPA is adopting (i.e., the current Proposal) must be *better* than the system EPA is rejecting (i.e., the Clean Power Plan). If—as is indeed the case—the Clean Power Plan were better than EPA’s proposed system, then EPA’s proposed system would not be the “best,” and its selection would be unlawful and arbitrary.

Second, EPA must demonstrate that there are “good reasons for the new policy” by engaging with the “facts and circumstances . . . underl[ying]” the Clean Power Plan and leave no “unexplained inconsistency” between the previous record and the Proposal.<sup>31</sup>

Third, EPA must consider “reasonable alternatives.”<sup>32</sup> The interpretation adopted by EPA itself in the Clean Power Plan, based on extensive analysis and corroboration, qualifies as a reasonable alternative.

Fourth, public comments are proffering the Clean Power Plan’s approach (and the supporting rationale and corroboration contained in the prior record) as a reasonable—indeed the best—approach to implementing the statute. Accordingly, EPA must grapple with the prior approach, rationale, and record as part of its obligation to respond to significant comments.<sup>33</sup>

In short, EPA’s Proposal therefore fails on at least two fronts: 1) its erroneous conclusion that the Clean Power Plan is beyond its statutory authority, and 2) its failure to provide a reasoned

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<sup>29</sup> *Rettig v. Pension Benefit Guaranty Corp.*, 744 F.2d 133, 151 (D.C. Cir. 1984) (at Step Two court asks whether the agency’s interpretation “represents a reasonable accommodation of conflicting policies that were committed to the agency’s care by the statute”) (citations and internal quotation marks omitted); *Petit v. Dep’t of Educ.*, 675 F.3d 769, 785 (D.C. Cir. 2012) (“At step two, we focus on ‘whether the [agency] has reasonably explained how the permissible interpretation it chose is ‘rationally related to the goals of’ the statute.’” *Village of Barrington, Ill.*, 636 F.3d at 665 (citation omitted)); *see also Northpoint Tech., Ltd. v. Fed. Commc’ns Comm’n*, 412 F.3d 145, 151 (D.C. Cir. 2005) (“A reasonable explanation of how an agency’s interpretation serves the statute’s objectives is the stuff of which a permissible construction is made.” (citations omitted)); *Bell Atl. Tel. Cos.*, 131 F.3d 1044, at 1049 (“[W]e will defer to the [agency’s] interpretation if it is reasonable and consistent with the statutory purpose and legislative history.” (citations omitted)).

<sup>30</sup> *See also* William W. Buzbee, *The Tethered President: Consistency and Contingency in Administrative Law*, 98 B.U.L. Rev. 1358, 1435-40 (Oct. 2018) (“[T]he agency cannot just embrace a new statutory view and policy yet not explain why it has done so. All of the consistency doctrine cases require the agency to provide a reasoned comparative analysis. The obligation to provide ‘good reasons’ will require assessment of the rationales for and consequences of the new read and explanation why it is congruent with what the statute sets forth. The agency will need to offer ‘good reasons’ for the change despite its previous embrace of a different policy.”).

<sup>31</sup> *Encino Motorcars, LLC v. Navarro*, 136 S. Ct. 2117, 2125-26 (2016).

<sup>32</sup> *Del. Dep’t of Nat. Res. v. EPA*, 785 F.3d 1, 18 (D.C. Cir. 2015) (“Because EPA too cavalierly sidestepped its responsibility to address reasonable alternatives, its action was not rational and must, therefore, be set aside.” (citations omitted)).

<sup>33</sup> 42 U.S.C. § 7607(d)(6)(B); *PSEG Energy Res. & Trade v. Fed. Energy Regulatory Comm’n*, 665 F.3d 203, 208 (D.C. Cir. 2011).

explanation for its position, including its failure to engage with the circumstances and record of the Clean Power Plan.<sup>34</sup>

The continued reliance on the legal errors in the Proposed Repeal, and the continued failure to conduct reasoned decisionmaking, fatally taint the instant Proposal. EPA must consider the option to recognize the broad language Congress chose in section 111 and to maintain, and indeed strengthen, the Clean Power Plan. This failure renders the Proposal unlawful and arbitrary.

**B. The System of Emission Reduction Underlying the Clean Power Plan Is a Lawful, Rational, and Better Means of Reducing Emissions from the Source Category than the Proposed Replacement—and EPA Has Offered No Reasoned Basis for Concluding Otherwise.**

EPA may not repeal the Clean Power Plan based on its flawed claims that the rule is unlawful—especially as it attempts to evade a decision from the D.C. Circuit Court of Appeals on that very question. As described above, “system” is a capacious term, and the Clean Power Plan’s best system of emission reduction fits well within it. Section 111 requires the Agency to determine the *best* system of emission reduction considering the relevant factors, and therefore, if the Agency replaces the Clean Power Plan, it must determine that the CPP was not in fact based on the best system and replace it with a *better* system. To replace the best system with an inferior or ineffective system would unlawfully and arbitrarily violate EPA’s statutory obligation under the Clean Air Act.

As a first step in demonstrating that ACE is the best system of emission reduction, EPA must show that at the very least it is regulating CO<sub>2</sub> emissions from fossil fuel-fired power plants. The Agency’s foremost obligation under the Clean Air Act is “to promote the public health and welfare,”<sup>35</sup> and preventing endangerment of public health and welfare is a core focus of section 111 as well.<sup>36</sup> As we explained in our prior comments to this docket, EPA has a statutory duty to adopt binding emission limits based on the *best* adequately demonstrated system of emission reduction for existing power plants, taking into account the quantity of emission reductions, costs, nonair quality health and environmental impacts, and energy requirements.<sup>37</sup> Power plants have been listed as a source category that “may reasonably be anticipated to endanger public health or welfare”<sup>38</sup> under section 111 since the 1970s.<sup>39</sup> The standards of performance for CO<sub>2</sub> from new power plants that EPA issued in 2015 triggered an obligation to set guidelines for CO<sub>2</sub>

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<sup>34</sup> EPA would be required to issue a new proposal if it were to shift either its legal interpretation of “system” or its consideration of the Clean Power Plan approach. *See* 42 U.S.C. § 7607(d)(3) (notice requirements for rulemakings); and 5 U.S.C. § 553(b) (same). *See also Int’l Union, UMW v. Mine Safety & Health Admin.*, 407 F.3d 1250, 1259-60 (D.C. Cir. 2005) (final rule must be a “logical outgrowth” of the proposal).

<sup>35</sup> 42 U.S.C. § 7401(b)(1).

<sup>36</sup> 42 U.S.C. § 7411(b)(1)(A).

<sup>37</sup> Joint Environmental Comments on Proposed Repeal, at 6-12.

<sup>38</sup> 42 U.S.C. § 7411(b)(1).

<sup>39</sup> *See* 44 Fed. Reg. 33,580 (July 11, 1979) (listing subpart Da); 71 Fed. Reg. 38,482 (July 6, 2006) (listing subpart KKKK).

pollution from existing sources.<sup>40</sup> The Supreme Court has confirmed that “EPA has the statutory authority to regulate the emission of [greenhouse] gases” and that section 111 “speaks directly” to the regulation of climate pollution from existing power plants.<sup>41</sup> Two judges on the D.C. Circuit Court of Appeals explained last year that the 2009 Endangerment Finding “triggered an affirmative statutory obligation to regulate greenhouse gases” from power plants.<sup>42</sup> Thus, EPA must “do[] the job Congress gave it in section [111]—utilizing emission standards to prevent reasonably anticipated endangerment from maturing into concrete harm.”<sup>43</sup> The Proposal effectively consists of a list of potential heat rate improvements that states may elect not to apply, with no binding emission target or implementation schedule, accompanied by a similarly unlawful proposal to exempt many significant physical and operational changes at power plants from the NSR program. It wholly fails to fulfill EPA’s statutory obligation to regulate these pollutants.

This failure is made all the more egregious as climate change continues to intensify and threaten public health and welfare. This month the Intergovernmental Panel on Climate Change issued an international “code red:” its report—by 91 scientists from 40 countries, who reviewed 6,000 scientific studies—concluded that if greenhouse gas emissions continue at the current rate, the atmosphere will warm up by as much as 1.5°C (or 2.7°F) by 2040.<sup>44</sup> “Climate-related risks to health, livelihoods, food security, water supply, human security, and economic growth are projected to increase with global warming of 1.5°C and increase further with 2°C.”<sup>45</sup>

Despite the increasing alarm, EPA could only muster two sentences in the regulatory impact analysis on the impacts of climate change.<sup>46</sup> In those two sentences, EPA cited the National Climate Assessment, a document that affirms the severity of climate change. For example, the Assessment states that the current “period is now the warmest in the history of modern civilization. The last few years have also seen record-breaking, climate-related weather extremes, and the last three years have been the warmest years on record for the globe. These trends are expected to continue over climate timescales.”<sup>47</sup> Joint Environmental Commenters previously submitted extensive comments to this docket—and are submitting additional comments today—describing the rapidly-changing climate and the dangers associated with it, as well as the record

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<sup>40</sup> 80 Fed. Reg. 64,510 (Oct. 23, 2015); ACE, 83 Fed. Reg. at 44,751 (EPA confirming its duty to issue section 111(d) regulations for power plants).

<sup>41</sup> *Massachusetts v. EPA*, 549 U.S. 497, 532 (2007); *Am. Elec. Power Co. v. Connecticut*, 564 U.S. 410, 424 (2011).

<sup>42</sup> Order, *West Virginia v. EPA*, D.C. Cir. 15-1363, Doc. No. 1687838 (issued Aug. 8, 2017) (Tatel, C.J. & Millett, C.J. concurring).

<sup>43</sup> *Coal. for Responsible Regulation v. EPA*, 684 F.3d 102, 122 (D.C. Cir. 2012) (citation omitted).

<sup>44</sup> See generally Myles Allen et al., Intergovernmental Panel on Climate Change, *Global Warming of 1.5°C: an IPCC special report on the impacts of global of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (Oct. 8, 2018) (“IPCC Report”), <http://www.ipcc.ch/report/sr15/>.

<sup>45</sup> *Id.* at SPM-11. See generally Joint Environmental Comments on Climate Science (Oct. 31, 2018).

<sup>46</sup> Zack Coleman & Maxine Joselow, *White House Cut Climate Warnings from Rule on Power Plants*, Climatewire (Sept. 5, 2018), <https://www.eenews.net/stories/1060095807>. An earlier draft devoted 500 words to climate change, which were deleted during interagency review. See Jennifer A. Dlouhy, *Dire Climate Change Warnings Cut From Trump Power-Plant Proposal*, Bloomberg (Sept. 4, 2018), <https://www.bloomberg.com/news/articles/2018-09-04/dire-climate-change-warnings-cut-from-trump-power-plant-proposal>.

<sup>47</sup> Wuebbles, D.J. et al., U.S. Global Change Research Program, *Climate Science Special Report: Fourth National Climate Assessment*, Vol. I, at 10 (2017), <https://science2017.globalchange.gov/chapter/executive-summary/>.

evidence of climate change and existing power plants' contribution to it.<sup>48</sup> Yet, while the Proposal recognizes that the power sector accounts for "29 percent of total nationwide greenhouse gas emissions,"<sup>49</sup> it fails to account for the urgent and devastating trends associated with climate change. EPA must explain how its do-nothing Proposal is reasonable—indeed, why it is the *best* system in the face of this escalating crisis.

In stark contrast to ACE, the Clean Power Plan is a legal and rational means to begin reducing emissions from existing power plants.<sup>50</sup> It responds meaningfully to the source category's contribution to the increasingly urgent threat of climate change. It reflects the unique characteristics of CO<sub>2</sub>, the interconnected nature of this source category, and the techniques that power companies and states routinely use to reduce carbon pollution. EPA's own limited analysis demonstrates that the Proposal achieves far fewer emission reductions than the Clean Power Plan and, moreover, that it altogether fails to meet the purposes of the Clean Air Act or the mandate of section 111 or to overcome its previous record.

EPA's Proposal, by its own estimation, would increase CO<sub>2</sub> pollution from the electricity sector by as much as 117 million short tons in 2030 as compared to no policy,<sup>51</sup> resulting in \$3.4 billion in forgone climate benefits by 2035.<sup>52</sup> Further, the estimated emission reductions are almost certainly overstated as EPA's modeling assumes an across the fleet 4.5% heat rate improvement despite no actual requirement to achieve such an improvement and multiple loopholes to further avoid doing so.<sup>53</sup> Adding insult to injury, assuming consistent costs of heat rate improvement, EPA's analysis shows that the Proposed Rule would be \$3.0 billion more expensive than the Clean Power Plan—and that does not even factor in the foregone benefits.<sup>54</sup>

The Proposal "runs counter to the evidence before the agency,"<sup>55</sup> which shows that the trends and trajectory of the electric sector are in line with the best system of emission reduction underlying the Clean Power Plan—heat rate improvement accompanied by substituting increased generation from lower- and zero-emitting sources for generation from higher-emitting affected sources.<sup>56</sup> As such, EPA concedes that "achieving the emission levels required under [the] CPP requires less effort and expense"<sup>57</sup> than was the case when the Clean Power Plan was finalized. The Proposal also shows that the average existing coal plant is currently 48 years old and that the generation from aging plants is increasingly being replaced by new lower-emitting units.<sup>58</sup> In the current proposal, EPA indicates that 43 GW of coal-steam capacity has retired since 2015 as a

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<sup>48</sup> Comments submitted by Ctr. for Biological Diversity et al., Doc. No. EPA-HQ-OAR-2017-0355-20637 (Apr. 26, 2018).

<sup>49</sup> EPA, "Regulatory Impact Analysis for the Proposed Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units; Revisions to Emission Guideline Implementing Regulations; Revisions to New Source Review Program," at 2-26 (Aug. 2018) ("ACE RIA").

<sup>50</sup> Joint Environmental Comments on Proposed Repeal, at 28-35.

<sup>51</sup> ACE RIA 3-40 tbl. 3-41.

<sup>52</sup> *Id.* 7-8.

<sup>53</sup> *Id.* 1-17.

<sup>54</sup> *Id.* ES-7 tbl. ES-3.

<sup>55</sup> *Motor Vehicles Mfrs. Ass'n v. State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 43 (1983) (internal citations omitted) ("*State Farm*").

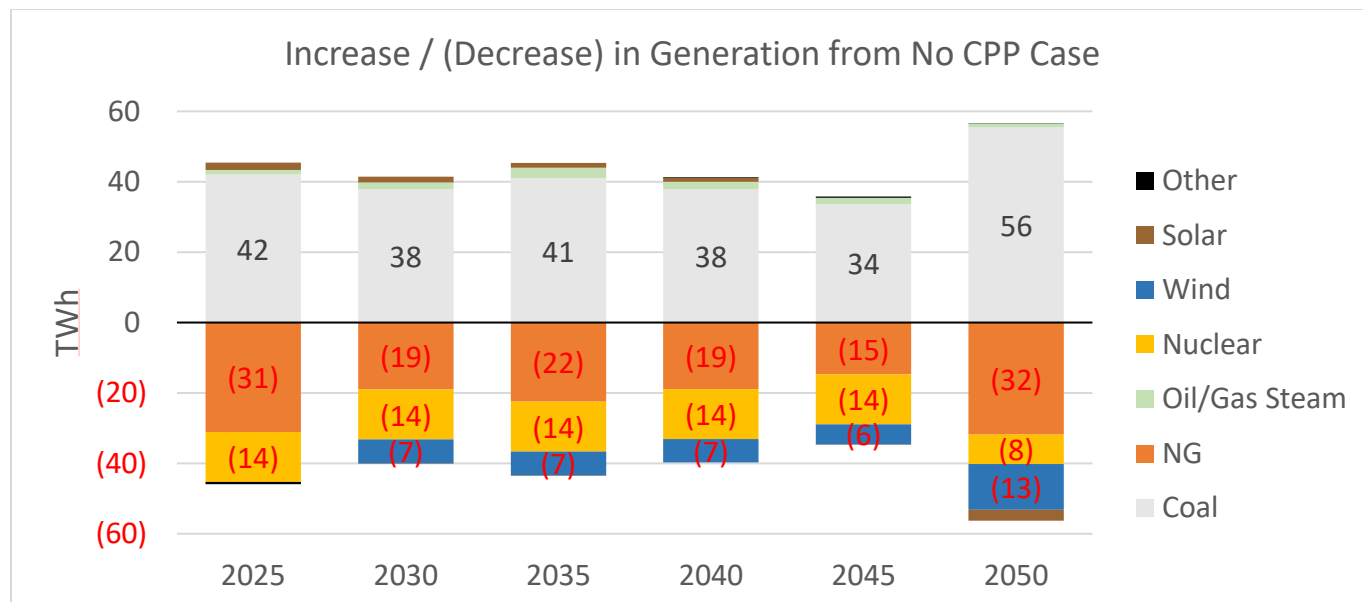
<sup>56</sup> ACE, 83 Fed. Reg. at 44,750-51; ACE RIA ES-7.

<sup>57</sup> ACE, 83 Fed. Reg. at 44,751; ACE RIA ES-7.

<sup>58</sup> ACE RIA 2-1.

result of “abundant natural gas supplies and low prices, large increases in renewable energy deployment, and flat overall electric demand.”<sup>59</sup>

A logical response to these trends would be to *build* on this progress by amending the Clean Power Plan to make it stronger. But instead of leveraging these trends, which reflect the means by which the affected sources are reducing CO<sub>2</sub> emissions, EPA proposes to place a hefty thumb on the scale to reverse those market trends. As compared to “business as usual” trends without the Clean Power Plan in place, the Proposal increases generation from coal-fired power plants and decreases generation at natural gas-fired power plants, wind, and nuclear.



Source: SSR spreadsheets accompanying ACE RIA

That the affected sources continue to reduce emissions by utilizing the measures underlying the Clean Power Plan without a regulation having taken effect does not relieve EPA from finalizing a meaningful section 111 regulation, *see infra* at section IV.C.3, as the Proposal<sup>60</sup>—and recently the Administrator<sup>61</sup>—ponders. The most recent IPCC report discussed above makes clear that, in order to have any hope of avoiding the most catastrophic impacts of climate change, global emissions of greenhouse gases must decrease by nearly 50% by 2030 and reach net zero by 2050.<sup>62</sup> As EPA itself has stated, “No serious effort to address the monumental problem of climate change can succeed without meaningfully limiting [power] plants’ CO<sub>2</sub> emissions.”<sup>63</sup> This is why it is important not just to maintain the Clean Power Plan, but to strengthen it to keep

<sup>59</sup> *Id.* 3-6.

<sup>60</sup> ACE, 83 Fed. Reg. at 44,751.

<sup>61</sup> Reid Frazier, StateImpact Pennsylvania NPR, “@EPAAWheeler at a gas conference touts declines in CO<sub>2</sub> emissions during Trump admin from power sector. Says that shows federal regs on CO<sub>2</sub> aren’t necessary to reduce GHGs.” Oct. 24, 2018, 9:10 am, <https://twitter.com/reidfrazier/status/1055091566438703105>.

<sup>62</sup> IPCC Report, Technical Summary TS-6, TS-7.

<sup>63</sup> Resp. EPA’s Final Br., at 10, *West Virginia v. EPA*, D.C. Cir. No. 15-1363 (filed Apr. 22, 2016).

up with the growing potential for cost-effective emission reductions and the continued urgency of climate change.

Moreover, even with recent progress in reducing climate pollution from power plants, the Clean Power Plan will still deliver significant benefits relative to the Proposal<sup>64</sup>—and is crucial to prevent any backsliding in the case of changing market conditions.<sup>65</sup> And despite EPA’s claims to the contrary,<sup>66</sup> the fact that current trends might change does not relieve EPA of its obligation to reasonably address them in its rulemaking.<sup>67</sup>

EPA has offered no reasoned explanation of its attempt to revive aging coal plants in the face of a mountain of evidence demonstrating that the source category is substituting high-emitting generation with low- or zero-emitting generation to reduce its emissions. Indeed, the Agency’s approach is unsupported by substantial evidence<sup>68</sup> and represents such “a clear error of judgment” that the Agency’s only option is to withdraw the Proposal.<sup>69</sup> This Proposal is so deficient that EPA admits that even with what is effectively a source-by-source analysis, “emissions might increase at some generators,” and the Proposal is a “deregulatory action.”<sup>70</sup> Not only is the Proposal worse than the system underlying the Clean Power Plan, it does not even meet EPA’s statutory obligation to actually mitigate CO<sub>2</sub> emissions from fossil fuel-fired power plants. EPA must not repeal the Clean Power Plan unless and until it can finalize a legal replacement rule that fulfills the section 111 mandate to *regulate* existing power plants—and to do so to a degree commensurate with the worsening climate crisis.

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<sup>64</sup> See ACE RIA ES-7, ES-8 tbl. ES-5, 3-40 tbl. 3-41 (showing that power sector emissions under ACE would be over 100 million tons greater in 2030 than under the CPP).

<sup>65</sup> For example, the U.S. Energy Information Administration (“EIA”) projects that under more rapid economic growth conditions, power sector emissions would increase by roughly 40 million metric tons over “business as usual” in 2030. EIA, Annual Energy Outlook, High Economic Growth Side Case tbl. 18 (Feb. 2018), [https://www.eia.gov/outlooks/aeo/excel/sidecases/hmacro/aeotab\\_18.xlsx](https://www.eia.gov/outlooks/aeo/excel/sidecases/hmacro/aeotab_18.xlsx); EIA, Annual Energy Outlook, High Economic Growth with CPP Side Case tbl. 18 (Feb. 2018), [https://www.eia.gov/outlooks/aeo/excel/sidecases/cpphm/aeotab\\_18.xlsx](https://www.eia.gov/outlooks/aeo/excel/sidecases/cpphm/aeotab_18.xlsx). EIA’s projections show that having the Clean Power Plan in place would ensure the continued downward emission trend even if economic growth increases. By contrast, EPA admits that the ACE Proposal will never yield any more than a slight improvement over whatever the market would otherwise deliver. ACE, 83 Fed. Reg. at 44,754 (“EPA believes that a BSER focused on making [coal] plants as efficient as possible is the best way to ensure GHG emission reductions regardless of other factors such as technology changes for other types of generation, changes in fuel price, changes in electricity demand or changes in energy policy that neither environmental regulators nor power companies have the power to control.”).

<sup>66</sup> ACE, 83 Fed. Reg. at 44,751, 44,754.

<sup>67</sup> *Chlorine Chem. Council v. EPA*, 206 F.3d 1286, 1290-91 (D.C. Cir. 2000) (“EPA cannot reject the ‘best available’ evidence simply because of the possibility of contradiction in the future by evidence unavailable at the time of action—a possibility that will *always* be present.”) (emphasis in original).

<sup>68</sup> See, e.g., *Cablevision Systems Corp. v. Fed. Comm’n Comm’n*, 597 F.3d 1306, 1310 (D.C. Cir. 2010); *Fla. Gas Trans. Co. v. Fed. Energy Regulatory Comm’n*, 604 F.3d 636, 639 (D.C. Cir. 2010); *Ass’n of Data Processing Serv. Orgs. v. Bd. of Governors of the Fed. Reserve Sys.*, 745 F.2d 677, 683-84 (D.C. Cir. 1984).

<sup>69</sup> *State Farm*, 463 U.S. at 43 (1983) (internal citations omitted).

<sup>70</sup> ACE RIA 6-3.

**III. THE PROPOSAL FAILS TO FULFILL EPA’S DUTY TO DETERMINE THE BEST SYSTEM OF EMISSION REDUCTION AND ISSUE EMISSION GUIDELINES UNDER SECTION 111(D) AND ARBITRARILY IGNORES THE CONSEQUENCES OF THAT FAILURE.**

**A. The Proposal Fails to Set a Quantitative Pollution Limit or Establish Any Required Timeline for Pollution Reductions, Flouting EPA’s Obligations Under Section 111.**

EPA has recognized for over forty years that section 111(d) requires “maximum feasible control of pollutants” from designated sources.<sup>71</sup> The failure to establish any guideline requiring a particular degree of emission reduction<sup>72</sup> by a time certain renders the Proposal meaningless and does not even begin to satisfy the Agency’s duty under section 111(d) to control emissions.

As discussed in Joint Environmental Comments on Framework Regulations, while states set “standards of performance” for their sources, that is a defined term, and section 111(a)(1) requires *the Administrator*, not the states, to identify “the emission levels that are ‘achievable’ with ‘adequately demonstrated technology.’” After EPA makes this determination, it must exercise its discretion to choose an achievable *emission level*, which represents the best balance of economic, environmental, and energy considerations.”<sup>73</sup> Moreover, a certain emission limit ensures that “State[s] shall . . . establish[] standards of performance” consistent with the statute, and is in line with the section 111(d) cross reference to section 110, where EPA establishes substantive baseline requirements, and states have flexibility in deciding *how*—but not *whether*—to meet those requirements.<sup>74</sup>

EPA *must* determine the emission limit that the best system would achieve, and state plans must be at least as stringent as that emission limit. A list of heat rate improvements of varying effectiveness—coupled with unfettered discretion for states to choose whether and how to apply those improvements—fails entirely to fulfill the Administrator’s duty under section 111. Moreover, it provides no benchmark by which the Administrator can judge whether state plans are “satisfactory” as required by the statute.<sup>75</sup> The Proposal contains no limit, which flatly violates section 111.

Not only does section 111 require EPA to determine an emission limit, the history and purpose of the Clean Air Act strongly weigh against a purely procedural role for EPA in reviewing state plans. This has been EPA’s longstanding position since 1975, when it first explained that

[a]gainst [the] background of Congressional firmness, the overriding purpose of which was to protect public health and welfare, it would make no sense to interpret

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<sup>71</sup> 1975 Implementing Regulations, 40 Fed. Reg. at 53,342; *see also id.* at 53,344 (stating that “section 111(d) requires maximum feasible control of welfare-related pollutants in the absence of” a reasoned basis for a less stringent approach, and that “EPA will promulgate plans requiring maximum feasible control if States fail to submit satisfactory plans for welfare-related pollutants”).

<sup>72</sup> 83 Fed. Reg. at 44,764 (“EPA is proposing to clarify that the implementing regulations do not require EPA to provide a presumptive numerical standard as part of its emission guidelines.”).

<sup>73</sup> *Sierra Club v. Costle*, 657 F.2d 298, 330 (D.C. Cir. 1981) (emphasis added).

<sup>74</sup> 42 U.S.C. § 7411(d).

<sup>75</sup> *Id.* § 7411(d)(2)(A).

section 111(d) as requiring the Administrator to base approval or disapproval of State plans solely on procedural criteria. Under that interpretation, States could set extremely lenient standards – even standards permitting greatly increased emissions – so long as EPA’s procedural requirements were met. Given that the pollutants in question are (or may be) harmful to public health and welfare, and that section 111(d) is the only provision in the Act requiring their control, it is difficult to believe that Congress meant to leave such a gaping loophole in a statutory scheme otherwise designed to force meaningful action.<sup>76</sup>

Not only is the Proposal unlawful, but EPA provides no reasoned explanation for adopting it, and in particular no reasoned explanation for abandoning its longstanding approach. Accordingly, its new reading is arbitrary and capricious. *See* Joint Environmental Comments on Framework Regulations.

Not only is a numerical limit missing from the Proposal, there is no time certain by which emission reductions are required.<sup>77</sup> As described in Joint Environmental Comments on Framework Regulations, the Proposal would allow as long as six years after the finalization of the rule for a satisfactory plan to be in place.<sup>78</sup> And as EPA has most recently stated, it does not expect to finalize the Proposal until “the first part of 2019.”<sup>79</sup> Therefore, a plan may not be in place until at least the first part of 2025. The Clean Power Plan, on the other hand, includes a mandatory compliance period beginning in 2022 for all covered states.<sup>80</sup>

However, under the Proposal, even once a plan is in place, there is no guarantee of emission reductions at that point. While the Proposal requires state plans to include compliance periods,<sup>81</sup> that term is merely defined as “a discrete time period for an affected EGU to comply with a standard of performance.”<sup>82</sup> The only requirement for compliance with the state-established standard of performance based on a voluntary list of minimal heat rate improvements is that, if the compliance period is longer than 24 months, it must include increments of progress.<sup>83</sup> In fact, EPA admits that “[t]he year 2025 is an *approximation* for when the standards of performance under the proposed rule might be implemented”<sup>84</sup> and provides no further guidance for proper compliance schedules or increments of progress.

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<sup>76</sup> 1975 Implementing Regulations, 40 Fed. Reg. at 53,343; *see also Alaska Dep’t of Env’tl. Conservation v. EPA*, 540 U.S. 461, 487 (2004) (recognizing that the Court “will normally accord particular deference to longstanding agency interpretations” (quoting *Barnhart v. Walton*, 535 U.S. 212, 220 (2002))).

<sup>77</sup> ACE, 83 Fed. Reg. at 44,763 (“EPA believes it more appropriate that a state establish tailored compliance deadlines for its sources based on the standard ultimately determined for each source.”).

<sup>78</sup> *Id.* at 44,770 tbl. 4 (describing a three-year deadline for state plan submission following the finalization of an emission guideline, an additional one-year period for EPA to review and approve or disapprove a plan, and an additional two years for EPA to promulgate a federal plan if it disapproves a state plan).

<sup>79</sup> Resp. EPA’s Opp. to Intervenor’s Mot. to Decide the Merits of Case, at 1, *West Virginia v. EPA*, D.C. Cir. No. 15-1363, Doc. No. 1750684 (filed Sept. 4, 2018).

<sup>80</sup> CPP, 80 Fed. Reg. at 64,744.

<sup>81</sup> ACE, 83 Fed. Reg. at 44,809 (to be codified at 40 C.F.R. § 60.5750a).

<sup>82</sup> *Id.* at 44,811 (to be codified at 40 C.F.R. § 60.5805a).

<sup>83</sup> *Id.* at 44,809 (to be codified at 40 C.F.R. § 60.5750a).

<sup>84</sup> ACE RIA ES-4 (emphasis added).



In contrast, the Clean Power Plan established clear compliance periods, on a calendar year basis for each emission standard, with defined interim and final periods, and a continuing obligation after 2030.<sup>85</sup> Since 1975, EPA has required *emission guidelines* to include “compliance times.”<sup>86</sup> Here, EPA shirks that responsibility, fails to offer a reasoned explanation for its approach, abandons its longstanding position without reasoned justification, and leaves states with a vague obligation to include compliance periods in their state plans. Such an approach would be arbitrary and unlawful in any event; but especially as the climate crisis intensifies, deadlines must be more expeditious than the Clean Power Plan, not indefinite as proposed.

**B. EPA Arbitrarily Failed to Consider that the Proposal Would Incentivize a Race to the Bottom and Fail to Internalize the Costs of Pollution, Thus Thwarting the CAA and Section 111.**

The Clean Air Act was enacted and amended in response to complex air pollution problems in a federal system.<sup>87</sup> In order to avoid a “race to the bottom,” wherein states compete with one another to lower environmental protections to attract new industries and keep existing businesses within their borders, the Clean Air Act envisions “uniform state and local laws related to the prevention and control of pollution,”<sup>88</sup> while also preserving state authority to adopt requirements that are *more* stringent (though not *less* so) than federal minimum requirements.<sup>89</sup> The Proposal controverts this overarching goal by neglecting to provide any minimum emissions performance benchmark to measure the adequacy of state plans regulating existing sources.

Under this Proposal, states are to evaluate the applicability of seven categories of potential heat rate improvement measures of varying effectiveness to establish a standard of performance for each plant,<sup>90</sup> but the Proposal provides no requirements governing how such applicability analyses must be conducted. Further, EPA proposes that states may establish an even less stringent standard based on a host of open-ended factors, without providing any requirements governing how these factors must be applied. The total absence of any requirement that ensures that the resulting standards of performance will achieve the statutorily required maximum feasible control renders meaningless the Proposal’s minimal requirement that states consider a list of heat rate improvement options.<sup>91</sup> In fact, EPA’s own analysis admits that it does not capture the possibility “that States may use opportunities afforded to them in the proposed rule when applying BSER to avoid implementing HRI and retirement of affected sources.”<sup>92</sup>

EPA recognized this danger in the Clean Power Plan, explaining that

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<sup>85</sup> CPP, 80 Fed. Reg. at 64,849.

<sup>86</sup> 1975 Implementing Regulations, 40 Fed. Reg. at 53,340.

<sup>87</sup> 42 U.S.C. § 7401(a).

<sup>88</sup> *Id.* § 7402(a).

<sup>89</sup> *Id.* § 7416 (preserving state authority to adopt emission limits and other air pollution control measures, “except that if an emission standard or limitation is in effect under an applicable implementation plan or under section 7411 or section 7412 of this title, such State or political subdivision may not adopt or enforce any emission standard or limitation which is less stringent than the standard or limitation under such plan or section.”).

<sup>90</sup> ACE, 83 Fed. Reg. at 44,763.

<sup>91</sup> *Id.*

<sup>92</sup> ACE RIA 1-19.

Congress intended to establish a national baseline for regulated sources. In the Clean Air Act Amendments of 1970, Congress was particularly concerned with “efforts on the part of States to compete with each other in trying to attract new plants and facilities without assuring adequate control of extrahazardous or large-scale emissions therefrom.” H. Rep. No. 91-1146, Reporting on H.R. 17255, p. 893 (Jun. 3, 1970). Providing states with an exclusive role in setting standards of performance could lead, Congress found, to pollution havens. Those same concerns apply to existing sources in the utility power sector today.<sup>93</sup>

Leaving such unfettered discretion to the states will result in significant discrepancies and inconsistent standards between states. The Proposal would incentivize states to establish the weakest possible standards, subjecting their populations and other jurisdictions to harms from dangerous air pollution of global effect. While the Clean Air Act's core approach is to protect public health through uniform floors, the Proposal flouts that approach by stoking a race to the bottom.

In addition to preventing a race to the bottom, the Clean Air Act—as EPA acknowledges—is designed to “address ‘negative externalities’ whereby the market does not internalize the full opportunity cost of production borne by society as public goods such as air quality are unpriced.”<sup>94</sup> Since the costs of climate pollution are borne by all Americans, rather than the residents of any individual state, it is particularly essential that EPA provide minimum levels of stringency that state plans should meet rather than give states unfettered discretion to determine standards of performance. And despite EPA’s rhetoric that the Proposal will “work towards addressing this market failure,” the Proposal fails to adopt real limits that would impose the costs of climate pollution back onto polluters, and would (even under EPA's over-optimistic estimates) only reduce CO<sub>2</sub> emissions by 14MM tons in 2030 as compared to the 117MM tons reduced under the Clean Power Plan.<sup>95</sup> This give-away to the affected sources reveals that the Proposal is an unlawful life extension program for old, dirty, coal plants masquerading as a climate rule. As described in our Joint Environmental Comments on NSR Issues, EPA is pretending to act on climate, but in actuality, the Agency is opening the door to life extension projects that will greatly increase emissions of pollutants and exempting those projects from the required pollution controls. Besides increasing emissions of harmful pollutants like sulfur dioxide and nitrogen oxides, the life extension projects will increase CO<sub>2</sub> emissions by amounts vastly exceeding the small reductions in CO<sub>2</sub> emissions attributable to heat rate improvements that EPA touts as discharging its statutory duties to the public.

### **C. The Proposal Unlawfully Fails to Ensure that States “Shall” Establish Sufficient “Standards of Performance.”**

EPA violates the Clean Air Act’s mandate by failing to provide a binding emission limit for States, and additionally failing to provide even minimal requirements governing how States are to use the “information” provided in the emission guideline or consider source-specific factors to

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<sup>93</sup> EPA, Legal Memorandum Accompanying Clean Power Plan for Certain Issues, at 19 n.34 (2015), *available at* <https://www.epa.gov/sites/production/files/2015-11/documents/cpp-legal-memo.pdf>.

<sup>94</sup> ACE RIA 1-3; ACE, 83 Fed. Reg. at 44,749.

<sup>95</sup> ACE RIA ES-8, 3-40 tbls. ES-5 & 3-41.

set standards of performance. Section 111(d)(1) provides: “The Administrator shall prescribe regulations which *shall* establish a procedure . . . under which each State shall submit to the Administrator a plan which [] establishes standards of performance [for existing sources]” (emphasis added). As described further in the Joint Environmental Comments on Framework Regulations, EPA’s proposed amendments to the implementing regulations fail to ensure that States will submit plans with adequate standards of performance. This is even more apparent in the Proposal’s specific Emission Guidelines for Greenhouse Gas Emissions From Existing Electric Utility Generating Units.

1. EPA’s obligation to ensure states establish adequate standards of performance is not diminished by section 111(d)’s reference to remaining useful life or other factors.

While section 111(d) allows states to consider factors such as remaining useful life when applying standards of performance to sources, this does not in any way diminish EPA’s responsibility to ensure states set and apply standards of performance to sources in a way that achieves maximum feasible control for all units. Section 111’s plain language defines “standard of performance” as “a standard for emissions of air pollutants *which reflects the degree of emission limitation achievable through the application of the best system of emission reduction* which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated” (emphasis added). States are required by 111(d) to set “standards of performance” that secure the degree of emission reduction achievable under the best system of emission reduction. It is EPA’s role to determine best system of emission reduction for *all* affected sources.<sup>96</sup>

The flexibility the Clean Air Act affords to states to consider remaining useful life and other factors when applying standards of performance to specific sources only underscores that the standards of performance themselves are expected to strictly conform to an EPA-determined emission limit. EPA acknowledges that “Congress explicitly envisioned under section 111(d)(1) that states could implement standards of performance that vary from EPA’s emission guidelines under appropriate circumstances.”<sup>97</sup> Though States have flexibility to tailor standards, they still must attain the emission limitation determined by EPA to be achievable through application of the BSER. In certain exceptional circumstances, states may tailor standards to deviate from the emission guideline—such as by securing the early retirement of a source nearing the end of its useful life. EPA determined in the CPP, for example, that remaining useful life and other source-specific factors could not be used to make adjustments to performance rates or the aggregate emission goal because states had sufficient flexibility to craft implementation plans that would take into account these factors using market-based instruments.<sup>98</sup> States could apply individual requirements to sources as long as an overall limit across sources was met. Remaining useful life and other factors cannot be used to justify watering down standards for sources when the emission guideline already sufficiently considers the relative costs of applying standards to sources. States can take advantage of flexibilities within the emission guideline to consider remaining useful life and other factors, and apply standards differently in exceptional

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<sup>96</sup> 42 U.S.C. § 7411(a)(1).

<sup>97</sup> ACE, 83 Fed. Reg. at 44,766.

<sup>98</sup> CPP, 80 Fed. Reg. at 64,870-71.

circumstances, such as when greater emission reductions can be achieved through an alternate approach—but still requiring states to achieve maximum feasible control.

EPA states, “Once a state evaluates the HRIs identified as part of the best system of emission reduction in establishing a standard of performance for a particular affected EGU, it is within the state’s discretion to take certain factors concerning that source, such as remaining useful life, into consideration when determining how the standard of performance should be applied.”<sup>99</sup>

However, these provisions are not intended to usurp EPA’s statutory role in setting the best system of emission reduction and allow states unfettered discretion to set standards of performance that do not reflect the best system of emission reduction. If EPA did not have a strong statutory role in this process, the remaining useful life provision would be mere surplusage. It is EPA’s role to determine the reductions that can be achieved when it determines the best system of emission reduction, with these provisions allowing flexibility in a narrow set of circumstances.

2. ACE fails to provide requirements sufficient to ensure that states set adequate standards of performance, making state plans less likely to achieve compliance with the Clean Air Act.

EPA has historically interpreted the Clean Air Act to require it to provide a numerical emission limit for states to meet, and indeed—as discussed in the Joint Environmental Comments on Framework Regulations—EPA is required to do so by the language, structure, and context of section 111. EPA now proposes to change course and provide states only with a list of “candidate technologies for HRI measures corresponding to a range of reductions and costs as information regarding the degree of emission reduction achievable through application of the best system of emission reduction.”<sup>100</sup> EPA expects states to use this “information” as “guidance for states to use in evaluating the efficacy of implementing each measure identified” but then to “conduct a unit-specific evaluation[] of HRI potential, technical feasibility, and applicability for each of the best system of emission reduction candidate technologies.”<sup>101</sup> The Proposal thus does not provide a binding numerical emission limit, which is arbitrary and unlawful for reasons stated above.

While the lack of a numerical emission limit is unlawful on its own, this deficiency is compounded by the absence of *any* additional requirements governing how to apply these candidate technologies to achieve compliance with section 111. Failing to provide a numerical emission limit *in addition* to failing to provide specific guidance to ensure standards of performance reflect maximum feasible control is an egregious violation. The Proposal thus does not “establish a procedure . . . under which each State shall submit to the Administrator a plan which [] establishes standards of performance.”<sup>102</sup>

Under EPA’s Proposal there is seemingly no limit on states’ discretion to water down standards of performance. States are free to evaluate “candidate technologies” supplied by EPA on the

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<sup>99</sup> ACE, 83 Fed. Reg. at 44,763.

<sup>100</sup> *Id.*

<sup>101</sup> *Id.*

<sup>102</sup> 42 U.S.C. § 7411(d)(1).

basis of “the specific characteristics of those units,” which may include “historical emission rates, effect of potential HRIs . . . , or changes in operation of the units, among other factors.”<sup>103</sup> If they choose to apply any of these to individual sources, they are further permitted to “take into consideration” remaining useful life and other factors when applying a standard of performance to a particular source. States are to do this with no requirements from EPA governing how to take these factors into consideration.<sup>104</sup> EPA itself notes that with this approach “there is a wide range of potential outcomes that are highly dependent upon how the standards are applied (and to what degree states take into consideration other factors, including remaining useful life).”<sup>105</sup> Thus, there is no assurance that state plans will contain standards of performance that require *any* improvement in sources’ emissions performance and there are no criteria advanced to indicate how EPA will determine whether a state plan is inconsistent with section 111(d).

EPA’s Proposal cannot stand because it flouts the statutory requirements discussed above, offers no reasoned explanation for such a do-nothing approach, and completely fails to address the problem at hand. The proposed procedure for development of state plans allows states to potentially make no emission reductions—much less meet the statutory requirement of maximum feasible control of carbon pollution. This is unlawful under section 111(d). In addition, in the current context where EPA has before it a massive record of climate science pointing to the need for rapid reductions of carbon emissions, the Proposal is all the more inadequate under the Clean Air Act.

#### **IV. EPA’S APPROACH TO CHOOSING THE BEST SYSTEM OF EMISSION REDUCTION IMPOSES ARBITRARY, UNLAWFUL CONSTRAINTS THAT DEFEAT THE STATUTORY PURPOSE.**

##### **A. EPA’s Evaluation of Potential Systems of Emission Reduction and Statutory Interpretation Unlawfully Fails to Give Appropriate Consideration to the Emission Reductions that Can Be Achieved Through Different Systems.**

EPA arbitrarily and unlawfully ignores the requirements of section 111(d) in proposing only heat rate improvements as the best system of emission reduction for existing power plants. Section 111 provides for controlling sources of pollution “to the greatest degree practicable,”<sup>106</sup> by basing emission guidelines on the “best system of emission reduction.” EPA undercuts this clear statutory mandate by instead choosing a system it finds “technically feasible and appropriate,” but which achieves minimal, if any, pollution reductions.<sup>107</sup> EPA’s choice here frustrates the statutory requirements because, unlike heat rate improvements, there are other adequately demonstrated options—none of which the Proposal explores in any serious detail—that would achieve far greater emission reductions from affected sources at acceptable costs. Not only does EPA fail to require the *best* system of emission reduction, it arbitrarily fails to provide “reasoned analysis to cogently explain why its [Proposal] satisfies the [Clean Air Act’s] requirements” at

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<sup>103</sup> ACE, 83 Fed. Reg. at 44,763.

<sup>104</sup> *Id.* at 44,756.

<sup>105</sup> *Id.* at 44,759.

<sup>106</sup> *Essex Chem. Corp. v. Ruckelshaus*, 486 F.2d 427, 434 n.14 (D.C. Cir. 1973) (citing S. Rep. No. 1196, 91<sup>st</sup> Cong., 2<sup>nd</sup> Sess. 16 (1970)).

<sup>107</sup> ACE, 83 Fed. Reg. at 44,749.

all.<sup>108</sup>

In the Clean Power Plan, EPA found that the “magnitude and rate of the present [greenhouse gas (“GHG”)] increase place the climate system in what could be one of the most severe increases in radiative forcing of the global climate system in Earth history.”<sup>109</sup> EPA further found it imperative that the section 111(d) regulation for power plants be “commensurate with the sector’s contribution to GHG emissions and thus necessary to mitigate the dangers presented by climate change.”<sup>110</sup> “[T]he amount of air pollution [is] a relevant factor to be weighed when determining the optimal standard.”<sup>111</sup>

However, EPA previously concluded that limiting the best system of emission reduction to heat rate improvements yields emission reductions at a level “grossly insufficient to address the public health and environmental impacts from CO<sub>2</sub>,” and may, in fact, lead to emission *increases*.<sup>112</sup> Even though the Proposal requires no minimum emission reductions, EPA arbitrarily and without reasoned explanation concludes that “the emission reductions required from state plans are the appropriate amount for a 111(d) rule.”<sup>113</sup> Additionally, the Proposal fails to analyze the amount or cost of reductions associated with other available controls options that meet all of the Agency’s purported “at the source” limitations, such as carbon capture and sequestration or natural gas co-firing. This type of conclusory justification is a hallmark for an unlawful and arbitrary rulemaking.<sup>114</sup>

EPA fails to address the climate crisis, power plants’ contribution, or the overwhelming record the Agency established in the Clean Power Plan. The failure to address the urgency and magnitude of this crisis renders the choice of minimal heat rate improvements irrational, arbitrary, and unlawful.

**B. EPA’s Selective List of Suggested HRI Measures Does Not Comprise the “Best System”—or Indeed Any “System”—Because EPA Does Not Define Which Combination of Technologies Constitutes the System or Explain Why that Combination of Technologies Is the Best.**

As described above, the Clean Air Act charges EPA with identifying the “best system of emission reduction” that it determines is adequately demonstrated, taking into account emission

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<sup>108</sup> *Nat. Res. Def. Council v. Daley*, 209 F.3d 747, 755-56 (D.C. Cir. 2000).

<sup>109</sup> CPP, 80 Fed. Reg. at 64,684. *See also generally* Joint Environmental Comments on Climate Change, Doc. No. EPA-HQ-OAR-2017-0355 (Oct. 31, 2018); Joint Comments Specific to Climate Change, Doc. No. EPA-HQ-OAR-2017-0355-20637 (Apr. 26, 2018) (discussing the voluminous scientific evidence published since the Clean Power Plan’s promulgation that overwhelmingly reinforces EPA’s already compelling record from 2015 and amplifies EPA’s conclusion that greenhouse gases from existing power plants endanger public health and welfare by driving increasingly dangerous climate change).

<sup>110</sup> CPP, 80 Fed. Reg. at 64,667.

<sup>111</sup> *Sierra Club*, 657 F.2d at 326.

<sup>112</sup> CPP Reconsideration Denial, at 55 n.75; *see also* CPP, 80 Fed. Reg. at 64,787.

<sup>113</sup> ACE, 83 Fed. Reg. at 44,749.

<sup>114</sup> *Keyspan-Ravenswood v. Fed. Energy Regulatory Comm’n*, 474 F.3d 804, 812 (D.C. Cir. 2007); *see also Chem. Mfrs. Ass’n v. EPA*, 28 F.3d 1259, 1265 (D.C. Cir. 1994) (conclusory statements imply that the agency is committed to a path regardless of the facts).

reductions, cost, environmental and health impacts, and energy requirements.<sup>115</sup> Instead of performing this duty, EPA has identified “a list of ‘candidate technologies’ of HRI measures” that states may consider when establishing standards of performance.<sup>116</sup> These measures are supposedly the “‘most impactful’” technologies, equipment upgrades, and best operating and maintenance practices that the Agency has identified<sup>117</sup>—but it does not explain what “most impactful” means, how it relates to the statutory factors, or what combination of measures in fact comprises the best system. EPA’s failure to identify the best system—or evaluate any specific system of HRI whatsoever—violates the statute and renders the proposed rule arbitrary.

Section 111 requires the Agency to identify the “system” that is the “best”—in the superlative—for reducing emissions from a source category.<sup>118</sup> Moreover, the statute directs EPA to take into account the cost, energy requirements, and nonair health and environmental impacts in choosing the “best system.”<sup>119</sup> This plain language forecloses the à la carte approach EPA has proposed. Although a set or combination of measures can together constitute the best system of emission reduction, a list of potential measures for states to choose from cannot. As EPA acknowledged in the CPP, “[t]he ordinary, everyday meaning of ‘system’ is a set of things or parts forming a complex whole,” or a “set of measures that work together to reduce emissions.”<sup>120</sup> Thus, a system may involve multiple parts, but simply collecting options and delegating to states the task of identifying the best system of emission reduction does not meet the statutory requirement.

Aside from its plain language, the structure of the statute illustrates the unreasonableness of EPA’s Proposal. The definition of “standard of performance” in section 111(a)(1) applies both to standards of performance for existing sources and to new source performance standards. A list of candidate technologies obviously would not constitute the best system of emission reduction for new sources, as there would be no other actors (here, the states) to step in and determine the best system. In the context of section 111(d), EPA cannot rely on the states’ prerogative to take remaining useful life and other source-specific factors into account when *setting* a standard of performance<sup>121</sup> to shirk the Agency’s section 111(a)(1) duty to “determine[.]” the best system of emission reduction.<sup>122</sup>

Contrary to EPA’s current position questioning the appropriateness of a source-category-wide best system of emission reduction,<sup>123</sup> the CPP appropriately did not attempt to tailor Building Block 1 of its best system of emission reduction (i.e., HRI) to individual sources by selecting customized sets of technologies for each EGU or, as here, delegating the choice of measures to states. Indeed, doing so would have upended the scheme of cooperative federalism enshrined in

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<sup>115</sup> 42 U.S.C. § 7411(a)(1).

<sup>116</sup> ACE, 83 Fed. Reg. at 44,756.

<sup>117</sup> *Id.*

<sup>118</sup> 42 U.S.C. § 7411(a)(1); *cf. Sierra Club v. EPA*, 895 F.3d 1, 15-16 (D.C. Cir. 2018) (noting that, in regulating hazardous air pollutants, “the EPA’s discretion does not extend to defining several different ‘best’ metrics within the same category and allowing emitters to comply with the most favorable standard”).

<sup>118</sup> 42 U.S.C. § 7411(a)(1).

<sup>119</sup> *Id.*

<sup>120</sup> CPP, 80 Fed. Reg. at 64,720 (citing Oxford Dictionary of English (3d ed.) (2010)).

<sup>121</sup> 42 U.S.C. § 7411(d).

<sup>122</sup> ACE, 83 Fed. Reg. at 44,756.

<sup>123</sup> *Id.* at 44,753.

section 111(d) by denying states the benefit of EPA’s expertise in identifying a best system of emission reduction and assessing the emission reductions that can be achieved using that system. States’ authority to take remaining useful life and other factors into account when applying a standard of performance to a source only underscores EPA’s duty to identify one system for the source category: without a defined system (and resultant federal emission limitation), there would have been little need for Congress to command EPA to allow states to take such factors into account. The structure of section 111 therefore points away from EPA’s free-floating interpretation.

EPA’s abdication of this duty has important legal and policy ramifications. The failure to determine a complete system of emission reduction demonstrates that the Agency has not engaged in a meaningful analysis of the factors in section 111(a)(1): if it had properly analyzed these factors, it would have arrived at one best system of emission reduction. By stopping short, EPA cannot rationally conclude that there are no other potential systems worthy of consideration (because under EPA’s truncated approach there is no system against which to compare such alternative systems). Furthermore, EPA cannot rationally conclude that the system that it purports to have identified is “adequately demonstrated”—or the “best”—because the Agency has not examined or reached any conclusion about which of these measures, if any, would function effectively in combination.

Delegating to the states the responsibility to identify the best system of emission reduction, for each unit, contravenes principles of cooperative federalism reflected in section 111(d). Indeed, EPA acknowledged in its 1975 implementing regulations that it has a comparative advantage in evaluating potential best system of emission reduction measures.<sup>124</sup> Moreover, the lack of a federally determined system leaves states to guess the level of emission reduction (which it is also EPA’s duty to identify, as discussed elsewhere<sup>125</sup>) that would make their plans approvable under section 111(d)—creating legal and regulatory uncertainty for EPA, the states, and the regulated entities themselves.<sup>126</sup> And because states would have an incentive to establish less stringent standards for sources within their borders relative to other states, the Proposed Rule would recreate the very “race to the bottom” dynamic that the Clean Air Act was intended to avoid.<sup>127</sup>

**C. Any Final Rule Replacing the CPP Must Use Updated Information, Must Use the “Best” System of Emission Reduction, and Would Yield More Ambitious Pollution Reductions than the CPP Requires.**

“One of the basic procedural requirements of administrative rulemaking is that an agency must give adequate reasons for its decisions.”<sup>128</sup> “[T]he agency must examine the relevant data and articulate a satisfactory explanation for its action including a ‘rational connection between the

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<sup>124</sup> See 1975 Implementing Regulations at 55,343 (noting that section 111 “take[s] advantage of the information and expertise available to EPA from its assessment of techniques for the control of the same pollutants from the same types of sources under section 111(b)”).

<sup>125</sup> See Joint Environmental Comments on Framework Regulations.

<sup>126</sup> 42 U.S.C. § 7411(d)(2)(A).

<sup>127</sup> See *Alaska Dep’t of Env’tl Conservation v. EPA*, 540 U.S. 461, 486 (2004).

<sup>128</sup> *Encino Motorcars, LLC v. Navarro*, 136 S. Ct. 2117, 2125 (2016).



facts found and the choice made.”<sup>129</sup> When an agency changes policy, “a reasoned explanation is needed for disregarding facts and circumstances that underlay or were engendered by the prior policy.”<sup>130</sup> “Where there is a policy change the record may be much more developed because the agency based its prior policy on factual findings. . . . An agency cannot simply disregard contrary or inconvenient factual determinations that it made in the past.”<sup>131</sup>

In determining the CPP’s best system of emission reduction, EPA extensively analyzed “broad trends within the utility power sector,” including measures that sources are already taking to reduce carbon pollution, trends indicative of the possibility of future progress, and federal and state programs succeeding at reducing carbon pollution from electric generating units (“EGUs”).<sup>132</sup> The facts that the Agency analyzed directly informed the degree of emission reduction that the best system of emission reduction would achieve. EPA recognized that sources could achieve pollution reductions using measures that had already been proven effective. In contrast, ACE includes a cursory reference to these trends but entirely omits them from the best system of emission reduction determination. EPA makes no effort to reconcile the ACE best system of emission reduction with either the Agency’s analysis in the CPP or the facts on the ground in the power sector. Instead, as discussed in more detail below, the Proposal draws the contradictory and arbitrary conclusion that a weak best system of emission reduction is appropriate whether market-driven pollution reductions continue on pace—or reverse course.<sup>133</sup> This dismissive, conclusory treatment of industry trends shows that EPA did not give balanced or reasoned consideration to how such trends are relevant to its action.

Recent reductions in carbon pollution from the power sector have been driven in large part by declining generation at higher-polluting sources and increasing generation at lower-polluting sources. Elsewhere, we show that EPA unlawfully excluded consideration of these power sector dynamics from its best system of emission reduction determination. In this section, we show that EPA diligently considered power sector trends in the CPP best system of emission reduction, and that those trends have only accelerated since the CPP was finalized, making pollution reductions more feasible and less expensive. EPA acknowledges these trends in the Proposal,<sup>134</sup> but it does not overcome—and barely discusses—the CPP’s well-supported conclusion that ongoing trends compel a best system of emission reduction that would achieve meaningful pollution reductions. Factoring in the most recent trends, EPA must finalize a best system of emission reduction that would achieve pollution reductions greater than those that would result from the CPP. Any other outcome would be arbitrary and unlawful.

The CPP also recognized that the best system of emission reduction must be established in the context of the problem that the rule addresses: climate change and the need to reduce carbon

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<sup>129</sup> *State Farm*, 463 U.S. 29, 43 (U.S. 1983) (quoting *Burlington Truck Lines v. United States*, 371 U.S. 156, 168 (1962)).

<sup>130</sup> *Fox Television*, 556 U.S. at 516.

<sup>131</sup> *Id.* at 537 (Kennedy, J., concurring).

<sup>132</sup> *E.g.*, CPP, 80 Fed. Reg. at 64,725, 64,795-96, 64,803-04.

<sup>133</sup> ACE, 83 Fed. Reg. at 44,754.

<sup>134</sup> *Id.* at 44,751 (“A comparison of EIA projections to EPA analysis for the original proposed CPP demonstrates that the rapid changes in the power sector are leading to CO<sub>2</sub> emission reductions at a faster rate than projected even a few years ago when the CPP was promulgated.”). *See also* ACE RIA ES-7.

pollution from EGUs.<sup>135</sup> In the CPP Preamble, EPA provided a thorough overview of climate science and the threat that it poses to our nation. As mentioned above, this context was a significant reason that EPA declined to base the CPP’s best system of emission reduction on heat rate improvement measures alone.<sup>136</sup> By contrast, EPA appears to have determined the proposed ACE best system of emission reduction in a vacuum, virtually oblivious to the magnitude of the problem at hand. In fact, the threat of climate change has only grown more severe since EPA finalized the CPP.<sup>137</sup> EPA’s failure to articulate “a reasoned explanation . . . for disregarding facts and circumstances that underlay . . . the prior policy” render the ACE proposal arbitrary and capricious.<sup>138</sup> A proper analysis of currently available information strongly supports even greater pollution reductions than those in the CPP.

1. Trends in the power sector make meaningful pollution reductions even more feasible and less costly than when the CPP was finalized.

The power sector has made remarkable progress over the past several years. EPA used 2012 as the baseline year to develop the targets for the Clean Power Plan, and the rule was projected to achieve pollution reductions of 19% below the 2012 baseline by 2030, equivalent to 32% below 2005 levels. Emissions have already declined by 14% between 2012 and 2017; in other words, the power sector has already achieved three-quarters of the reductions required from the baseline.<sup>139</sup> The decline since 2005 is even more dramatic: power sector emissions have decreased by approximately 28% relative to 2005 emissions, or about 88% of the reduction the CPP was originally expected to provide.<sup>140</sup> By contrast, in 2015—the year that the CPP was finalized—the U.S. Energy Information Administration (“EIA”) had projected that, without the CPP, power sector carbon pollution in 2030 would have fallen just 10% below 2005 levels.<sup>141</sup> The trends toward emission reductions are expected to continue, and as discussed below, many states and power companies have committed to generating a significantly higher percentage of power from zero-emitting sources in coming years.

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<sup>135</sup> CPP, 80 Fed. Reg. at 64,682-89.

<sup>136</sup> CPP, 80 Fed. Reg. at 64,727:

Given the magnitude of the environmental problem and projections by climate scientists that much larger emission reductions are needed from fossil fuel-fired EGUs to address climate change, the EPA looked at additional measures to reduce emission rates. This reflects our conclusion that, given the availability of other measures capable of much greater emission reductions, the emission reductions limited to this set of heat rate improvement measures would not meet one of the considerations critical to the best system of emission reduction determination—the quantity of emissions reductions resulting from the application of these measures is too small for these measures to be the best system of emission reduction by themselves for this source category.

*See also id.* at 64,787; CPP Reconsideration Denial, at 55 n.75.

<sup>137</sup> IPCC Report; Wuebbles, D.J., et al., U.S. Global Change Research Program, *Climate Science Special Report: Fourth National Climate Assessment*, <https://science2017.globalchange.gov/chapter/executive-summary/>.

<sup>138</sup> *Fox Television*, 556 U.S. at 515-16; *see also State Farm*, 463 U.S. at 43.

<sup>139</sup> *See EIA, Monthly Energy Review*, at 205 tbl. 12.6 “Carbon Dioxide Emissions from Energy Consumption: Electric Power Sector” (Sept. 2018), <https://www.eia.gov/totalenergy/data/monthly/pdf/mer.pdf> (stating that electric power sector CO<sub>2</sub> emissions totaled 2,034 MMT in 2012 and 1,744 MMT in 2017).

<sup>140</sup> *See id.* (stating that electric power sector CO<sub>2</sub> emissions totaled 2,416 MMT in 2005).

<sup>141</sup> EIA, *Annual Energy Outlook 2015* (Apr. 2015), <https://www.eia.gov/outlooks/archive/aeo15/index.cfm>.

When EPA finalized the CPP in 2015, it established emission guidelines based “in large part on already clearly emerging growth in clean energy innovation, development, and deployment.”<sup>142</sup> In its January 2017 Reconsideration Denial, EPA recognized that market trends in the power sector have continued to drive carbon pollution reductions in the period since the CPP was finalized.<sup>143</sup> These trends include declining coal generation and increased renewable energy and natural gas generation—driven in large part by improving wind and solar economics, the renewable energy tax credit extensions, and low natural gas prices—in addition to increased demand-side energy efficiency.<sup>144</sup> EPA concluded that those power sector trends “allow states and sources to implement the CPP and achieve its goals more readily than originally projected” and “at very low costs.”<sup>145</sup> A more recent analysis supported EPA’s observations, attributing the decline in U.S. coal generation between 2011 and 2017 to natural gas (accounting for 49% of the decline), reduced demand for electricity (26%), and the growth of renewables (18%).<sup>146</sup>

Even as emissions have declined, the potential to achieve cost-effective emission reductions by shifting generation to lower emitting sources continues to grow. Applying the CPP methodology to a baseline reflecting the major emission reductions already achieved in the power sector since 2015, and taking into account declining costs of lower and zero-emitting generation, would yield much greater projected emission reductions by 2030 than were projected to be achieved when the CPP was finalized. A June 2016 analysis by M.J. Bradley & Associates, using the same electric sector model as EPA but updating several inputs to account for recent developments, found that compliance would cost up to 84% less than EPA originally estimated.<sup>147</sup> A 2016 analysis by the American Petroleum Institute—also using the same electric sector model as EPA—projected that one compliance scenario would impose no costs in 2030, while another would cost 40% less than EPA’s 2015 estimate.<sup>148</sup> A paper from the Institute for Policy Integrity at New York University School of Law provides additional confirmation of, and context for, these analyses.<sup>149</sup>

Any effort to repeal and replace the CPP must update the factual record and account for the cost declines and shifts in the power sector toward cleaner sources of electricity, and the increasing costs of the havoc wrought by climate change. The need for climate action has only increased

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<sup>142</sup> CPP 80 Fed. Reg. at 64,662.

<sup>143</sup> CPP Reconsideration Denial: Appendix 2 – Power Sector Trends (Jan. 2017).

<sup>144</sup> *Id.*

<sup>145</sup> *Id.* at 42.

<sup>146</sup> Trevor Houser et al., Columbia University School of International and Public Affairs Center on Global Energy Policy, *Can Coal Make a Comeback?* (Apr. 2017), <http://energypolicy.columbia.edu/sites/default/files/Center%20on%20Global%20Energy%20Policy%20Can%20Coal%20Make%20a%20Comeback%20April%202017.pdf>. See also Paul Hibbard et al., Analysis Group, *Electricity Markets, Reliability and the Evolving U.S. Power System* (June 2017), [http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/ag\\_markets\\_reliability\\_final\\_june\\_2017.pdf](http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/ag_markets_reliability_final_june_2017.pdf); Judy W. Chang et al., The Brattle Group, *Advancing Past “Baseload” to a Flexible Grid: How Grid Planners and Power Markets Are Better Defining System Needs to Achieve a Cost-Effective and Reliable Supply Mix* (June 2017), [http://www.brattle.com/system/publications/pdfs/000/005/456/original/Advancing\\_Past\\_Baseload\\_to\\_a\\_Flexible\\_Grid.pdf?1498246224](http://www.brattle.com/system/publications/pdfs/000/005/456/original/Advancing_Past_Baseload_to_a_Flexible_Grid.pdf?1498246224).

<sup>147</sup> See M.J. Bradley & Associates, *EPA’s Clean Power Plan: Summary of IPM Modeling Results with ITC/PTC Extension* (June 2016).

<sup>148</sup> See American Petroleum Institute, *Natural Gas Solutions: Power Generation, EPA Clean Power Plan Compliance Pathways – Modeled Generation, Capacity and Costs* (2016).

<sup>149</sup> Denise A. Grab et al., Institute for Policy Integrity, New York University School of Law, *The Falling Cost of Clean Power Plan Compliance* (Oct. 2017).

since 2015 and the cost of reducing carbon pollution has gone down. This means that new emission guidelines issued under section 111(d) can and must achieve greater reductions than contemplated under the CPP.

*a. Costs of renewable energy are declining, and its use is expanding.*

The growth of renewable energy generation has significantly exceeded the expectations in the CPP, which included EIA's projection that renewable energy generation would increase by 70% from 2013 to 2040, accounting for over one-third of new generation capacity in that period.<sup>150</sup> In fact, wind and solar jointly accounted for over one-half of new capacity in 2014 and more than 60% in both 2015 and 2016.<sup>151</sup>

The ACE proposal also acknowledges that solar and wind energy have become more cost-competitive since the CPP was crafted.<sup>152</sup> In many places, these zero-emission resources are out-competing fossil fuel-based electricity generation. According to a 2017 report by the investment firm Lazard, the cost of generating power from new wind and solar projects has declined by 67% and 86%, respectively, since 2009.<sup>153</sup> In the two years immediately after the CPP was finalized, according to the same analysis, the cost of wind and solar power fell by 17% and 22%, respectively. Indeed, the average price of a wind power purchase agreement dropped to just \$20 per megawatt-hour in 2016.<sup>154</sup> In 2017, the Department of Energy ("DOE") announced that the solar industry had hit the Sunshot target for utility-scale projects—an installation cost of \$1 per watt—three years ahead of DOE's goal.<sup>155</sup> When Xcel Energy put out its request for proposals in Colorado in 2017, it received an unprecedented number of renewable energy bids, with a median bid price for wind of \$19.30/MWh and a median for wind plus storage of \$20.63/MWh—cheaper than the operating cost of all existing coal plants in Colorado.<sup>156</sup> Meanwhile, the median bid for solar was \$30.96/MWh and the median for solar plus storage was \$38.30/MWh—cheaper than approximately three-quarters of Colorado's operating coal capacity.<sup>157</sup>

Given the significant recent cost declines and increased deployment of renewable energy, the potential for renewable generation is much higher than previously estimated. In fact, in its

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<sup>150</sup> CPP 80 Fed. Reg. at 64,804 (citing EIA, *Annual Energy Outlook 2015 with Projections to 2040*, at ES-6-7 (2015)).

<sup>151</sup> EIA, *Wind Adds the Most Electric Generation Capacity in 2015, Followed by Natural Gas and Solar, Today in Energy*, (Mar. 23, 2016); EIA, *U.S. Electric Generating Capacity Increase in 2016 Was Largest Net Change Since 2011, Today in Energy* (Feb. 27, 2017).

<sup>152</sup> ACE, 83 Fed. Reg. at 44,754.

<sup>153</sup> Lazard, *Lazard's Levelized Cost of Energy Analysis – Version 11.0* (Nov. 2017), <https://www.lazard.com/media/450337/lazard-levelized-cost-of-energy-version-110.pdf>.

<sup>154</sup> DOE, *2017 Wind Technologies Market Report* 58-59 (Aug. 2018), [https://emp.lbl.gov/sites/default/files/2017\\_wind\\_technologies\\_market\\_report.pdf](https://emp.lbl.gov/sites/default/files/2017_wind_technologies_market_report.pdf).

<sup>155</sup> NREL, *U.S. Solar Photovoltaic System Cost Benchmark: Q1 2017*, (Sept. 2017), <https://www.nrel.gov/docs/fy17osti/68925.pdf>.

<sup>156</sup> See Xcel Energy, *2016 Electric Resource Plan (2017 All Source Solicitation 30-Day Report Update)*: Updated Attachment A (March 1, 2018); see also David Roberts, *In Colorado, A Glimpse of Renewable Energy's Insanely Cheap Future*, Vox (Jan. 16, 2018), <https://www.vox.com/energy-and-environment/2018/1/16/16895594/colorado-renewable-energy-future>.

<sup>157</sup> See Xcel Energy, *2016 Electric Resource Plan (2017 All Source Solicitation 30-Day Report Update)*: Updated Attachment A; Roberts, *In Colorado, A Glimpse of Renewable Energy's Insanely Cheap Future*.

modeling of the CPP, EPA relied on cost projections developed by the National Renewable Energy Laboratory (“NREL”), as published in its Annual Technology Baseline. NREL updates these cost projections each year to reflect the most recent technological progress. NREL’s latest 2017 Annual Technology Baseline shows significant declines in the 2030 projected levelized cost of wind and solar compared to the 2015 Annual Technology Baseline projections. Based on NREL’s updated projections, onshore wind costs are 28% lower and utility-scale solar photovoltaics are 68% lower than 2015 projections.<sup>158</sup> According to EIA’s most recent projections, even without the CPP, renewable energy generation is projected to reach 1,055 TWh in 2030<sup>159</sup>—just shy of the approximately 1,200 TWh in 2030 total renewable energy used in Building Block 3 in the final CPP.<sup>160</sup> Indeed, EIA projects renewable energy would constitute 23% of the total generation in 2030<sup>161</sup>—higher than EPA’s 2015 modeling projections of 21% renewable generation in 2030 under the CPP.<sup>162</sup> EIA also projected that wind and solar would account for 64% of total electric generation growth through 2050, even without the CPP in place.<sup>163</sup> Modeling by M.J. Bradley & Associates shows that in 2030, renewable energy capacity is expected to reach levels consistent with projections under the CPP, even in the reference case without the CPP.<sup>164</sup>

The RIA for EPA’s proposed repeal of the CPP recognized that “[p]rojections of new renewable capacity have increased . . . substantially” since 2015, reflecting decreased technology costs.<sup>165</sup> EPA noted that EIA’s projections of both cumulative unplanned new renewable energy capacity and total renewable energy capacity have increased substantially; unplanned new renewable energy capacity additions grew almost 400% in its Annual Energy Outlook 2017 (“AEO2017”) over AEO2015.<sup>166</sup> Total renewable energy capacity projected for 2030 increased 38% in AEO2017 compared with AEO2015.<sup>167</sup> As EPA noted, “[T]he increase in projected new builds of these generation technologies reflects the fact that the private cost of building these technologies has decreased over the past few years both because of the PTC/ITC tax credit extensions and because of decreases in the cost of new capacity.”<sup>168</sup>

The policy landscape for wind and solar technologies has also changed considerably. In December 2015, four months after EPA finalized the CPP, Congress passed legislation that

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<sup>158</sup> NREL, *Annual Technology Baseline*, <https://atb.nrel.gov/electricity/data.html>. Estimates are derived from mid-case projections in the 2018 version of the Annual Technology Baseline and an early draft of the 2015 version, which was what EPA relied on in its modeling. See EPA Base Case v.5.15 Using IPM Incremental Documentation, (Aug. 2015), [https://www.epa.gov/sites/production/files/2015-08/documents/epa\\_base\\_case\\_v.5.15\\_incremental\\_documentation\\_august\\_2015.pdf](https://www.epa.gov/sites/production/files/2015-08/documents/epa_base_case_v.5.15_incremental_documentation_august_2015.pdf).

<sup>159</sup> EIA, *Annual Energy Outlook 2018* (Feb. 2018), <https://www.eia.gov/outlooks/aeo/index.php>.

<sup>160</sup> See EPA, Greenhouse Gas Mitigation Measures Technical Support Document (Aug. 2015). The 1,200 TWh renewable energy in 2030 number is derived using the incremental (above 2012) Building Block 3 generation potential of 706 TWh in 2030 plus renewable energy generation of 495 TWh in 2012.

<sup>161</sup> EIA, *Annual Energy Outlook 2018* (Feb. 2018), <https://www.eia.gov/outlooks/aeo/index.php>.

<sup>162</sup> EPA, “Regulatory Impact Analysis for the Clean Power Plan Final Rule” (Aug. 2015).

<sup>163</sup> EIA, *Annual Energy Outlook 2018*, at 20 (Feb. 6, 2018), <https://www.eia.gov/outlooks/aeo/pdf/AEO2018.pdf>.

<sup>164</sup> M.J. Bradley & Associates, *EPA’s Clean Power Plan: Summary of IPM Modeling Results with ITC/PTC Extension* (June 2016).

<sup>165</sup> Repeal Proposal RIA 105-06 (citing *Annual Energy Outlook 2017*).

<sup>166</sup> *Id.* at 105-06.

<sup>167</sup> *Id.* at 106.

<sup>168</sup> *Id.*

extended the Production Tax Credit for wind projects and the Investment Tax Credit for solar projects, placing both credits on a phase-down schedule.<sup>169</sup> As discussed below, many states and power companies have also made new commitments to utilizing renewable power since the CPP was finalized.

In ACE, EPA failed to account for how the CPP best system of emission reduction incorporated renewable energy trends or how more recent data would now yield a best system of emission reduction that achieves pollution reductions greater than those in the CPP. EPA's reasoning is thereby arbitrary and capricious, as it has failed to rationally justify, with substantial evidence, that its approach to best system of emission reduction is the "best," including that it is better than the CPP's approach.<sup>170</sup>

*b. Power sector trends show continued decline in coal-fired generation and increased retirements.*

According to M.J. Bradley & Associates, in 2016, U.S. coal generation dropped to its lowest levels since the early 1980s, reaching 30% of total generation compared to 50% of total generation in 2005.<sup>171</sup> For the first time, in 2016, natural gas was the leading source of electricity generation at 34% of total generation.<sup>172</sup> That same year, the U.S. coal fleet operated at a 53% utilization rate—down from 73% eight years earlier—while natural gas combined cycle plants operated at an average capacity factor of 56%.<sup>173</sup> In the PJM Interconnection, this trend is even more pronounced, with natural gas combined cycle facilities operating at an average capacity factor of 62% in 2016 while coal units operated at a 33% average capacity factor.<sup>174</sup>

Natural gas combined cycle capacity has also significantly increased since EPA finalized the CPP. In 2016, natural gas combined cycle in-service capacity reached roughly 240 GW,<sup>175</sup> compared to roughly 210 GW of existing capacity in 2012 used in Building Block 2 in the final CPP.<sup>176</sup>

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<sup>169</sup> As part of *The Consolidated Appropriations Act of 2016*, the Production Tax Credit (PTC) for onshore wind projects was extended at its full value of 2.3 cents/kWh through the end of 2016, and then will phase down to 80% of its full value in 2017, 60% in 2018, and 40% in 2019. The Investment Tax Credit (ITC) for solar projects was extended at its full value of 30% of project investment costs through the end of 2019, and will drop to 26% in 2020 and 22% in 2021. Without additional legislation, the PTC will expire after 2019, and after 2021, the ITC will drop to 10% of investment costs for utility-scale and commercial projects and will expire for residential projects.

<sup>170</sup> See 42 U.S.C. § 7411(a)(1); *supra* § II (discussing administrative law framework governing this rulemaking); *State Farm*, 463 U.S. at 43; *Fox Television*, 556 U.S. at 515-16; *id.* at 537 (Kennedy, J., concurring).

<sup>171</sup> M.J. Bradley & Associates, *Coal-Fired Electricity Generation in the United States and Future Outlook* (Aug. 2017).

<sup>172</sup> *Id.*

<sup>173</sup> *Id.*

<sup>174</sup> *Id.*

<sup>175</sup> See EIA, *Electric Power Monthly* (Mar. 2017), tbl. 6.1, <https://www.eia.gov/electricity/monthly/archive/march2017.pdf>.

<sup>176</sup> See EIA, *Annual Energy Outlook 2015* (Apr. 2015), <https://www.eia.gov/outlooks/archive/aeo15/index.cfm>; see also EPA, CO<sub>2</sub> Emission Performance Rate and Goal Computation Technical Support Document for CPP Final Rule (Aug. 2015).

Coal-fired units continue to retire at a rapid pace. In its Repeal Proposal RIA, EPA pointed out that, between 2015 and 2017, the AEO No CPP Reference Case projection for coal generation in 2030 decreased by 290 TWh, or 17%, with commensurate declines in coal capacity and coal consumption.<sup>177</sup> M.J. Bradley & Associates reported in mid-2017 that, since 2010, more than 100 GW of U.S. coal capacity has announced plans to retire, representing almost one-third of all U.S. coal capacity, and that nearly 63 GW had already retired.<sup>178</sup> Most of these retiring plants are very old, and aging out of the coal fleet will continue in the near future.<sup>179</sup>

At the same time, projected natural gas prices for 2030 have continued to fall since EPA finalized the CPP. Based on EIA's latest projections, the 2030 power sector delivered natural gas price without the CPP is projected to be \$4.78/mcf (\$2017)—roughly 30% lower than previously projected in 2015.<sup>180</sup> In the RIA for EPA's proposed CPP repeal, the Agency acknowledged that AEO's projected natural gas price forecasts were continually revised lower between 2015 and 2017.<sup>181</sup> These forecasts in turn lead to an expectation that competition from natural gas will continue to challenge coal in the electricity sector going forward. EPA also acknowledged that these ongoing market trends are expected to reduce the share of coal in the electricity mix by more than the Agency projected in 2015.<sup>182</sup>

The recent trends and new projections concerning the utilization and cost of coal and gas generation further demonstrate that more ambitious targets than the CPP would be achievable and entail reasonable costs. EPA's failure to account for these trends and projections is arbitrary and capricious, as EPA has failed to rationally justify, with substantial evidence, that its approach to best system of emission reduction is the "best," including that it is better than the CPP's approach.<sup>183</sup>

*c. Energy efficiency remains the most cost-effective resource, and its use is expanding.*

In the CPP, EPA anticipated that entities would comply partly through investments in demand-side energy efficiency, a highly cost-effective means of reducing carbon pollution emissions from the power sector.

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<sup>177</sup> Repeal Proposal RIA at 108.

<sup>178</sup> M.J. Bradley & Associates, *Coal-Fired Electricity Generation in the United States and Future Outlook* (Aug. 2017).

<sup>179</sup> See *id.* at 4 (On average, units that announced plans to retire between 2010 and 2015 were 57 years old); see also Declaration of Kevin P. Culligan 10-11, in Resp. EPA's Opp. to Mots. to Stay Final Rule, *West Virginia v. EPA*, D.C. Cir. No. 15-1363, Doc. No. 1586661 (Ex. 3) (filed Dec. 3, 2015) (citing aging out as the second factor, after natural gas prices, driving the shift away from coal towards a cleaner resource mix: "In the nearly five years preceding signature of the Rule, the average age of a retiring coal plant was 55 years old.").

<sup>180</sup> See EIA, *Annual Energy Outlook 2018* (Feb. 2018), <https://www.eia.gov/outlooks/aeo/index.php>; EIA, *Annual Energy Outlook 2015* (Apr. 2015), <https://www.eia.gov/outlooks/archive/aeo15/index.cfm>. In 2015, the power sector delivered natural gas price without the Clean Power Plan was projected to be \$6.38/mcf (\$2013) or \$6.70/mcf (\$2017).

<sup>181</sup> Repeal Proposal RIA 107.

<sup>182</sup> See *id.* at 108.

<sup>183</sup> See 42 U.S.C. § 7411(a)(1); *supra* § II (discussing administrative law framework governing this rulemaking); *State Farm*, 463 U.S. at 43; *Fox Television*, 556 U.S. at 515-16; *id.* at 537 (Kennedy, J., concurring).

Demand-side energy efficiency measures help consumers save electricity, resulting in lower electric bills, less pollution, and a more reliable electric grid. Investments in energy efficiency are largely offset by the resulting electricity savings. In fact, analysis by the World Resources Institute found that state efficiency programs regularly save \$2 for every \$1 invested, and in some cases up to \$5 for every \$1 invested.<sup>184</sup>

States and consumers have continued to invest in energy efficiency programs in recent years, decreasing electric demand and contributing to the recent decline in power sector emissions. In 2015, state energy efficiency programs saved more than 26 million MWh—almost twice the amount saved in 2010.<sup>185</sup> Those savings were equivalent to almost 1% of total U.S. electric demand for 2015.<sup>186</sup> A number of studies have shown the enormous further potential of energy efficiency to reduce demand growth. For example, a report by the National Academy of Sciences also found that 25 to 30% energy savings for the building sector could be achieved between 2030 and 2035 at a cost of just 2.7 cents per kWh saved.<sup>187</sup>

These trends underscore that energy efficiency investments will continue to play a major role in decarbonizing the power sector, and that tremendous potential exists to further tap these cost-effective opportunities. Although EPA determined in the CPP that energy efficiency should not be part of the best system of emission reduction for carbon pollution from existing power plants, the increasing deployment of energy efficiency has positive implications for the overall cost and feasibility of achieving even deeper reductions than the CPP. To the extent that EPA expects sources to comply with a section 111(d) rule through energy efficiency, that must be factored into its estimate of compliance costs, which in turn informs the achievability of the best system of emission reduction.<sup>188</sup>

2. Recent modeling shows significant pollution reduction potential can be achieved at low cost.

- a. *Recent analyses confirm that the Clean Power Plan targets can be readily achieved at significantly less cost than originally projected.*

In the RIA for the ACE proposal, EPA stated that

Due to a number of changes in the electricity sector since the CPP was finalized . . . the sector has become less carbon intensive over the past several years, and this trend is projected to continue in the future. . . . As a result of these changes, the

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<sup>184</sup> See World Resources Institute, *Seeing Is Believing: Creating a New Climate Economy in the United States*, (Oct. 2014), <http://www.wri.org/publication/seeing-believing-creating-new-climate-economy-united-states>.

<sup>185</sup> Denise A. Grab et al., Institute for Policy Integrity New York University School of Law, *The Falling Cost of Clean Power Plan Compliance* (Oct. 2017).

<sup>186</sup> *Id.*

<sup>187</sup> America's Energy Future Panel on Energy Efficiency Technologies, *Real Prospects for Energy Efficiency in the United States*, 7-8, 15-16 (2010), <https://www.nap.edu/catalog/12621/real-prospects-for-energy-efficiency-in-the-united-states>. See also Galen Barbose et al., *Incorporating Energy Efficiency into Western Interconnection Transmission Planning*, 19, 36 (Feb. 2014), <http://eta-publications.lbl.gov/sites/default/files/lbnl-6578e.pdf>.

<sup>188</sup> Cf. CPP, 80 Fed. Reg. at 64,927 (including demand-side EE, which was not part of the best system of emission reduction, in cost estimate).



projected compliance costs of achieving the emissions levels required under CPP is [sic] now projected to be significantly lower than the estimates presented in the final CPP RIA.<sup>189</sup>

This mirrored EPA’s acknowledgment in the RIA for the proposed CPP repeal that updating its CPP analysis to account for the latest market and sector information would likely show fewer incremental capacity additions and lower compliance costs, compared to the estimates in the CPP. To test this hypothesis, EPA compared the 2016 and 2017 AEO projections that include the CPP. It found that in the 2017 projections, using the most up-to-date baseline, the CPP drives less incremental new generating capacity, has less impact on natural gas prices, and requires a more modest amount of emissions reductions beyond what is already expected, since a portion of the reductions are now projected to occur in the Reference Case. EPA pointed out that the implication of these shifts would be that the compliance costs associated with the CPP would be more modest than previously estimated.<sup>190</sup>

A recent report by the Institute for Policy Integrity highlights the declines in power sector carbon pollution emissions and the concomitant decreases in CPP compliance costs.<sup>191</sup> The report presents several recent economic analyses conducted by independent, non-governmental entities that estimate substantially lower compliance costs than EPA projected in 2015. As noted above, a June 2016 analysis by M.J. Bradley & Associates, using the same electric sector model as EPA but updating several inputs to account for recent developments, found that compliance would cost up to 84% less than EPA originally estimated.<sup>192</sup> A 2016 analysis by the American Petroleum Institute—also using the same electric sector model as EPA—projected that one compliance scenario would impose no costs in 2030, while another would cost 40% less than EPA’s 2015 estimate.<sup>193</sup>

In June 2016, NRDC reviewed four studies published after the extensions of the renewable energy tax credits, published by Rhodium Group, the National Renewable Energy Laboratory, M.J. Bradley and Associates (“MJB&A”), and Bloomberg New Energy Finance (“BNEF”). NRDC found that each study reached a similar conclusion, with renewables capacity expected to nearly double from 2015 levels by 2021. This growth in renewable energy puts the power industry in an excellent position to meet, or even exceed, the goals of the CPP.<sup>194</sup>

These trends show that the regulated fleet of power plants is well on its way to achieving the emission reductions required under the CPP, on a faster timeline, and at far lower costs, than initially anticipated. They are additional evidence that climate protections stronger than those in the CPP are achievable, and that the only lawful and reasonable course for EPA—if it proceeds

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<sup>189</sup> ACE RIA 3-8.

<sup>190</sup> Repeal Proposal RIA 118.

<sup>191</sup> Denise A. Grab et al., Institute for Policy Integrity, New York University School of Law, *The Falling Cost of Clean Power Plan Compliance* (Oct. 2017).

<sup>192</sup> *Id.*; see also M.J. Bradley & Associates, *EPA’s Clean Power Plan: Summary of IPM Modeling Results with ITC/PTC Extension* (June 2016).

<sup>193</sup> See Denise A. Grab et al., Institute for Policy Integrity New York University School of Law, *The Falling Cost of Clean Power Plan Compliance* (Oct. 2017); see also American Petroleum Institute, *Natural Gas Solutions: Power Generation, EPA Clean Power Plan Compliance Pathways – Modeled Generation, Capacity and Costs* (2016).

<sup>194</sup> Natural Resources Defense Council, *The Clean Power Plan: Keeping Climate Progress On Track*, (June 2016).

with a rulemaking to replace the CPP—is to fortify the CPP with more ambitious emission reduction targets.

*b. Emission reductions greater than those in the CPP can be implemented while maintaining reliability.*

Although the Proposal suggests that the ongoing shift away from coal generation “could create reliability problems,”<sup>195</sup> the evidence indicates pollution limits much more ambitious than those in the Clean Power Plan could be smoothly integrated into the reliable planning and operation of the electric grid.

The changes anticipated from the CPP—shifts from higher-emitting generation to lower- and zero-emitting generation—have been ongoing for years without posing a problem to the reliability of the electric system.<sup>196</sup> Indeed, the electric system incorporates various features that ensure reliability, including extensive planning, monitoring, and assessment requirements, mandatory reliability standards, and numerous remedies to address local or regional issues.<sup>197</sup> This extremely successful institutional framework would continue to ensure the reliability of the grid as states and power companies achieve the carbon pollution limits in the CPP. In section IV.D.1.b, we review the evidence that carbon pollution reductions equal to or greater than those anticipated by the CPP could be achieved while maintaining grid reliability.

*c. Other evidence indicates that more ambitious targets than those in the CPP would be achievable and cost-effective.*

When EPA finalized the Clean Power Plan, it found that the average cost of shifting generation to renewable energy and natural gas, to achieve 32% reductions below 2005 by 2030, was in the range of \$24 to \$37 per ton of carbon over the 2022 to 2030 compliance period. EPA determined that these were “well within the range” of reasonable costs.<sup>198</sup> Recently, the 2018 Annual Energy Outlook from EIA showed that carbon emissions from the power sector can be reduced by 58-68% below 2005 levels—more than twice the level of reduction anticipated under the Clean Power Plan—at a cost of \$24-\$33 per ton in 2030.<sup>199</sup> That means significantly more reductions are achievable for less than the Clean Power Plan was projected to cost.

Recent modeling performed as part of the United States Mid-Century Strategy for Deep Decarbonization also illustrates the significant potential for clean energy deployment and decarbonization of the U.S. electricity sector.<sup>200</sup> This modeling shows that an effective carbon price that starts at \$20 per metric ton in 2017 and increases at 5% per year, combined with successful innovation policies, would be sufficient to put energy carbon pollution emissions on a

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<sup>195</sup> ACE, 83 Fed. Reg. at 44,754.

<sup>196</sup> CPP 80 Fed. Reg. at 64,874.

<sup>197</sup> Craig Aubuchon et al., Analysis Group, *Electric System Reliability and EPA’s Clean Power Plan: Tools and Practices*, at ES-1, Doc. No. EPA-HQ-OAR-2013-0602-37015 (Feb. 2015) (“[T]he standard reliability practices that industry and its regulators have used for decades are a strong foundation from which any reliability concerns about the Clean Power Plan will be addressed.”).

<sup>198</sup> CPP, 80 Fed. Reg. at 64,750.

<sup>199</sup> EIA, Annual Energy Outlook 2018 (Feb. 6 2018), [https://www.eia.gov/outlooks/aeo/tables\\_side.php](https://www.eia.gov/outlooks/aeo/tables_side.php).

<sup>200</sup> The White House, United States Mid-Century Strategy for Deep Decarbonization (Nov. 2016).

pathway consistent with the mid-century strategy vision, in the range of 80% below 2005 levels by 2050.<sup>201</sup> This would entail near-complete decarbonization of the electricity sector with wind and solar capacity additions of roughly 30 GW per year between 2016 and 2035<sup>202</sup>—significantly higher than the wind and solar maximum annual capacity growth factor of 17.8 GW used in Building Block 3 in the final CPP.<sup>203</sup>

In its 2017 Reconsideration Denial, EPA also identified a range of measures—additional to those included in the CPP best system of emission reduction—that can be used to meet emission reduction targets under the CPP based on technology advances and project updates since finalization of the CPP.<sup>204</sup> These include switching from coal to gas or another fuel, carbon capture and storage, efficiency improvements at gas turbines and integrated renewables—which are discussed in more detail in sections IV.D.3 and VI below, in addition to non-best system of emission reduction renewables such as offshore wind and distributed solar as well as demand-side energy efficiency. According to EPA, application of such non-best system of emission reduction measures to the 2012 CPP baseline data for each state results in an emissions estimate that is lower than the 2030 CPP goal for nearly every state.<sup>205</sup>

Together, the evidence described above demonstrates that more ambitious targets than the CPP would be achievable and cost-effective.

3. EPA must issue stringent pollution limits to ensure continued progress on pollution reduction and prevent backsliding.

While recent developments show that pollution reductions greater than those required by the CPP are eminently achievable, we cannot rely solely on market dynamics to reduce emissions. Preserving strong pollution limits is vital to ensure that emission trends continue, particularly given market and economic uncertainty, which could potentially drive some shift back to coal generation.<sup>206</sup> Stringent emission limits also provide important policy certainty for power companies and investors. By ignoring long-term trends and patently failing to address the threat of climate change in any meaningful way, ACE would impose a much less certain long-term planning framework.

These developments demonstrate that the CPP sets conservative, eminently achievable carbon pollution limits while providing certainty of future emission reductions that market trends alone cannot deliver. The rapid progress in emission reductions also indicates the need to *strengthen* the CPP; indeed, its national regulatory framework was ready-made to enable “target ratcheting as energy prices, technology costs and baseline emissions projections changed.”<sup>207</sup>

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<sup>201</sup> *Id.*

<sup>202</sup> *Id.*

<sup>203</sup> See CO<sub>2</sub> Emission Performance Rate and Goal Computation Technical Support Document for CPP Final Rule.

<sup>204</sup> CPP Reconsideration Denial: Appendix 3 – Non-BSER CPP Flexibilities (Jan. 2017).

<sup>205</sup> *Id.* at 17.

<sup>206</sup> EIA, *Annual Energy Outlook 2018*, High Economic Growth Side Case tbl. 18 (Feb. 2018), [https://www.eia.gov/outlooks/aeo/excel/sidecases/hmacro/aeotab\\_18.xlsx](https://www.eia.gov/outlooks/aeo/excel/sidecases/hmacro/aeotab_18.xlsx); EIA, *Annual Energy Outlook 2018*, High Economic Growth with CPP Side Case tbl. 18 (Feb. 2018), [https://www.eia.gov/outlooks/aeo/excel/sidecases/cpphm/aeotab\\_18.xlsx](https://www.eia.gov/outlooks/aeo/excel/sidecases/cpphm/aeotab_18.xlsx).

<sup>207</sup> John Larsen et al., Rhodium Group, *What the CPP Would Have Done* (Oct. 2017).

*a. Power sector companies and states continue momentum on clean energy.*

Not only are market trends driving a reduction in fossil fuel-fired generation and increases in zero- or lower-emitting generation, but states and companies have taken steps to decarbonize their generating fleets through measures that are consistent with the CPP best system of emission reduction.

Even during the current Administration, executives at a significant number of electric power companies that own or operate affected generating units have committed to continue deploying clean energy resources that reduce CO<sub>2</sub> emissions. Power companies owning more than 19.7% of U.S. generating capacity announced significant new renewable energy projects or carbon reduction commitments in 2017.<sup>208</sup> For instance, Duke Energy (with an overall portfolio of 52,700 MW) plans to reduce carbon emissions by 40% below 2005 levels by 2030.<sup>209</sup> Xcel Energy (17,000 MW) plans to reduce carbon emissions 60% by 2030 below 2005 levels—and recently announced that it is progressing well ahead of schedule.<sup>210</sup> DTE Energy (11,000 MW) plans to reduce carbon emissions 80% by 2050,<sup>211</sup> and Southern Company (46,000 MW) plans to construct 3,000 MW of new wind projects between 2018 and 2020.<sup>212</sup> And in 2018, Southern Company has also announced a goal reduce carbon pollution 50% below 2007 levels by 2030 and to achieve “low- to no-carbon operations by 2050”,<sup>213</sup> American Electric Power (26,000 MW) set a goal to cut carbon emissions by 60% from 2000 levels by 2030 and 80% from 2000 levels by 2050,<sup>214</sup> and PPL Corporation (8,000 MW) announced a goal to cut the company’s CO<sub>2</sub> emissions 70% from 2010 levels by 2050.<sup>215</sup>

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<sup>208</sup> Estimated from generating capacities of American Electric Power, Dominion, DTE, Duke Energy, Great River Energy, MidAmerican, NextEra, PacifiCorp, Portland General Electric, Southern Company, and Xcel Energy, against total installed U.S. generating capacity. See Edison Electric Institute, *Industry Data*, <http://www.eei.org/resourcesandmedia/industrydataanalysis/industrydata/Pages/default.aspx>.

<sup>209</sup> Dylan Brown, *Duke Stays Course on CO<sub>2</sub> Cuts Despite Trump Politics*, Greenwire, (Apr. 27, 2017), <https://www.eenews.net/greenwire/2017/04/27/stories/1060053707>.

<sup>210</sup> Ben Fowke, *At Xcel, We’ll Stay on a Clean Energy Path*, StarTribune, (June 14, 2017), <http://www.startribune.com/at-xcel-we-ll-stay-on-a-clean-energy-path/428513313/>; Aldo Svaldi, *Xcel Energy Says Carbon Emissions Down 35 Percent Since 2005*, Denver Post (May 23, 2018), <https://www.denverpost.com/2018/05/23/xcel-energy-carbon-emissions/>.

<sup>211</sup> Hannah Northey, *Mich. Utility to Close Power Plants, Slash Emissions*, E&E News, (May 16, 2017), <https://www.eenews.net/eenewspm/2017/05/16/stories/1060054642>.

<sup>212</sup> Southern Company, *Southern Company Subsidiary Announces Strategic Wind Development Agreement*, PR Newswire, (Dec. 30, 2016), <https://www.prnewswire.com/news-releases/southern-company-subsidiary-announces-strategic-wind-development-agreement-300384200.html>.

<sup>213</sup> Southern Company, *Planning for a low-carbon future* (Apr. 2018), <https://www.southerncompany.com/content/dam/southern-company/pdf/corpresponsibility/Planning-for-a-low-carbon-future.pdf>.

<sup>214</sup> American Electric Power, *AEP’s Clean Energy Strategy Will Achieve Significant Future Carbon Dioxide Reductions*, PR Newswire, (Feb. 6, 2018), <https://seekingalpha.com/pr/17066680-aeps-clean-energy-strategy-will-achieve-significant-future-carbon-dioxide-reductions>.

<sup>215</sup> PPL Corporation, *PPL Corporation sets goal to reduce carbon dioxide emissions*, PR Newswire, (Jan. 30, 2018), <https://www.prnewswire.com/news-releases/ppl-corporation-sets-goal-to-reduce-carbon-dioxide-emissions-300590222.html>.

Within the past few months, second quarter 2018 earnings calls for investor-owned utilities indicated more progress toward reducing carbon pollution and increasing cleaner generation. WEC Energy projected that its goal to reduce carbon pollution 40% from 2005 levels by 2030 would be met seven years early, in 2023.<sup>216</sup> DTE Energy reiterated its plan to double its renewable capacity to 2,000 MW by 2022.<sup>217</sup> Alliant Energy projected that its carbon pollution would fall 40% from 2005 by 2030.<sup>218</sup>

In June 2018, Consumers Energy announced that it would stop using coal to generate electricity by 2040.<sup>219</sup> In May 2018, MidAmerican Energy announced a plan to generate enough wind energy by late 2020 to cover 100% of its consumers' demand, adding that the plan would enable a freeze in consumer rates for as long as fifteen years.<sup>220</sup> A recent report from Ceres (and partner organizations including NRDC) showed that the top 100 U.S. electric power producers decreased carbon emissions by 24% from 2005 through 2016, while the U.S. economy grew by 20% during that period.<sup>221</sup>

Power company executives cite the falling cost of cleaner resources, changing consumer and investor preferences for clean energy, and environmental concerns as the major reasons for these changes. For example, NextEra Energy (45,900 MW capacity) Chief Financial Officer John Ketchum has reported that “[w]e anticipate that improved wind and solar economics and low natural gas prices will continue to lead to additional retirements of coal, nuclear and less fuel-efficient oil and gas-fired generation units, creating significant opportunities for renewables growth going forward.”<sup>222</sup> Southern California Edison has stated that it “will maintain an active role in supporting California’s efforts to reduce greenhouse gas emissions, including support for renewable energy, transportation electrification, energy efficiency and innovative, clean energy technologies.”<sup>223</sup> Exelon Corporation has said that “our customers want reliable, clean and affordable electricity and Exelon remains committed to helping drive the national transition to a

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<sup>216</sup> See WEC Energy Group, Inc. (WEC) CEO Glen Klappa on Q2 2018 Results – Earnings Call Transcript (July 31, 2018), <https://seekingalpha.com/article/4192796-wec-energy-group-inc-wec-ceo-gale-klappa-q2-2018-results-earnings-call-transcript?part=single>.

<sup>217</sup> See DTE Energy Company (DTE) CEO Gerry Anderson on Q2 2018 Results - Earnings Call Transcript (July 25, 2018), <https://seekingalpha.com/article/4189993-dte-energy-company-dte-ceo-gerry-anderson-q2-2018-results-earnings-call-transcript?part=single>.

<sup>218</sup> See Alliant Energy Corporation (LNT) CEO Pat Kampling on Q2 2018 Results - Earnings Call Transcript (Aug. 3, 2018), <https://seekingalpha.com/article/4194400-alliant-energy-corporation-lnt-ceo-pat-kampling-q2-2018-results-earnings-call-transcript?part=single>.

<sup>219</sup> See Detroit News, *Consumers Energy to End Use of Coal* (June 13, 2018), <https://www.detroitnews.com/story/news/local/michigan/2018/06/13/consumers-energy-eliminate-coal-power-2040-close-karn-campbell-plants/698310002/>.

<sup>220</sup> See Donnelle Eller, *MidAmerican Will Be First to Create Enough Wind Energy to Cover 100% of Consumer Use*, Des Moines Register (May 30, 2018), <https://www.desmoinesregister.com/story/money/business/2018/05/30/iowa-midamerican-energy-wind-capacity-enough-cover-all-consumers-use/655441002/>.

<sup>221</sup> See Ceres, *New Analysis: U.S. Electric Power Sector Continues Transition to Clean Energy, Reducing Air Pollutant Emissions* (June 20, 2018), <https://www.ceres.org/news-center/press-releases/new-analysis-us-electric-power-sector-continues-transition-clean-energy>.

<sup>222</sup> NextEra, NextEra Energy Partners' (NEE) CEO James Robo on Q1 2017 Results – Earnings Call Transcript, Seeking Alpha, (Apr. 21, 2017), <https://seekingalpha.com/article/4064238-nextera-energy-partners-nee-ceo-james-robo-q1-2017-results-earnings-call-transcript?part=single>.

<sup>223</sup> Peter Behr et al., *Clean Power Plan: For many utilities, court action 'doesn't really change anything*, Energywire (Feb. 11, 2016), <https://www.eenews.net/stories/1060032232>.

low-carbon future.”<sup>224</sup> And according to Calpine Corporation, carbon pollution reduction is consistent with the company’s core principles and “makes a lot of business sense for us.”<sup>225</sup> In a recent Reuters survey of utilities that have announced plans to close coal units, no utility indicated that replacing the CPP with ACE would change their plans.<sup>226</sup>

Many states are also continuing to move toward a clean energy future, enacting *new* commitments to reduce carbon pollution under this Administration. These commitments include initiatives that span multiple states and large swathes of the U.S. population. For instance, the U.S. Climate Alliance reports that, at the time it published its report at the beginning of 2017, the fourteen states and Puerto Rico in their Alliance—which represent more than 36% of the country’s population—had pledged to reduce their economy-wide emissions by 26-28% below 2005 levels by 2025.<sup>227</sup> Also in 2017, the nine states comprising the Regional Greenhouse Gas Initiative (“RGGI”) proposed to build on the progress they have made over the past decade and reduce carbon emissions from the power sector an additional 30% by 2030 relative to 2020 levels.<sup>228</sup> And in 2018, Maryland and New Jersey joined the U.S. Climate Alliance, while New Jersey announced its intention to rejoin RGGI.<sup>229</sup>

Many individual states have also made strong commitments to reducing greenhouse gases. For example, Colorado Governor John Hickenlooper signed an executive order committing his state to reduce its economy-wide greenhouse gas emissions by 26% below 2005 levels by 2025.<sup>230</sup> As part of that commitment, the state will also reduce its power sector emissions by 25% below 2012 levels by 2025, and by 35% below 2012 levels by 2030. These reduction goals are stronger than what would have been required by the CPP.<sup>231</sup> In issuing this policy, Governor Hickenlooper stated that “[c]lean energy is an economic engine for our state and for our nation.”

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<sup>224</sup> *Id.*

<sup>225</sup> NPR, *Texas Power Players Sit Out Political Opposition To Clean Power Plan* (Apr. 16, 2016), <https://www.npr.org/2016/04/16/474462519/texas-power-players-sit-out-political-opposition-to-clean-power-plan>.

<sup>226</sup> See Nichola Groom et al., *EPA’s New Carbon Plan Won’t Slow Coal Unit Shutdowns: Utilities*, Reuters (Oct. 5, 2018), <https://www.reuters.com/article/us-usa-carbon-utilities/epas-new-carbon-plan-wont-slow-coal-unit-shutdowns-utilities-idUSKCN1MF1BX?feedType=RSS&feedName=environmentNews>. Of the 44 utilities surveyed, “24 operators believe the proposal will have no impact, four believe it is too early to say if it will have an impact, seven declined to comment, and the rest did not respond.”

<sup>227</sup> U.S. Climate Alliance, *2017 Annual Report: Alliance States Take the Lead* (2017), [https://static1.squarespace.com/static/5936b0bde4fcb5371d7ebe4c/t/59bc4959beba2c44067922/1505511771219/USCA\\_Climate\\_Report-V2A-Online-RGB.PDF](https://static1.squarespace.com/static/5936b0bde4fcb5371d7ebe4c/t/59bc4959beba2c44067922/1505511771219/USCA_Climate_Report-V2A-Online-RGB.PDF). The fourteen states are California, Colorado, Connecticut, Delaware, Hawaii, Massachusetts, Minnesota, New York, North Carolina, Oregon, Rhode Island, Vermont, Virginia, and Washington.

<sup>228</sup> RGGI Inc., *RGGI States Announce Proposed Program Changes: Additional 30% Emissions Cap Decline by 2030*, (Aug. 23, 2017), [https://www.rggi.org/docs/ProgramReview/2017/08-23-17/Announcement\\_Proposed\\_Program\\_Changes.pdf](https://www.rggi.org/docs/ProgramReview/2017/08-23-17/Announcement_Proposed_Program_Changes.pdf). The nine states are Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont.

<sup>229</sup> Scott Dance, *Maryland will join alliance of states supporting Paris climate agreement, Hogan says*, Baltimore Sun (Jan. 10, 2018), <http://www.baltimoresun.com/news/maryland/environment/bs-md-hogan-climate-alliance-20180110-story.html>; Josh Siegel, *New Jersey joins coalition backing Paris climate change deal*, Wash. Examiner (Feb. 21, 2018), <https://www.washingtonexaminer.com/new-jersey-joins-coalition-backing-paris-climate-change-deal/article/2649679>; Letter from Philip D. Murphy, Governor of New Jersey, to Governors of RGGI states (Feb. 16, 2018), available at: <https://www.state.nj.us/dep/ages/docs/letter-to-rggi-governors20180222.pdf>.

<sup>230</sup> State of Colorado, Office of the Governor, *D 2017-015 Executive Order Supporting Colorado’s Clean Energy Transition*, (July 11, 2017) [https://www.colorado.gov/governor/sites/default/files/executive\\_orders/climate\\_eo.pdf](https://www.colorado.gov/governor/sites/default/files/executive_orders/climate_eo.pdf).

<sup>231</sup> *Id.*

Similarly, Illinois enacted legislation in December 2016 that will reduce its greenhouse gas emissions, in part by mandating 4,300 MW of new wind and solar generation.<sup>232</sup> And Virginia is proposing to establish a program that will reduce carbon emissions from the power sector by 30% between 2020 and 2030.<sup>233</sup> City officials across the U.S. are also pledging to reduce emissions and accelerate clean energy deployment. More than 400 U.S. mayors have committed to “intensify efforts to meet each of our cities’ current climate goals, push for new action to meet the 1.5 degrees Celsius target, and work together to create a 21st century clean energy economy.”<sup>234</sup> Recently, New Jersey enacted a 50% renewable portfolio standard by 2030, becoming one of several states with similarly stringent standards.<sup>235</sup> And in September 2018, California—the most populous state and equivalent to the world’s fifth-largest economy—enacted a requirement to obtain 100% of its electricity from carbon-free sources by 2045.<sup>236</sup>

*b. A properly designed rule would leverage progress, not conflict with it as EPA suggests.*

As described above and in Joint Environmental Comments on Climate Change,<sup>237</sup> scientific developments since the CPP was finalized continue to show that climate change is advancing at an alarming pace, that anthropogenic greenhouse gas pollution is the cause of this phenomenon, and that the threat to public health and welfare is increasingly severe. At the same time, the rapidly increasing availability and dramatically falling costs of various options for reducing carbon pollution from existing power plants demonstrate both the eminent feasibility of the CPP emission reduction targets and the significant potential to achieve further reductions from existing power plants. Together, these facts show that any replacement for the CPP must achieve deeper cuts than were expected under that program, and must do so on a very expeditious schedule.

The ACE Preamble contains only brief and contradictory mentions of industry trends—evidence of EPA’s arbitrary disregard of the facts on the ground. Even within these brief mentions, EPA arrives at irrational and inconsistent conclusions indicative of an irrational aversion to meaningful pollution limits.

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<sup>232</sup> Andrew Barbeau, EDF Blogs, *Illinois’ Future Energy Jobs Bill Shows States are Taking the Lead to Build the Clean Energy Economy*, (Dec. 7, 2016), <http://blogs.edf.org/energyexchange/2016/12/07/illinois-future-energy-jobs-bill-shows-states-are-taking-the-lead-to-build-the-clean-energy-economy/>.

<sup>233</sup> Virginia State Air Pollution Control Board, *Tentative Agenda and Minibook: State Air Pollution Control Board Meeting* (Oct. 29, 2018), [http://www.townhall.virginia.gov/L/GetFile.cfm?File=meeting\1\28304\Agenda\\_DEQ\\_28304\\_v1.pdf](http://www.townhall.virginia.gov/L/GetFile.cfm?File=meeting\1\28304\Agenda_DEQ_28304_v1.pdf).

<sup>234</sup> Climate Mayors, *407 US Climate Mayors Commit to Adopt, Honor and Uphold Paris Climate Agreement Goals*, (June 1, 2017), <https://medium.com/@ClimateMayors/climate-mayors-commit-to-adopt-honor-and-uphold-paris-climate-agreement-goals-ba566e260097>.

<sup>235</sup> See Christian Roselund, *New Jersey joins the 50% by 2030 renewable energy club*, PV Magazine (May 23, 2018), <https://pv-magazine-usa.com/2018/05/23/new-jersey-joins-the-50-by-2030-renewable-energy-club/>.

<sup>236</sup> See Paul Rogers and Katy Murphy, *California mandates 100 percent clean energy by 2045*, *Mercury News* (Sept. 10, 2018), <https://www.mercurynews.com/2018/09/10/california-mandates-100-percent-clean-energy-by-2045/>. Hawai’i enacted a similar requirement in 2015. See Mileka Lincoln, *Gov. Ige signs bill setting 100 percent renewable energy goal for state*, *Hawaii News Now* (June 8, 2015), <http://www.hawaiinewsnow.com/story/29269793/gov-ige-signs-bill-setting-100-percent-renewable-energy-goal-for-state/>.

<sup>237</sup> Joint Environmental Comments on Climate Change, Doc. No. EPA-HQ-OAR-2017-0355 (Oct. 31, 2018); Joint Comments Specific to Climate Change, Doc. No. EPA-HQ-OAR-2017-0355-20637 (Apr. 26, 2018).

EPA observes that power sector CO<sub>2</sub> emissions are declining “at a faster rate than projected even a few years ago when the CPP was promulgated,” and that industry trends “are expected to result in declining power sector CO<sub>2</sub> emissions.”<sup>238</sup> EPA then expresses concern that these trends might make efforts under section 111(d) “redundant or, even worse, put them in conflict with industry trends that are already reducing CO<sub>2</sub> emissions.”<sup>239</sup> But there is no conflict between positive industry trends and pollution limits that reinforce and secure those trends. To the extent that the CPP’s forecasts diverged from the progress of the past few years, it is only because the trends upon which the CPP was based accelerated. Far from creating a conflict, that makes meaningful pollution limits like those in the CPP even more achievable.

Nor would meaningful pollution limits be redundant with positive trends. Such limits, structured within a durable regulatory framework that recognizes industry practices, would accelerate those trends and provide much needed certainty to a sector that must make long-term investment decisions. If EPA leaves this dangerous pollution unregulated, or promulgates weak regulations that do not rationally address the urgent threat of climate change, the Agency would increase uncertainty about what actions the power sector should take now or must take in the future.

Meaningful pollution limits also complement industry trends by providing an enforceable backstop to ensure that progress toward reducing pollution does not decelerate, stall, or reverse. The Agency cannot outsource pollution reductions to market dynamics—the positive trends of recent years do not relieve EPA of its statutory obligations. While current projections suggest continued pollution reductions, there is no guarantee that these reductions will occur, especially at the pace that meaningful limits would and must achieve. EPA action is essential to ensure progress commensurate with the scale and urgency of climate change.

Indeed, in *ACE*, EPA recognizes that industry trends could change.<sup>240</sup> This possibility clearly demonstrates the need for a strong regulatory backstop, but EPA illogically arrives at the opposite conclusion, insinuating that, if market trends change, EPA should not stand in the way of allowing the power sector to increase its pollution.<sup>241</sup> Here EPA not only disregards its obligation to define the “best” system of emission reduction, but also misapprehends its fundamental purpose as an agency responsible for protecting Americans from dangerous pollution. Uncertainty about the future is precisely the reason that meaningful pollution limits are necessary, not a justification for abdicating EPA’s authority and obligation to protect the public. The Supreme Court has cautioned that an “agency should not defer to the industry’s failure” to achieve a statutory objective of protecting the public.<sup>242</sup> Moreover, in the CPP, EPA determined a best system of emission reduction that thoroughly accounts for industry trends and pollution reduction opportunities—and correspondingly, the CPP allows for a wide array of flexible compliance measures. This helps to ensure that compliance is achievable at reasonable cost under a broad range of economic scenarios. There is no reason that EPA could not take the same

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<sup>238</sup> *ACE*, 83 Fed. Reg. at 44,751.

<sup>239</sup> *Id.*

<sup>240</sup> *Id.* at 44,754 (“[T]he uncertainties that have resulted in faster than projected emission reductions are also uncertain in the opposite direction.”).

<sup>241</sup> *Id.*

<sup>242</sup> *State Farm*, 463 U.S. at 49.



approach in any new carbon pollution limits for the electric power sector. See section IV.D.1.c for a deeper discussion of how to address power sector forecast uncertainties.

It is irrational and contradictory for EPA to argue that meaningful pollution limits are unwise both because current trends might continue, and because they might not. Any new emission guidelines can and must rationally embrace ongoing trends and progress, which would result in greater pollution reductions than the CPP required.

**D. The Proposal’s Exclusion of Virtually All Measures that Would Meaningfully Reduce Pollution, and Measures that Power Companies and States Have Been Principally Using to Reduce Carbon Pollution for Many Years, Is Arbitrary and Unlawful.**

1. EPA’s objections that the CPP best system of emission reduction exceeds its expertise and will “challenge” the grid are baseless.

As our comments below discuss in further detail, the CPP is supported by a careful and comprehensive analysis of costs and energy requirements that draws upon EPA’s own deep expertise and long history in regulating EGUs, as well as input from other expert agencies and voluminous public comments. The Proposal itself acknowledges that power sector trends have been consistent with the expectations that underlay the CPP and that the costs and compliance burdens associated with the CPP have, if anything, declined since the rule was finalized.

Ignoring this record, EPA offers a litany of related arguments in the Proposal in a futile attempt to bolster its claim that the best system of emission reduction in the CPP reflects an unreasonable interpretation of the Clean Air Act—and that the Agency, in designating the best system of emission reduction, must now disregard the interconnected nature of the power sector and the cost-effective approaches that power companies and states have overwhelmingly been using to reduce carbon pollution. EPA claims that the CPP best system of emission reduction entails measures that are properly within the jurisdiction of the Federal Energy Regulatory Commission (“FERC”) and state regulators, and for which the Agency “has no express legal authority and no particular expertise”; that ongoing shifts in the generation mix are “creating tremendous strain on the power infrastructure” and that (despite the Proposal’s claim that EPA lacks expertise on energy issues) “it is not appropriate to further challenge the nation’s electricity system while these important technical and policy issues are being addressed”; and that uncertainties in the pace and extent of future power sector trends could make any rule based on the CPP best system of emission reduction either too stringent or too lenient.<sup>243</sup> As the comments below demonstrate,

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<sup>243</sup> ACE, 83 Fed. Reg. at 44,753-54. Note that many, if not all, of these issues were raised in the context of the proposed repeal of the CPP and thoroughly addressed in comments already filed in this docket. *See, e.g.*, Comments of Environmental Defense Fund on EPA’s Proposed Rule: Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, at 71-79, Doc. No. EPA-HQ-OAR-2017-0355-20949 (Apr. 26, 2018) (rejecting “policy concerns” raised in the proposed repeal of the Clean Power Plan, including concerns about the impacts of the CPP on the reliability of the grid and on the jurisdiction of federal and state energy regulators); “Joint Comments of Health, Environmental, and Conservation Groups on EPA’s Proposed Rule: Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units,” at 20-22, Doc. No. EPA-HQ-OAR-2017-0355-20656 (Apr. 26, 2018) (“Joint NGO Repeal Comments”) (same). We address these points again here for clarity, but also refer the reader to our prior comments.

each of these rationalizations for EPA’s rejection of the common-sense framework in the CPP, and its adoption of a vastly inferior “do-nothing” policy that requires virtually nothing in the way of emission reduction from existing power plants, is arbitrary and capricious.

- a. The CPP best system of emission reduction reflected an appropriate exercise of the Agency’s expertise and authority.*

Contrary to EPA’s assertions in the Proposal, the CPP establishes eminently reasonable limits on carbon pollution from existing power plants, based on the very “system of emission reduction” that power companies have actually been using to reduce carbon pollution from these sources. As we described in detail in comments on the proposed repeal of the CPP, the CPP adheres closely to the bounds of section 111 and is supported by the statutory context, legislative history and administrative precedent.<sup>244</sup> Consistent with EPA’s core authority and area of expertise, the CPP regulates *only* emissions from existing power plants—*not* generation. Further, the CPP respected state prerogatives by vesting both states and power companies with extensive flexibility to determine how best to meet the performance rates set forth in the rule. Both former commissioners of the Federal Energy Regulatory Commission and former state energy and environmental regulators have submitted detailed comments explaining that the CPP adheres to EPA’s proper role and does not impinge on the respective prerogatives of FERC and the states.<sup>245</sup>

That the CPP entailed analysis of the extent to which different generating resources would be available to meet the nation’s need for electricity does not mean that it overstepped the Agency’s expertise. To the contrary, section 111 explicitly *directs* EPA to consider “energy requirements” when designating a “best system.”<sup>246</sup> And in the specific context of establishing carbon pollution standards for power plants under section 111(d), the Supreme Court explicitly recognized that the Clean Air Act “entrusts” EPA to undertake a “complex balancing” of competing and far-ranging interests:

The appropriate amount of regulation in any particular greenhouse gas-producing sector cannot be prescribed in a vacuum: As with other questions of national or international policy, informed assessment of competing interests is required. *Along with the environmental benefit potentially achievable, our Nation’s energy needs and the possibility of economic disruption must weigh in the balance. The Clean Air Act entrusts such complex balancing to EPA in the first instance*, in combination with state regulators.<sup>247</sup>

Even when EPA has issued section 111 standards for power plants that are based on pollution control technologies that can be implemented “at the stack,” it has evaluated the statutory factors by undertaking a long-term analysis of the energy sector similar to that which was used in the

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<sup>244</sup> See Joint NGO Repeal Comments at 12-20.

<sup>245</sup> See Comments of Former State Energy and Environmental Regulators, at 2-4, Doc. No. EPA-HQ-OAR-2017-0355-20875 (Apr. 26, 2018); Comments of Former FERC Commissioners Norman Bay, John Norris, and Jon Wellinghoff, at 2-6, Doc. No. EPA-HQ-OAR-2017-0355-19640 (Apr. 26, 2018).

<sup>246</sup> 42 U.S.C. § 7411(a)(1).

<sup>247</sup> *Am. Elec. Power Co. v. Connecticut*, 564 U.S. 410, 427 (2011) (emphasis added).

CPP. In 1979, for example, EPA issued a New Source Performance Standard (“NSPS”) for sulfur dioxide from new steam EGUs that was based on relatively new wet scrubber technology.<sup>248</sup> To justify its determination that this technology was the “best system,” EPA employed a long-term “econometric computer model” (essentially a forerunner to IPM) to evaluate the impacts of the NSPS over a sixteen-year time horizon—utilizing assumptions drawn from consultations with other expert agencies, including the Department of Energy.<sup>249</sup>

In reviewing this approach, the D.C. Circuit recognized that EPA’s analysis took into account uncertain energy sector trends, including the future of oil prices and future nuclear capacity.<sup>250</sup> The court also observed that EPA’s best system of emission reduction determination hinged on its prediction as to how much new coal capacity would be incentivized (or not) under alternative regulatory approaches.<sup>251</sup> Nonetheless, the D.C. Circuit upheld the standards—recognizing that section 111 calls on EPA “to weigh cost, energy, and environmental impacts in the broadest sense at the national and regional levels and over time as opposed to simply at the plant level in the immediate present.”<sup>252</sup> As this example demonstrates, section 111 requires EPA to conduct a far-reaching analysis of systems of emission reduction that considers multiple streams of evidence, including energy sector trends. The Proposal fails to explain why EPA’s expertise *includes* evaluation of power sector generation sources and complex pollution reduction “bolt on” technologies and their effects on power sector emissions, costs, reliability, and future evolution but somehow *excludes* evaluation of power sector generation sources and how the optimization of the utilization of those generation sources—as is the moment-to-moment practice of the power sector—can affect power sector emissions, costs, reliability, and future evolution. The Proposal’s suggestion that certain energy-related topics are not within EPA’s expertise neither conforms to the clear scope of section 111 nor to EPA’s historical experience in implementing this section.

In the CPP, as with the 1979 NSPS for steam EGUs, EPA also took steps to ensure that its own expertise was supplemented by that of other entities with relevant expertise. As described in the final CPP, EPA consulted with FERC; DOE; and the Department of Agriculture on a range of issues, including the reliability impacts of the final rule and the final rule’s assumptions regarding the cost and performance of renewable energy and demand-side energy efficiency.<sup>253</sup> For the CPP, EPA also consulted broadly with state officials, grid operators, power company representatives, and other agencies, entities, and individuals with relevant expertise on the issues raised in the rulemaking.<sup>254</sup> Several of the final features of the CPP, especially provisions relating to reliability concerns, are directly attributable to this interagency and stakeholder consultation.<sup>255</sup> This consultation with other agencies is appropriate when EPA, in issuing its pollution control regulations, is called upon to evaluate complex factors about which other

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<sup>248</sup> See *Sierra Club v. Costle*, 657 F.2d 298, 324-25 (D.C. Cir. 1981).

<sup>249</sup> *Id.* at 326-27.

<sup>250</sup> *Id.* at 337-38.

<sup>251</sup> *Id.* at 335.

<sup>252</sup> *Id.* at 330.

<sup>253</sup> CPP, 80 Fed. Reg. at 64,707.

<sup>254</sup> *Id.* at 64,704-07.

<sup>255</sup> *Id.* at 64,874.

agencies also have expertise,<sup>256</sup> and underscores that the CPP was underpinned by a massive factual record reflecting EPA’s own expertise as well as external expertise.

*b. EPA’s reliability-related concerns are baseless and do not support discarding the CPP best system of emission reduction.*

On the same page in which EPA discounts its own expertise with respect to the issues raised in the CPP, the Proposal makes the arbitrary and unsupported assertion that the CPP best system of emission reduction must be discarded because trends in the power sector are causing “tremendous strain on the power infrastructure” and it would not be “appropriate” to “further challenge” the electricity system at this time.<sup>257</sup> It is incoherent—and arbitrary—for EPA to simultaneously reject *and* invoke its expertise on energy issues.<sup>258</sup> Moreover, EPA’s concerns that current trends are threatening the reliability of the grid are contrary to conclusions set forth in the very DOE staff report that it cites—as well as a significant body of other evidence discussed in more detail below.<sup>259</sup> EPA’s concern that the CPP best system of emission reduction would “challenge” the electricity system is not only contradicted by the analyses conducted by EPA, EIA, and many independent organizations; it is contradicted by EPA’s concessions in the Proposed Rule itself that power sector trends “have already well outpaced the projections that went into the CPP for many states” and have made the CPP emission reduction targets easier and less costly to achieve.<sup>260</sup> Lastly, EPA ignores that the impacts of an emission standard on the generation mix and system reliability have nothing to do with whether the standard is based on site-constrained pollution controls or the types of measures reflected in the CPP best system of emission reduction. Taken to its logical conclusion, EPA’s concern about creating any “further challenge” to the energy system is not an argument against the CPP best system of emission reduction: it is an excuse to avoid adopting *any* kind of best system of emission reduction that would require more than the trivial level of reduction that would result from this Proposal, in contravention to the Clean Air Act.

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<sup>256</sup> Cf. *Del. Dep’t of Nat. Res. & Envtl. Control v. EPA*, 785 F.3d 1, 18 (D.C. Cir. 2015) (remanding a revision to NESHAP standards for backup generators where EPA had cited reliability concerns, a subject that “is not the province of EPA,” without seeking input from FERC).

<sup>257</sup> ACE, 83 Fed. Reg. at 44754.

<sup>258</sup> See *Del. Dep’t of Nat. Res. & Envtl. Control v. EPA*, 785 F.3d at 18 (“EPA cannot have it both ways it cannot simultaneously rely on reliability concerns and then brush off comments about those concerns as beyond its purview.”).

<sup>259</sup> These issues were also discussed at length in EDF’s comments on the December 2017 ANPR. See Comments of Environmental Defense Fund on EPA’s Advance Notice of Proposed Rulemaking on State Guidelines for Greenhouse Gas Emissions from Existing Sources, at 28-31, Doc. No. EPA-HQ-OAR-2017-0545-0297 (Feb. 26, 2018).

<sup>260</sup> ACE, 83 Fed. Reg. at 44,754; see also ACE RIA ES-7 (“Due to a number of changes in the electricity sector since the CPP was finalized . . . the sector has become less carbon intensive over the past several years, and the trend is projected to continue. These changes and trends are reflected in the modeling used for this analysis. As such, achieving the emissions levels required under CPP requires less effort and expense, relative to a scenario without the CPP, and the estimated compliance costs are significantly lower than what was estimated in the final CPP RIA (U.S. EPA, 2015).”).

- i. EPA’s professed concerns about the reliability of the grid are baseless.

EPA’s concern that the nation’s grid is under “tremendous strain” is flatly contradicted by a range of evidence, including the DOE Staff Report on Electricity Markets and Reliability cited in the Proposal. That report—released in August 2017 in response to Secretary of Energy Rick Perry’s order to assess electricity markets and reliability in the face of the dynamic changes occurring within the U.S. power sector—concluded that electric reliability remains strong:

[Bulk Power System] reliability is adequate today despite the retirement of 11 percent of the generating capacity available in 2002, as significant additions from natural gas, wind, and solar have come online since then. Overall, at the end of 2016, the system had **more** dispatchable capacity capable of operating at high utilization rates than it did in 2002.<sup>261</sup>

This conclusion is consistent with voluminous literature and evidence that shows there are no signs of deteriorating reliability on the grid today, and that continued growth in cleaner resources is fully compatible with sustained reliability. For example, the North American Electric Reliability Corporation’s (“NERC’s”) 2017 State of Reliability report found that over the past five years the trends in planning reserve margins were stable while other reliability metrics were either improving, stable, or inconclusive.<sup>262</sup> NERC also found that bulk power system resiliency to severe weather has continued to improve.<sup>263</sup> PJM, which has recently experienced both significant coal retirements and new deployment of clean energy resources, found that “the expected near-term resource portfolio is among the highest-performing portfolios and is well equipped to provide the generator reliability attributes.”<sup>264</sup>

A wide range of literature further indicates that high renewable penetration scenarios are possible without compromising grid reliability, indicating that a continuation and even an acceleration of current decarbonization trends are eminently feasible.<sup>265</sup> For example:

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<sup>261</sup> DOE, *Staff Report to the Secretary on Electricity Markets and Reliability* at 63 (Aug. 2017) (emphasis added), [https://energy.gov/sites/prod/files/2017/08/f36/Staff%20Report%20on%20Electricity%20Markets%20and%20Reliability\\_0.pdf](https://energy.gov/sites/prod/files/2017/08/f36/Staff%20Report%20on%20Electricity%20Markets%20and%20Reliability_0.pdf).

<sup>262</sup> NERC, *State of Reliability 2017* (June 2017), [http://www.nerc.com/pa/RAPA/PA/Performance%20Analysis%20DL/SOR\\_2017\\_MASTER\\_20170613.pdf](http://www.nerc.com/pa/RAPA/PA/Performance%20Analysis%20DL/SOR_2017_MASTER_20170613.pdf).

<sup>263</sup> *Id.*

<sup>264</sup> PJM Interconnection, *PJM’s Evolving Resource Mix and System Reliability* (Mar. 2017), <http://www.pjm.com/~media/library/reports-notice/special-reports/20170330-pjms-evolving-resource-mix-and-system-reliability.ashx>.

<sup>265</sup> In addition to the resources cited below, see Paul Hibbard et al., Analysis Group, *Electricity Markets, Reliability and the Evolving U.S. Power System*, at 53 (June 2017), [http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/ag\\_markets\\_reliability\\_final\\_june\\_2017.pdf](http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/ag_markets_reliability_final_june_2017.pdf) (“Studies reviewing potential limits to reliable integration of greater amounts of variable resources (1) generally find that variable resources can be integrated in quantities vastly exceeding current levels, and (2) have shown that the expected potential for successful integration of variable resources has increased over time as renewable technologies change, market designs and interconnection requirements evolve, forecasting tools improve, other technologies (e.g., storage, demand response) are deployed, and system operational techniques evolve.”); Judy W. Chang et al., The Brattle Group, *Advancing Past “Baseload” to a Flexible Grid* at 18-19 (June 2017), available at [http://files.brattle.com/files/7352\\_advancing\\_past\\_baseload\\_to\\_a\\_flexible\\_grid.pdf](http://files.brattle.com/files/7352_advancing_past_baseload_to_a_flexible_grid.pdf).

- NREL’s Renewables Future Study reported no concerns on “any reliability metric” with renewable energy resources providing at least 25-50% of electricity, and found that renewable generation levels as high as 80% could be achieved with technologies commercially available today without compromising reliability.<sup>266</sup>
- NREL’s Eastern Renewable Generation Integration Study found that integrating up to 30% variable wind and PV generation into the power system is technically feasible at a five-minute interval.<sup>267</sup>
- Southwest Power Pool’s 2016 Wind Integration Study, which found that the SPP system could operate reliably with wind generation comprising 60% of its generating capacity.<sup>268</sup>
- PJM’s Renewable Integration Study found that the PJM system could incorporate 30% variable generation with no loss of reliability.<sup>269</sup>

Studies also show that cleaner resources and new technologies being added to the system have, in combination, most if not all the reliability attributes provided by retiring coal-fired generation and other resources exiting the system. In fact, the evolving resource mix that includes the retirement of aging coal-fired capacity and the addition of new lower- and zero-emitting capacity can increase system reliability from a number of perspectives. For instance, available data indicate that forced and planned outage rates for renewable and natural gas technologies can be less than half of those for coal.<sup>270</sup> Renewable resources also help hedge against fuel supply and price volatility, contributing to increased resilience. Indeed, clean energy resources have demonstrated their ability to support reliable electric service at times of severe stress on the grid. In the 2014 polar vortex, for example, frozen coal stockpiles led to coal generation outages, while wind and demand response resources were increasingly relied upon to help maintain reliability.<sup>271</sup> More recently, in 2017, wind energy contributed critical power during Hurricane Harvey, while W.A. Parish, one of America’s largest coal plants, was forced to shutter two of its units after its coal piles were flooded.<sup>272</sup>

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<sup>266</sup> NREL, *Renewable Electricity Futures Study*, at 20 (2012), <https://www.nrel.gov/docs/fy13osti/52409-ES.pdf>.

<sup>267</sup> NREL, *Eastern Renewable Generation Integration Study*, Executive Summary at xvii (Aug. 2016), <https://www.nrel.gov/docs/fy16osti/64472-ES.pdf>.

<sup>268</sup> Southwest Power Pool, *2016 Wind Integration Study* (Jan. 5, 2016).

<sup>269</sup> PJM, *Renewable Integration Study*, (Mar. 31, 2014), <https://www.pjm.com/committees-and-groups/subcommittees/irs/pris.aspx>.

<sup>270</sup> See Paul Hibbard et al. at 54-55 (documenting forced outage rates for different resources and observing that the “technologies being added to the system have, in combination, most if not all of the reliability attributes provided by resources exiting the system . . . an evolving resource mix that includes retirement of aging capacity and the addition of new gas-fired units and renewable capacity can increase system reliability from a number of perspectives.”); Judy W. Chang et al., at 7 (“Reliable power supply always comes from a portfolio of resources, and it never comes from a single generating unit. In power markets and utility operations, a generating unit typically is committed and dispatched to run at full output in all hours of the day only when it is economical to do so, not because it is a prerequisite for system reliability. The same level of generation, for example, can be met through a combination of variable wind or solar resources and flexible natural gas-fired resources or storage. Similarly, regional system planning requires no single “match” of resources; resources can be combined in a number of ways to ensure that at any given time supply meets demand.”).

<sup>271</sup> PJM Interconnection, *Analysis of Operational Events and Market Impacts During the January 2014 Cold Weather Events* (May 2014), <http://www.pjm.com/~media/library/reports-notice/weather-related/20140509-analysis-of-operational-events-and-market-impacts-during-the-jan-2014-cold-weather-events.ashx>.

<sup>272</sup> Benjamin Storrow, *Flooded Texas Coal Piles Dampen Reliability Arguments*, Climatewire (Sept. 29, 2017), <https://www.eenews.net/climatewire/2017/09/29/stories/1060062093>.

Comments from a diverse array of stakeholders opposing the DOE Grid Resiliency Pricing Rule proposal issued on September 29, 2017 further bolster the record that the shift away from coal-fired generation towards cleaner resources does not adversely impact grid reliability.<sup>273</sup> Commenters noted that, given technological advancements, new variable renewable generation is capable of providing essential reliability services including voltage support, fast frequency response, and dynamic reactive power. In fact, in some cases, the bulk power system recovery performance is faster with high levels of variable renewable generation and low levels of thermal plant generation as compared to today's system.<sup>274</sup>

As part of this record, the Rhodium Group performed a detailed examination of outages which demonstrated that on-site fuel supply is not correlated with reliability. According to Rhodium Group, only 0.00007% of disturbances over the past five years were due to fuel supply problems and 0.00858% were due to generation inadequacy.<sup>275</sup> Rhodium Group found no evidence of any relationship between the generation share of coal and nuclear and the frequency or duration of outages experienced.<sup>276</sup> Conversely, Rhodium Group found that there was no relationship between the share of variable renewable generation and the frequency or duration of outages; in other words, there is no evidence to support the claim that renewables growth is eroding overall system reliability.<sup>277</sup> In fact, Rhodium Group notes that power companies in balancing authorities<sup>278</sup> with the highest share of renewable energy generation experienced the fewest outages in terms of both frequency and duration.<sup>279</sup>

And on January 8, 2018, FERC unanimously rejected DOE's Grid Resiliency Pricing Rule proposal—which was premised on the notion that the changing resource mix on the grid poses an imminent threat to reliability—affirming the continued reliability of the bulk power system.<sup>280</sup>

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<sup>273</sup> See, e.g., Comments of MISO Transmission Owners, RM-18 (Oct. 23, 2017); Comments of ISO New England, Inc., RM18-1 (Oct. 23, 2017); Comments of Bipartisan Former FERC Commissioners, RM18-1 (Oct. 19, 2017); Multistate Comments of Attorneys General, State Agencies and State Consumer Advocates, RM18-1 (Oct. 23, 2017); Comments of Advanced Energy Management Alliance, RM18-1 (Oct. 23, 2017); Comments of Public Interest Organizations, RM18-1 (Oct. 23, 2017).

<sup>274</sup> See, e.g., Reply Comments of Michael Milligan, RM18-1 (Nov. 7, 2017).

<sup>275</sup> Trevor Houser et al., Rhodium Group, *The Real Electricity Reliability Crisis* (Oct. 3, 2017), <http://rhg.com/notes/the-real-electricity-reliability-crisis>.

<sup>276</sup> John Larsen et al., Rhodium Group, *Electric System Reliability: No Clear Link to Coal and Nuclear* (Oct. 23, 2017), <http://rhg.com/notes/doe-nopr-ferc-comments>.

<sup>277</sup> *Id.*

<sup>278</sup> A balancing authority is the responsible entity that integrates resource plans ahead of time, maintains load-interchange-generation balance within a balancing authority area, and supports interconnection frequency in real time. A balancing authority area is the collection of generation, transmission, and loads within the metered boundaries of the balancing authority. See North American Electric Reliability Corporation, *Glossary of Terms Used in NERC Reliability Standards* (Sep. 2014), [https://library.e.abb.com/public/f091b8ae9dec300f85257d6500660234/pa\\_Stand\\_Glossary-2.pdf](https://library.e.abb.com/public/f091b8ae9dec300f85257d6500660234/pa_Stand_Glossary-2.pdf).

<sup>279</sup> John Larsen et al., Rhodium Group, *Electric System Reliability* (Oct. 23, 2017).

<sup>280</sup> Federal Energy Regulatory Commission, Order Terminating Rulemaking Proceeding, Initiating New Proceeding, and Establishing Additional Procedures, Doc. No. RM18-1-000 (Jan. 8, 2018). The Order terminates the DOE proposal proceeding and initiates a new proceeding to develop a common understanding of resilience that would enable a more holistic examination of the resilience of the bulk power system including transmission and distribution system impacts.

According to FERC, “the extensive comments submitted by the RTOs/ISOs do not point to any past or planned generator retirements that may be a threat to grid resilience.”<sup>281</sup>

- ii. EPA’s suggestion that the CPP would “challenge” the grid is contradicted by the Proposal itself and numerous independent analyses.

In the Proposal, EPA also suggests that the CPP (or any other rule premised on the same best system of emission reduction) would pose an unacceptable “challenge” to “the nation’s electricity system.” This completely unsupported statement is contradicted by the Proposal itself, by EPA’s prior analyses of the CPP, and by numerous other analyses.

The Proposal contains an updated IPM modeling analysis of the CPP and its impacts on power sector dispatch, energy supplies and prices, and overall electricity system costs. Nowhere does the Proposal or RIA present any information to suggest that the CPP would compromise the reliability of the grid. To the contrary, the Proposal and RIA acknowledge in various places that power sector emissions have continued to decline since 2015, and at a faster rate than EPA originally anticipated in the CPP; that power sector emissions are now at approximately 28% below 2005 levels, within striking distance of the level that the CPP would require in 2030; and that the result of these trends has been to “significantly” lower the cost associated with the CPP.<sup>282</sup> The Proposal, in other words, is replete with information suggesting that the CPP emission reduction targets are in line with current industry trends and are even more readily attainable than EPA anticipated when the final rule was issued in 2015.

EPA’s prior analyses confirm that the CPP can be readily implemented with no threat whatsoever to reliability. In its January 2017 decision denying reconsideration of the CPP, EPA recognized that market trends in the power sector have continued to drive carbon pollution reductions in the period since the CPP was finalized.<sup>283</sup> These trends include declining coal generation and increased renewable energy and natural gas generation—driven in large part by improving wind and solar economics, the renewable energy tax credit extensions, and low natural gas prices—in addition to increased demand-side energy efficiency.<sup>284</sup> EPA concluded that those power sector trends “allow states and sources to implement the CPP and achieve its goals more readily than originally projected” and “at very low costs.”<sup>285</sup> In support of these conclusions, the Reconsideration Denial presented updated modeling of the CPP indicating that

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<sup>281</sup> *Id.*

<sup>282</sup> See ACE, 83 Fed. Reg. at 44,786 (“Due to a number of changes in the electricity sector since the CPP was finalized, as documented in the October 2017 RIA conducted for the proposed CPP repeal and Chapter 3 of the RIA for this action, the sector has become less carbon intensive over the past several years, and the trend is projected to continue. . . . As such, achieving the emissions levels required under CPP requires less effort and expense, relative to a scenario without the CPP, and the estimated compliance costs are significantly lower than what was estimated in the final CPP RIA.”); *id.* at 44,754 (“These trends have driven down GHG emissions from power plants, which were also key components to the BSER as defined in the CPP. In fact, the analysis that EPA has done for ACE (see RIA), as well as analysis by many others (including EIA), show that these trends have already well outpaced the projections that went into the CPP for many states.”); *id.* at 44,751 (“[T]he rapid changes in the power sector are leading to CO<sub>2</sub> emission reductions at a faster rate than projected even a few years ago when the CPP was promulgated.”); ACE RIA ES-7, 3-8.

<sup>283</sup> CPP Reconsideration Denial: Appendix 2 – Power Sector Trends (Jan. 2017).

<sup>284</sup> *Id.*

<sup>285</sup> *Id.* at 42.



the average marginal cost of compliance had fallen by almost 64% since the finalization of the rule, and that eighteen states would face *no* marginal costs to comply.<sup>286</sup> The Reconsideration Denial also documented independent studies showing that *every* state in the country was on track to meet the interim emission reduction targets laid out in the CPP under “business as usual” conditions, and that 85% of the states affected by the CPP were on track to meet the final emission reduction targets in 2030.<sup>287</sup>

As noted above, an October 2017 report by the Institute for Policy Integrity also highlights the declines in power sector carbon pollution emissions and the concomitant decreases in CPP compliance costs.<sup>288</sup> The report identifies several recent economic analyses conducted by independent, non-governmental entities that estimate substantially lower compliance costs than EPA projected in 2015. For instance, a June 2016 analysis by M.J. Bradley & Associates, using the same electric sector model as EPA but updating several inputs to account for recent developments, found that compliance would cost up to 84% less than EPA originally estimated.<sup>289</sup> Another analysis by the American Petroleum Institute—also using the same electric sector model as EPA—projected that one compliance scenario would impose no costs in 2030, while another would cost 40% less than EPA’s 2015 estimate.<sup>290</sup>

The CPP itself, of course, was accompanied by an extensive analysis of reliability impacts—and included a number of policy design features, suggested by FERC and other entities, that were intended to mitigate any possible impact on reliability. EPA extensively assessed the CPP’s impact on energy requirements in the technical support document “Resource Adequacy and Reliability Analysis.”<sup>291</sup> In that analysis, the Agency determined that “power system impacts of the final rule on system operations, under conditions preserving resource adequacy, are modest and manageable.”<sup>292</sup> In particular, EPA noted the tremendous compliance flexibilities that the CPP affords to states and sources, the extended compliance timeframe, and the rule’s reliability safety valve.<sup>293</sup>

During the rulemaking process, EPA modeled various illustrative plan approaches and found that under each scenario, “implementation of [the CPP] can be achieved without undermining resource adequacy or reliability.”<sup>294</sup> The Agency reiterated this finding in its 2017

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<sup>286</sup> *Id.* at 58 (noting that average marginal costs for the CPP had declined from \$11/ton to \$4/ton).

<sup>287</sup> CPP Reconsideration Denial: Appendix 1 – States’ Progress and Trends, at 7-12.

<sup>288</sup> Denise A. Grab et al., Institute for Policy Integrity, New York University School of Law, *The Falling Cost of Clean Power Plan Compliance* (Oct. 2017).

<sup>289</sup> *Id.*; see also M.J. Bradley & Associates, *EPA’s Clean Power Plan: Summary of IPM Modeling Results with ITC/PTC Extension* (June 2016).

<sup>290</sup> See Denise A. Grab et al., *The Falling Cost of Clean Power Plan Compliance*; see also American Petroleum Institute, Natural Gas Solutions: Power Generation, *EPA Clean Power Plan Compliance Pathways – Modeled Generation, Capacity and Costs* (2016).

<sup>291</sup> EPA, Technical Support Document: Resource Adequacy and Reliability Analysis, Doc. No. EPA-HQ-OAR-2013-0602-36847 (Aug. 2015) (“Reliability TSD”); see also CPP, 80 Fed. Reg. at 64,571 (“There is no reason to expect an adverse non-air environmental or energy impact from deployment of the combination of the three building blocks, whether considered on a source-by-source basis, on a sector-wide or national basis, or both.”).

<sup>292</sup> Reliability TSD, at 1.

<sup>293</sup> See *id.* at 1-2.

<sup>294</sup> *Id.* at 2 (Aug. 2015).

Reconsideration Denial when it concluded that “no approach to meet the final requirements need interfere with the ability of [the] sector to meet electricity demand.”<sup>295</sup>

In sum, EPA has cited *no* evidence to support its vague assertion that the CPP best system of emission reduction would pose any kind of serious “challenge” to the reliability of the grid, and any such notion is flatly contradicted by the analysis in the Proposed Rule itself, EPA’s multiple prior analyses of the CPP, and a large body of independent studies.

- iii. Shifts in generation are likely to occur under any meaningful pollution standard, regardless of how the best system of emission reduction is defined.

Lastly, EPA’s claim that the CPP best system of emission reduction should be rejected because of unsupported and vaguely described reliability concerns ignores the fact that *any* emission standard of any consequence—regardless of the system of emission reduction it is based upon—will have the effect of altering the generation mix and the day-to-day operation of the grid. Because of the interconnected nature of the power sector, any emission standard will affect the relative costs of different generating resources and alter the dispatch order for those generating resources.

EPA itself recognized this in the CPP when it observed that power companies would likely seek to comply with a standard of performance based on site-constrained measures (such as carbon capture) by shifting generation, rather than actually implementing the controls.<sup>296</sup> Likewise, comments previously submitted in this docket by some of the nation’s foremost experts on the operation of the electric grid argue that the same is true of any emission standard:

All power-sector environmental regulations impact dispatch, either by increasing or decreasing the relative operating costs of affected sources or by constraining their operations. Because grid operators in both organized markets and traditional cost-of-service regimes employ Constrained Least-Cost Dispatch principles, a unit that experiences a cost increase or operational constraint will tend to operate less frequently, while units whose costs are relatively lower will be dispatched more. Existing pollution regulations already affect the dispatch competitiveness of fossil-fuel-fired power plants.<sup>297</sup>

Because of this inescapable feature of the grid, EPA’s expressed desire in the Proposed Rule to avoid adding any “further challenge” to the nation’s power grid is not a rational reason to discard the CPP best system of emission reduction. Whether a standard of performance is based on the measures reflected in the CPP best system of emission reduction, or on physical or operational controls implemented at every individual unit, does not determine the impact of that standard on the generation mix and the reliability of the grid.

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<sup>295</sup> CPP Reconsideration Denial: Appendix 2, at 129 (citing Sarah K. Adair, et al., Nicholas Institute for Environmental Policy Solutions, Duke University, *The Clean Power and Electricity Demand: Considering Load Growth in a Carbon-Constrained Economy* (Jan. 2016)).

<sup>296</sup> CPP, 80 Fed. Reg. at 64,728. *See also* Respondent EPA’s Final Brief at 22, 35-36, *West Virginia v. EPA*, D.C. Cir. No. 15-1363 (filed Apr. 22, 2016).

<sup>297</sup> Comment by Electricity Grid Experts Benjamin F. Hobbs, Brendan Kirby, Kenneth J. Lutz, James D. McCalley, and Brian Parsons, at 7, Doc. No. EPA-HQ-OAR-2017-0355-20922 (Apr. 25, 2018).

Taken to its logical conclusion, the position EPA has taken in the Proposed Rule is not an argument against the CPP best system of emission reduction. It is an argument against *any* best system of emission reduction that would actually drive a meaningful reduction in emissions and that would change the relative costs of high-emitting power plants. Faced with the dire and urgent threat of climate change, and a statute that requires the Agency to select a “best” system of emission reduction that achieves maximum feasible control of harmful pollution, EPA’s purported distinction is irrational and unlawful.

*c. Uncertainties in power sector trends are not a reasoned basis to discard the CPP best system of emission reduction.*

Finally, EPA argues in the Proposed Rule that the CPP best system of emission reduction is unreasonable because power sector trends are inherently uncertain, making it possible that the CPP (or a successor policy based on the same best system of emission reduction) could either be more costly or less costly than initially estimated.<sup>298</sup>

This is not a reasoned basis to discard the CPP best system of emission reduction. First, uncertainty about future economic or energy trends is present during any rulemaking. It is not a problem that is unique to the CPP best system of emission reduction; the same uncertainties can affect the analysis of any system of reduction, including site-constrained pollution controls. Costs of materials, costs of labor, costs of fuel, the future trajectory of electricity demand, and the costs and availability of alternative generating resources *all* affect the costs of any system of emission reduction and any standard based on that system. Indeed, EPA’s own assessment of the costs of HRI in this Proposed Rule is subject to significant uncertainty. If uncertainty about the future cost of a system were sufficient to discard it as a potential best system of emission reduction, EPA would be unable to implement section 111.

Second, EPA has several tools available to it to manage uncertainty with respect to power trends. If power sector trends evolve in an unexpected direction that makes a standard more costly (or less costly) than originally anticipated, EPA has the power to review an emission guideline to determine whether it still reflects the “best” system of emission reduction in light of updated costs and energy implications. Likewise, in crafting an emission guideline EPA can consider sensitivity analyses that would illuminate how the costs and energy impacts of the guideline would change in the event that key variables such as natural gas prices end up being higher or lower than anticipated. Indeed, EPA noted in the January 2017 Reconsideration Denial that the natural gas prices it assumed in the CPP were substantially higher than EIA’s most recent projections—indicating that the compliance costs EPA estimated for the CPP were based on are conservative, and would be robust even if natural gas prices begin to rise again.<sup>299</sup> In the Proposal, EPA’s casual assertions that uncertainties in future power sector trends are just too great to manage amounts to an abandonment of EPA’s responsibility to “make a reasonable effort to develop the facts” and an impermissible decision “on the basis of a guess about what the facts might be.”<sup>300</sup>

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<sup>298</sup> ACE, 83 Fed. Reg. at 44,754.

<sup>299</sup> CPP Reconsideration Denial: Appendix 2, at 43.

<sup>300</sup> *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 531, (D.C. Cir. 1983).

2. The “redefining the source” policy does not apply to standards of performance under section 111, and none of the relevant systems of emission reduction unlawfully redefine the source.

In the Proposal, EPA attempts to further limit the systems of emission reduction that it may consider by proposing “additional interpretive constraints” that have long applied only in the context of Prevention of Significant Deterioration (“PSD”) permitting—a different Clean Air Act program whose text and operation are distinct from section 111(d). Specifically, EPA posits that its policy that allows it and other PSD permitting authorities to exercise their discretion to eliminate from consideration control options that would “fundamentally redefine the nature of the source” when determining “best available control technology” (“BACT”) limitations in case-by-case PSD permit proceedings should *also* apply when determining the “best system” for a source category-wide rulemaking under section 111(d). Acknowledging that EPA reached precisely the opposite conclusion in the CPP, EPA nonetheless claims that there are similarities between the PSD program and section 111(d) that make it appropriate to apply the “redefining the source” policy in the context of the Proposal. EPA further asserts that this “interpretive constraint” would preclude the Agency from considering adequately demonstrated and cost-effective control options, such as emissions-reducing utilization and conversion to natural gas, as potential “best systems” for existing sources under section 111(d). And EPA argues—without any evidence and without considering features of section 111 that address such concerns—that the application of this policy is appropriate because control options that would “redefine the source” would “likely require, at a minimum, significant modification and could even require decommissioning, redesign and new construction.”<sup>301</sup>

EPA’s proposed application of the “redefining the source” policy places unlawful, arbitrary, and unnecessary legal constraints on the potential “best systems” that EPA can consider. As our comments below discuss in more detail, neither the PSD provisions of the Clean Air Act nor section 111 compel the application of the “redefining the source” policy. Moreover, the application of this policy in the Proposal is patently arbitrary: in the past, EPA has consistently recognized that the “redefining the source” policy is closely tied both to the text of the PSD provisions of the Clean Air Act and to the unique purposes and operation of that program, none of which are relevant in the context of establishing a best system of emission reduction and emission guideline for a source category under section 111(d). Indeed, the case law explicating the “redefining the source” policy makes clear that it is *infeasible* to apply in a section 111(d) rulemaking. EPA fails to explain why the “redefining the source” policy is lawful or necessary in light of Congress’s clear instructions in section 111 as to what factors EPA may consider in determining the best system of emission reduction. Finally, the claim in the Proposal that certain systems of emission reduction—including the CPP best system of emission reduction and conversion of boilers to natural gas—would “redefine the source” is unsupported and incorrect.

*a. The Clean Air Act does not compel the “redefining the source” policy.*

As a threshold matter, the text of the Clean Air Act clearly does not *compel* the “redefining the source” policy—either in the context of the PSD program or section 111. As EPA explained in

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<sup>301</sup> ACE, 83 Fed. Reg. at 44,752-53.

the PSD and Title V Permitting Guidance for Greenhouse Gases (cited in the Proposal), “EPA does not interpret the [Clean Air Act] to prohibit fundamentally redefining the source and has recognized that permitting authorities have the discretion to conduct a broader BACT analysis if they desire.”<sup>302</sup> Likewise, the Environmental Appeals Board (“EAB”) has explained that “the policy is really an agency interpretation of ambiguous statutory provisions.”<sup>303</sup>

Confirming that the policy is not compelled by the statute even in the context of the PSD program, EPA has historically allowed state permitting authorities to take a different approach in their BACT determinations, noting that “this is an aspect of the PSD permitting process in which states have the discretion to engage in a broader analysis if they so desire.”<sup>304</sup> Accordingly, EPA has explained that states retain discretion to consider, for example, changes in primary fuel type when defining control options at Step 1 BACT analysis.<sup>305</sup>

*b. The cross-reference to section 111 in the PSD provisions of the CAA does not support application of the “redefining the source” policy.*<sup>306</sup>

EPA begins with the unfounded premise that a cross-reference to section 111 in the statutory definition of BACT shapes key features of the separate section 111 program. Specifically, the CAA prohibits state and local air agencies from selecting a BACT that is less stringent than “any applicable standard established pursuant to Section 111.”<sup>307</sup> This so-called “BACT floor” confirms that preconstruction permits cannot be issued for sources that would violate applicable NSPS for new and modified sources.<sup>308</sup> To suggest that the set of measures available to an agency in an individualized permitting process should inform EPA’s antecedent analysis of systems adequately demonstrated for the source category would turn the statute on its head. NSPS are expressly intended to force technological advancements and shape industry’s plans,<sup>309</sup> whereas a source-specific permitting process (under EPA’s “redefining the source” policy) is designed to accommodate the particular circumstances of a proposed source while ensuring that the source implements “best available control technology” (and, if possible, exceeds the reductions required under an applicable NSPS). Plans to develop new sources are already informed by the existing NSPS—and as such may have already been “redefined.” There is no

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<sup>302</sup> EPA, PSD and Title V Permitting Guidance for Greenhouse Gases, at 27 (Mar. 2011).

<sup>303</sup> *In re City of Palmdale (Palmdale Hybrid Power Project)*, PSD Appeal No. 11-07, 2012 EPA App. LEXIS 29, at \*75 n.25 (EAB Sept. 17, 2012) (citations and internal quotation marks omitted).

<sup>304</sup> EPA, New Source Review Workshop Manual at B.13-B.14 (Draft, 1990).

<sup>305</sup> EPA, PSD and Title V Permitting Guidance for Greenhouse Gases, at 27-28 (Mar. 2011); *see also id.* at 27 n.76 (noting that the EAB has found consideration of repowering reasonable for a coal-fired unit that was equipped to burn natural gas).

<sup>306</sup> Comments filed in response to the proposed repeal of the Clean Power Plan, all of which are included in this docket, also addressed the cross-reference to section 111 in the PSD provisions of the CAA at great length. *See, e.g.*, Comments of Environmental Defense Fund on EPA’s Proposed Rule: Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, at 62-66, Doc. No. EPA-HQ-OAR-2017-0355-20949 (Apr. 26, 2018).

<sup>307</sup> 42 U.S.C. § 7479(3).

<sup>308</sup> *See N. Plains Res. Council v. EPA*, 645 F.2d 1349, 1353 (9th Cir. 1981), *vacated on other grounds*, 464 U.S. 806 (1983).

<sup>309</sup> *See Sierra Club v. Costle*, 657 F.2d 298, 364 (D.C. Cir. 1981) (“Recognizing that the Clean Air Act is a technology-forcing statute, we believe EPA does have authority to hold the industry to a standard of improved design and operational advances, so long as there is substantial evidence that such improvements are feasible and will produce the improved performance necessary to meet the standard.”).

indication that Congress intended the cross-reference in the definition of BACT to limit the universe of systems EPA initially considers when promulgating NSPS, much less emission guidelines for existing sources, which are not subject to PSD permitting.

On the contrary, given the industry-wide scope of the best system of emission reduction under section 111, specific units' designs or business purposes should not affect EPA's analysis. The Agency's task is to identify the system that will best reduce emissions from a generic unit within the source category. Unlike with the PSD permitting program, the Agency cannot tailor the best system of emission reduction to individual project proposals. It is therefore inappropriate for EPA to import the "redefining the source" concept into its role in selecting the best system of emission reduction and identifying the resultant emission limitation for the source category under section 111.

Further, there is simply no statutory link between the PSD program and existing-source standards under section 111(d). The definition of BACT refers to "applicable" standards under section 111.<sup>310</sup> The only standards that are applicable to new or modified sources subject to preconstruction review are performance standards for new and modified sources, promulgated under section 111(b). If EPA is constrained under section 111 to make choices that facilitate the use of standards of performance as a floor for the source-specific BACT determinations, that constraint can only apply under section 111(b). EPA attempts to import BACT concepts into its section 111(d) rulemaking by noting that the statute provides a "unitary definition" of the term "standard of performance," which suggests that "applying the same interpretive constraints may in fact be required."<sup>311</sup> But EPA is not grounding this constraint in the term "standard of performance" or its definition. EPA is grounding this constraint in the structure of the statute, specifically, the use of NSPS for new and modified sources as the floor for BACT determinations for new and modified sources. The function that the section 111(b) standards serve for the BACT program cannot logically constrain the interpretation of best system of emission reduction for section 111(d) standards—and particularly cannot constrain it in a manner that frustrates the function of section 111(d) itself, which is to find the most effective system to address dangerous pollution from existing sources.

*c. "Redefining the source" is irrelevant to the establishment of an emission guideline.*

Not only is the "redefining the source" policy not compelled by the statute even for PSD and incompatible with the basic purpose of section 111 standards, it is manifestly arbitrary, infeasible, and unlawful to apply to the establishment of an emission guideline under section 111(d).

First, the Proposal arbitrarily fails to consider the administrative precedents and case law explaining the "redefining the source" policy, all of which make clear that it was developed by EPA to resolve specific statutory ambiguities and policy concerns that are unique to the PSD program and are distinct from the designation of a best system of emission reduction and quantitative emission guidelines for a section 111 source category. As a 2009 decision by the

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<sup>310</sup> 42 U.S.C. § 7479(3).

<sup>311</sup> ACE, 83 Fed. Reg. at 44,752.

EAB explains, the “redefining the source” policy “resolves ambiguity found in the statutory text of [Clean Air Act] sections 165 and 169.”<sup>312</sup> Specifically, the policy harmonizes the section 165 requirement that the “*proposed* facility” be “subject to BACT” with the section 169 requirement that BACT consider a broad range of control techniques including “application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment of innovative fuel combustion techniques.”<sup>313</sup> One of the few federal courts to rule on the policy has observed that it also resolves the tension between the broad scope of BACT analysis and the separate statutory command that permitting authorities consider “alternatives” to the project (which implies that BACT cannot consist of “alternatives” to the proposed project itself).<sup>314</sup> None of these statutory provisions have analogues in section 111(a) and (d), which straightforwardly direct EPA to provide for the establishment of “standards of performance” for “any existing source” and that reflect the “best system of emission reduction.”<sup>315</sup>

EPA’s application of the “redefining the source” policy has also consistently recognized that it responds to the specific nature of the PSD program as a *permitting* program in which the applicant initiates the process by defining the proposed project that is to be “subject to BACT” – thereby limiting the extent to which the permitting authority can alter the project through permitting conditions.<sup>316</sup> In the first PSD proceeding to apply the policy, the Administrator determined that “permit conditions defining the emissions control systems ‘are imposed on the source *as the applicant has defined it*’ and ‘the source itself is not a condition of the permit.’”<sup>317</sup> The EAB has more recently explained that the policy exists because “there continues to be a need to distinguish between basic design aspects of the facility *proposed by the applicant that must be fixed to enable a case-by-case review* and the types of processes, methods, systems and techniques that are potentially applicable to a specific facility to control pollution.”<sup>318</sup>

This feature of the PSD program is likewise distinct from a rulemaking to establish an emission guideline under section 111(d). In an emission guideline rulemaking, the Agency’s task is to identify the “best system” to reduce emissions from sources within the source category. Unlike the case-by-case review in a PSD permit proceeding, the Agency cannot tailor the best system of emission reduction to individual project proposals. It is therefore arbitrary for EPA to import the “redefining the source” concept into its role in selecting the best system of emission reduction and identifying the resultant emission limitation for the source category under section 111. As the Proposal acknowledges, this is exactly the position EPA took in responding to comments on the CPP:

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<sup>312</sup> *In re Desert Rock Energy Co., LLC*, 14 E.A.D. 484, 528 (E.P.A. Sept. 24, 2009).

<sup>313</sup> *See id.*; *see also Prairie State*, 13 E.A.D. 1, 19 (E.P.A. Aug. 24, 2006).

<sup>314</sup> *Sierra Club v. EPA*, 499 F.3d 653, 654-55 (7th Cir. 2007).

<sup>315</sup> 42 U.S.C. § 7411(a)(1), (d)(1).

<sup>316</sup> *See In re Desert Rock*, 14 E.A.D. at 528-29 (describing EAB’s prior recognition that “Congress designed the PSD program as a permitting program in which the permit applicant initiates the process,” and stating that parties in a prior case recognized that “Congress intended the permit applicant to have the prerogative to define certain aspects of the proposed facility that may not be redesigned through application of BACT.”).

<sup>317</sup> *In re Prairie State*, 13 E.A.D. at 22 (quoting *In re Pennsauken County*, 2 E.A.D. 667, 673 (Adm’r 1988)) (emphasis in original).

<sup>318</sup> *Prairie State*, 13 E.A.D. at 19 (quoting from brief submitted by the Office of Air and Radiation in the case) (emphasis added).

[The PSD program] involves the case-by-case review of the construction of an individual stationary source. . . . BACT is not applicable to unmodified existing sources nor is it applied on a source category basis. The CAA's PSD program is administered primarily by state and local permitting authorities as [an] individualized preconstruction requirement under CAA section 165. Under section 111(d), the Administrator identifies a list of adequately demonstrated control options in use by the industry, selects the best of those control options after considering cost and other factors, then selects an achievable limit for the category through the application of the best system of emission reduction across the industry.

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The Proposal nonetheless asserts that section 111(d) is similar to the PSD program, because states can take into account remaining useful life and other source-specific factors in “applying” a “standard of performance “to any particular source.”<sup>320</sup> This claim conflates the *state planning process* under section 111(d) with the scope of an *emission guideline rulemaking*, which is to determine the best system of emission reduction for the source category and provide criteria (in the form of quantitative, binding emission limitations) that will enable states to develop “satisfactory” plans.<sup>321</sup> The best system of emission reduction is not intended to be, and has never been, tailored to individual sources as part of an emission guideline rulemaking; indeed it would be practically impossible for EPA to do so. The Proposal’s facile claims of similarity between the section 111(d) and PSD programs do not support the application of the “redefining the source” policy in this rulemaking.

The case-by-case nature of the PSD permitting program points to another reason why the “redefining the source” policy can have no relevance to a best system of emission reduction determination under section 111(d): the “redefining the source” policy, as it has consistently been applied by EPA, *requires* an individualized determination based on the circumstances of a particular proposed project. As the Ninth Circuit Court of Appeals explained in a 2016 decision, the “redefining the source” policy requires *first* that the permit applicant define “the proposed facility’s end, object, aim, or purpose – that is the facility’s basic design.” Then, “the permitting authority must take a ‘hard look’ at the proposed definition to determine which design elements are inherent to the applicant’s purpose and which elements can be changed to reduce pollutant emissions without disrupting the applicant’s basic business purpose.”<sup>322</sup> The EAB has emphasized that “[e]ach such determination, like each BACT analysis itself, requires a case-by-case analysis and is highly fact-specific.”<sup>323</sup> This fact-specific, case-by-case determination is integral to the application of the policy: in prior PSD permitting proceedings, whether a particular control option must be considered in the BACT analysis has often hinged on the “basic business purpose” of the project at hand.<sup>324</sup> In an emission guideline rulemaking, where this kind

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<sup>319</sup> See ACE, 83 Fed. Reg. at 44,753 (emphasis removed).

<sup>320</sup> *Id.*

<sup>321</sup> 42 U.S.C. § 7411(d)(2)(A).

<sup>322</sup> *Helping Hand Tools v. EPA*, 848 F.3d 1185, 1194-95 (9th Cir. 2016).

<sup>323</sup> *In re Ariz. PSC Ocotillo Power*, 17 E.A.D. 323, 336-37 (EPA 2016) (citing *In re La Paloma*, 16 E.A.D. 267, 287 (EAB 2014)).

<sup>324</sup> See PSD and Title V Permitting Guidance for Greenhouse Gases, at 27-28 (Mar. 2011) (discussing project-specific circumstances that might justify considering fuel-switching as a potential BACT, and relevant precedents).



of source-specific information is not before the Agency, it is simply impossible to apply the “redefining the source” policy as it has been historically applied by EPA.

What is more, the EAB has explicitly *rejected* what EPA is proposing to do here through its unlawful delegation of source-by-source best system of emission reduction determinations to the states: apply the “redefining the source” doctrine in a way that would categorically rule out certain control options, without carefully considering whether those options disrupt the “basic business purpose” of a particular facility. In a 2016 decision upholding a PSD permit for the construction of new natural gas-fired combustion turbines, for example, the EAB emphasized that:

Permit issuers generally have broad discretion in conducting BACT determinations, but they are strongly discouraged from categorizing emissions control options as “impermissible redesign” without first taking the requisite “hard look” at the project. To skip this step might result in their “paving an automatic BACT off-ramp” that “frustrates congressional will” and may constitute a reversible abuse of discretion.<sup>325</sup>

Indeed, the EAB has *remanded* permit decisions when the permitting authority has treated the “redefining the source policy” as an “automatic BACT off-ramp” rather than taking the requisite “hard look” at the applicant’s particular business purpose and the circumstances of the proposed project.<sup>326</sup> These decisions have made clear that it is not only arbitrary, but contrary to “Congressional will” and to the purposes of the PSD program for a permitting authority to simply declare that certain control options constitute “redefining the source” outside the particularized context of a specific permit application. Yet that is exactly what EPA has proposed to do in ACE: declare *ex ante* that entire categories of control options—such as natural gas co-firing—represent a “redefinition of the source” that should be excluded from consideration as the best system of emission reduction for *any* existing coal-fired power plant, even in circumstances where those options would be consistent with the business purpose of existing power plants and could be implemented without a fundamental redesign. Thus, even if the “redefining the source” policy had some relevance to best system of emission reduction determinations for existing sources (which it does not), EPA’s current approach does not reflect the “redefining the source” policy as it has historically been applied.

Finally, EPA claims in the Proposal that the application of the “redefining the source” policy is appropriate because of concerns that certain options would “require, at a minimum, significant

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<sup>325</sup> *In re Ariz. PSC Ocotillo Power*, 17 E.A.D. 323, 336-37 (E.P.A. Sept. 1, 2016) (citing *In re N. Mich. Univ.*, 14 E.A.D. 283, 302 (EAB 2009); *La Paloma*, 16 E.A.D. at 289)

<sup>326</sup> *See, e.g., In re Desert Rock Energy Company*, 14 E.A.D. 484, 538-39 (EAB 2009) (remanding a PSD permit where the agency concluded that integrated gasification combined cycle technology would “redefine the source” without adequate explanation); *In re Northern Michigan University Ripley Heating Plant*, 14 E.A.D. 283, 303 (EAB 2014) (remanding a permit where agency determined that cleaner fuels would “redefine the source” without looking at particular circumstances of the facility; observing that “. . . the CAA promotes ‘clean fuels’ with particular vigor. . . Merely equating use of lower polluting fuels to impermissible redesign in the hope of paving an automatic BACT off-ramp pointedly frustrates congressional will.”) (citations omitted).

modification and could even require decommissioning, redesign and new construction.”<sup>327</sup> EPA provides absolutely no evidence to support its claim that these concerns would preclude the options referenced in the Proposal, such as converting EGU boilers to natural gas. But more fundamentally, EPA fails to explain why its concerns about the cost and disruption associated with these systems of emission reduction cannot be fully addressed using the statutory factors (cost, energy requirements, nonair impacts, “adequately demonstrated”) that Congress has directed EPA to consider when designating a best system of emission reduction.

Indeed, to the extent EPA believes the “redefining the source” policy is meaningfully different from cost and other factors that are already specified in section 111, the Agency appears to be unlawfully “rel[ying] on factors which Congress has not intended it to consider.”<sup>328</sup> Section 111 identifies specific criteria that EPA must consider in designating a best system of emission reduction and developing standards of performance, and “redefining the source” is not one of them. If invoking the “redefining the source” policy eliminates systems of emission reduction that are otherwise “adequately demonstrated” and meet the section 111 criteria, EPA would be unlawfully “engrafting” an additional criterion on to the carefully designed statutory framework.<sup>329</sup> Congress has laid out the factors EPA is to consider in designating a best system of emission reduction in the statute. EPA does not have the authority to invent additional ones or import them from a separate statutory scheme.

*d. EPA’s determination that certain systems would “redefine the source” is baseless.*

Even if EPA’s application of the “redefining the source” policy were valid, its proposed conclusion that certain systems of emission reduction would violate that policy is baseless.

First, the best system of emission reduction in the CPP does *not* “redefine the source” because there is no evidence that it in any way disrupts the “basic business purpose” of any existing fossil fuel-fired EGU or require any redesign or alteration of any kind to an existing fossil EGU. To the contrary, the CPP best system of emission reduction was deliberately chosen to reflect the interconnected operation of the power sector and the techniques that power companies themselves have been using for decades to reduce CO<sub>2</sub> and other emissions.<sup>330</sup> Building blocks two and three of the CPP best system of emission reduction, in particular, contemplate that steam EGUs and some natural gas-fired combustion turbines will reduce their utilization by an amount that can be offset by increased generation from lower-emitting resources. Neither of these building blocks would have required *any* affected EGU to undertake *any* physical modification

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<sup>327</sup> ACE, 83 Fed. Reg. at 44,753. As one of the Joint Environmental Commenters noted in its comments on the December 2017 Advance Notice of Proposed Rulemaking, EPA is incorrect that conversion of EGU boilers to natural gas would require “significant modification.” See Comments of Environmental Defense Fund on EPA’s Advance Notice of Proposed Rulemaking on State Guidelines for Greenhouse Gas Emissions from Existing Sources, at 48-52, Doc. No. EPA-HQ-OAR-2017-0545-0297 (Feb. 26, 2018).

<sup>328</sup> *State Farm*, 463 U.S. at 43.

<sup>329</sup> See *Nat’l Ass’n of Home Builders v. Defenders of Wildlife*, 551 U.S. 644 (2007).

<sup>330</sup> CPP 80 Fed. Reg. at 64,664; see also Comment by Electricity Grid Experts Benjamin F. Hobbs, Brendan Kirby, Kenneth J. Lutz, James D. McCalley, and Brian Parsons, at 3, Doc. No. EPA-HQ-OAR-2017-0355-20922 (Apr. 25, 2018).

or make *any* change to its design;<sup>331</sup> rather, the CPP best system of emission reduction contemplated only that these facilities would change their amount of generation. To the extent that owners and operators of EGUs intend to sell power on a unified grid and must rely on replacement generation during shutdowns or malfunctions, generation from alternative sources is already part of their business plan and, under the “redefining the source” policy, agencies would need to consider expanding the use of that design feature to reduce pollution, as discussed below. Moreover, these building blocks—both in kind and degree—are consistent with the same large-scale shift in generation that has enabled the power sector to reduce its carbon pollution emissions by 28% since 2005.<sup>332</sup> Indeed, even the Proposed Rule acknowledges that changes in the generation mix since the CPP was adopted have been consistent with—and even outpaced—expectations at the time the CPP was finalized.<sup>333</sup>

The Proposed Rule’s completely unsupported assertions that the CPP could “only be accomplished by ‘a fundamental redesign’ of [this source category], of the generation mix, and of the division of jurisdiction over electricity generation” are therefore simply false.<sup>334</sup> They are also irrelevant to whether the CPP best system of emission reduction would entail a “redefinition” of the source. The “redefining the source” policy has *always* been based on an examination of the basic business purpose of a proposed new or modified source subject to PSD permitting, not to the composition of sources in a source category or the “division of jurisdiction” relevant to that source. The Proposal’s effort to enlist the “redefining the source” doctrine as a further reason to reject the CPP best system of emission reduction thus lacks reasoned explanation and factual support, and arbitrarily invokes a host of factors that have never entered into the application of the policy.

3. EPA cannot rule out a best system of emission reduction on the grounds that it is not universally or widely available.

As we demonstrate elsewhere in our comments, the Proposal’s overall approach—in which EPA merely designates a list of heat rate improvement technologies as the best system of emission reduction, without providing any presumptive quantitative standards or even requirements governing how the states must evaluate these technologies—violates EPA’s obligation to designate a “best” system and to establish a procedure that ensures each state “shall” submit a “satisfactory” plan that establishes standards of performance that comply with the Clean Air Act. If EPA ultimately finalizes this unlawful approach, however, it cannot simultaneously rule out technologies that would be more effective in reducing emissions than HRI as the best system of

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<sup>331</sup> See CPP, 80 Fed. Reg. at 64,873 (“Multiple methods are available for reducing emissions from affected EGUs that do not involve capital investments by the owner/operator of an affected EGU. For example, generation shifts among affected EGUs, and addition of new RE generating capacity do not generally involve capital investments by the owner/operator at an affected EGU.”).

<sup>332</sup> Comment by Electricity Grid Experts, at 12-17.

<sup>333</sup> ACE, 83 Fed. Reg. at 44,750-51; ACE RIA at 3-8.

<sup>334</sup> Both former FERC commissioners and former state energy and environmental officials have filed comments in response to the proposed repeal of the Clean Power Plan that fully refute EPA’s claim that the CPP would “redefine” the division of jurisdiction over electricity generation. See Comments of Former State Energy and Environmental Regulators, at 2-4, Doc. No. EPA-HQ-OAR-2017-0355-20875 (Apr. 26, 2018); Comments of Former FERC Commissioners Norman Bay, John Norris, and Jon Wellinghoff, at 2-6, Doc. No. EPA-HQ-OAR-2017-0355-19640 (Apr. 26, 2018).

emission reduction on the grounds that the technologies are not applicable or available at all existing EGUs. Yet the Proposal's brief and dismissive discussion of alternatives to HRI relies precisely on such source-specific availability concerns as grounds for excluding them from the best system of emission reduction.<sup>335</sup>

In the context of ACE, this is an arbitrary and incoherent basis for ruling out a particular system of emission reduction as the best system of emission reduction. First, EPA acknowledges that its own proposed "best system" may not be cost-effective or even available at all steam EGUs<sup>336</sup>—even suggesting that some states may choose to require *no* reductions from certain EGUs under its proposed "best system."<sup>337</sup> That other, more effective systems of emission reduction may *also* not be available at all EGUs is therefore not a reasoned basis for EPA to reject them<sup>338</sup>—especially where EPA's own "best system" achieves such trivial reductions and where EPA itself admits that states could readily decline to apply that "best system" based on any number of vague and open-ended factors.

Second, ruling out certain systems of emission reduction based on concerns regarding source-specific applicability is inconsistent with EPA's proposed framework. In a regulatory regime in which the states are expected to carry out a source-specific analysis of HRI for each existing EGU (especially one that the Proposal explicitly compares to the BACT process<sup>339</sup>), EPA cannot cite source-specific geographic or infrastructure constraints as a basis to tell the states not to evaluate other approaches (such as CCS or natural gas co-firing or conversion) that the data before the Agency indicates are available and feasible on a source-specific basis. Indeed, EPA's PSD permitting guidance requires permitting authorities to consider such options at Step 1 of the BACT process,<sup>340</sup>—which, as discussed above, is similar to the proposed BSER analysis that EPA has unlawfully delegated to state and local agencies—even if they must ultimately be ruled out as infeasible due to source-specific constraints.

In short, if EPA is determined to make states evaluate the applicability of HRI on a source-specific basis, EPA must also require states to consider more effective systems of emission reduction (such as CCS and co-firing) that may also be available—and would be superior to HRI—in source-specific circumstances. Instead, EPA arbitrarily uses the fact that CCS or co-firing may be limited in *some* situations as a reason not to require states to consider them under

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<sup>335</sup> See ACE, 83 Fed. Reg. at 44,761-62 (EPA ruled out CCS as the best system of emission reduction because it "may not be a viable option for many individual facilities"; dismissing natural gas co-firing as the best system of emission reduction based on the assertion that "many existing coal-fired plants" do not have access to natural gas pipeline infrastructure or that the available infrastructure may have limited capacity).

<sup>336</sup> *Id.* at 44,756-57.

<sup>337</sup> *Id.* at 44,766.

<sup>338</sup> See *United States Sugar Corp. v. EPA*, 830 F.3d 579, 650 (D.C. Cir. 2016) ("This court has often declined to affirm an agency decision if there are unexplained inconsistencies in the final rule." (quotations removed)).

<sup>339</sup> ACE, 83 Fed. Reg. at 44,753.

<sup>340</sup> EPA, PSD and Title V Permitting Guidance for Greenhouse Gases at 32 (Mar. 2011) ("For the purposes of a BACT analysis for GHGs, EPA classifies CCS as an add-on pollution control technology that is 'available' for facilities emitting CO<sub>2</sub> in large amounts, including fossil fuel-fired power plants, and for industrial facilities with high-purity CO<sub>2</sub> streams (e.g., hydrogen production, ammonia production, natural gas processing, ethanol production, ethylene oxide production, cement production, and iron and steel manufacturing). For these types of facilities, CCS should be listed in Step 1 of a top-down BACT analysis for GHGs.").

any circumstances—even though its proposed “best” system of emission reduction is susceptible to the same limitation.

Finally, EPA arbitrarily rejects co-firing, CCS, and other alternatives to its proposed best system of emission reduction without giving *any* consideration to whether it could use subcategorization to identify subsets of EGUs for which these alternatives might be effective and appropriate. As judicial precedent makes clear, section 111 is a “technology-forcing statute” and in designating a best system of emission reduction, EPA is required to look broadly at systems and techniques that may be in use in other, comparable industrial sectors;<sup>341</sup> to consider future improvements and refinements in emission reduction systems;<sup>342</sup> and to consider systems that are not necessarily in “actual, routine use somewhere.”<sup>343</sup> Section 111 and EPA’s implementing regulations for section 111(d) also give the Agency broad discretion to subcategorize among sources,<sup>344</sup> and the Proposal suggests that states themselves should have flexibility to subcategorize sources in evaluating the application of HRI.<sup>345</sup> Taken together, these authorities require EPA (assuming *arguendo* it can lawfully adopt the approach described at the beginning of this section) to provide that systems that may vary in availability according to geography or other factors must nonetheless be considered in crafting the “best system” for tailored subcategories of sources—a possibility the Proposal entirely fails to consider.

**V. EVEN UNDER EPA’S FLAWED INTERPRETATION OF “SYSTEM,” THE AGENCY WAS REQUIRED TO SELECT BETTER POLLUTION REDUCTION MEASURES; HEAT RATE IMPROVEMENTS INCREASE EMISSIONS AND CANNOT BE THE *BEST* SYSTEM.**

Even under EPA’s cramped definition of “system” as necessarily “source-oriented,” there are better measures to meaningfully reduce carbon pollution from existing power plants. The Proposal flouts the technology-forcing purpose of the Clean Air Act and section 111(d),<sup>346 347</sup>

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<sup>341</sup> *Lignite Energy Council v. EPA*, 198 F.3d 930, 934 (D.C. Cir. 1999).

<sup>342</sup> *Sierra Club v. Costle*, 657 F.2d 298, 364 (D.C. Cir. 1981) (“Recognizing that the Clean Air Act is a technology-forcing statute, we believe EPA does have authority to hold the industry to a standard of improved design and operational advances” when setting standards under section 111); *Portland Cement Ass’n v. Ruckelshaus*, 486 F.2d 375, 391 (D.C. Cir. 1973) (“Section 111 looks toward what may fairly be projected for the regulated future, rather than the state of the art at present.”); *id.* (holding that EPA may make a reasonable “projection based on existing technology” when selecting the best system of emission reduction).

<sup>343</sup> See *Portland Cement Ass’n*, 486 F.2d at 391 (citing S. Rep. No. 91-1196, at 16).

<sup>344</sup> 40 C.F.R. § 60.22(b)(5).

<sup>345</sup> ACE, 83 Fed. Reg. at 44,764.

<sup>346</sup> *Portland Cement Ass’n v. Ruckelshaus*, 486 F.2d at 391.

<sup>347</sup> EPA’s standards have been upheld on the basis of 1) “literature review and operation of one plant in the U.S.,” *Essex Chem. Corp.*, 486 F.2d at 434; 2) “various test programs,” *Nat’l Petrochemical & Refiners Ass’n v. EPA*, 287 F.3d 1130, 1137 (D.C. Cir. 2002) (upholding CAA section 202(a)(3) standards for new motor vehicles, which have a similar basis as section 111 standards); 3) “pilot plant technology,” *Am. Iron & Steel Inst. v. EPA*, 526 F.2d 1027, 1061 (3rd Cir. 1975) (upholding Clean Water Act standards and guidelines, which are based on the best practicable technology currently available); *cf. FMC Corp. v. Train*, 539 F.2d 973, 983-83 (4th Cir. 1976) (upholding EPA’s decision to set Clean Water Act guidelines based on data from a single pilot plant); and 4) “testimony from experts and vendors,” *Portland Cement Ass’n*, 486 F.2d at 402. EPA may also base standards upon “the reasonable extrapolation of a technology’s performance in other industries.” *Lignite Energy Council v. EPA*, 198 F.3d 930, 934 (D.C. Cir. 1978). EPA’s standards are also reasonable where “the combination of controls is novel” and each of the “components ha[ve] been tested and used.” *Sur Contra la Contaminacion v. EPA*, 202 F.3d 443, 448 (1st Cir. 2000)

and EPA's obligation under section 111 and judicial precedent to carefully weigh all pollution controls and select the *best* system whose costs are not exorbitant.<sup>348</sup> As public health and environmental commenters will show in individual comments submitted to this docket, there are various measures such as reduced utilization, carbon capture and sequestration, co-firing or converting to natural gas, coal and lignite drying, the use of heat recovery steam generators, and inlet cooling at gas-fired combustion turbines, which are adequately demonstrated and available at reasonable costs. Moreover, EPA's scant or non-existent record on these measures, as well as the failure to overcome the Clean Power Plan's record on these measures,<sup>349</sup> renders the Proposal an insufficient basis upon which to reject far superior means of pollution control.<sup>350</sup>

In light of these available measures, EPA's determination that heat rate improvements represent the best system of emission reduction is arbitrary and capricious and violates the statutory mandate to identify the *best* system. As EPA previously found, and as shown in the analysis here, the emission reductions associated with heat rate improvements are minimal at best and likely will lead to increased emissions of carbon as well as other air pollutants. EPA concluded last year that "reductions from [heat rate improvements] alone would be grossly insufficient to address the public health and environmental impacts from CO<sub>2</sub> emissions and limiting the best system of emission reduction to efficiency measures might actually exacerbate the insufficiency of the emission reductions."<sup>351</sup> A system which fails to achieve meaningful emission reductions, especially in light of the dire climate crisis, source categories' contribution, and other available control options, is plainly unlawful.<sup>352</sup>

With efficiency improvements, the marginal costs of electricity generation for a power plant go down. Since it can produce electricity cheaper and will likely be favored in the dispatch order, the plant may actually run more than before the improvements, to such an extent that its total carbon emissions would be greater despite fewer emissions per megawatt hour generated.<sup>353</sup> In addition to increasing utilization of plants, efficiency improvements may increase the lifetime of plants, thereby increasing overall emissions as compared to the baseline.<sup>354</sup> Collectively, these

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(upholding CAA section 145 best available control technology determination).

<sup>348</sup> *Lignite Energy Council*, 198 F.3d at 933.

<sup>349</sup> 80 Fed. Reg. at 64,727-28, 64,756, 64,785; EPA, Greenhouse Gas Mitigation Measures TSD, ch. 5 (Aug. 3, 2015) (summarizing availability of carbon capture and sequestration); Andover Technology Partners, *Natural Gas Conversion and Cofiring for Coal-Fired Utility Boilers* (Nov. 30, 2014), Comments of Environmental Defense Fund on EPA's Proposed Carbon Pollution Emission Guidelines for Existing Stationary Sources: Attachment C, Doc. No. EPA-HQ-OAR-2013-0602-23140 (Dec. 1, 2014).

<sup>350</sup> ACE, 83 Fed. Reg. at 44,761-62.

<sup>351</sup> CPP Reconsideration Denial, at 55 n.75 (Jan. 11, 2017); *see also* CPP, 80 Fed. Reg. at 64,787; Proposed Repeal, 82 Fed. Reg. at 48,039 n.5 (acknowledging that the Clean Power Plan building block one cannot stand on its own).

<sup>352</sup> *Sierra Club v. Costle*, 657 F.2d 298, 326 (D.C. Cir. 1981).

<sup>353</sup> Don Grant et al., *A Sustainable "Building Block"?: The Paradoxical Effects of Thermal Efficiency on U.S. Power Plants' CO<sub>2</sub> Emissions*, 75 Energy Policy 398 (Dec. 2014) (finding that "efficient power plants have significantly lower emission rates, but significantly higher emission levels"); *see also* Sarah K. Adair et al., *New Source Review and Coal Plant Efficiency Gains: How New and Forthcoming Air Regulations Affect Outcomes*, 70 Energy Policy 183, 184 (2014) (confirming that efficiency improvements may lead to higher annual emissions).

<sup>354</sup> Dallas Burtraw, Resources for the Future, Comments to the Maryland Office of the Attorney General and the Maryland General Assembly on the Proposed Repeal of the Clean Power Plan, at 10 (Jan. 11, 2018), [http://www.rff.org/files/document/file/RFF-Testimony-Burtraw-Jan2018\\_1.pdf](http://www.rff.org/files/document/file/RFF-Testimony-Burtraw-Jan2018_1.pdf).

problems are known as the “rebound effect.”<sup>355</sup> Further, over time the efficiency improvements erode and lead to diminishing emission reductions.<sup>356</sup>

EPA concluded that “system-wide emission decreases from heat rate improvement will likely outweigh any potential emission increases.”<sup>357</sup> But, even though it insists that heat rate improvement must be assessed on a unit by unit basis,<sup>358</sup> it failed to consider the rebound associated with individual plants operating more and the impact the increased pollution would have on the local population. EPA admits that “emissions might *increase* at some generators,”<sup>359</sup> and that the Proposal will result in an overall *increase* in generation from highly-polluting coal steam units,<sup>360</sup> which—given that the Proposal would lead to a source-specific assessment of the best system of emission reduction—in and of itself disqualifies the proposed approach as the best system of emission “reduction.”<sup>361</sup> EPA also seeks to reform the New Source Review program for the express purpose of “facilitat[ing]” projects that would increase pollution under the proposed best system of emission reduction—as well as other pollution-increasing projects undertaken at EGUs.<sup>362</sup> A source-specific system of emission reduction that *increases emissions* at that source cannot be the “best system of emission reduction.”

Moreover, EPA’s analysis does not consider the degradation of the pollution controls over time or the effect of plants delaying retirement for months or years due to the efficiency upgrades. Without this analysis, EPA’s tentative assertion that “system-wide emission decreases from heat rate improvement will likely outweigh any potential emission increases”<sup>363</sup> does not constitute reasoned decisionmaking, especially in light of the plethora of loopholes the Proposal provides for states to establish weak standards.

As discussed above, EPA’s own analysis likely undercounts the harms associated with the Proposal because the extent to which affected sources will actually improve heat rates without a numerical emission guideline is entirely uncertain.<sup>364</sup> EPA also admits that it chose to model the high-end of the possible heat rate improvement percentage.<sup>365</sup> Yet even this analysis shows that, as compared to the Clean Power Plan, the Proposal not only increases emissions of CO<sub>2</sub> by 117 MM tons, it also increases emissions of sulfur dioxide (“SO<sub>2</sub>”) by 72 MM tons and nitrogen oxides (“NO<sub>x</sub>”) by 53 MM tons in 2030.<sup>366</sup> Even more striking, as compared to doing *nothing*,

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<sup>355</sup> See generally Amelia T. Keyes et al., Resources for the Future, *Carbon Standards Examined: A Comparison of At-the-Source and Beyond-the-Source Power Plant Carbon Standards*, (Aug. 2018), <http://www.rff.org/files/document/file/RFF%20WP%2018-20.pdf>.

<sup>356</sup> *Id.*

<sup>357</sup> ACE, 83 Fed. Reg. at 44,756 n.17, 44,761.

<sup>358</sup> *Id.* at 44,756.

<sup>359</sup> ACE RIA 3-19 n.18; ACE, 83 Fed. Reg. at 44,761 (“[U]nder certain assumptions, sources that adopt HRI may increase generation, due to their improved efficiency and relatively improved economic competitiveness.”).

<sup>360</sup> ACE RIA 3-22.

<sup>361</sup> CPP, 80 Fed. Reg. at 44,753. (Ironically, EPA criticizes the Clean Power Plan for regulating “at the level of an entire industrial sector,” and “electric power writ large,” while focusing on assumed sector-wide emission reductions under the Proposal rather than the potential emission increases at individual sources.)

<sup>362</sup> ACE, 83 Fed. Reg. at 44,777.

<sup>363</sup> 83 Fed. Reg. at 44,756 n.17, 44,761.

<sup>364</sup> ACE RIA ES-21.

<sup>365</sup> *Id.* at 1-17.

<sup>366</sup> *Id.* at RIA 3-40 tbl. 3-41, 3-41 tbl. 3-42.

the Proposal increases deadly SO<sub>2</sub> by 4 MM tons in 2025.<sup>367</sup> Were EPA to take into account the degradation of heat rate improvements over time, impacts of heat rate improvements on power plant operating lifetimes, or the full impacts of the proposed New Source Review changes, the increases in harmful pollution resulting from the Proposal would be significantly greater.

The record amply documents that heat rate improvement is not the best system of emission reduction for power plants, and thus its adoption contravenes the section 111 mandate and is arbitrary. EPA's Proposal fails to exhibit a "rational connection between the facts found and the choice made," and fails "to consider an important aspect of the problem": emission reductions.<sup>368</sup> As such, the Proposal fails to constitute reasoned decisionmaking in accordance with the Clean Air Act and Administrative Procedure Act.

## **VI. EPA'S FAILURE TO DETERMINE A BEST SYSTEM OF EMISSION REDUCTION OR REQUIRE ESTABLISHMENT OF STANDARDS FOR NATURAL GAS-FIRED EGUs IS ARBITRARY AND UNLAWFUL.**

### **A. Section 111 Requires that EPA's Emission Guidelines Provide for the Establishment of Standards for "Any Existing Source" that Would Be Subject to New Source Standards if Such Source Were New.**

EPA also fails to ensure state plans will contain standards of performance for natural gas-fired power plants as required under the Clean Air Act. This is arbitrary and capricious as well as contrary to section 111(d). Section 111(d) requires EPA to issue emission guidelines for categories of sources for which EPA has already promulgated NSPS. EPA has already promulgated NSPS for gas-fired combustion turbines and IGCC units and it thus violates section 111(d) to fail now to require standards of performance for existing units in these subcategories.<sup>369</sup>

EPA's final carbon pollution standards for new, modified, and reconstructed power plants, issued in 2015,<sup>370</sup> included limits for carbon pollution from baseload and non-baseload natural gas-fired power plants that commenced construction after January 8, 2014, among other provisions.<sup>371</sup> In issuing these standards, EPA specifically noted the significant CO<sub>2</sub> emissions from NGCCs,<sup>372</sup> as well as natural gas's increasing share of the total U.S. electricity generation mix.<sup>373</sup>

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<sup>367</sup> *Id.* at ES-10 tbl. ES-8; see also Syracuse University, *Study: Clean Power Plan Replacement Worse than Nothing, Costs More than 3,500 Lives and \$33B Yearly* (Oct. 10, 2017) <https://news.syr.edu/2017/10/study-clean-power-replacement-worse-than-nothing-costs-more-than-3500-lives-and-33b-yearly/> (The study finds that as compared to doing nothing, replacing the Clean Power Plan with a narrower option would make air quality worse and endanger more lives, on top of the 3,500 premature deaths and \$33 billion in health costs already estimated. According to the study, the deterioration in air quality under a heat-rate only approach would be caused by emissions rebound at coal-fired power plants.).

<sup>368</sup> *State Farm*, 463 U.S. 29, 43 (1983) (internal citations omitted).

<sup>369</sup> See 40 C.F.R. Part 60 subparts D, Da, GG, and KKKK.

<sup>370</sup> GHG NSPS Final Rule, 80 Fed. Reg. at 64,530.

<sup>371</sup> 80 Fed. Reg. at 64,601.

<sup>372</sup> 80 Fed. Reg. at 64,531 ("[T]he CO<sub>2</sub> emissions from even a single NGCC unit may amount to one million or more tons per year," a significant contribution "under any reasonable threshold or definition.").

<sup>373</sup> *Id.* at 64,524.



By the unambiguous terms of the Clean Air Act, the promulgation of these standards creates a binding obligation on EPA to issue emission guidelines for carbon pollution that cover existing natural-gas fired power plants. Section 111(d) clearly mandates the scope for EPA's regulation, plainly directing that EPA "shall" issue emission guidelines covering "any existing source" to which a NSPS would apply "if such existing source were a new source."<sup>374</sup>

EPA's Carbon Pollution Standards for New Sources applies to new combustion turbines that burn natural gas. Accordingly, under section 111(d) EPA is legally obligated to issue emission guidelines for carbon pollution that cover existing natural gas-fired EGUs. Yet EPA proposes to revoke existing standards for these facilities, and acknowledges that its new regulatory scheme does not propose to address carbon pollution from combustion turbines and would leave natural gas-fired EGUs unaddressed.<sup>375</sup> Not only does the Proposal fail to fulfill EPA's obligation under section 111, it is a deliberate step to reverse fulfillment of a statutory duty.

**B. Natural Gas-Fired EGUs Are Major Contributors to GHGs and Represent a Large and Increasing Proportion of Existing Capacity and Generation.**

EPA's failure to propose carbon emission guidelines that address natural gas-fired EGUs is particularly egregious given their immense emissions of health-harming, welfare-reducing climate pollution. Natural gas-fired EGUs represent a significant portion of power sector emissions. In 2016, roughly 25% of all carbon emissions from the U.S. power sector came from NGCCs.<sup>376</sup> Moreover, gas-fired combustion turbines are responsible for a large and increasing share of power generation. Electricity generated from these units already represents 28% of the total U.S. power sector generation,<sup>377</sup> compared to 30% from coal.<sup>378</sup> And natural gas's share of total generation continues to increase as coal's share declines.<sup>379</sup> These data plainly underscore the importance of EPA's obligation to establish emission guidelines that address natural gas-fired EGUs.

**C. EPA Has Ignored the Available Information on Opportunities to Reduce Emissions from Natural Gas-Fired EGUs, and Has Failed to Explain Why It Cannot Propose Emission Guidelines for Natural Gas-Fired EGUs.**

In the Proposal, EPA acknowledges that the proposed applicability criteria do not cover stationary combustion turbines and thus, natural gas-fired EGUs.<sup>380</sup> EPA bases its failure to propose a best system of emission reduction for NGCCs on its claim that "no commenters

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<sup>374</sup> 42 U.S.C. § 7411(d)(1) (emphasis added). *See also New York v. EPA*, 443 F.3d 880, 885 (D.C. Cir. 2006) ("[T]he word 'any' has an expansive meaning." (citation omitted)).

<sup>375</sup> ACE, 83 Fed. Reg. at 44,754.

<sup>376</sup> *See EIA, Emissions by Plant for CO<sub>2</sub>, SO<sub>2</sub>, and NO<sub>x</sub>* (2016), <https://www.eia.gov/electricity/data/emissions/> (showing that 465,054,175 of the 1,928,400,912 MtCO<sub>2</sub> from the U.S. power sector in 2016 came from NGCCs).

<sup>377</sup> *See EIA, Form EIA-923* (2016), <https://www.eia.gov/electricity/data/eia923/>.

<sup>378</sup> M.J. Bradley & Associates, *Coal-Fired Electricity Generation in the United States and Future Outlook*, at 1 (Aug. 2017), <https://www.mjbradley.com/reports/coal-fired-electricity-generation-united-states-and-future-outlook>.

<sup>379</sup> *See id.* at 2 fig. 1; *see also EIA, Electric Power Monthly* tbl. 1.1 (Sept. 2018), [https://www.eia.gov/electricity/monthly/current\\_month/epm.pdf](https://www.eia.gov/electricity/monthly/current_month/epm.pdf).

<sup>380</sup> ACE, 83 Fed. Reg. at 44,754.

provided specific information on the availability, applicability, or cost of HRI opportunities for NGCC units . . . [or] on the magnitude of expected heat rate reductions.”<sup>381</sup> But this alleged absence of information has no bearing on and does not excuse EPA’s failure to address these sources, in clear violation of section 111(d)’s command that EPA address “any existing source” subject to new source standards under section 111(b). The Agency is “obligated to collect the data it need[s]” to fulfill this mandatory obligation.<sup>382</sup>

Moreover, EPA’s claim summarily ignores the range of relevant information on GHG emissions management at natural gas-fired power plants that is reflected in the record. In the Proposal, EPA acknowledged that “numerous comments suggested that there are available HRI opportunities at existing NGCC EGUs.”<sup>383</sup> The Agency noted that it evaluated 11 years’ worth of relevant data.<sup>384</sup> And EPA also said that it “conducted a literature search and found some papers” related to HRIs for NGCCs.<sup>385</sup> EPA’s own analyses discuss efficiency improvement opportunities at natural gas facilities and cite to more detailed supporting sources.<sup>386</sup> EDF submitted into the Clean Power Plan ANPR docket as an attachment a report entitled *Improving Heat Rate on Combined Cycle Power Plants*.<sup>387</sup> That report discusses various HRI measures for NGCCs in detail—including turbine inlet cooling, upgrading of gas turbine components, and condenser cleaning—and concludes that these technologies “offer substantial promise.”<sup>388</sup> The Sierra Club recommended a control regime for gas-fired units that was consistent with its recommendations concerning coal-fired units. These comments included load shifting to lower emitting generation based on the age and efficiency of the unit, curtailing use of duct burners, application of additional technology, including inlet cooling and, for operation and maintenance, a specific performance level for combustion turbines based on the 95<sup>th</sup> percentile of each unit’s long term low rolling annual average emission rate.<sup>389</sup> Clean Air Task Force submitted comments detailing opportunities for CCS application to power plants, including those powered by natural gas.<sup>390</sup> Additional material discussed on-site renewable energy integration for power plants, including those powered by natural gas.<sup>391</sup>

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<sup>381</sup> ACE, 83 Fed. Reg. at 44,761.

<sup>382</sup> See *U.S. Sugar Corp. v. EPA*, 830 F.3d 579, 644 (D.C. Cir. 2016).

<sup>383</sup> 83 Fed. Reg. at 44,761.

<sup>384</sup> *Id.*

<sup>385</sup> *Id.*

<sup>386</sup> CPP Reconsideration Denial at 10-11.

<sup>387</sup> See Andover Technology Partners, *Improving Heat Rate on Combined Cycle Power Plants* (Dec. 2016), Comments of Environmental Defense Fund on EPA’s Advance Notice of Proposed Rulemaking on State Guidelines for Greenhouse Gas Emissions from Existing Sources: Attachment A, Doc. No. EPA-HQ-OAR-2017-0545-0361 (Feb. 26, 2018).

<sup>388</sup> *Id.* at 2.

<sup>389</sup> Comments of Sierra Club, Center for Biological Diversity, and Earthjustice on EPA’s Advance Notice of Proposed Rulemaking on State Guidelines for Greenhouse Gas Emissions from Existing Sources, at 31-32, Doc. No. EPA-HQ-OAR-2017-0545-0256 (Feb. 26, 2018).

<sup>390</sup> Comments of Clean Air Task Force, at 29-33, Doc. No. EPA-HQ-OAR-2017-0545-0391 (Feb. 26, 2018) (describing the availability and cost-reasonableness of CCS on all fossil fuel-fired power plants).

<sup>391</sup> Comments of Environmental Defense Fund on EPA’s Advance Notice of Proposed Rulemaking on State Guidelines for Greenhouse Gas Emissions from Existing Sources, at 55-56, Doc. No. EPA-HQ-OAR-2017-0545-0297 (Feb. 26, 2018) (discussing on-site renewable energy integration at power plants, including natural gas-fired facilities); CPP Reconsideration Denial: Appendix 3 – Non-BSER CPP Flexibilities at 10-11 (Jan. 2017).

In addition, to the extent EPA did not have information on the cost, availability and performance of such techniques as inlet cooling and HRSG performance, it is because the Agency did not attempt to access publicly accessible information regarding these technologies or review the ample data that it and DOE maintain in the air markets and EIA data systems. The published technical data concerning the availability, applicability and cost of turbine cleaning, upgrades, inlet cooling, HRSG performance and the like is at least as comprehensive as similar information concerning HRI options at coal-fired units.

Further, as will be set out in more detail in individual organization comments, the Agency must consider two technologies available for combustion turbines that can substantially reduce CO<sub>2</sub> emission rates that are not applicable to the operation of coal-fired steam EGUs. The first is the use of heat recovery steam generators that can reduce CO<sub>2</sub> emission rates by one-third. While most natural gas turbines used in baseload or load following applications employ this technology, EPA air markets program data show that a substantial number of combustion turbines with large and increasing capacity factors do not employ this technology. Second, a majority of existing combustion turbines do not employ inlet air cooling, which can also reduce CO<sub>2</sub> emissions from these units.

EPA must withdraw this Proposal, which unlawfully omits any effort to address this major source of dangerous climate pollution. At minimum, EPA must consider the information available in the docket and through further investigation, as well as additional materials submitted on this Proposal, and re-propose emission guidelines that adequately address this significant source of harmful emissions.

## **VII. EPA’S FAILURE TO CONSIDER RELEVANT INFORMATION IN THE RECORD IS ARBITRARY AND CAPRICIOUS.**

In the Proposal, EPA incorrectly asserts in several locations that its flawed decision-making is driven by a lack of information, when in fact record information on the particular topic does exist. EPA’s failure to consider relevant information renders its proposal arbitrary and capricious.<sup>392</sup>

In the Proposal, EPA identified and evaluated several systems of emission reduction for existing fossil-fuel fired steam generating EGUs, including heat rate improvements.

However, EPA did not include a comparable analysis for natural-gas fired combustion turbines, despite their significant contribution to GHG emissions. EPA asserted that “EPA does not currently have sufficient information on adequately demonstrated systems of emission reduction—including HRI opportunities—for existing natural gas-fired stationary combustion turbines. As such, the Agency is currently unable to determine the best system of emission reduction for such units.”<sup>393</sup> EPA specifically noted that it did not have “specific information on the availability, applicability, or cost of HRI opportunities” at natural gas-fired EGUs.<sup>394</sup> As

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<sup>392</sup> *State Farm*, 463 U.S. at 43 (an agency “must examine the relevant data”).

<sup>393</sup> ACE, 83 Fed. Reg. at 44,755.

<sup>394</sup> *Id.*

discussed above, EPA's inadequate justification for failing to set these standards fails to consider the extensive information submitted and publicly available on this issue.<sup>395</sup>

This record evidence manifestly demonstrated that more than zero reductions were available at natural gas-fired EGUs. EPA's summary refusal to set any best system of emission reduction is not based on a reasoned rejection of this evidence—indeed, the Proposal does not even acknowledge this submitted record evidence—or any thoughtful conclusion that the described emission reduction opportunities at existing natural gas-fired EGUs are not adequately demonstrated. EPA must properly consider this information and set a standard for natural gas-fired EGUs based on this record evidence.

EPA makes additional erroneous claims of lack of knowledge. In the Proposal, EPA claims that it is unaware of non-air health and environmental impacts associated with co-firing, despite record evidence submitted on that issue.<sup>396</sup> EPA asserts without any references or analysis whatsoever that natural co-firing is infeasible because of pipeline constraints—despite public comments as well as EPA's own previous analysis of coal-fired power plants' proximity to pipelines and costs of pipeline infrastructure.<sup>397</sup> EPA rests on its prior conclusions with respect to CCS from a 2015 rulemaking and invites “any new information” from commenters—never acknowledging or responding to any material submitted by commenters on the ANPR providing updated, detailed information on CCS feasibility and cost.<sup>398</sup> EPA's decisions to reject consideration of natural gas co-firing and CCS as emissions mitigation strategies—while ignoring and failing to even acknowledge these relevant materials—represents an arbitrary and unlawful failure to consider the record as a whole.<sup>399</sup>

#### **VIII. EPA STILL HAS FAILED TO DISCLOSE ANY INFORMATION ABOUT THE REVIEW OF THE CLEAN POWER PLAN CONDUCTED PURSUANT TO EXECUTIVE ORDER 13,783.**

The Proposed Rule states that EPA's proposed interpretation of the best system of emission reduction is in line with the interpretation presented in the proposed CPP repeal.<sup>400</sup> The proposed CPP repeal was “based on the outcome of” EPA's review of the CPP under Executive Order

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<sup>395</sup> *Supra* section VI.C.

<sup>396</sup> Comments of Environmental Defense Fund on EPA's Advance Notice of Proposed Rulemaking on State Guidelines for Greenhouse Gas Emissions from Existing Sources, at 52, Doc. No. EPA-HQ-OAR-2017-0545-0297 (Feb. 26, 2018); Comments of Environmental Defense Fund on EPA's Proposed Rule: Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, Doc. No. EPA-HQ-OAR-2017-0355-20949 (Apr. 26, 2017); Comments of Environmental Defense Fund on EPA's Proposed Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, at 141, Doc. No. EPA-HQ-OAR-2013-0602-23140 (Dec. 1, 2014).

<sup>397</sup> Comments of Environmental Defense Fund on EPA's Advance Notice of Proposed Rulemaking on State Guidelines for Greenhouse Gas Emissions from Existing Sources, at 49-51, Doc. No. EPA-HQ-OAR-2017-0545-0297 (Feb. 26, 2018); CPP Reconsideration Denial: Appendix 3 – Non-BSER CPP Flexibilities, at 3-10 (Jan. 2017); EPA, GHG Abatement Measures Technical Support Document, at 6-4 to -5 (June 18, 2014).

<sup>398</sup> *e*, CPP Reconsideration Denial: Appendix 3 – Non-BSER CPP Flexibilities, at 2-3 (Jan. 2017); “Comments of Clean Air Task Force,” at 29-33, Doc. EPA-HQ-OAR-2017-0545-0391 (Feb. 26, 2018).

<sup>399</sup> See *Cablevision Systems Corp. v. Fed. Comm'n's Comm'n*, 597 F.3d 1306, 1310 (D.C. Cir. 2010).

<sup>400</sup> 83 Fed. Reg. at 44,750.

13,783, “Promoting Energy Independence and Economic Growth.”<sup>401</sup> The secrecy of the Agency’s review under Executive Order 13,783—the origin of EPA’s best system of emission reduction definition, a central decision in this Proposal—violates procedural and substantive requirements of the Clean Air Act.

As described in greater detail in comments submitted on the proposed CPP repeal,<sup>402</sup> the preamble to the proposed CPP repeal and the accompanying record provide no information concerning the content of this review, including what documents EPA generated or relied on in performing the review; how EPA interpreted E.O. 13,783; or what provisions of the Executive Order EPA relied upon in deciding to propose to repeal the CPP. This lack of information is unlawful. It violates the CAA’s requirement that EPA place in the docket for a proposed rule the information and analyses the Agency relied upon in developing it,<sup>403</sup> and also violates general requirements of reasoned decision-making and meaningful public comment. Furthermore, EPA has failed to explain how it interpreted the substantive language in the Executive Order, and how reliance on such factors as promoting fossil fuel development is consistent with the CAA. Finally, the Agency has utterly failed to show why it determined that the CPP is inconsistent with (unspecified) requirements of the Executive Order, let alone address its own detailed determinations made in the CPP rulemaking showing that the CPP was fully compatible with a thriving economy and reliable electricity system. EPA has failed to provide related records in response to a Freedom of Information Act request,<sup>404</sup> further evidence of the impermissible lack of transparency regarding this review, which the Agency continues to maintain was the foundation for this proceeding.

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<sup>401</sup> *Id.* See also Proposed Repeal, 82 Fed. Reg. at 48,036; EPA, Electric Utility Generating Units: Repealing the Clean Power Plan: Proposal, <https://www.epa.gov/stationary-sources-air-pollution/electric-utility-generating-units-repealing-clean-power-plan-0> (accessed Oct. 9, 2018) (“EPA proposed to repeal the Clean Power Plan - after completing a thorough review as directed by the Energy Independence Executive Order.”).

<sup>402</sup> See Comments of Environmental Defense Fund on EPA’s Proposed Rule: Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 82 Fed. Reg. 48,035 (Oct. 16, 2017), at 118-25, Doc. No. EPA-HQ-OAR-2017-0355-20949.

<sup>403</sup> 42 U.S.C. § 7607(d)(3).

<sup>404</sup> Freedom of Information Act Request from Environmental Defense Fund, No. EPA-HQ-2018-003777 (Jan. 26, 2018).

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