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Michael S. Regan  
Environmental Protection Agency  
1200 Pennsylvania Avenue NW  
Washington, DC 20460

Docket No: EPA-HQ-OAR-2023-0072

*Re: Ohio and 17 States' comments regarding proposed rulemaking RIN 2060-AV09, as set forth in 40 CFR Part 60, 88 Federal Register 33240.*

Dear Administrator Regan:

The States of Ohio, Alabama, Arkansas, Florida, Georgia, Indiana, Kansas, Kentucky, Louisiana, Mississippi, Missouri, Nebraska, New Hampshire, South Carolina, South Dakota, Texas, Utah, and Virginia submit these comments in opposition to the notice of proposed rulemaking entitled, “New Source Performance Standards for Greenhouse Gas Emissions From New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Emission Guidelines for Greenhouse Gas Emissions From Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule,” set forth at 88 Fed. Reg. 33240 (May 23, 2023) (the “Proposed Rule”).

Coal- and natural-gas-fired power plants together provide about 60% of America’s electricity. In Ohio alone, coal generates over 25%, and natural gas over 60%, of the State’s electricity.<sup>1</sup> In May of this year, the EPA proposed a rule to regulate greenhouse-gas emissions—or “GHG” emissions, to borrow the EPA’s clunky acronym—from these already-existing power plants. The Proposed Rule also regulates

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<sup>1</sup> *Ohio Net Electricity Generation by Source, March 2023*, Energy Information Administration, Electric Power Monthly, available at <https://perma.cc/GGR7-F29H>; see *OHIO State Profile and Energy Estimates, June 2023*, U.S. Energy Information Administration, <https://perma.cc/HB4B-DZ9Q>.

greenhouse-gas emissions from new coal- and natural-gas-fired power plants. The EPA claimed authority to issue this rule under the New Source Performance Standards program set forth in Section 111<sup>2</sup> of the Clean Air Act<sup>3</sup>. This Proposed Rule, much like the Clean Power Plan that preceded it,<sup>4</sup> determines that the “best system” for reducing greenhouse gas emissions involves shifting away from coal- and natural-gas-powered energy generation to generation from cleaner energy sources. The Proposed Rule seeks to accomplish this shifting by forcing coal- and natural-gas plants to shut down or shift generation to cleaner inputs. What is more, the Proposed Rule presupposes that power plants will be able to implement several new technologies based on “crystal ball” predictions as to their availability and technical feasibility.<sup>5</sup> In doing all this, the EPA again sets out to accomplish what the Supreme Court said it could not without clear congressional authorization: restructure the nation’s mix of energy generation.<sup>6</sup>

What is more, the EPA further asserts unheralded power over aspects of the power-generation process—specifically, hydrogen-fuel manufacturing—that it lacks authority to regulate. The Proposed Rule not only demands that power plants substitute large amounts of hydrogen fuel for natural gas, but also demands that the fuel be produced through processes that generate low, or no, greenhouse-gas emissions. But hydrogen burns just the same whether it was obtained through a “clean” or “dirty” process. Tellingly, the EPA offers no justification for this authority to demand emissions reductions beyond the sources that it is authorized to regulate under Section 111. That is because it has no such authority; if Congress had conferred upon the EPA the “unheralded power” to control the end-to-end production of power for the country, it would have given “clear congressional authorization” to do so.<sup>7</sup> Congress gave no such authorization.

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<sup>2</sup> 42 U. S. C. §7411.

<sup>3</sup> 42 U. S. C. §§7408-7410.

<sup>4</sup> *Compare* New Source Performance Standards for Greenhouse Gas Emissions From New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Emission Guidelines for Greenhouse Gas Emissions From Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule, 88 Fed. Reg. 33240, 33243 (May 23, 2023) with Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64662, 64784 (Oct. 23, 2015).

<sup>5</sup> *Portland Cement Ass’n v. Ruckelshaus*, 486 F.2d 375, 391 (D.C. Cir. 1973) (quotation omitted).

<sup>6</sup> *West Virginia v. EPA*, 142 S. Ct. 2587, 2610–16 (2022).

<sup>7</sup> *Id.* at 2609 (quoting *Utility Air Regulatory Group v. EPA*, 573 U. S. 302, 324 (2014)); see *Biden v. Nebraska*, 600 U.S. \_\_\_, 2023 WL 4277210 \*3 (2023).

All told, the EPA lacks authority to order such a vast restructuring of the nation’s mix of energy generation. The Proposed Rule will touch all aspects of American life. It will cost tens of billions of dollars; eliminate thousands of jobs at hundreds of power plants and related industries; affect the reliability of the power grid; and alter energy prices for millions of commercial and residential consumers. Our Constitution leaves decisions like this—decisions of “vast economic and political significance”—to Congress.<sup>8</sup> At the very least, no agency can make such decisions without clear authorization from Congress. Neither the New Source Performance Standards program nor anything else in the Clean Air Act is susceptible of being read to confer such massive authority upon the EPA.

In light of these and other problems, the EPA should withdraw the Proposed Rule.

## **I. The Proposed Rule relies on inadequately demonstrated technology.**

The Proposed Rule is unlawful because it relies on technologies—specifically, carbon capture and sequestration, along with high levels of co-firing—that have not been “adequately demonstrated.”<sup>9</sup> Retrofitting these technologies to existing sources will be infeasible, if not impossible. Thus, there is no way to achieve the proposed emissions reductions through the implementation of these inadequately demonstrated technologies.

### **A. Carbon Capture and Sequestration.**

First, the Proposed Rule asks power plants to implement a largely untested technology: carbon capture and sequestration. Carbon-capture-and-sequestration technology, as its name indicates, permits power plants to capture and permanently store CO<sub>2</sub> emissions.<sup>10</sup> Successful capture and sequestration has three major components: CO<sub>2</sub> capture, transportation, and underground storage.<sup>11</sup> The Proposed Rule determines that the best system of emissions reductions for three groups of power plants—new (and modified) natural-gas and coal-fired power plants and existing long-term coal-fired plants—includes capturing and sequestering 90% of carbon emissions.<sup>12</sup> But, carbon capture and sequestration at this very high rate is not technically feasible.

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<sup>8</sup> *Utility Air*, 573 U. S. at 324 (quotation omitted).

<sup>9</sup> See §7411(a)(1).

<sup>10</sup> 88 Fed. Reg. at 33254.

<sup>11</sup> *Id.*

<sup>12</sup> *Id.* at 33277, 33303, 33335, 33351.

To provide an illustration of why the EPA overstates the feasibility of carbon capture at a 90% rate, consider SaskPower’s Boundary Dam Unit 3, a coal-fired unit retrofitted with carbon-capture-and-sequestration technology in Saskatchewan, Canada. The EPA touts this unit as having “achieved CO<sub>2</sub> capture rates of 90%.”<sup>13</sup> But this facility is the *world’s* only operating commercial carbon capture facility at a coal-fired power plant.<sup>14</sup> And it has never achieved its maximum capacity.<sup>15</sup> It also battled significant technical issues throughout 2021—to the point that the plant idled the equipment for weeks at a time.<sup>16</sup> As a result, the plant achieved less than 37% carbon capture that year despite having an official target of 90% (which is the target set for newly modified and existing coal-fired plants by the Proposed Rule).<sup>17</sup>

These technical failures are not unique to SaskPower. A study of 263 carbon-capture-and-sequestration projects undertaken between 1995 and 2018 found that the majority failed and 78% of the largest projects were cancelled or put on hold.<sup>18</sup> After the study was published in May 2021, the only other coal plant with a carbon-capture-and-sequestration attachment in the world, Petra Nova, shuttered after facing 367 outages in its three years of operation. That plant fell short of its emissions reduction goals by 17%. In the EPA’s less-than handful of examples touting the success of carbon capture and sequestration, the agency points to two domestic coal-fired plants, for example<sup>19</sup>—but even those plants have implemented only the capture component of carbon-capture-and-sequestration.<sup>20</sup>

Even if carbon capture on the order of 90% is possible, there is yet another roadblock to successfully executing carbon capture and sequestration at the levels contemplated in the Proposed Rule: sequestration. As the EPA admits, CO<sub>2</sub> sequestration is not so much a “technology” but rather a hypothesis. The EPA asserts the “effectiveness of long-term trapping of CO<sub>2</sub>” because it has observed CO<sub>2</sub> being naturally

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<sup>13</sup> 88 Fed. Reg. at 33254.

<sup>14</sup> *Only still-operating carbon capture project battled technical issues in 2021*, S&P Global Market Intelligence, (Jan. 6, 2022), available at <https://perma.cc/BMB6-BS37>

<sup>15</sup> *Id.*

<sup>16</sup> *Id.*

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

<sup>18</sup> *The World’s Only Coal Carbon Capture Plant Is Regularly Breaking*, Vice, (Jan. 11, 2022), available at <https://perma.cc/6MJA-FMTJ>.

<sup>19</sup> 88 Fed. Reg. at 33254.

<sup>20</sup> *Id.* at 333291–92.

trapped in rock formations “for millions of years.”<sup>21</sup> This is hardly a “demonstration” of sequestration, much less an adequate one. Natural sequestration is not the same as intentional CO<sub>2</sub> injection into the Earth. It is telling, moreover, that the EPA does not point to a single example where controlled injection of captured carbon emissions has been successful on the scale required to sequester 90% of carbon captured at a large-scale power plant.<sup>22</sup> Moreover, the examples it does provide do not compare to the circumstances of plants in Ohio. For example, two of the EPA’s examples of successful sequestration are located in Norway.<sup>23</sup> Plants in Norway, however, have easy access to offshore sites. That makes transportation of captured carbon dioxide and sequestration under the ocean technologically feasible and substantially more cost effective.

Coal plants located in Ohio and most other States will not have the same easy access to offshore sites. Existing coal- and natural-gas-fired power plants are geographically constrained. They cannot relocate to be closer to sequestration sites, which means that the transport of CO<sub>2</sub>, even if it can be accomplished successfully (which is itself doubtful), will be prohibitively expensive to implement owing to the plants’ distance from traditional offshore sequestration sites.

Putting this all together, unless the ideal geology is already present beneath an existing power plant, the plant cannot sequester its captured emissions without constructing pipeline and sequestration infrastructure. Ohio plants currently in operation neither have this unique geological luck, nor do they have the infrastructure for transport or injection underground or a market for the development of that infrastructure. The same goes for plants in other States across the country. Successful sequestration is precisely the kind of “purely theoretical or experimental” technology that cannot be deemed “adequately demonstrated.”<sup>24</sup>

### **B. Retrofitting existing plants for co-firing.**

The Proposed Rule also requires plants to “co-fire” cleaner inputs—that is, to substitute a cleaner energy input in lieu of the one currently being fired.<sup>25</sup> For instance, in a coal-fired power plant, natural-gas co-firing is the substitution of natural gas for

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<sup>21</sup> *Id.* at 33295.

<sup>22</sup> *See id.*

<sup>23</sup> *Id.*

<sup>24</sup> *Portland Cement Ass’n*, 486 F.2d at 391.

<sup>25</sup> 88 Fed. Reg. at 33254.

some of the coal input so that the unit fires a combination of coal and natural gas.<sup>26</sup> The Proposed Rule demands co-firing at extremely high levels. Some existing coal-fired power plants must co-fire up to 40% of their input with natural gas.<sup>27</sup> And, natural-gas plants, both existing and new, must co-fire up to 96% (nearly all) of their inputs with hydrogen manufactured through a process that produces little to no greenhouse gas emissions (also called “low-GHG hydrogen”).<sup>28</sup>

These co-firing requirements at such high levels are onerous on all power plants. But they will be prohibitively costly for existing power plants. Existing coal plants will have to install significant infrastructure, such as new gas burners and related boiler modifications. And they will have to construct natural gas pipelines to supply natural gas for co-firing purposes. But, redirecting or building new natural-gas pipelines to where the coal plants are currently located is hardly feasible and likely impossible. Further, existing natural-gas plants must undergo similar, costly modifications to achieve hydrogen-co-firing compatibility. And obtaining nearly 100% levels of low-greenhouse-gas hydrogen, which is hard to obtain, is unlikely to come to fruition.

What is more, co-firing compatibility is not adequately demonstrated. The EPA notes that “[m]any models of *new* utility combustion turbines have demonstrated the ability to co-fire up to 30 percent hydrogen,” and that “developers are working toward models that will be ready to combust 100 percent hydrogen by 2030.”<sup>29</sup> This is hardly the kind of demonstration that justifies forcing *existing* natural-gas plants to convert to co-firing hydrogen at 96% levels the Proposed Rule contemplates. For one thing, the only demonstration of hydrogen co-firing that the Proposed Rule touts has been achieved in *new* combustion turbines—and only at the 30% rate. Consider also two of the examples of hydrogen-co-firing retrofits on existing natural-gas-fired plants.<sup>30</sup> One was capable of co-firing 5% hydrogen and the other, 20%.<sup>31</sup> These are nowhere near the optimistic levels contemplated in the Proposed Rule. It is not enough that the EPA point to a “test burn” at 80% hydrogen-substitution levels to justify placing these burdens on all plants.<sup>32</sup> Thus even if hydrogen co-firing at very high levels could be feasible for new plants, it is doubtful that it can be accomplished

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<sup>26</sup> *Id.*

<sup>27</sup> *Id.* at 33337–38.

<sup>28</sup> *Id.* at 33361.

<sup>29</sup> *Id.* at 33255.

<sup>30</sup> *Id.* at 33364.

<sup>31</sup> *Id.*

<sup>32</sup> *Id.*

by existing natural-gas plants at the levels and in the timeline contemplated by the rule.

### **C. Procuring Low-greenhouse-gas Hydrogen.**

The EPA makes one more “crystal ball” prediction:<sup>33</sup> that natural-gas power plants will be able to procure massive quantities of hydrogen manufactured through a low-greenhouse-gas process in the time frame set by the Proposed Rule. Remember, low-greenhouse-gas hydrogen refers to the manufacturing process that produces hydrogen, not to the chemical composition of the hydrogen itself.<sup>34</sup> Power plants must now seek out vendors that sell hydrogen manufactured through this clean process. Such vendors are few and far between, largely because of the technical- and cost-barriers of producing clean hydrogen.

## **II. The EPA exceeds its Section-111 Authority by regulating the means by which hydrogen is being procured for co-firing.**

The EPA does not have authority to dictate the manufacturing process by which hydrogen is obtained for co-firing. But, by forcing existing and new natural-gas-fired power plants to co-fire low-greenhouse-gas hydrogen,<sup>35</sup> that is exactly what the EPA unlawfully does. Some technical background is helpful here. Hydrogen is a clean fuel, which means that burning it does not emit CO<sub>2</sub>.<sup>36</sup> But some of the processes used to produce hydrogen fuel does generate CO<sub>2</sub>.<sup>37</sup> For instance, the most common way of obtaining hydrogen fuel is by splitting natural gas into hydrogen and CO<sub>2</sub>.<sup>38</sup> But this process produces significant carbon emissions and does little to offset the emissions saved by burning hydrogen for power. The greenest method of producing hydrogen involves splitting water into hydrogen and oxygen through electrolysis conducted using renewable energy.<sup>39</sup> And, because hydrogen obtained through a high-greenhouse-gas process is indistinguishable from hydrogen obtained through a low-greenhouse-gas process, the EPA suggests that it may seek “independent third-party verification” “to ensure that the low-GHG hydrogen used by” power plants

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<sup>33</sup> *Portland Cement Ass’n*, 486 F.2d at 391 (citation omitted).

<sup>34</sup> 88 Fed. Reg. at 33255.

<sup>35</sup> *Id.* at 33366; *id.* at 33331.

<sup>36</sup> *Id.* at 33255.

<sup>37</sup> *Id.*

<sup>38</sup> Zurich Insurance Group, *What are green hydrogen and blue hydrogen, and can they solve the climate crisis?* (Jan. 13, 2023), available at <https://perma.cc/DF34-HSAK>.

<sup>39</sup> *Id.*

“is actually low-GHG, and” to “guard against [the] use of hydrogen that is falsely claimed to be low-GHG hydrogen.”<sup>40</sup>

Somewhat glaringly, the EPA provides no authority to justify regulating fuel-manufacturing processes under Section 111. That is because it does not have the authority to impose these beyond-the-source regulations. True, the agency notes that “tax credits” in the Inflation Reduction Act<sup>41</sup> will “incentivize the manufacture of hydrogen through low GHG-emitting methods” and will “fuel[] interest in co-firing hydrogen.”<sup>42</sup> But such incentive schemes do not give *the EPA* regulatory authority to regulate the production of hydrogen.

Surely Section 111 does not give the EPA the power it claims. That section empowers the EPA to enact only “efficiency-improving, at-the-source measures.”<sup>43</sup> Regulating the hydrogen-manufacturing process is neither efficiency improving nor an at-the-source measure. By the EPA’s own concession, whether hydrogen is produced through a high-greenhouse-gas or low-greenhouse-gas method has no impact on its efficiency as a fuel substitute—in other words, the manner in which hydrogen is produced has no bearing on how well it will improve efficiency at the source where it is used. Hydrogen burns just the same at each source, regardless of whether it was obtained through a “clean” or “dirty” process. And the hydrogen-manufacturing process falls outside of the purview and scope of the regulated power plants, generally. Indeed, the statute permits the EPA to set standards of performance for new and existing “*sources*,” and not their vendors.<sup>44</sup> Thus, the EPA does not have the authority to enact such beyond-the-source regulations that have no impact on the efficiency of emissions reductions by each source.

The EPA’s assertion of this dramatic and unjustified authority runs afoul of the major-questions doctrine. If the EPA has the authority to regulate beyond the regulated source, where does that authority end? Can the EPA demand under its Section-111 authority that a regulated source’s employees use only electric vehicles on their way to work? “[C]ommon sense” would suggest otherwise.<sup>45</sup> If Congress had conferred upon the EPA the “unheralded power” to control the end-to-end production of

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<sup>40</sup> 88 Fed. Reg. at 33331.

<sup>41</sup> Pub. L. 117–169, 136 Stat. 1818 (2022).

<sup>42</sup> 88 Fed. Reg at 33246.

<sup>43</sup> *West Virginia*, 142 S. Ct. at 2612 n.3.

<sup>44</sup> §§7411(b)(1)(B), (d)(1).

<sup>45</sup> *West Virginia*, 142 S. Ct. at 2609 (quotation omitted); *Biden*, 600 U.S. \_\_\_, 2023 WL 4277210 at \*17 (Barrett, J., concurring).



power for the country, it would have given “clear congressional authorization” to do so.<sup>46</sup> Congress has not authorized the EPA, clearly or otherwise, to regulate in this area.

### **III. The Proposed Rule unlawfully restructures the current mix of energy generation.**

Under Section 111(d), the EPA may regulate emissions from existing sources by imposing standards of performance based on targeted, achievable “measures that would reduce pollution by causing the regulated source to operate more cleanly.”<sup>47</sup> These measures must involve at-the-source implementation of “efficiency improvements, fuel-switching,” “add-on controls,” and other “traditional air pollution control measures.”<sup>48</sup> What the EPA may not do through Section 111—a quintessential “gap-fill[ing]” provision<sup>49</sup>—is restructure “the Nation’s overall mix of electricity generation.”<sup>50</sup> Agencies cannot take such decisions of vast “economic and political significance” without “clear congressional authorization.”<sup>51</sup> On this basis, the Supreme Court, just last year, found that the EPA had exceeded its Section 111 authority by ordering a nationwide shift from 38% coal-based electricity generation to 27% coal-based electricity generation.<sup>52</sup> The EPA cannot “bring about the same result” of generation-shifting through at-the-source measures “by, for example, simply requiring coal plants to become natural gas plants.”<sup>53</sup> Although the EPA has “never ordered anything remotely likely that” before now, the nation’s high court already cast “doubt” on the EPA’s authority to do so.<sup>54</sup>

But that is what the EPA seeks to do here. In the Proposed Rule, the EPA purports to set performance standards for new coal- and natural-gas-fired power plants under its section 111(b) (§7411) authority. That, in turn, triggers the EPA’s Section-111(d) authority to regulate coal- and natural-gas plants that are currently in operation. Wielding this authority, the EPA again tries to force existing coal and natural-gas

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<sup>46</sup> *West Virginia*, 142 S. Ct. at 2608–09 (quoting *Utility Air*, 573 U. S. at 324); see *Biden*, 600 U.S. \_\_\_, 2023 WL 4277210 at \*15.

<sup>47</sup> *West Virginia*, 142 S. Ct. at 2610–11 (quoting 80 Fed. Reg. 64726).

<sup>48</sup> *Id.* at 2610–11 (quoting 80 Fed. Reg. 64784).

<sup>49</sup> *Id.* at 2610.

<sup>50</sup> *Id.* at 2607.

<sup>51</sup> *Id.* at 2609–16 (quotations omitted).

<sup>52</sup> *Id.* at 2607, 2616.

<sup>53</sup> *Id.* at 2612 n.3.

<sup>54</sup> *Id.*

plants to “‘shift’ away virtually all of their generation, that is, cease making power altogether.”<sup>55</sup> This time, however, it does so with at-the-source shifting requirements: coal-plants must adopt either carbon capture and sequestration at a 90% rate, or substitute nearly half of their input with natural gas, while natural-gas plants must substitute almost all of their input with (hard to obtain) low-greenhouse-gas hydrogen.

At the levels imposed by the Proposed Rule, these at-the-source measures in aggregate entail nationwide generation shifting. Through the Proposed Rule, the nation’s mix of energy generation will shift more significantly than it would have under the now-defunct Clean Power Plan. The Supreme Court already rejected the EPA’s claimed authority to restructure the nation’s power industry in this way.<sup>56</sup> The EPA should withdraw the Proposed Rule before it is struck down again.

### **A. Proposed regulation of existing coal- and natural-gas-fired power plants.**

Because the Proposed Rule takes a complex, at-the-source approach to shifting power generation in existing sources, this letter first provides some background on the Proposed Rule’s requirements for existing sources. Under the Proposed Rule, the EPA will regulate two categories of power plants under its Section 111(d) authority: fossil-fuel-fired electric steam generating units—which are mostly coal-fired—and natural-gas-fired stationary combustion turbines. This letter describes the requirements the Proposed Rule would impose on each category of existing source.

#### **1. Fossil-fuel-fired electric steam generating units**

The EPA first proposes standards of performance for fossil-fuel-fired electric steam generating units, which are largely coal-fired. The Proposed Rule these units into two groups: coal-fired plants on the one hand, and oil- and gas-fired plants on the other. The EPA further subcategorizes coal-fired plants into groups based on whether, and when, the power plants have committed to cease operations in the future: long-term, medium-term, near-term, and imminent-term.<sup>57</sup> Altogether, this gives rise to five groups of power plants: the four categories of coal-fired plans, plus oil- and gas-fired plants.

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<sup>55</sup> *West Virginia*, 142 S. Ct. at 2612.

<sup>56</sup> *Id.*

<sup>57</sup> 88 Fed. Reg. at 33341–60.

The first group—long-term coal-fired plants—are coal-fired power plants that have not committed to permanently ceasing operations by 2040.<sup>58</sup> For this category, the EPA determined that the best system of emissions reduction would be carbon capture and sequestration that achieves 90% capture of CO<sub>2</sub>. (The proposed rule and many cases refer to the “best system of emissions reduction” using the acronym “BSEER.” This letter will do the same.) The standard of performance that coal-fired plants in this category must achieve by 2030 is an 88.4% reduction in greenhouse-gas emissions from each plant’s current emissions level.<sup>59</sup>

The second group—medium-term coal-fired plants—are those that have committed to permanently ceasing operations after 2031 and before 2040, and that have not taken any capacity restrictions.<sup>60</sup> For this category, the Proposed Rule determines that the BSEER is co-firing natural gas at 40% “of the heat input to the unit” —that is “substitut[ing] ... natural gas for” 40% “of the coal” as an input.<sup>61</sup> The standard of performance that coal-fired plants in this category must achieve by 2030 is a 16% reduction in greenhouse-gas emissions from each plant’s current emissions level.<sup>62</sup>

The third and fourth groups, respectively, are coal-fired power plants slated to shut down before 2035 (and that have opted to function at only 20% capacity) and those that will shut down before 2032. Those coal-fired plants are to continue “routine methods of operation” and maintain the emissions rate at which they currently operate until they close in the near term.<sup>63</sup>

*Finally*, the remaining small number of non-coal-fired electric steam generating units are similarly capped at their current emissions rate and must continue “routine methods of operation and maintenance” or are not subject to regulation under this Rule at all.<sup>64</sup>

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<sup>58</sup> *Id.* at 33359, Table 5.

<sup>59</sup> *Id.*

<sup>60</sup> *Id.*

<sup>61</sup> *Id.*; *see also id.* at 33251 (defining co-firing).

<sup>62</sup> *Id.* at 33359, Table 5.

<sup>63</sup> *Id.*

<sup>64</sup> *Id.* at 33359–60, Table 5.

## 2. Fossil-fuel-fired stationary combustion engines

The Proposed Rule also regulates the existing fleet of fossil-fuel-fired stationary combustion engines. These are natural-gas fired power plants. Recognizing that the “large size of the existing” natural-gas-fired “fleet” needs “lead time required to develop” and “appl[y]” the BSER technology and supporting infrastructure, the Proposed Rule focuses only on the largest and most frequently operated existing natural-gas plants that emit the most greenhouse-gas emissions in this category.<sup>65</sup> The EPA committed to subsequent rulemaking addressing the smaller natural-gas plants.<sup>66</sup>

The Proposed Rule sets performance standards for natural-gas plants that run at or over a 50% capacity factor—that is, plants that generate over 50% of its theoretical maximum capacity of electricity generation—and which have a capacity size of 300MW or greater.<sup>67</sup> These plants represent about 20% of the total power generated by this category.<sup>68</sup> But, the EPA is contemplating inclusion of natural-gas plants that generate over 200MW (which would affect about 51% of the total capacity and generation of units in this category) and over 100MW which would encompass *all* units in this category.<sup>69</sup>

Nevertheless, for natural-gas plants that have a capacity to produce over 300MW and that run at or over a 50% capacity, the Proposed Rule requires either carbon capture and sequestration at the 90% rate by 2035 *or* co-firing hydrogen (obtained through processes that emit low greenhouse-gas) in the amounts of 30% by 2032 and 96% by 2038 (by volume).<sup>70</sup>

Rather than take the usual next step of setting emissions limits based on the implementation of the identified BSER, the EPA takes the unusual step of estimating the “extent of reductions in CO<sub>2</sub> emissions” possible under either the carbon-capture-and-sequestration approach or the low-greenhouse-gas hydrogen co-firing approach. With the carbon capture and sequestration of 90% approach, the EPA estimates emissions reductions anywhere from 88.7% to 89.3%.<sup>71</sup> With the hydrogen co-firing

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<sup>65</sup> *Id.* at 33361.

<sup>66</sup> *Id.*

<sup>67</sup> *Id.*

<sup>68</sup> *Id.* at 33363, Table 6.

<sup>69</sup> *Id.* at 33362, 33363, Table 6.

<sup>70</sup> *Id.* at 33363.

<sup>71</sup> *Id.* at 33369.

approach, the EPA estimates 90% reduction in emissions by co-firing at the 96% level.<sup>72</sup> The Proposed Rule does not set an emissions level that the plants must meet.

**B. The EPA greatly exceeds its Section-111(d) authority by restructuring the current mix of energy generation.**

The EPA has already lost once in its attempt to restructure the nation's power generation. The Clean Power Plan that the Supreme Court rejected in *West Virginia* was straightforward in its intention: shift the nation's power generation from 38% to 27% coal-fired power.<sup>73</sup> The Proposed Rule is not as straightforward, but ultimately does the same, albeit disguised as efficiency-improving, at-the-source measures. Just like the Clean Power Plan, the Proposed Rule will impact the nation's power supply, eliminate thousands of jobs in the power and related industries, and force industry and consumers to pay billions of dollars to achieve the EPA's policy preference for less fossil-fuel-based power generation. The Supreme Court already stopped the EPA from exerting such massive authority over the nation's power industry once.<sup>74</sup> It is likely to do so again if the Proposed Rule is not withdrawn.

To understand why this Rule runs afoul of the limited authority granted by Congress, consider what the at-the-source measures, applied in aggregate to all existing power plants, actually do. For the reasons stated above, carbon capture and sequestration at a 90% capture rate cannot be accomplished by existing power plants. Yet, the Proposed Rule gives long-term coal-fired plants—that is, plants with the greatest remaining useful life, which form the nation's baseload of electricity generation—no option but to accomplish the impossible within seven years.<sup>75</sup> Those plants will close.

The remaining medium-term coal-fired plants (which also form a significant part of the nation's base load) must co-fire 40% of their input with natural gas.<sup>76</sup> Co-firing at these levels is generation shifting by a different name. By 2030, the Proposed Rule requires each medium-term plant to “simply ... become”<sup>77</sup> almost half natural-gas plants. Combined with the fact that many smaller coal-fired plants have already

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<sup>72</sup> *Id.* at 33366.

<sup>73</sup> *West Virginia*, 142 S. Ct. at 2604.

<sup>74</sup> *Id.* at 2616.

<sup>75</sup> *See* 88 Fed. Reg. at 33349 (compliance deadline for implementing carbon capture and storage for affected units is January 1, 2030).

<sup>76</sup> *Id.* at 33351.

<sup>77</sup> *West Virginia*, 142 S. Ct. at 2612 n.3.

committed to imminent or near-term closure, this Rule in aggregate creates a dramatic shift away from coal to sources that the EPA, in its judgment alone, deems better for the nation’s energy generation.

Natural-gas plants are put to the same test. Here, however, the Proposed Rule gives them options: either retrofit technically infeasible carbon-capture-and-sequestration technology or co-fire hydrogen at a near-hundred-percent level. In other words, the EPA directs natural-gas plants to adopt technology that is unlikely to work or, more “simply,” “become”<sup>78</sup> hydrogen plants. And the Proposed Rule, as of now, requires this shift to almost-full hydrogen-based generation for at least 20% of the existing natural-gas fleet by generation capacity.<sup>79</sup> That is a *much larger* impact than the 11% shift out of coal to cleaner sources in the CPP that the Supreme Court determined was unlawful. Through these at-the-source measures, aggregated nationwide, the EPA will do what the Court said it could not under its Section 111(d) authority: “dictat[e] the optimal mix of energy sources nationwide.”<sup>80</sup>

Whether by design or through neglect, the EPA does not explain how large a shift the Proposed Rule will cause from coal to natural gas and natural gas to hydrogen. But other indicia confirm that this is the sort of “at-the-source measures” aimed at generation shifting that the Supreme Court doubted the EPA had authority to enact.<sup>81</sup> Because the standards of performance for existing coal-fired power plants are percentage reductions of emissions relative to the source’s current baseline, while the standards of performance for new coal-fired power plants are numerical caps,<sup>82</sup> the Proposed Rule does not allow meaningful comparison between the performance standards for new and existing coal plants. That is legally significant: the Supreme Court has inferred that stricter emissions caps for existing sources than those for new sources is indicative of an attempt to force existing sources out of production completely.<sup>83</sup> What sort of nationwide shift will the Proposed Rule will effectuate? The EPA offers no answer. Its failure to do so is arbitrary and capricious.

What is more, the EPA does not set any standard of performance at all for natural-gas plants—numerical, percentage reduction, or otherwise. It simply assumes that

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<sup>78</sup> *Id.*

<sup>79</sup> See 88 Fed. Reg. at 33363, Table 6.

<sup>80</sup> *West Virginia*, 142 S. Ct. at 2613.

<sup>81</sup> *Id.* at 2612 n.3.

<sup>82</sup> Compare 88 Fed. Reg. at 33359 with *id.* at 33322–33326.

<sup>83</sup> *West Virginia*, 142 S.Ct. at 2604.

the plants will pick one of the identified BSERs and estimates that they will end up reducing its emissions, relative to the baseline, by about 90%. In other words, natural-gas plants can comply with the rule only by adopting one or the other BSER—adopting another technology that achieves the same (or better) level of emission reduction will not suffice.

By eschewing a set standard of performance for natural-gas plants, the EPA falls short of fulfilling, and also contradicts, its role under Section 111(d). Remember, once an emissions cap is set, a source “may achieve that emissions cap any way it chooses” as long as “its pollution [is] no more than the amount ‘achievable through the application of the best system of emission reduction.’”<sup>84</sup> In other words, the EPA may not dictate *how* the source will achieve a particular cap, just what those targets are. Indeed, if Congress had intended to grant the EPA authority to simply dictate the technical measures stationary sources must adopt, it would have stopped at granting the EPA the authority to set the BSER for covered stationary sources, and would not have not required the EPA to take the next step to set standards of performance *based on* the BSER identified by the EPA. Under the Proposed Rule, however, existing natural gas plants have no set emissions ceiling. Rather they have three options: either implement carbon capture and sequestration, shift generation to hydrogen inputs, or shut down. Put another way, the EPA falls short of its Section 111(d) obligation by failing to set standards of emissions after identifying the BSER. Because many of the “existing” natural-gas plants must shift to firing low-greenhouse-gas hydrogen, the only somewhat-technically feasible BSER, their only true options are either to “effectively cease to exist” or to become hydrogen-fired power plants.<sup>85</sup>

The net result is clear. After trying and failing to set an overarching, nationwide generation-shifting scheme, the EPA now “forc[es] a shift throughout the power grid from one type of energy source to another” by putting the most productive power plants to a Hobson’s choice: close or transition.<sup>86</sup> But that is precisely what the Supreme Court already considered and rejected. The EPA may not “bring about the same result” of restructuring the nation’s mix of energy generation “by, for example, simply requiring coal plants to become natural gas plants,” or natural-gas plants to simply become hydrogen plants through the imposition of “efficiency-improving, at-the-source measures.”<sup>87</sup>

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<sup>84</sup> *Id.* at 2601(quoting §7411(a)(1)).

<sup>85</sup> *Id.* at 2612 n.3.

<sup>86</sup> *Id.* at 2611–12.

<sup>87</sup> *Id.* at 2612 n.3.

How much coal- and natural-gas based generation there should be over the next two decades is a policy question of great “magnitude and consequence.” Without clear delegation from Congress, the EPA is without authority to make that decision for the nation.<sup>88</sup>

#### **IV. The cost-benefit analysis supporting the Proposed Rule is flawed.**

The EPA must “tak[e] into account the cost of achieving” emissions reductions “and any nonair quality health and environmental impact and energy requirements” in any rulemaking undertaken pursuant to Section 111.<sup>89</sup> The EPA’s cost-benefit analysis supporting this Rule rests on erroneous assumptions and is underdeveloped in parts. When an agency relies “on a cost benefit analysis as part of its rule-making,” such “serious flaw[s] undermining that analysis can render the rule unreasonable.”<sup>90</sup>

##### **A. The cost-benefit analysis considers factors that Congress did not intend for the EPA to consider.**

The EPA relies on the flawed social cost of carbon metric to measure the alleged benefits of the Proposed Rule.<sup>91</sup> This “SC-CO<sub>2</sub>” allegedly represents “monetary value of the net harm to society associated with a marginal increase in CO<sub>2</sub> emissions in a given year, or the benefit of avoiding that increase.”<sup>92</sup> It “includes the value of all climate change impacts (both negative and positive), including (but not limited to) changes in net agricultural productivity, human health effects, property damage from increased flood risk natural disasters, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services.”<sup>93</sup> Factors such as “risk of conflict,” “environmental migration,” and “property damage” are included in the social cost of carbon,<sup>94</sup> but are well outside the “nonair health and environmental impacts and energy requirements” that Congress authorized the EPA to consider in setting standards of performance under Section 111.<sup>95</sup> Inflating the

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<sup>88</sup> *Id.* at 2616.

<sup>89</sup> §7411(a)(1).

<sup>90</sup> *National Ass’n of Home Builders v. EPA*, 682 F.3d 1032, 1040 (D.C. Cir. 2012).

<sup>91</sup> 88 Fed Reg. at 33411-12.

<sup>92</sup> *Id.* at 33411.

<sup>93</sup> *Id.*

<sup>94</sup> *Id.*

<sup>95</sup> *See* §7411(a)(1).



benefits of the Proposed Rule by including such factors that Congress did not intend is arbitrary and capricious.<sup>96</sup>

## **B. The cost-benefit analysis contradicts the requirements of Section 111.**

The EPA's cost-benefit analysis is separately flawed because it does not separate the Proposed Rule's impact on new sources with that on existing sources. For reasons the EPA does not explain, it groups together the costs and benefits associated with both existing and new sources without delineating which costs and benefits are attributed to the Proposed Rule's impact on which sources.<sup>97</sup> This approach is both contrary to the Section 111's requirements and is arbitrary and capricious.

Section 111 requires that regulations on new sources be independently justified from those on existing sources. That is because Section 111's two-step regulatory process is linear: the authority to regulate existing sources is triggered only after the EPA sets standards of performance for new sources "taking into account the cost of achieving" such emissions reductions from new sources "and any nonair quality health and environmental impact and energy requirements" thereof.<sup>98</sup> The standards of performance for new sources thus cannot include the costs and benefits justifying the *yet-undetermined* standards of performance for existing sources. It follows that subsequent rulemaking process for *existing* sources cannot double dip by including in it the benefits of regulating new sources. Indeed it is telling that in a prior rulemaking to reduce greenhouse-gas emissions under its authority to set New Source Performance Standards, the EPA did the cost-benefit analysis twice-over—once for the new-source regulation that was limited to the costs and benefits associated with regulating new sources,<sup>99</sup> and once for the existing-source regulation limited to the costs and benefits of regulating the existing sources.<sup>100</sup>

This unlawful mixing and matching has serious implications. It frustrates any meaningful examination of the costs and benefits associated with regulating new sources and those associated with existing sources. This is especially so when the technical considerations of, and approaches to, setting standards for new and existing sources

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<sup>96</sup> *Motor Vehicle Mfrs. Ass'n v. State Farm*, 463 U.S. 29, 43 (1983).

<sup>97</sup> 88 Fed. Reg. at 33416-17.

<sup>98</sup> §7411(a)(1), (d); *see also West Virginia*, 142 S. Ct. at 2601.

<sup>99</sup> Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64510, 64640-64642 (Oct. 23, 2015)

<sup>100</sup> 80 Fed. Reg. at 64924-64933.

are night and day. As an example, implementing carbon capture and sequestration at a 90% capture rate in existing sources involves different technical considerations and therefore a different cost-benefit calculus than that used for new sources. To name just one difference that has serious cost implications, new power plants may have some geographical flexibility to consider locating near sequestration sites, while existing power plants have none. That means that the costs associated with transport and sequestration of 90% carbon capture for a new source and for an existing source will dramatically differ.

In sum, the EPA does not give any reason for why its mix-and-match cost-benefit analysis is lawful or even helpful. Indeed, it does not give any reason at all for splitting the analysis in this way. Thus this cost-benefit analysis is contrary to law, meaningless, and the decision to take a mix-and-match approach is arbitrary and capricious.

### **C. The net benefits are erroneously and unlawfully inflated to emphasize benefits over costs.**

The cost-benefit analysis is also flawed because it unreasonably inflates the benefits over the costs through creative accounting methods. Cost-benefit analyses are sensitive to discount factors and so can be manipulated easily by creative accounting methods. The EPA leans on that. Citing “special ethical considerations” that “arise when comparing benefits and costs across generations,” the EPA discounts climate benefits at a lower discount rate of 3% and combines it with health benefits and costs discounted at a higher 7% rate. The EPA’s use of a lower discount rate to compute benefits and a higher one to compute costs ensures that the putative benefits of regulation always outweigh the costs. Moreover, discounting benefits at a 3% rate and costs at a 7% rate lacks economic sense. Worse, it contradicts the Office of Management and Budget’s own methodology which suggests that cost-benefits analyses may appropriately “discount future costs and consumption benefits,” *both*, “at a lower rate than for intragenerational analysis.”<sup>101</sup> Thus, even if using a lower discount value is appropriate for intergenerational regulatory analysis—a dubious proposition in itself—nowhere does the Office of Management and Budget suggest that it is

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<sup>101</sup> See Office of Management and Budget, Circular A-4 at 33–36 (Sept. 17, 2003) *available at* <https://perma.cc/D9XW-F8QQ>.

appropriate to inflate benefits over costs by applying a significantly lower discount rate to one and not the other.<sup>102</sup>

**D. The EPA cannot base its authority to regulate greenhouse-gas emissions on the basis of health benefits that are not attributable to reductions in greenhouse-gases.**

The cost-benefit analysis further inflates the benefits associated with the Proposed Rule with benefits unrelated to reductions in greenhouse-gas emissions. The EPA does not have authority under Section 111 to include the benefits of reducing other pollutants, especially pollutants regulated under another section of the Clean Air Act.

Under Section 111, the EPA must regulate sources on a “pollutant-by-pollutant basis.”<sup>103</sup> Consistent with that approach, the EPA has always performed a pollutant-focused analysis: it identifies a pollutant that will endanger public health or welfare; next, it identifies major sources of that pollutant; and finally, it sets standards of performance aimed at reducing emissions *of those* pollutants.<sup>104</sup> At the final step, the EPA may account only for “the cost of achieving *such* reduction and any nonair quality health and environmental impact and energy requirements.”<sup>105</sup> The final step thus is pollutant focused: incidental reductions in emissions of other pollutants do not matter.

This is further confirmed by Section 111(d), which forbids the EPA from imposing on existing sources controls for pollutants that are *already* being regulated under the NAAQS or HAP programs.<sup>106</sup> Because the EPA does not have authority to regulate under Section 111(d) pollutants that are regulated under other sections of the Clean Air Act, it cannot include, as justification for rulemaking under Section 111(d), incidental reductions in emissions of those prohibited pollutants. To allow otherwise would effectively permit an end run around Section 111(d)’s limited grant of authority. In other words, the EPA could regulate indirectly any pollutant under 111(d) even though Congress expressly barred it from doing so.

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<sup>102</sup> *Id.* at 35-36; *see also id.* at 34 (“[F]uture health effects, including both benefits and costs, should be discounted at the same rate.”).

<sup>103</sup> *West Virginia*, 142 S. Ct. at 2601.

<sup>104</sup> *Id.* at 2602 (citing examples).

<sup>105</sup> §7411(a)(1) (emphasis added).

<sup>106</sup> §7411(d)(1).

Thus the EPA cannot justify regulating greenhouse-gas emissions under Section 111 with reference to ancillary health benefits wholly attributable to reductions in emissions of pollutants *other than* greenhouse-gases. And it especially cannot do so where, as here, those co-benefits stem from reductions of criteria pollutants—NO<sub>x</sub>, SO<sub>x</sub>, and PM<sub>2.5</sub>—that are regulated under a completely different Clean Air Act program: the NAAQS program.<sup>107</sup>

True, the benefits stemming from reductions in GHG, even excluding the co-benefits, outweigh the costs by the EPA's estimation.<sup>108</sup> That makes the inclusion of co-benefits even more puzzling. Even if the EPA could account for incidental co-benefits of reductions in non-greenhouse-gases, those co-benefits are unreasonably disproportionate to the benefits actually stemming from reductions in greenhouse-gases. The EPA calculates that health benefits account for \$68 billion of the benefits.<sup>109</sup> That is over twice the estimated \$30 billion of climate benefits attributable to reductions in greenhouse-gas emissions.<sup>110</sup> And it accounts for over half of the benefits attributable to the Proposed Rule.<sup>111</sup> This outsized representation of co-benefits attributable to reductions in *non-greenhouse-gas* emissions cannot justify the EPA's decision to impose billions of dollars of costs on new and existing power plants to reduce greenhouse-gas emissions.

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<sup>107</sup> *Criteria Air Pollutants*, United States Environmental Protection Agency, (August 9, 2022), available at <https://perma.cc/CFT8-77GE>.

<sup>108</sup> 88 Fed. Reg. at 33416, Table 10

<sup>109</sup> *Id.*

<sup>110</sup> *Id.*

<sup>111</sup> *Id.*

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The EPA exceeds its Section-111(d) authority by imposing at-the-source measures to shut down coal- and natural-gas plants or shift them away from coal- and natural-gas based energy generation. This Rule will force power plants to adopt unproven technologies that are technically infeasible or shut down. Many will shut down. As a result, an already stretched-thin electric grid will become more unreliable.<sup>112</sup> This is the sort of nationwide generation-shifting that the Supreme Court has already held that the EPA lacks the authority to order. And the EPA asserts unheralded power over more aspects of the power-generation process than ever before by asserting limitless authority over manufacturing processes ancillary to the traditional at-the-source efficiency-improvements that it is authorized to impose. All this means one thing: the EPA should withdraw its Proposed Rule now, so that the States and other parties do not have to secure a judicial order vacating it later.

Yours,

A handwritten signature in blue ink that reads "Dave Yost". The signature is written in a cursive, flowing style.

DAVE YOST  
Attorney General  
State of Ohio

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<sup>112</sup> See PJM Interconnection, *Energy Transition in PJM: Resource Retirements, Replacements & Risks* (Feb. 24, 2023), available at <https://perma.cc/2NQZ-C2W5>



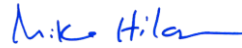
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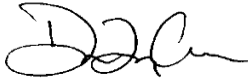
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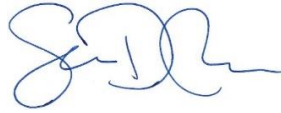
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