ORAL ARGUMENT SCHEDULED FOR APRIL 17, 2016

No. 15-1381 (and consolidated cases)

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

STATE OF NORTH DAKOTA, *et al.*,

Petitioners,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, *et al.*,

Respondents.

On Petition for Review of Final Agency Action of the
United States Environmental Protection Agency

INITIAL BRIEF OF INTERVENOR ENVIRONMENTAL AND PUBLIC HEALTH ORGANIZATIONS IN SUPPORT OF RESPONDENTS

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CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

Pursuant to Circuit Rule 28(a)(1), Intervenor Environmental and Public Health Organizations state as follows:

All parties and amici, rulings under review, and related cases are set forth in the Brief of Respondent Environmental Protection Agency.

/s/ Selena Kyle

CORPORATE DISCLOSURE STATEMENT

Pursuant to Rule 26.1 of the Federal Rules of Appellate Procedure and Circuit Rule 26.1, Intervenors American Lung Association, Center for Biological Diversity, Clean Air Council, Clean Wisconsin, Conservation Law Foundation, Environmental Defense Fund, Natural Resources Defense Council, The Ohio Environmental Council, and Sierra Club state that they are not-for-profit non-governmental organizations whose missions include protection of public health and the environment and conservation of natural resources. None of the organizations has any outstanding shares or debt securities in the hands of the public, or any parent, subsidiary, or affiliate that has issued shares or debt securities to the public.

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GLOSSARY

CCS	Carbon Capture and Sequestration
CO_2	Carbon Dioxide
DOE	Department of Energy
EPA	Environmental Protection Agency
EPAct	Energy Policy Act of 2005
JA	Joint Appendix
lbs/MWh	Pounds per Megawatt Hour

INTRODUCTION AND SUMMARY OF ARGUMENT

Fossil fuel-fired power plants are "by far" the largest emitters of carbon dioxide ("CO_2") pollution among stationary sources. Standards of Performance for Greenhouse Gas Emissions From New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,510, 64,522 (Oct. 23, 2015) ("Rule"). The Environmental Protection Agency ("EPA") considered overwhelming evidence that CO_2 pollution from fossil fuel-fired power plants harms human health and welfare, properly determined that emission standards were warranted under Clean Air Act Section 111, and established achievable standards for these sources. For new fossil fuel-fired steam generating units (hereinafter "coal plants"), EPA's final standard mandates a level of control reflecting, but not requiring, partial post-combustion carbon capture and sequestration ("CCS"). EPA reasonably determined that partial CCS is the "best" system of emission reduction "adequately demonstrated," based on an exhaustive record. 42 U.S.C. §7411(a)(1). The standard can also be met through other means, including by co-firing natural gas along with coal.

Contrary to "Congress' intent that new plants be controlled to the maximum practicable degree," *Essex Chem. Corp. v. Ruckelshaus*, 486 F.2d 427, 437 (D.C. Cir. 1973), Petitioners attempt to avoid *any* CO_2 pollution control for these massive sources. Their arguments subvert Section 111's command to select the "best"

system to reduce emissions. *Sierra Club v. Costle*, 657 F.2d 298, 326 (D.C. Cir. 1981). Although CCS technologies have been used for decades, Petitioners contend they are not adequately demonstrated. Petitioners even seek to reopen the settled question of the manifest dangers of CO_2, "the most important species" of greenhouse gas pollution. *Massachusetts v. EPA*, 549 U.S. 497, 504-05 (2007).

In challenging these reasonable standards, Petitioners deny irrefutable climate science and repudiate proven control technologies. They seek to avoid regulation so they can dump CO_2 pollution unabated, heedless of the climate crisis that is already causing severe damage throughout the U.S. and the world. The petitions should be denied.

ARGUMENT

I. PARTIAL CCS IS ADEQUATELY DEMONSTRATED

EPA reasonably determined that partial post-combustion CCS is the "best" system of emission reduction that is "adequately demonstrated" for new coal plants. 42 U.S.C. §7411(a)(1). The extensive record of power sector and industrial CCS projects, along with vendor guarantees, readily demonstrates that partial CCS is "available for installation in new plants." *Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375, 391 (D.C. Cir. 1973). Furthermore, no one is bound to use partial CCS; the Rule requires only that new plants limit their CO_2 pollution to the level EPA has found is achievable with partial CCS. *See* EPA Br. 36-37 (new source can

meet limit "by any means the source elects"). Petitioners misrepresent the applicable legal standard, EPA's robust record, the modest level of pollution control required, and sources' options for compliance.

A. The Many Operating CCS Projects Show that CCS Technology is "Adequately Demonstrated"

The key steps in CCS—separation of the pollutant (carbon capture) and permanent disposal (sequestration)—are at the heart of many air-pollution-control processes. These steps have been used for decades. *See* 80 Fed. Reg. at 64,571; EPA, Technical Support Document: Literature Survey of Carbon Capture Technology ("Carbon Capture TSD") at 22-31 (July 10, 2015), EPA-HQ-OAR-2013-0495-11773 (JA__). When the Rule was finalized, 13 large-scale CCS projects were operating in the power sector and other industries. Global CCS Institute, Large Scale CCS Projects, EPA-HQ-OAR-2013-0495-11650 (JA__).

In particular, SaskPower's Boundary Dam lignite-coal plant is successfully meeting Canada's *more stringent* CO_2 pollution limit using a full-scale system that integrates post-combustion carbon capture with geologic sequestration, including in a saline formation. *See* EPA Br. 21-26; 80 Fed. Reg. at 64,549-50; EPA, Basis for Denial of Petitions to Reconsider ("Reconsideration Memo") at 7 (Apr. 2016), EPA-HQ-OAR-2013-0495-11918 (JA__). EPA determined that Boundary Dam's technology can be applied to other plant configurations, including different-sized

plants and plants using different boiler or coal types. EPA Br. 40 n.20; 80 Fed. Reg. at 64,550.

While operation of one plant suffices to support a performance standard, *see, e.g.*, *Essex Chem. Corp.*, 486 F.2d at 437, EPA's record goes well beyond Boundary Dam. Power plants in the U.S. have been using post-combustion technology to capture substantial amounts of CO_2 for decades. 80 Fed. Reg. at 64,550-51. AES Corporation's Shady Point and Warrior Run facilities use post-combustion capture technology to capture 66,000 and 110,000 tons per year, respectively.[1] Carbon Capture TSD at 37 (JA__). Shady Point has been generating electricity and capturing CO_2 since 1991, and Warrior Run since 2000. Searles Valley, a coal plant that generates power for onsite industrial use, has successfully employed post-combustion CCS to capture approximately 270,000 tons of CO_2 per year since 1978. 80 Fed. Reg. at 64,574. EPA demonstrated that the technology these projects use could be scaled up to accommodate larger capture volumes.[2] *See Sierra Club*, 657 F.2d at 382 (upholding standards based on data from smaller units that EPA demonstrated were representative of larger sources). None of these

[1] *See* 80 Fed. Reg. at 64,574 tbl.12 (comparing CCS project capture magnitudes to 354,000 tons/year, the magnitude of capture for a 500-megawatt facility meeting the final standard).

[2] *See* EPA Br. 26-27; *see also* 80 Fed. Reg. at 64,557; Tenaska Trailblazer Partners, Final Front-End Engineering Design Study Report (Jan. 2012), EPA-HQ-OAR-2013-0495-11659 (study confirming that scale-up to larger size is achievable) (JA__).

projects received support under the Energy Policy Act of 2005 ("EPAct"). 80 Fed. Reg. at 64,549-51.

Numerous vendor guarantees for post-combustion carbon capture technology also support EPA's determination. *Portland Cement Ass'n*, 486 F.2d at 401-02 (it is "entirely appropriate" for EPA to predicate standards on, among other factors, "testimony from ... vendors"). Companies like Shell, Mitsubishi Heavy Industries, Linde, BASF, and Fluor provide performance guarantees for, or otherwise market, carbon capture technologies. 80 Fed. Reg. at 64,555. Linde and BASF, for example, offer "[p]roven and tested processes including guarantee[s]" for their "commercially available" carbon capture technology. *Id.* (internal quotations and emphasis omitted).

EPA also properly identified successful CCS projects in other industries.[3] Dakota Gasification's Great Plains Synfuels Plant, which has been in operation for over 15 years, is a fully integrated pre-combustion CCS project that "consumes roughly 18,000 tons of … lignite coal each day and captures about 3 million metric tons of CO_2 per year." Carbon Capture TSD at 43 (JA__); *see also* 80 Fed. Reg. at 64,553. EPA reasonably concluded that although Dakota Gasification does not

[3] *See Lignite Energy Council v. EPA*, 198 F.3d 930, 934 (D.C. Cir. 1999) (approving "reasonable extrapolation of a technology's performance in other industries"); c*f. Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1054 (D.C. Cir. 1978) (in issuing regulations under the Federal Water Pollution Control Act, EPA may "make a practicability finding based on … technology used solely in other industries but reasonably found to be transferable to the industry in question").

generate electricity, it was appropriate to extrapolate from that project because of its "essential similarities" to power plants. 80 Fed. Reg. at 64,553.

Finally, evidence from post-combustion CCS projects receiving EPAct support corroborates EPA's determination. American Electric Power retrofitted its Mountaineer plant to capture 75 to 90 percent of CO_2 emissions from a 20-megawatt slipstream of flue gas and prepared a detailed study on how the project could be scaled up to full-scale operation. *Id.* at 64,552 (citing American Electric Power, CCS Front End Engineering & Design Report: Mountaineer CCS II Project Phase 1, at 10-11 (Jan. 30, 2012), EPA-HQ-OAR-2013-0495-11642 (JA__)). While the company cited uncertainties about U.S. climate policy as a reason not to scale up the project, *id.* at 64,552, it expressed no doubts about the technology: "we have demonstrated to a certainty that [CCS] is in fact viable technology for the United States and quite honestly for the rest of the world going forward," *id.* at 64,556. In addition, Southern Company's Plant Barry has captured 90 percent of CO_2 emissions from a 25-megawatt slipstream—165,000 tons in a year—and stored the emissions in a saline reservoir. *Id.* at 64,552.

As shown above, Petitioners' complaint that EPA relies predominantly on projects that are small-scale or received government support, *see* Non-State Br. 3, mischaracterizes EPA's extensive record. In any event, the very purpose of Section 111(b) is to bring demonstrated pollution-control technology into widespread use,

as polluters otherwise have little incentive to address the public hazards posed by their pollution. *Sierra Club*, 657 F.2d at 346 n.174 ("[S]ection 111 was intended 'to assure the use of available technology and to stimulate the development of new technology.'" (quoting S. Rep. No. 95-127, at 114 (1977))); *cf. Int'l Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 622-23 (D.C. Cir. 1973) ("The state of the art has tended to meander along until some sort of regulation took it by the hand and gave it a good pull.").

B. CCS is Available to New Power Plants in All Regions

EPA's record shows that CO_2 transportation is adequately demonstrated and available. CO_2 has been transported via pipelines in the U.S. for nearly 40 years, and the pipeline network is large and rapidly expanding. 80 Fed. Reg. at 64,581. Sequestration of CO_2 in deep saline formations is also well demonstrated and accessible. Seven Regional Carbon Sequestration Partnerships—representing areas that account for nearly all of U.S. coal-fired CO_2 emissions—are currently deploying large-scale sequestration projects in different geological settings, including saline formations, across the country. *Id.* at 64,579. The Department of Energy ("DOE") estimates that at least two trillion tons of CO_2 can be sequestered in deep saline formations in the U.S. *Id.* at 64,578-79. Petitioners cite a recent survey that found regional variation in sequestration availability, Non-State Br. 28, but obscure the report's finding that ample sequestration resources exist across the

country: the Appalachian Basin, for example, offers a 20 billion-ton sequestration resource adjacent to the East Coast, a region with relatively less capacity. U.S Geological Survey, National Assessment of Geologic Carbon Dioxide Storage Resources – Results at 3-7 (Sept. 2013), EPA-HQ-OAR-2013-0495-11561 (JA__).

Where sequestration capacity does not exist close to areas where there is demand for new power plants, CO_2 pipelines and power transmission are both viable options. A plant can transport captured CO_2 to sequestration sites by pipeline, as EPA's cost estimates reflect. EPA Br. 33-34 n.16; 80 Fed. Reg. at 64,576 n.374. Because this standard is for *new* coal plants, developers making citing decisions can compare the costs of building a pipeline to transport CO_2 to sequestration sites with the costs of building transmission lines to carry electricity to demand centers. 80 Fed. Reg. at 64,572, 64,581; EPA, Technical Support Document: Geographic Availability at 10-18 (July 31, 2015), EPA-HQ-OAR-2013-0495-11772 (JA__).

In any event, EPA's "best system" determination does *not* mandate the use of CCS technology. It requires new sources to satisfy the numerical pollution standard of 1,400 pounds of CO_2 per megawatt hour ("lbs/MWh"), which can also be met by co-firing coal with natural gas in an efficient boiler or by using coal gasification technology. EPA Br. 30. EPA reasonably concluded that these

alternative compliance approaches are available to new plant developers who choose not to use CCS. *Id*.

C. EPA's Determination Does Not Contravene the EPAct

Partial CCS for new coal plants is adequately demonstrated based on evidence from projects that did not receive EPAct support. *See* 80 Fed. Reg. at 64,549-51. Thus, even if Petitioners' interpretation of EPAct, State Br. 19-23, were correct, it would not affect EPA's "best system" determination, EPA Br. 51-56.

But Petitioners' interpretation is wrong. They disregard the unambiguous meaning of "solely" as it appears in EPAct Sections 402(i) and 421(a).[4] Its ordinary meaning—"to the exclusion of all else," Merriam-Webster Dictionary, *available at* https://www.merriam-webster.com—signifies that EPA may not rely on EPAct-supported facilities *alone* as the basis for a "best system" determination. *See Milner v. Dep't of the Navy*, 562 U.S. 562, 571 n.4, 573 (2011) (equating "solely" with "exclusively or only" and rejecting reading that "substitut[ed] the word 'predominantly' for 'solely[]'" (internal quotation omitted)); *see also Ponce v. Billington*, 679 F.3d 840, 846 (D.C. Cir. 2012) ("'sole' and but-for cause are very different").[5] Had Congress intended to bar EPA from considering EPAct-

[4] EPA did not consider any facilities receiving tax credits under EPAct Section 48A(g), the other provision Petitioners cite. EPA Br. 56.

[5] Petitioners' citations, State Br. 22, support our and EPA's reading of the EPAct provisions. *See Price Waterhouse v. Hopkins*, 490 U.S. 228, 241 (1989) (plurality

supported facilities at all, it would have used different language such as "in whole or in part," a phrase that appears 11 times in EPAct itself.[6]

The verbs in EPAct Sections 402(i) and 421(a) confirm that Congress wished to ensure that subsidized facilities would not suffice, without more, to support a "best system" determination. *See* 42 U.S.C. §15962(i) ("considered to be … adequately demonstrated"); 42 U.S.C. §13573 ("treated as adequately demonstrated"). "Consider[]" in Section 402(i) is a synonym for "deem" or "treat" (the term actually used in Section 421(a))—as in, "she considers herself a moderate." These provisions do not require the exclusion of all EPAct evidence from EPA's analysis.

Petitioners conjure hypotheticals in which a "best system" might rest on only a "scintilla" of non-EPAct evidence. State Br. 23. But here, evidence from EPAct-supported facilities simply corroborates a determination fully supported by *non-*

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opinion) ("[S]ince we know that the words 'because of' do not mean '*solely* because of,' we also know that Title VII meant to condemn even those decisions based on a mixture of legitimate and illegitimate considerations." (footnote omitted)); *Severino v. N. Fort Myers Fire Control Dist.*, 935 F.2d 1179, 1182-83 (11th Cir. 1991) (finding no liability under Rehabilitation Act because "the employment decisions were, in part,"—*not* "solely"—based on plaintiff's handicap).

[6] *See, e.g.*, EPAct §108(a) (codified at 42 U.S.C. §6966(a)(2)(B), (3)(C)); §369(q)(1) (codified at 10 U.S.C. §2922d(a)); §502(a) (codified at 42 U.S.C. §7144e(b)(4)); §915(a)(1) (codified at 42 U.S.C. §16195(a)(1)); §1211(a) (codified at 16 U.S.C. §824o(d)(4)); §1501(a)(2) (codified at 42 U.S.C. §7545(o)(7)(A)); §1501(a)(2) (codified at 42 U.S.C. §7545(o)(8)(D)(i), (ii)).

EPAct evidence. Petitioners' "theoretical possibility" is far removed from EPA's robust record here. *See PDK Labs. v. U.S. Drug Enforcement Admin.*, 438 F.3d 1184, 1192 (D.C. Cir. 2006).

II. THE COAL PLANT STANDARD IS ACHIEVABLE

EPA properly concluded that a CO_2 emission standard of 1,400 lbs/MWh is "achievable" by coal plants using "best system" technology. Petitioners' contention that this standard is unachievable because it does not account for adverse conditions, Non-State Br. 41, is factually incorrect and distorts controlling precedent.

In *National Lime Association v. EPA*, this Court emphasized that "[a]n achievable standard need not be one already routinely achieved in the industry." 627 F.2d 416, 431 n.46 (D.C. Cir. 1980). Later cases explained that new source standards need not be achievable by all conceivable designs or by currently existing units. *See Sierra Club*, 657 F.2d at 364 (upholding as achievable more stringent pollution-control standard than had been achieved over the long-term); *cf. Kennecott Greens Creek Mining Co. v. Mine Safety & Health Admin.*, 476 F.3d 946, 957 (D.C. Cir. 2007) ("When a statute is technology-forcing, the agency can impose a standard which only the most technologically advanced plants in an industry have been able to achieve—even if only in some of their operations some of the time." (citations and internal quotation marks omitted)).

While *National Lime* directs EPA to address "most adverse conditions" affecting emission rates when setting a performance standard, it does not mandate standards that are achievable under "*the* most adverse conditions," as Petitioners imply. Non-State Br. 61 (emphasis added). Rather, EPA must "consider[] . . . the range of relevant variables that may affect emissions in different plants," *Nat'l Lime*, 627 F.2d at 433, and account for the costs of "adjusting for such routine variations (assuming such adjustments [are] possible)," *id.* at 431 n.46. EPA satisfied these requirements.

Petitioners' assertion that EPA failed to consider "adverse conditions," Non-State Br. 47, is simply wrong. EPA first determined a baseline from which to account for realistic operational variations at new coal plants. It considered studies from DOE's National Energy Technology Laboratory. *See* EPA, Technical Support Document: Achievability of the Standard for Newly Constructed Steam Generating EGUs ("Achievability TSD") at 1 (July 31, 2015), EPA-HQ-OAR-2013-0495-11771 (JA__). These studies provide "the most comprehensive and transparent" analyses reflecting "the most up-to-date information" on advanced coal technologies, including updated vendor quotes. 80 Fed. Reg. at 64,567. They were peer-reviewed under official protocols, *id.*, and Petitioners have identified no flaws in their methodology or technical conclusions.

From the DOE studies, EPA determined baseline emission rates for affected coal plants—i.e., pollution levels from new plants using state-of-the-art boilers, but not CCS. Reconsideration Memo at 16 (JA__). EPA then calculated that new units could reduce their emission rates from DOE's baseline to 1,400 lbs/MWh by installing CCS systems and capturing a portion of their CO_2 pollution (16 to 23 percent, depending on coal type). Achievability TSD at 3 fig.1 (JA___).

Petitioners highlight DOE's finding that "[a]ctual average annual emissions from operating plants are likely to be higher than the [DOE baseline rates]," due to a range of operating variables: "start-up, shutdown, [low capacity-factor] operation, and performance degradation." *Id.* at 5 (JA___). But Petitioners *omit* DOE's conclusion that "designing for this margin does not have major cost implications" due to the low incremental costs of capturing small additional amounts of CO_2. *Id*. EPA's achievability determination incorporated DOE's findings, *id.*, and thus accounted for these operating variables, *Nat'l Lime*, 627 F.2d at 431 n.46.

EPA also corroborated DOE's findings by comparing DOE's baseline rates to emissions rates at the country's best-performing coal plants: GenPower's Longview Plant and American Electric Power's Turk Plant. Achievability TSD at 5-6 (JA___). EPA found that these units' best monthly rates were superior to DOE's baseline rates, and that their 12-month annual rates were close to (though

slightly higher than) the DOE rates. *Id*. EPA reasonably determined that new plants with comparable emission rates could achieve the final standard of 1,400 lbs/MWh under all foreseeable operating conditions. Even if plants would need to capture a marginally greater amount of CO_2—one to four percent more—than the 16 to 23 percent anticipated in the DOE studies, the cost increase would be minor. *Id.*; *see also* Reconsideration Memo at 18-20 (JA__).[7]

EPA also concluded that malfunctions and other non-routine performance factors would not affect achievability in light of the standard's unusually long 12-operating-month averaging period. 80 Fed. Reg. at 64,573. This extended period is "very forgiving of short-term excursions that can be associated with non-routine events such as start-ups, shutdowns, and malfunctions," *id.*, as it allows facilities to average out exceedances over a full year. In contrast, compliance with the standard in *National Lime* was based on emissions measured over as few as 60 minutes, 40 C.F.R. §60.344(b)(2), allowing only a small margin of exceedance.

Petitioners quarrel with DOE's assumption that new steam units will operate annually at 85 percent of full capacity, incorrectly citing 53 percent as the fleetwide average. Non-State Br. 43. The 53 percent figure pertains to a sample of 884 *existing* coal plants, including units nearing retirement and units with poor or

[7] Each percentage point of CO_2 capture above 16 percent would raise a unit's cost of generating electricity by less than one percent of total levelized costs. Achievability TSD at 3 (JA___).

deteriorating efficiency. EPA, Technical Support Document: Greenhouse Gas Mitigation Measures at 2-36, 2-28, 2-9 (Aug. 3, 2015), EPA-HQ-OAR-2013-0495-11879 (JA___, ___, ___). It does not undermine EPA's estimate for new state-of-the-art plants.

The coal plant standard accordingly reflects EPA's consideration of "the range of relevant [operational] variables" and its well-supported conclusion that the "costs of adjusting for such routine variations" would not only be reasonable, but minimal. *Nat'l Lime*, 627 F.2d at 433, 431 n.46.

III. EPA CAREFULLY CONSIDERED COSTS.

The Clean Air Act requires EPA to "tak[e] into account [] cost[s]" when setting performance standards under Section 111(b), but gives EPA discretion to decide how to weigh them. 42 U.S.C. §7411(a)(1); 80 Fed. Reg. at 64,528. Based on careful evaluation of cost metrics at the individual plant and industry-wide levels, EPA concluded that the Rule's costs are reasonable. 80 Fed. Reg. at 64,559-64. EPA also rejected more stringent pollution standards due to cost considerations. *Id*.

EPA considered the increased capital costs of constructing a new plant with partial CCS. *Id.* at 64,559-60. It also compared the levelized cost of electricity of a new coal plant using partial CCS with the levelized cost of comparable generation sources. *Id.* at 64,560-63. And it considered the overall costs of the standard across

the industry. *Id.* at 64,563; *Sierra Club*, 657 F.2d at 330 (nationwide costs are appropriate for evaluating costs under Section 111). These estimates reflect conservative assumptions: the CCS costs reflect higher-than-normal financing costs, Reconsideration Memo at 13 (JA__), and EPA did not consider revenue from enhanced oil recovery despite the industry's use of this practice.[8] The plant-level costs of the "best system" are comparable to the cost of prior standards and analogous power sources. *Id.* at 64,559-61. And overall costs are far lower than those of earlier standards this Court has upheld. *Id*. Indeed, Petitioners fail to mention that EPA rejected its proposed standard of 1,100 lbs/MWh (based on full CCS), and adopted a less stringent standard of 1,400 lbs/MWh (based on partial CCS) to address any "legitimate concerns" regarding cost. *Id*. at 64,513, 64,564.

Petitioners' complaint that on the margin, the costs of the final standard may deter the construction of new sources, State Br. 11, is necessarily true of *any* pollution-control standard. Section 111 does not immunize sources from the cost of abating their pollution—indeed, EPA's choice of the "best system" will be upheld unless its costs are "exorbitant." *Lignite Energy Council*, 198 F.3d at 933. Congress was clear that the costs of controlling pollution should be "considered by

[8] In addition, EPA assumed no project subsidies when it evaluated the reasonableness of CCS costs even though fossil-fired power plants are frequently "supported by some type of government subsidy." 80 Fed. Reg. at 64,564; EPA Br. 25-26.

the owner of a large new source of pollution as a normal and proper expense of doing business." H.R. Rep. No. 95-294 at 184 (1977) (JA___).

Petitioners also claim that EPA shirked a duty under *Michigan v. EPA*, 135 S. Ct. 2699 (2015), to compare expected costs and benefits. But *Michigan* established no such duty. It merely held that EPA must consider costs when deciding whether a regulation under Section 112 is "appropriate and necessary"—a term that does not appear in Section 111. *Id.* at 2711. Indeed, *Michigan* emphasized that "[i]t will be up to the Agency to decide (as always, within the limits of reasonable interpretation) *how* to account for cost." *Id.* (emphasis added). In any event, EPA found that if plant owners choose to build new coal plants, the climate and public health benefits of the standard will outweigh their costs under a wide range of scenarios. EPA, Regulatory Impact Analysis at Ch. 5 (Aug. 2015), EPA-HQ-OAR-2013-0495-11877 (JA__); 80 Fed. Reg. at 64,564.

Petitioners also err in asserting that the Rule yields no benefits. EPA estimates that a new 500-megawatt coal plant built under the Rule will emit 354,000 fewer metric tons of CO_2 per year. 80 Fed. Reg. at 64,574. Even if no new coal plants are anticipated under current economic forecasts, EPA has reasonably put potential coal plant developers on notice of the standard new plants would need to meet. And by ensuring that no plant will be built without CO_2 controls if economic circumstances change, the Rule appropriately reflects the Clean Air

Act's "precautionary and preventive orientation." *Coalition for Responsible Regulation, Inc. v. EPA* (*"CRR"*), 684 F.3d 102, 122 (D.C. Cir. 2012) (quoting *Lead Indus. Ass'n v. EPA*, 647 F.2d 1130, 1155 (D.C. Cir. 1980)), *cert. denied in relevant respect*, 134 S. Ct. 418 (2013), *aff'd in part, rev'd in part on other grounds sub nom. Util. Air Regulatory Grp. v. EPA*, 134 S. Ct. 2427 (2014).

IV. EPA PROPERLY REGULATED CARBON POLLUTION FROM FOSSIL FUEL-FIRED POWER PLANTS

Petitioners' attacks on EPA's findings about the danger of CO_2 pollution from fossil fuel-fired power plants border on frivolous.

Petitioners' claims rest on a false premise. The Clean Air Act did not require EPA to make *any* new endangerment finding before issuing this Rule. The Rule establishes additional performance standards for sources (steam units and combustion turbines) that EPA listed under Section 111 in the 1970s. *See* EPA Br. 108-09 (citing 42 U.S.C. §7411(b)(1)(A), (B)). Section 111 does not require a supplemental endangerment finding before EPA may regulate additional pollutants from listed sources. *Id.*; *see also* 80 Fed. Reg. at 64,532 (Rule does not "subject[] any additional sources in the categories to CAA regulation for the first time"). This reading of the Act is hardly unprecedented; EPA has previously regulated new

pollutants from source categories already listed under Section 111(b) without issuing a supplemental endangerment or contribution finding.[9]

In any event, EPA has made a rigorous, science-based finding that greenhouse gas pollution (including CO_2 pollution) causes climate change and endangers public health and welfare. *CRR*, 684 F.3d at 122 (upholding 2009 Endangerment Finding). Since EPA's 2009 finding, evidence of the dangers of climate change and fossil fuel-fired power plants' contributions to those dangers has "only grown stronger and the potential adverse consequences to public health and the environment more dire." 80 Fed. Reg. at 64,531.

The evidence is overwhelming. New peer-reviewed analyses show that harms from climate change include increased illness and death from heat and ozone, more intense hurricanes, more floods and water shortages, and an increased risk of infectious diseases. *Id.* at 64,517. The new analyses show that regional climate impacts, such as drought in the Southwest, sea-level rise along the East Coast, and decreased agricultural productivity in the Midwest, may be especially acute; that these impacts fall most heavily on vulnerable populations, including indigenous peoples, children, the elderly, and the poor; and that many impacts,

[9] *See, e.g.*, 73 Fed. Reg. 35,838, 35,839-41 (June 24, 2008) (regulating nitrogen oxides from petroleum refineries for the first time); 54 Fed. Reg. 34,008 (Aug. 17, 1989) (regulating sulfur oxides from petroleum refineries for the first time).

including higher temperatures, melting glaciers, and rising sea levels, are already occurring. *Id.* at 64,518-22.

Electricity generation is responsible for far more greenhouse gas pollution than any other stationary source category, Endangerment and Cause or Contribute Findings for Greenhouse Gases, 74 Fed. Reg. 66,496, 66,539-40 (Dec. 15, 2009), and power plants are major polluters "under any reasonable threshold or definition," 80 Fed. Reg.at 64,531. Power plants release three times as much greenhouse gas pollution as the next ten stationary source categories combined, and in the U.S. account for almost one-third of all such pollution. *Id.* This pollution "far exceed[s] in magnitude the emissions from motor vehicles," *id.*, which EPA and this Court have previously recognized endanger public health and welfare based on "substantial evidence," *CRR*, 684 F.3d. at 121.

Petitioners cannot rebut EPA's fundamental conclusion that CO_2 pollution from fossil fuel-fired power plants imperils the nation. EPA's determination that this pollution should be regulated under Section 111 was the *only* defensible conclusion it could have reached.

CONCLUSION

The petitions for review should be denied.

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

I hereby certify that the foregoing Brief of Intervenor Environmental and Public Health Organizations in Support of Respondents complies with the type-volume limitations of Rule 32 of the Federal Rules of Appellate Procedure and the Circuit Rules of this Court. I further certify that this brief contains 4,510 words as counted by the Microsoft Word software used to prepare this brief, and that the combined words of this brief and those filed by the other Intervenor-Respondents do not exceed the 13,300 word limit set by this Court's briefing order issued on August 30, 2016.

/s/ Selena Kyle

Dated: December 21, 2016

CERTIFICATE OF SERVICE

I hereby certify that on December 21, 2016, the foregoing Brief of Intervenor Environmental and Public Health Organizations in Support of Respondents was served upon all registered counsel via the Court's CM/ECF system.

/s/ Selena Kyle

Dated: December 21, 2016