ORAL ARGUMENT NOT YET SCHEDULED

No. 16-1127 (and consolidated cases)

UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

MURRAY ENERGY CORPORATION, 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, 81 Fed. Reg. 24,420 (Apr. 25, 2016)

BRIEF OF NON-GOVERNMENTAL ORGANIZATION INTERVENORS

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CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

Pursuant to Circuit Rule 28(a)(1), Respondent-Intervenors American Lung Association, American Public Health Association, Chesapeake Bay Foundation, Chesapeake Climate Action Network, Citizens for Pennsylvania's Future, Clean Air Council, Conservation Law Foundation, Downwinders at Risk, Environmental Defense Fund, Environmental Integrity Project, National Association for the Advancement of Colored People, Natural Resources Council of Maine, Natural Resources Defense Council, Physicians for Social Responsibility, Sierra Club, and The Ohio Environmental Council (collectively, "Non-Governmental Organization Intervenors") hereby certify as follows:

Parties and *Amici*. All parties, intervenors, and *amici* appearing in this Court are listed in the Brief for Petitioners, filed November 18, 2016, and the Brief for Respondent United States Environmental Protection Agency (EPA), filed January 18, 2017, except for the following: (1) National Congress of American Indians, Great Lakes Indian Fish and Wildlife Commission, Bad River Band of Lake Superior Chippewa Indians, Fond du Lac Band of Lake Superior Chippewa, Grand Traverse Band of Ottawa and Chippewa Indians, Lac Courte Oreilles Band of Lake Superior Chippewa Indians, Little Traverse Bay Bands of Odawa Indians, Little River Band of Ottawa Indians, and St. Croix Chippewa Indians of Wisconsin; (2) Institute for Policy Integrity at New York University School of

Law; (3) American Thoracic Society; and (4) Elsie Sunderland, Joel D. Blum, Celia Y. Chen, Charles T. Driscoll, Jr., David C. Evers, Philippe Grandjean, Daniel A. Jaffe, Robert P. Mason, and Noelle Eckley Selin, all of whom filed their *amicus curiae* briefs on January 25, 2017.

Rulings Under Review. Petitioners challenge a final rule entitled, "Supplemental Finding That It Is Appropriate and Necessary to Regulate Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units." 81 Fed. Reg. 24,420 (April 25, 2016).

Related Cases. Non-Governmental Organization Intervenors adopt the statement of related cases set forth in the Brief of Respondent EPA.

CORPORATE DISCLOSURE STATEMENT

Pursuant to Federal Rule of Appellate Procedure and Circuit Rule 26.1, Respondent-Intervenors American Lung Association, American Public Health Association, Chesapeake Bay Foundation, Chesapeake Climate Action Network, Citizens for Pennsylvania's Future, Clean Air Council, Conservation Law Foundation, Downwinders at Risk, Environmental Defense Fund, Environmental Integrity Project, National Association for the Advancement of Colored People, Natural Resources Council of Maine, Natural Resources Defense Council, Physicians for Social Responsibility, Sierra Club, and The Ohio Environmental Council state that they are not-for-profit, non-governmental organizations whose missions include protection of public health and the environment, conservation of natural resources, and eliminating race-based discrimination. 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.

DATED: February 10, 2017

/s/ Sean H. Donahue

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GLOSSARY

Clean Air Act or Act	42 U.S.C. 7401-7671q
EPA or Agency	United States Environmental Protection Agency
Section 111	42 U.S.C. 7411
Section 112	42 U.S.C. 7412
Supplemental Finding	Supplemental Finding That It Is Appropriate and Necessary to Regulate Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units, 81 Fed. Reg. 24,420 (April 25, 2016)

Non-Governmental Organization Intervenors submit this brief supporting the Environmental Protection Agency's (EPA's) Supplemental Finding That It Is Appropriate and Necessary to Regulate Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units, 81 Fed. Reg. 24,420 (April 25, 2016). We embrace, but do not repeat, the arguments of EPA and the State and Industry Respondent-Intervenors.

STATUTES AND REGULATIONS

Applicable statutes and regulations are contained in Petitioners' Addendum and EPA's Addendum.

SUMMARY OF ARGUMENT

I. Congress enacted Section 112 of the Clean Air Act, 42 U.S.C. 7412, to reduce exposure to hazardous air pollutants (or "air toxics"), substances designated by Congress for their serious health and environmental harms. Petitioners' efforts to minimize the value of controlling hazardous pollutants emitted by coal- and oil-fired electric generating units (hereinafter "power plants") contradict that purpose and wrongly place the risk of harm from these known toxins on the public, except where EPA can quantify risks and assign monetary values to pollution reduction—an approach Congress deliberately rejected.

In considering whether regulation is "appropriate" in light of costs, EPA properly took note of power plants' outsize emissions of mercury and numerous other hazardous pollutants and of the Agency's specific determinations concerning health and environmental harms from power plants' emissions. Petitioners' arguments are irreconcilable with Section 112 and the robust administrative record. And nothing in the statute, or in *Michigan v. EPA*, 135 S. Ct. 2699 (2015), limits EPA to considering only monetized benefits of regulation.

II. EPA properly responded to *Michigan*'s ruling that cost is a factor that bears on whether regulation is "appropriate." EPA's preferred approach to considering costs—using tested metrics to assess reasonableness—is lawful, and indeed more rigorous than approaches this Court has repeatedly upheld under another Clean Air Act provision explicitly requiring consideration of costs.

III. There is no merit to Petitioners' attacks on EPA's alternative approach based on the 2011 Regulatory Impact Analysis. EPA's consideration of the benefits of particulate-matter reductions caused by hazardous-pollutant controls was consistent with sound economic analysis, EPA's longstanding practice, recent and controlling precedent from this Court, and *Michigan*.

ARGUMENT

I. LARGE REDUCTIONS IN POWER PLANTS' HAZARDOUS EMISSIONS RESULT IN VITAL PUBLIC BENEFITS OF THE KIND SECTION 112 WAS ENACTED TO SECURE

Petitioners' central theme is that the *benefits* of regulation here are too small to justify the costs. Despite the statute's description of the toxic characteristics of listed pollutants, *see* 42 U.S.C. 7412(b)(2), Petitioners assert that these chemicals when emitted by power plants cause scant harm. *See* Br. 2-3, 16, 25, 56 ("purported" health benefits of controls are "paltry," "extraordinarily low," "meager" or "too speculative"). Petitioners misleadingly cite the $4-6 million figure in EPA's Regulatory Impact Analysis, covering only a minuscule subset of the health benefits of controlling one pollutant (mercury),[1] as the *only* benefit of controlling power plants' air toxics. Pet. Br. 1, 2, 14, 16, 21, 25, 36, 56, 57.

Petitioners' arguments mock the congressional judgment underlying Section 112. EPA properly concluded that regulation of power plant toxics "has many advantages, chief among them is furthering Congress' goal of protecting the public, including sensitive populations, from risks posed by [those] emissions by reducing the volume of, and thus, the exposure to, those harmful pollutants." 81

[1] That figure was an estimate of avoided lost earnings for persons experiencing neurological deficits from *in utero* exposure to methylmercury. It reflected the certain harms only to "a small subset of recreational fishers" for which EPA had data. 80 Fed. Reg. 75,025, 75,040 (Dec. 1, 2015).

Fed. Reg. 24,420, 24,429 (April 25, 2016); *see also* Legal Memorandum Accompanying the Proposed Supplemental Finding 10 ("[A] primary goal of section 112 is to reduce the inherent risk of exposure to such emissions by reducing the volume of [hazardous air pollutant] emissions entering the air.") ("Legal Memo") (JA __).

A. Under Section 112, Reducing Emissions of Listed Hazardous Air Pollutants is an Urgent Priority and a Valuable Public Benefit

The pollutants identified in Section 112(b) represent the Clean Air Act's Most Wanted List. Congress itself designated these pollutants, provided a mechanism for EPA to designate more, and subjected emitters to relatively stringent regulation, triggered at smaller emissions volumes than the Act's other major programs, with strict deadlines. *See* Legal Memo 6-10 (JA __).

The listed pollutants are "carcinogenic, mutagenic, teratogenic, neurotoxic," "cause reproductive dysfunction," or have "acutely or chronically toxic" or "adverse environmental effects." 42 U.S.C. 7412(b)(2). Congress targeted even relatively small quantities of them for their "potent" and "especially serious health risks," including "birth defects, damage to the brain or other parts of the nervous system, reproductive disorders, and genetic mutations," and cancer. Legis. History of the Clean Air Act Amendments of 1990 2,522, 2,524 (Cong. Research Serv. 1993) ("Leg. Hist.") (House Debate); *see also id*. at 8,472 ("Routine and episodic

releases of hundreds" of air toxics "pose a significant threat to public health") (S. Rep. No. 101-228 at 132).

The 1990 overhaul reflected frustration with the regulatory stasis under the previous statutory regime, which required EPA to issue administrative determinations of risk and under which EPA regulated only a few pollutants. *See Sierra Club v. EPA*, 353 F.3d 976, 979 (D.C. Cir. 2004); Legal Memo 6 (JA __). Congress in 1990 withdrew that benefit-assessing task from EPA by listing 189 pollutants as hazardous and mandating their regulation. Further, Congress made clear that EPA may decline to set standards for listed pollutants only by making an affirmative finding that they present no adverse health risks. EPA may "delist" a hazardous air pollutant only if "there is adequate data on the health and environmental effects of the substance to determine that emissions, ambient concentrations, bioaccumulation or deposition of the substance may not reasonably be anticipated to cause any adverse effects to the human health or adverse environmental effects." 42 U.S.C. 7412(b)(3)(C). Similarly, EPA may remove a source category from the list of industries requiring regulation only upon finding that "no source in the category … emits [listed] hazardous air pollutants in quantities which may cause a lifetime risk of cancer greater than one in one million" to the "most exposed" individual and that "no adverse environmental

effect will result from emissions of any source." 42 U.S.C. 7412(c)(9)(B); *see* Legal Memo 9 & n.7 (JA __).

Congress rejected proposals that would have allowed EPA to balance "health and economic considerations" against each other. Leg. Hist. at 8,746-47 (S. Rep. No. 101-228 at 406-07) (Sen. Lautenberg); *id.* (EPA would "fail[] to protect public health" in such balancing). That choice reflected difficulties Congress saw as peculiar to air toxics: "[t]he public health consequences of substances which express their toxic potential only after long periods of chronic exposure will not be given sufficient weight in [a] regulatory process when they must be balanced against the present day costs of pollution control and its other economic consequences." Leg. Hist. at 8,522 (S. Rep. No. 101-228 at 182).

B. Power Plants Emit Large Amounts of Multiple Listed Hazardous Air Pollutants, Posing a Significant Hazard to Health and the Environment

Power plants are the United States' largest source of mercury, chromium, arsenic, nickel, selenium, and the acid gases hydrogen fluoride, hydrogen cyanide, and hydrogen chloride. 77 Fed. Reg. 9304, 9310-11, 9335 (Feb. 16, 2012). These and other hazardous pollutants emitted in large amounts by power plants cause serious harms to human health, *e.g.*, 76 Fed. Reg. 24,976, 25,003-06 (May 3, 2011), and to wildlife and the environment, *id.* at 25,012-16. EPA projected that the rule will eliminate over a third of total *national* anthropogenic emissions of

mercury, arsenic, chromium and nickel, and reduce acid gas emissions by nearly half. *Id*. at 25,014-15.

Based on exhaustive scientific studies, EPA also determined that power plants' emissions of mercury and other hazardous pollutants pose a "hazard" to public health—a term EPA understood to embrace both "the nature and severity of health effects" and "the magnitude and breadth of exposure." 76 Fed. Reg. at 24,992. These harms include "about 580,000 women" of child-bearing age with blood mercury levels sufficient to endanger a developing fetus, *id*. at 24,995; *see id.* at 25,007-11; and power plants' significant contribution to human exposures exceeding safe levels in nearly a quarter of modeled watersheds with populations at-risk—dangers EPA considered "unacceptable," *id*. at 9363. EPA determined that power plants' emissions of hazardous metals including chromium and nickel pose cancer risks, *id*. at 9319.

The health damage caused by power plants' hazardous emissions is borne disproportionately by people of color and the poor. 77 Fed. Reg. at 9444-45; 76 Fed. Reg. at 25,018-19. *See also* Br. of Amicus Curiae National Congress of American Indians, *et al*. 5-19. Exposure and risk are greatest for those who live near power plants, often poor people and minorities. 77 Fed. Reg. at 9444-45.

C. The Significant Benefits of Controlling Air Toxics Can be Considered Even If Not Monetized

While they deride EPA's judgment that hazardous-pollutant emissions are "inherently harmful," Br. 36, Petitioners have not challenged *Congress's* decision to list the hazardous pollutants emitted by power plants, 42 U.S.C. 7412(b), nor EPA's characterization of those pollutants' "serious public health and environmental hazards," 77 Fed. Reg. at 9310; *see also*, *e.g.*, 76 Fed. Reg. at 25,003-06; Comments of American Academy of Pediatrics, *et al*. 3-11 & Exhibits 1, 6-8 (EPA-HQ-OAR-2009-0234-20558) (JA __). Instead, they assert the benefits of controlling power plants' toxic emissions must be negligible because EPA did not monetize them. *See, e.g.*, Br. 2, 28, 30 n.16, 55-57.

But "nothing in the statute or legislative history suggests that EPA should ignore benefits unless they can be monetized," Legal Memo 22 (JA __). Indeed, if only monetized emissions reductions mattered, Section 112 would make no sense, since it *mandates* regulation whenever emissions exceed volumetric thresholds, and authorizes delisting of industries or pollutants only under an exclusively health-based standard. *Supra*, pp. 5-6. Section 112(n)(1)(A) requires a power-plant-specific determination of whether regulation is "appropriate," but there is no sign that EPA, in making that determination, may ignore Congress's clear judgment that hazardous air pollutants are especially dangerous, meriting speedy abatement. Indeed, each of the toxics emitted by power plants is "chemically

identical to [hazardous air pollutants] that are emitted from other stationary sources and thus the risks posed by exposure to such [hazardous pollutant emissions] are the same." Legal Memo 11 (JA __). The benefits of controlling toxics from power plants are the same as from any other source (and because power plants' emissions are more voluminous than other sources, that much greater).

As Congress recognized in 1990, *supra*, p. 6, quantifying harms from hazardous pollution (and correspondingly, benefits of control) presents unique challenges. In the Supplemental Finding, EPA explained that it could not monetize nearly all of the benefits of hazardous pollutant reductions—including "benefits for the populations most affected by mercury emissions"—because "data and methods for monetizing these benefits are largely unavailable in scientific literature." 81 Fed. Reg. at 24,441; *see also* 80 Fed. Reg. at 75,040 n.53. *Cf. Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375, 387 (D.C. Cir. 1973) ("The difficulty, if not impossibility, of quantifying the benefit to ambient air conditions, further militates against the imposition of such an imperative on the agency."). Congress's concern with protecting "the most exposed individual," 42 U.S.C. 7412(c)(9), and the impacts of hazardous pollution on "sensitive populations," 81 Fed. Reg. at 24,421, reflect values not readily converted to money. *See* 76 Fed. Reg. at 24,987 (noting

cumulative character of harm from mercury exposures); 77 Fed. Reg. at 9441 (noting "substantial health improvements for children" from regulation).[2]

Indeed, monetization requires both quantifying the harms to be avoided and developing a way to assign a monetary value to them: "Monetized benefits are at least two steps removed from risk identification, thus they are even more difficult to assess than risk." Legal Memo 23 n.27 (JA __). In 1990, Congress sought to reduce barriers to regulation of air toxics, not increase them. *Id*.

Petitioners offer no grounds to dispute Congress's judgment that the hazardous pollutants at issue are all serious toxins. Nor could they: For example, mercury "is a highly toxic pollutant" that causes grave, irreversible harms even with small exposures. 76 Fed. Reg. at 24,977-78; Amicus Br. of Elsie M. Sunderland, *et al*. 7-28. The record supporting EPA's 2000 findings concerning mercury hazards was robust, that supporting the 2012 finding even more so, and the scientific understanding of mercury's harms has broadened since, *see* 81 Fed. Reg. at 24,441. Research has focused mainly on identifying harms, not monetizing them; as EPA explained, however, its inability to monetize benefits does not mean

[2] The impacts of power plants' hazardous pollutant emissions are extremely widespread. Due to mercury contamination, bodies of fresh water throughout the continental United States are subject to fishing consumption advisories (in some states, covering *all* waters), a particularly severe harm for those whose identity and culture center on waters and fishing, *see* Br. of Amicus Curiae National Congress of American Indians, *et al*. 9-19.

the benefits are minor. *See* 81 Fed. Reg. at 24,441. Many serious harms—*e.g.*, permanent damage to unborn children's neurological capacity—are not readily amenable to technical cost-based accounting by an agency.

Other hazardous pollutants emitted by power plants in great quantities also pose significant health risks. *See* 77 Fed. Reg. at 9318-19 (discussing cancer risks from power plant emissions of chromium and nickel and noting that case-study based estimates likely underestimate true maximum risk), 9363 (acid gases "contribute to chronic non-cancer toxicity and environmental degradation"); Br. of American Thoracic Society as Amicus Curiae 5-7, 9-10 (discussing health hazards of acid gases and of non-mercury metal toxics). As with mercury, the absence of a sufficiently robust method to monetize benefits does not change the reality of serious health impacts.

In Section 112, Congress placed the burdens of overcoming scientific uncertainty, of gaps in scientific data or research, and of difficulties of quantifying risk, on those who would emit listed hazardous pollutants, not on the public that is exposed to them. Moreover, nothing in Section 112(n)(1)(A)'s threshold inquiry supports Petitioners' position that the *benefits* of controlling hazardous air pollutants from power plants must be monetized in order to have weight. *Michigan* teaches that "appropriate" must include "some attention to cost," but the Court recognized that health and environmental hazards are central considerations, and

declined to mandate an approach where "each advantage and disadvantage is assigned a monetary value." 135 S. Ct. at 2711.

Contrary to Petitioners' charge (Br. 33-36), in considering the "appropriateness" of regulation under Section 112(n)(1)(A), EPA carefully compared the costs of regulation and the regulatory benefits. *See* 81 Fed. Reg. at 24,421-22, 24,428-29. EPA properly gave substantial weight to, among other factors, the fact that power plants emit significant amounts of many hazardous air pollutants, and that regulation would greatly reduce these emissions. Failing to give significance to the benefits of reducing these emissions and their corresponding risks would have defied the statute's core purpose of "achieving prompt, permanent, and ongoing reductions in significant volumes of [hazardous air pollutant] emissions." *Id.* at 24,421.

II. EPA'S PREFERRED APPROACH TO CONSIDERING COSTS IS LAWFUL

The Act is silent on how EPA should consider cost in deciding whether it is "appropriate" to regulate power plants, prescribing no methodology and no "weight that should be assigned" to cost as against other factors, *Lignite Energy Council v. EPA*, 198 F.3d 930, 933 (D.C. Cir. 1999). As the *Michigan* Court made clear, it does not mandate any form of cost-benefit analysis. 135 S. Ct. at 2711, *see also* EPA Br. 24-26. In holding that EPA had erred by deeming cost irrelevant to

the listing decision, the Court repeatedly disavowed any intention to prescribe how EPA should consider cost on remand. 135 S. Ct. at 2707, 2711.

EPA's preferred approach was easily permissible. EPA considered a preliminary, highly conservative estimate of compliance costs,[3] in light of several tested metrics: (1) annual power sector revenues, (2) annual power sector capital expenditures and operational costs, and (3) consumer electric rates. *See* 81 Fed. Reg. 24,425-32. Under each metric, EPA found, the rule's costs were reasonable when compared to its significant reductions in hazardous pollutants and associated health and environmental benefits.[4]

This analysis was far more than adequate. The large body of precedent construing the express requirement in Clean Air Act Section 111's requirement

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[3] Experience under the program indicates that annual compliance costs are around $2 billion, less than a quarter of EPA's preliminary estimate. *See* Andover Technology Partners, Review and Analysis of the Actual Costs of Complying with MATS in Comparison to Predicted in EPA's Regulatory Impact Analysis 1-2, 11 (Ex. 2 to Exh. A to Comments of Calpine Corp, *et al.*) (Doc. EPA-HQ-OAR-2009-0234-20549) (JA __); *see* 81 Fed. Reg. at 24,434.

[4] EPA's review also addressed concerns in the *Michigan* decision, 135 S. Ct. at 2709, that the imposition of Section 112(d)'s 'floor' might require controls whose costs would be inappropriate under Section 112(n)(1)(A). EPA found that the best-performing power plants were using control technologies—fabric filters, carbon injection, and flue gas desulfurization—that are cost-effective, readily available, and already in widespread use. Legal Memo 16-17 (JA); *see also* 77 Fed. Reg. at 9388 (identifying 64 units meeting all the standards prior to regulation); 76 Fed. Reg. at 25,075 (Table 25) (projected emissions reductions well within the cost-per-ton ranges achieved by other Section 112 rules).

that EPA take "into account the cost," 42 U.S.C. 7411(a)(1), of New Source Performance Standards, supports EPA's approach here. *See* Legal Memo 18-19. Section 111 standards will not be set aside unless the cost is "exorbitant," *Lignite Energy Council v. EPA*, 198 F.3d at 933, or too great for the industry to "bear and survive," *Portland Cement Ass'n v. Train*, 513 F.2d 506, 508 (D.C. Cir. 1975); *Essex Chem. Corp. v. Ruckelshaus*, 486 F.2d 427, 433 (D.C. Cir. 1973). *See also Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d at 387-88 (upholding standard where controls amounted to roughly 12 percent of capital investment for new plant and consumed 5-7 percent of operating costs); *Portland Cement Ass'n v. EPA*, 665 F.3d 177, 191 (D.C. Cir. 2011) (upholding particulate standards anticipated to increase price of cement by 5.4 percent, *see* 75 Fed. Reg. 54,970, 55,024 (Sep. 9, 2010)); *Lignite Energy Council*, 198 F.3d at 933 (two percent increase in cost of producing electricity not excessive). Section 111 precedent confirms that "considering" costs does not require a tallying of monetized costs and monetized benefits, *e.g.*, *Essex*, 486 F.2d at 437; *Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d at 387.

The lawfulness of EPA's approach for toxic, top-priority pollutants follows *a fortiori* from the Section 111 cases. EPA examined cost more comprehensively than in analyses upheld under the explicit cost-consideration command in Section 111(a). And whereas under Section 111(a) cost expressly must be considered in

setting standards that apply directly to sources, the Section 112(n)(1)(A) appropriateness inquiry occurs at the threshold, before the standards are set or their details known, with cost and industry practice later factored into the subsequent setting of standards. *See* Legal Memo 26-27 (JA __).

III. EPA PERMISSIBLY RELIED UPON THE BENEFIT-COST ANALYSIS IN ITS REGULATORY IMPACT ANALYSIS AS AN ALTERNATIVE BASIS FOR ITS FINDING

Although not required, the benefit-cost analysis EPA performed in its Regulatory Impact Analysis demonstrated that the "benefits (monetized and non-monetized) of the rule are substantial and far outweigh the costs," and independently supports the Supplemental Finding, 81 Fed. Reg. at 24,421.

There is no merit to petitioners' contention (Br. 49-53) that EPA was bound to *ignore* benefits from reductions in fine particulate matter. The reductions in fine particulates and their gas precursors are the "direct result of the regulation" of targeted hazardous pollutants. Legal Memo 24 (JA __). *See also id*. (explaining how control of the "target" hazardous pollutant also causes reductions in fine particulates and sulfur dioxide (a precursor to fine particulate pollution)). The relationship between the target hazardous pollutants and fine particulates and sulfur dioxide is "so close" that the Rule uses the latter two non-hazardous pollutants as surrogates for measuring control of the targeted hazardous pollutants—a decision that "no party challenged." *Id*.; *see id*. at 29 (noting that use

of surrogates reduces sources' compliance costs). According to long-established federal guidelines and fundamental principles of cost-benefit analysis, it was not only proper, but necessary, to count these effects. *See* EPA Br. 12; Institute for Policy Integrity Amicus Br. 9-19.

In *United States Sugar Corp. v EPA*, 830 F.3d 579 (D.C. Cir. 2016), this Court held that it was proper for EPA to take account of particulate matter co-benefits of regulating hazardous pollutants in deciding whether to impose health-based standards under Section 112(d)(4), concluding that the statute "does not foreclose the Agency from considering co-benefits" and that such consideration was "consistent with the CAA's purpose." *Id.* at 625.[5] The same is true here.

Considering co-benefits is consistent with Section 112(n)(1)(A). "Appropriate" is a "'classic broad and all-encompassing term,'" *Michigan*, 135 S. Ct. at 2707 (quoting Judge Kavanaugh's dissent). Indeed, the *Michigan* Court explained that regulation would *not* be "appropriate" under Section 112(n)(1)(A) under a hypothetical scenario where technologies for controlling hazardous pollutants "do even more damage to human health." 135 S. Ct. at 2707.

[5] The Senate Report states that EPA, in setting technology-based standards under Section 112(d), "may consider the benefits which result from control of air pollutants that are not listed but the emissions of which are, nevertheless, reduced by control technologies or practices necessary to meet the prescribed limitation." Leg. Hist. at 8,512 (S. Rep. No. 101-228 at 172 (cited at 81 Fed. Reg. at 24,439)). *See also* 76 Fed. Reg. 15,608, 15,644 (March 21, 2011) (discussion in preamble of rule at issue in *United States Sugar*).

Correspondingly, the reality that controls for hazardous pollutants simultaneously *save* thousands of lives by reducing other harmful emissions strongly supports the appropriateness of regulation.

Petitioners also err in arguing (Br. 51-55) that EPA could not consider health benefits from particulate reductions beyond the National Ambient Air Quality Standards. Fine particulate matter is a "non-threshold" pollutant, causing incremental health harms at concentrations lower than ambient standards. *See* 81 Fed. Reg. at 24,440; Institute for Policy Integrity Amicus Br. 20-22. The important health benefits of such reductions are supported by a "robust body of scientific evidence." Response to Comments for Supplemental Finding 131 (citing EPA's 2009 Integrated Science Assessment for Particulate Matter) (EPA-HQ-OAR-2009-0234-20578) (JA __); *see also* EPA Br. 12 & n.12.

CONCLUSION

The petitions should be denied.

Respectfully submitted,

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February 10, 2017 (Initial Brief)

CERTIFICATE OF COMPLIANCE

I certify pursuant to Fed. R. App. P. 32(a)(7)(C) that, according to the word-count tool in Microsoft Word, the portions of the foregoing brief that count against the word limit total 3731 words. Pursuant to the Court's Order dated October 14, 2016, I further certify that together with the briefs filed by the State and Local Government Respondent-Intervenors and the Industry Respondent-Intervenors, the Respondent-Intervenors' briefs together do not exceed the combined total of 11,250 words.

CERTIFICATE OF SERVICE

I hereby certify that I filed the foregoing brief electronically via this Court's CM/ECF system, which will automatically serve copies upon registered counsel.

DATED: February 10, 2017

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