

**Hearing Before the U.S. House of Representatives
Committee On Energy & Commerce
Subcommittee On Oversight and Investigations**

“Undermining Mercury Protections: EPA Endangers Human Health and the Environment”

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Thank you, Chair DeGette and Ranking Member Walden, for inviting me here today to speak to the Subcommittee about the Trump Administration’s reconsideration of EPA’s Supplemental Finding on whether the Obama Administration’s Mercury Rule is “appropriate and necessary.” EPA’s new proposal represents an important course correction in the Agency’s accounting of the costs and benefits of environmental regulation. EPA now proposes that the cost-benefit analysis that determines whether the Mercury Rule is “appropriate and necessary” under section 112 of the Clean Air Act, should not give equal weight to ancillary benefits (or “co-benefits”) caused by incidental reductions of pollutants like particulate matter (“PM”) that could not legally be regulated under

¹ This testimony draws from my previous publications on this subject and from comments on the Clean Power Plan drafted by Boyden Gray & Associates PLLC for the National Federation of Independent Business. See Adam Gustafson, EPA Reconsiders its Use of Co-Benefits in Cost-Benefit Analysis, Federalist Society Blog, Jan. 16, 2019, <http://bit.ly/2QdyPBn>; Daniel Farber & Adam Gustafson, Re-Considering Co-Benefits in Environmental Regulation, Federalist Society Teleforum (Mar. 29, 2019), <http://bit.ly/2Q9VKhf>; National Federation of Independent Business, Comments on Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, EPA-HQ-OAR-2013-0602-22962 (Dec. 1, 2014), <http://bit.ly/2Qa0T8V>.

the same statutory regime as mercury. The Agency’s new approach is eminently reasonable as a policy matter, and it is consistent with the text of the statute.

Indeed, the Agency’s former methodology, which is the subject of pending litigation, will be legally vulnerable unless EPA finalizes its new approach. The Obama Administration’s 2016 supplemental fact finding, which EPA is now reconsidering, violates Section 112’s prohibition on regulating criteria pollutants,² and it violates the statute’s instruction to determine appropriateness of HAP regulation for coal-fired power plants only “after imposition of the requirements of this chapter.”³ A court could also conclude that the Obama Administration arbitrarily and capriciously double-counted and over-counted PM reductions that had already been captured by other rules. In particular, EPA’s national ambient air quality standard (“NAAQS”) already controls PM_{2.5} to the degree EPA deems “requisite to protect the public health” with “an adequate margin of safety.”⁴ And because the States are principally responsible for implementing that standard, EPA’s treatment of PM reductions as co-benefits of its HAP regulation violates the cooperative federalism framework that Congress intended for the regulation of criteria pollutants.⁵

² 42 U.S.C. § 7412(b)(2).

³ *Id.* § 7412(n)(1)(A).

⁴ *Id.* § 7409(b)(1). “PM_{2.5}” is particulate matter with a diameter of 2.5 microns or less.

⁵ *See id.* § 7410(a).

By ceasing to rely on PM co-benefits to justify HAP regulation, EPA’s new proposal takes an important step toward rationalizing future air quality regulation without actually altering the mercury standard itself. Existing coal-fired power plants have already complied with the standard, so there would be nothing to gain from rescinding the Mercury Rule today. And under binding D.C. Circuit case law, the Agency may only “de-list” a source of HAP emissions if a stringent statutory test is met and a demanding procedure is followed.⁶ EPA has not initiated that procedure, and the test likely cannot be met.⁷ Nevertheless, recognizing that criteria pollutant co-benefits are irrelevant to the Section 112 appropriateness determination could spark needed reforms of EPA’s cost-benefit analyses in other areas.

I. Background

A. Particulate Matter Co-benefits Dominate Cost-Benefit Analyses in Support of EPA’s Regulations.

The Obama Administration’s Mercury Rule was one in a series of major environmental rules that EPA cost-justified on the basis of co-benefits from incidental reductions of particulate matter—a “criteria pollutant” that is already regulated under section 108, 109, and 110 of the Clean Air Act.

⁶ *New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008).

⁷ 42 U.S.C. § 7412(c)(9).

A 2011 study of all of the available Regulatory Impact Analyses (RIAs) for Clean Air Act regulations since 1997 (when EPA issued the first national ambient air quality standard (NAAQS) for PM_{2.5}) found that in most RIAs “a majority of [the] benefits—sometimes *all* of them—are from reductions in PM_{2.5},” even when the rules themselves do not target PM.⁸ And “a trend toward almost complete reliance of PM_{2.5}-related health co-benefits has grown over time.”⁹ EPA’s generous use of co-benefits has enabled more costly regulation; or—perhaps more accurately—increasingly costly environmental regulations have required ever loftier co-benefit claims.¹⁰

B. EPA’s Mercury Rule Became a Test Case for Co-Benefits.

As part of the trend toward near-exclusive reliance on PM_{2.5}-related co-benefits, the Mercury Rule is especially important. For some environmental regulations, cost-benefit analysis is only required by Executive Order; it has no independent significance outside the Executive branch.¹¹ But HAP regulation is

⁸ ANNE E. SMITH, NERA ECONOMIC CONSULTING, AN EVALUATION OF THE PM_{2.5} HEALTH BENEFITS ESTIMATES IN REGULATORY IMPACT ANALYSES FOR RECENT AIR REGULATION 7 (2011).

⁹ *Id.*

¹⁰ See C. Boyden Gray, *EPA’s Use of Co-Benefits*, ENGAGE (Sept. 24, 2015) (“Faced with the staggering costs of regulation and the requirement of cost-benefit analysis, EPA is under considerable pressure to identify corresponding benefits to outweigh the costs. That is where co-benefits come in.”).

¹¹ See Executive Order 12,866, 58 Fed. Reg. 51,735 (Oct. 4, 1993).

different after *Michigan v. EPA*, in which the Supreme Court held that costs and benefits are relevant to the question whether regulation is “appropriate and necessary” in the first place.

The case began in the U.S. Court of Appeals for the D.C. Circuit where State and industry petitioners were challenging the Mercury Rule based on—among other grounds—EPA’s refusal to consider costs when it decided to regulate HAP emissions from coal-fired power plants. The D.C. Circuit upheld the Rule in 2014, but then-Judge Kavanaugh dissented in part. He said it was “just common sense and sound government practice” that EPA should consider benefits and costs in deciding “whether it is ‘appropriate’ to go forward with the regulation.”¹² That “key statutory term” came from Section 112(n), which requires EPA to determine whether regulation of coal-fired power plants is “appropriate and necessary after considering the results of [a] study” of the residual health hazards of HAP emissions from power plants “after imposition of the requirements of this chapter.”¹³ Judge Kavanaugh would have held that “[i]t is entirely unreasonable for EPA to exclude consideration of costs in determining whether it is ‘appropriate’ to regulate electric utilities under the MACT

¹² *White Stallion Energy Ctr., LLC v. EPA*, 748 F.3d 1222, 1258–59 (D.C. Cir. 2014) (Kavanaugh, J., dissenting), *rev’d sub nom. Michigan v. EPA*, 135 S. Ct. 2699 (2015).

¹³ 42 U.S.C. § 7412(n)(1)(A).

program.”¹⁴ Although he had no occasion to rule on it, Judge Kavanaugh flagged the co-benefits question, noting that unless indirect PM_{2.5} benefits are included, “the Rule costs nearly \$1,500 for every \$1 of health and environmental benefit produced.”¹⁵

When the case reached the Supreme Court, Chief Justice Roberts probed the co-benefits question at oral argument: “It’s a good thing if your regulation also benefits in other ways,” he said. “But when it’s such a disproportion, you begin to wonder whether it’s an illegitimate way of avoiding the different—quite different limitations on EPA that apply in the criteria program.”¹⁶

Ultimately the Court did not decide whether EPA could rely on co-benefits to justify the Mercury Rule, because the Agency had eschewed any cost-benefit analysis at all when it decided to regulate mercury emissions from power plants. Justice Scalia’s opinion for the Court sided with Judge Kavanaugh. It held that ignoring costs was improper, because the statute required EPA to set “appropriate and necessary” standards. And it is not “rational, never mind ‘appropriate,’ to impose billions of dollars in economic costs in return for a few dollars in health or environmental benefits.”¹⁷ The Court expressly reserved the

¹⁴ 748 F.3d at 1261.

¹⁵ *Id.* at 1263.

¹⁶ Transcript of Oral Argument, *Michigan v. EPA*, No. 14-46 (Mar. 25, 2015).

¹⁷ *Michigan v. EPA*, 135 S. Ct. 2699, 2707 (2015).

question whether “the Agency *could* have considered ancillary benefits when deciding whether regulation is appropriate and necessary.”¹⁸

On remand, the Obama EPA issued a new “appropriate and necessary” determination—this time considering costs. EPA’s 2016 Supplemental Finding adopted a “cost reasonableness” methodology as its “preferred approach” to the appropriateness analysis.¹⁹ Under this approach, EPA concluded that “the cost of MATS is reasonable,” because compliance costs are “well within the range of historical variability” and that “the power sector is able to comply with the rule’s requirements while maintaining its ability to perform its primary and unique function—the generation, transmission, and distribution of reliable electricity at reasonable cost to consumers.”²⁰

As an alternative approach, EPA’s 2016 Supplemental Finding adopted a traditional cost-benefit analysis and concluded that the Mercury Rule’s benefits (including PM_{2.5} co-benefits) would outweigh its compliance costs.²¹

¹⁸ *Id.* at 2711.

¹⁹ *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, 24,420 (Apr. 25, 2016).

²⁰ *Id.*

²¹ *Id.*

Several State and industry petitioners challenged the Obama Administration’s new “appropriateness” determination in the D.C. Circuit.²² Following the 2016 presidential election, the Trump Administration sought and obtained an order holding the litigation in abeyance while EPA reviewed the 2016 Supplemental Finding.²³

Instead of defending the former Administration’s Supplemental Finding in court, EPA issued a proposed reconsideration of the supplemental finding in February 2019.²⁴ EPA now “propose[s] to find that the EPA’s equal reliance on the particulate matter (PM) air quality co-benefits projected to occur as a result of the reductions in HAP was flawed[,] as the focus of CAA section 112(n)(1)(A) is HAP emissions reductions.”²⁵ When EPA amended its analysis to remove consideration of co-benefit pollutants that the Agency already controls under different regulations, the benefits of the Mercury Rule fall significantly short of its acknowledged costs. Thus, “EPA proposes to conclude that it is not appropriate and necessary to regulate HAP from [electric generating units]

²² *Murray Energy v. EPA*, No. 16-1127 (D.C. Cir.).

²³ Order, *Murray Energy*, No. 16-1127 (D.C. Cir. Apr. 27, 2017).

²⁴ *National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units—Reconsideration of Supplemental Finding and Residual Risk and Technology Review*, 84 Fed. Reg. 2679 (Feb. 7, 2019). The comment period closed April 17, 2019.

²⁵ *Id.* at 2675–76.

under CAA section 112 because the costs of such regulation grossly outweigh the HAP benefits.”²⁶

EPA emphasized that its proposed factual finding that the Mercury Rule is not “appropriate and necessary” will not alter the regulatory environment: “finalizing this replacement will not remove the Coal- and Oil-Fired EGU source category from the CAA section 112(c)(1) list, nor will finalizing this revision otherwise affect the existing CAA section 112(d) emissions standards promulgated in 2012.”²⁷ To do that, under controlling D.C. Circuit precedent, EPA would first have to “determine that the CAA section 112(c)(9) statutory criteria for delisting have been met.”²⁸ Those criteria would be difficult if not impossible to satisfy.²⁹ Thus, if the proposed finding is finalized, it “would not have the effect of removing EGUs from the CAA section 112(c)(1) source category list.”³⁰

²⁶ *Id.* at 2676.

²⁷ *Id.* at 2678.

²⁸ *Id.* (citing *New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008)).

²⁹ To de-list a source category in the case of a carcinogenic HAP, EPA must determine “that no source in the category . . . emits such hazardous air pollutants in quantities which may cause a lifetime risk of cancer greater than one in one million to the individual in the population who is most exposed to emissions of such pollutants from the source.” 42 U.S.C. § 7412(c)(9)(B)(i). In the case of a non-carcinogenic HAP, EPA must determine “that emissions from no source in the category . . . exceed a level which is adequate to protect public health with an ample margin of safety and no adverse environmental effect will result from emissions from any source.” *Id.* § 7412(c)(9)(B)(ii).

³⁰ 2019 Reconsideration of Supplemental Finding, 84 Fed. Reg. at 2678.

II. EPA's Former Reliance on Co-Benefits To Justify the Mercury Rule Was Unlawful.

EPA should be commended for reconsidering the “appropriateness” determination, because the past Administration’s analysis was in legal jeopardy if the Chief Justice’s questions in *Michigan* are any indication.³¹ Although the MATS Rule was directed at reducing emissions of mercury and air toxics, most of the Rule’s projected benefits came from projected avoidance of premature mortalities through projected reductions of PM_{2.5}. This reliance on PM_{2.5}-related co-benefits to justify the Mercury Rule involved three distinct statutory defects.

First, EPA’s use of co-benefits to justify HAP regulation is in conflict with the provision of Section 112 that expressly excludes these pollutants from the scope of the statute’s delegation of rulemaking authority.

Second, the Obama Administration’s approach neglected the cooperative federalism framework that Congress established for criteria pollutants.

Third, counting as co-benefits emissions reductions that would be attained by other Clean Air Act programs violates Section 112’s requirement to evaluate the appropriateness of regulating coal-fired power plants only “after imposition of the requirements of this chapter.”³²

³¹ See *supra* note 16 and accompanying text.

³² 42 U.S.C. § 112(n)(1)(A).

A. Counting PM_{2.5} Reductions as Benefits of the Mercury Rule Violated the Statutory Prohibition on Regulating Criteria Pollutants Under Section 112.

Section 112 excludes regulation of NAAQS pollutants, like PM_{2.5} and ozone (also known as “criteria pollutants”). EPA may expand the list of “hazardous air pollutants” (HAPs) regulated under that section, but “no air pollutant which is listed under section [108(a)] may be added to the [section 112] list.”³³ The D.C. Circuit has explained that “[t]his prohibition extends of necessity not only to rules that literally list a criteria pollutant as a HAP but also to any rule that in effect treats a criteria pollutant as a HAP.”³⁴ PM_{2.5} appears on the list of criteria pollutants published under Section 108. There can be no dispute, therefore, that they are improper subjects for regulation under Section 112.

Although the Mercury Rule did not purport to regulate PM_{2.5} directly, the vast majority of the projected benefits calculated by the Obama Administration from reducing PM_{2.5}. Out of \$37 to \$90 *billion* in projected annual benefits, all but \$4 to \$6 *million* came from the projected PM_{2.5} effects of the rule.

Counting PM_{2.5} reductions as benefits of the Mercury Rule violates the statutory prohibition on regulating criteria pollutants through Section 112. Because sources of air pollution inevitably emit multiple pollutants

³³ 42 U.S.C. § 7412(b)(2).

³⁴ *Nat'l Lime Ass'n v. EPA*, 233 F.3d 625, 638 (D.C. Cir. 2000), *as amended on denial of reh'g* (Feb. 14, 2001).

indiscriminately, air pollution controls necessarily affect multiple pollutants. The only meaningful way to enforce the prohibition on regulating criteria pollutants through Section 112, therefore, is to exclude PM_{2.5} and other NAAQS pollutants from the determination of whether a Section 112 regulation's costs are "appropriate and necessary."

To cost-justify Section 112 rules on the basis of ancillary criteria pollutant reductions would be to allow the Agency to simply sidestep the statutory bar on regulating criteria pollutants. If the criteria pollutant co-benefits are treated on par with HAP benefits, the Agency can regulate criteria pollutants freely by purporting to regulate the HAPs that are emitted along with them, no matter how negligible—or even nonexistent—the HAP-related benefits of the rule may be.

That is precisely what occurred in the Obama Administration's Mercury and Air Toxics Standards. Although known colloquially as the "Mercury Rule," 95% of the Rule's projected benefits (in the form of PM_{2.5} co-benefits) came not from mercury controls but from controls ostensibly intended to reduce acid gas emissions.³⁵ The Agency imposed these controls on power plants, which

³⁵ Regulatory Impact Analysis for the Final Mercury and Air Toxics Standards at 5-14, EPA-452/R-11-011 (Dec. 2011) ("[S]ulfate reductions contributed 95% of the health co-benefits of all PM_{2.5} components, with an additional 5% from direct PM_{2.5} reductions. . . . The SO₂ emission reductions are the main driver for the health co-benefits of this rule.").

accounted for half of the rule’s compliance costs,³⁶ even though acid gases “are not known to cause cancer,” and even though none of EPA’s case studies had identified “significant chronic non-cancer risks from acid gas emissions.”³⁷ In fact, EPA did not quantify *any* direct benefits from reducing acid gas emissions. But the charade of regulating acid gas, a HAP, allowed EPA to mandate controls for SO₂, which is a precursor to PM and a criteria pollutant in its own right. Even though SO₂ (and NO₂) regulation under Section 112 is explicitly prohibited,³⁸ EPA acknowledged that the flue gas desulfurization (FGD or “scrubber”) and selective catalytic reduction (SCR) technology that plants would have to adopt to comply with the acid gas standard had “SO₂ and NO_x reduction” as “their primary targets.”³⁹ Power plants can even comply with the acid gas standard using SO₂ levels as a proxy.⁴⁰ This suggests that the MATS Rule was an effort to control criteria pollutant emissions under the guise of HAPs regulation.

³⁶ EPA estimated that the scrubbers required to meet the standard for acid gases would cost about \$5 billion per year, or “approximately half of the \$10 billion price tag” for the MATS Rule. *What EPA’s Utility MACT Rule Will Cost U.S. Consumers: Hearing Before the Subcommittee on Energy and Power of the House Committee on Energy & Commerce*, 112th Cong. 160 (Feb. 8, 2012) (statement of Anne E. Smith, Ph.D.), <https://www.govinfo.gov/content/pkg/CHRG-112hrg76379/pdf/CHRG-112hrg76379.pdf>.

³⁷ 76 Fed. Reg. at 25,016.

³⁸ 42 U.S.C. § 7412(b)(2).

³⁹ Regulatory Impact Analysis for the Final Mercury and Air Toxics Standards at 3-9, EPA-452/R-11-011 (Dec. 2011); *see id.* at 2-9 (“SCR is primarily used for NO_x control.”).

⁴⁰ *See* 40 C.F.R. Part 63, subpart UUUUU, Table 2.

B. Counting Criteria Pollutant Co-Benefits in HAPs Regulation Violates Cooperative Federalism.

Congress had another good reason to prohibit the regulation of criteria pollutants under Section 112. The issue is not just that criteria pollutants are already regulated under Sections 108–110 but that they are regulated under an entirely different framework that gives States—not EPA—the primary responsibility to regulate. Although EPA sets the NAAQS under Section 109, it falls to the States in the first instance to implement those standards under Section 110 as they see best.

By using PM reductions as co-benefits, the Obama Administration silently amended the State Implementation Plans for the PM_{2.5} NAAQS to mandate PM reductions from coal-fired power plants instead of (or in addition to) whatever alternative PM_{2.5} controls the States have adopted.

The Obama Administration’s cost-benefit methodology defeated Congress’s intention to establish the NAAQS program and its cooperative federalism framework as the primary means by which criteria pollutants would be regulated.

C. The Statute Requires EPA To Take Account of Existing CAA Regulatory Regimes in its “Appropriate and Necessary” Determination.

The Obama Administration’s inclusion of PM co-benefits violates Section 112 in another way. Before EPA may regulate HAP emissions from coal-fired power plants (“electric utility steam generating units”), EPA must first “perform a

study of the hazards to public health” of the HAP emissions from such plants “after imposition of the requirements of this chapter.”⁴¹ EPA may regulate only if “such regulation is appropriate and necessary after considering the results of th[at] study.”⁴²

Thus, Section 112 requires EPA to factor in all of the other air quality regulation that is required by the Clean Air Act, before determining whether even more regulation of coal-fired power plants is “appropriate and necessary.” Particulate matter emissions from power plants are controlled by several existing air quality programs, including NAAQS (under Sections 108–110), federal standards of performance for new sources (under Section 111), new source review and prevention of significant deterioration (under Sections 160–169B), the regional haze program (under Section 169A), and the acid rain program (under Sections 401–416).

To comply with Section 112, EPA’s “appropriate and necessary” analysis must adopt a forward-looking baseline that includes the emissions reductions that will be achieved “after imposition of” these air quality programs. Counting PM reductions as co-benefits for HAP regulation under Section 112 ignores this requirement. In effect, the Obama Administration pretended that the Agency was

⁴¹ 42 U.S.C. § 7412(n)(1)(A).

⁴² *Id.*

writing on a blank slate with no other PM-related regulation in sight. Section 112 requires a more circumspect approach.

III. All PM_{2.5} Co-Benefits Result from Either Double-Counting Benefits Captured by the NAAQS or Over-Counting Insignificant Emissions Reductions.

In addition to its statutory defects, the Obama Administration's cost-benefit analysis was arbitrary and capricious in that it "include[d] benefits both above and below the levels of the [PM_{2.5}] NAAQS."⁴³ Regulating against the backdrop of the PM_{2.5} NAAQS, the asserted co-benefits were illegitimate, both above and below that the existing regulatory threshold.

First, the benefits of compliance with EPA's PM_{2.5} NAAQS were accounted for when EPA set the NAAQS in the first place, so treating them as co-benefits of the MATS Rule amounted to double-counting.

Second, EPA's reliance on incidental PM_{2.5} reductions also overstated the benefits of the proposed rule by valuing all emissions reductions equally, even in areas that have already attained the PM_{2.5} NAAQS, below which it is impossible to measure significant health effects.

By removing the PM_{2.5} co-benefits from the analysis, the Trump Administration corrects both of these problems.

⁴³ 2016 Supplemental Finding, 81 Fed. Reg. at 24,440.

A. PM_{2.5} Reductions Above 12.0 µg/m³ Are Mandated by the NAAQS, So Using them as Co-Benefits Amounts to Double-Counting.

It is for good reason that the Clean Air Act expressly excludes NAAQS pollutants from those that can be regulated under § 112. These pollutants are already regulated under Section 109 of the Act at a level EPA deems “requisite to protect the public health” with “an adequate margin of safety.”⁴⁴ Under the 2013 PM_{2.5} NAAQS, the States are held to a 12.0 µg/m³ standard.⁴⁵ The benefits of reducing PM_{2.5} emissions to this level have already been quantified and used to justify EPA’s costly NAAQS regulations.

By counting the effects of reducing PM_{2.5} to the level already required by the NAAQS, the Obama Administration was improperly double-counting those benefits to justify two sets of regulations.⁴⁶ This methodology would allow an agency to cost-justify duplicative regulations aimed at addressing a single problem even though their combined costs outweigh the common benefit they

⁴⁴ 42 U.S.C. § 7409(b)(1).

⁴⁵ *National Ambient Air Quality Standards for Particulate Matter*, 78 Fed. Reg. 3,086 (Jan. 15, 2013).

⁴⁶ See Michael A. Livermore & Richard L. Revesz, *Rethinking Health-Based Environmental Standards*, 89 N.Y.U. L. Rev. 1184, 1267 note 347 (2014) (“To guard against double counting the ancillary benefits, one needs to make sure that after each regulation is promulgated, a new baseline level of pollution is computed. Then, the further benefits from subsequent regulations need to be determined by reference to this baseline.”).

both hope to achieve. The benefits of achieving the NAAQS standards cannot rationally be counted as benefits of other rules.

B. PM_{2.5} Reductions Below the NAAQS Are Insignificant.

In addition to counting benefits from PM_{2.5} reductions already mandated by the relevant NAAQS, the Obama Administration’s cost-benefit analysis also “include[d] benefits of reductions in air pollution at levels below the NAAQS.”⁴⁷ Specifically, the 2016 Supplemental Finding defended “log-linear, no-threshold concentration-response functions,” meaning that anticipated PM_{2.5} reductions in high-concentration areas were given the same weight as reductions in low-concentration areas, all the way down to zero. This methodology is contrary to the NAAQS regulation’s premise that PM_{2.5} emissions below the level of the NAAQS are inconsequential.

The NAAQS represent the level of pollution control that EPA deems “requisite to protect the public health” with “an adequate margin of safety.”⁴⁸ Reducing PM_{2.5} emissions even further is not “requisite to protect the public health,” and therefore cannot possibly produce the same degree of health benefits as reductions above the NAAQS. As a former Chairman of the Texas Commission on Environmental Quality has explained,

⁴⁷ 2016 Supplemental Finding, 81 Fed. Reg. at 24,440.

⁴⁸ 42 U.S.C. § 7409(b)(1).

If reducing particulate matter had the enormous benefits that EPA’s analysis claims, it has a legal responsibility to lower the national ambient standard to a level that is actually protective of human health. The fact that it has not done so suggests that the EPA does not really believe its own numbers. The EPA set the new NAAQS for annual PM_{2.5} at 12 µg/m³, an ambient level still far above the lowest measured levels (LMLs) that the EPA used to identify risk of death in cost-benefit analyses. . . . This . . . gives a misleading picture of the relative costs and benefits of EPA regulations.⁴⁹

EPA’s newly proposed finding alludes to this problem in a memorandum to the docket. It cites “uncertainties . . . regarding the relationship between PM_{2.5} exposure and the risk of premature death at low PM_{2.5} concentrations.”⁵⁰ It goes on to say that “[t]hese uncertainties are particularly important because air quality has improved over time . . . reducing the fraction of the U.S. population experiencing elevated PM_{2.5} exposures.”⁵¹ These concerns are well founded, and they justify EPA’s decision not to count below-NAAQS PM_{2.5} co-benefits in its appropriateness determination.

The Obama Administration’s assumption, for purposes of the Mercury Rule, that the health impact function for PM_{2.5} is log-linear without a threshold violates the best available science on which EPA relied when it updated the PM_{2.5}

⁴⁹ Kathleen Hartnett White & Josiah Neeley, *Who Regulates the Regulator?: Cost-Effectiveness Analysis in Texas State Agency Rulemaking*, 14 TEX. TECH. ADMIN. L.J. 401, 412 (2013).

⁵⁰ Memorandum to Docket for *National Emission Standards for Hazardous Air Pollutants: Coal-and Oil-Fired Electric Utility Steam Generating Units—Reconsideration of Supplemental Finding and Residual Risk and Technology Review* 4, EPA-HQ-OAR-2018-0794 (Dec. 14, 2018).

⁵¹ *Id.*

NAAQS in 2013—less than one year after the Mercury Rule.⁵² In the NAAQS rulemaking, the Agency selected a threshold of 12.0 $\mu\text{g}/\text{m}^3$ because “it was somewhat below the lowest long-term mean concentration shown by certain key epidemiologic studies to cause adverse health effects.”⁵³ By counting $\text{PM}_{2.5}$ reductions in areas that are already in attainment with the NAAQS, down to zero, the Obama Administration assigned mortality-avoidance benefits to reducing $\text{PM}_{2.5}$ below the level at which that pollutant has a measurable effect on mortality.

In the $\text{PM}_{2.5}$ NAAQS Rule, EPA explicitly considered and rejected proposals to mandate lower levels of $\text{PM}_{2.5}$, because “a standard set at a lower level would not be warranted to provide requisite protection that is neither more nor less than needed to provide an adequate margin of safety.”⁵⁴ In setting the NAAQS, EPA found that the limited evidence of $\text{PM}_{2.5}$ ’s contribution to adverse health effects at low concentrations “does not justify” a more stringent standard.⁵⁵

⁵² 78 Fed. Reg. 3,086 (Jan. 15, 2013).

⁵³ *Nat’l Ass’n of Mfrs. v. EPA*, 750 F.3d 921, 924 (D.C. Cir. 2014) (citing 78 Fed. Reg. 3086, 3158-59, 3161 (Jan. 1, 2013)).

⁵⁴ 78 Fed. Reg. at 3,161.

⁵⁵ *See id.* at 3162 (“[T]he available evidence interpreted in light of the remaining uncertainties does not justify a standard level set below 12 $\mu\text{g}/\text{m}^3$ as necessary to protect public health with an adequate margin of safety.”); *id.* (“[A] lower annual standard level . . . would reflect placing essentially as much weight on the relatively more limited data providing evidence suggestive of a causal relationship for effects observed in some at-risk populations (e.g., low birth weight) as on more certain evidence of effects classified as having a causal or likely causal relationship with $\text{PM}_{2.5}$ exposures. In the Administrator’s view, while it is important to place some weight on such suggestive evidence, it would not be appropriate to place as much weight on it as the commenters would do. . . . [U]sing this type of information to set a standard level of 11 $\mu\text{g}/\text{m}^3$ or below would assume too high a degree of confidence in

In attempting to cost-justify the Mercury Rule, the Obama Administration ignored these findings and treated all emissions reductions alike, whether or not they occur below the NAAQS level. This unjustified methodological change between the PM_{2.5} NAAQS and the 2016 Supplemental Finding is arbitrary and capricious.

IV. The Obama Administration Omitted Corresponding Ancillary Costs from its Cost-Benefit Analysis.

Even if EPA's 2016 appropriate and necessary determination had properly considered PM reductions as ancillary benefits, the cost-benefit analysis would have been flawed because it omitted corresponding ancillary costs. The Agency considered the direct compliance costs to industry, but it neglected the other societal effects of the Mercury Rule. Mandating costly control technology on power plants presumably raised energy prices and forced some plants to close down. Increased prices and forced closures have ancillary effects on the

the magnitude and significance of the associations observed in the lower part of the distributions of health events observed in these studies."); *see also id.* at 3158 ("[I]n the absence of any discernible population-level thresholds" for any health effect based on the currently available evidence "it is appropriate to consider the relative degree of confidence in the magnitude and significance of the associations observed in epidemiological studies across the range of long-term PM_{2.5} concentrations in [the relevant] studies."); *id.* ("[T]he Administrator deems it reasonable not to draw further inferences from air quality and health event data in the lower part of the distribution."); *id.* ("[T]here is significantly greater confidence in the magnitude and significance of observed associations for the part of the air quality distribution corresponding to where the bulk of the health events evaluated in each study have been observed, generally at and around the long-term mean concentrations.").

economy—increased production costs, reduced discretionary income, foregone healthcare, unemployment, etc.

A balanced cost-benefit analysis would have taken such “co-costs” into account to the same extent it considered co-benefits. The Obama Administration’s omission of ancillary costs from its analysis is another justification for the Trump Administration’s decision to exclude PM co-benefits from its “appropriate and necessary” analysis.

V. Unlimited Accounting of Co-Benefits Tends to Justify Unjustifiable Regulations and Misinform the Public.

The point of cost-benefit analysis is to ensure that regulations are efficient. Including incidental reductions of emission of non-target pollutants (especially where those non-target pollutants are directly regulated by separate rules) undermines efficient regulation, because it fails to consider whether the non-target pollutant may be regulated more efficiently by different means.⁵⁶ In the case of PM_{2.5}, EPA has already determined that an “annual standard is the most effective and efficient way to reduce total population risk associated with both long- and short-term PM_{2.5} exposures.”⁵⁷

⁵⁶ See Anne E. Smith, NERA Economic Consulting, *An Evaluation of the PM_{2.5} Health Benefits Estimates in Regulatory Impact Analyses for Recent Air Regulations* (2011).

⁵⁷ 78 Fed. Reg. at 3,163.

Including co-benefits obscures the impact of the rule on the targeted pollutants (mercury and air toxics) and hinders both the public's ability to understand the Agency's policies and to hold the Agency accountable for those policies.

CONCLUSION

EPA's proposed reconsideration of the Obama Administration's supplemental finding on the appropriateness of the Mercury Rule is not just sound policy, it is a necessary response—in the context of pending litigation—to the Supreme Court's remand in *Michigan* and its holding that a rule must be cost-justified to be "appropriate." Because criteria pollutants like PM are not a proper object of HAP regulation under Section 112, and because the benefits of reducing PM_{2.5} have already been captured by the NAAQS, EPA has done well to reconsider the past Administration's over-reliance on co-benefits. EPA should take a similar approach to future regulatory actions that require or permit consideration of cost. To give effect to Congress's cooperative federalism framework for criteria pollutants and to avoid illusory or duplicative benefit, such actions should not count ancillary reductions of PM_{2.5} and other criteria pollutants as co-benefits.

Thank you, again, for the opportunity to testify on this important issue. I welcome your questions.