

Comments of the Commonwealths of Massachusetts and Pennsylvania; the States of California, Connecticut, Delaware, Illinois, Iowa, Maine, Maryland, Minnesota, New Jersey, New Mexico, New York, North Carolina, Oregon, Rhode Island, Vermont, Washington, Wisconsin; the District of Columbia; and the Cities of Baltimore, Chicago, and New York City

on

the Environmental Protection Agency’s Proposed “National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units— Revocation of the 2020 Reconsideration, and Affirmation of the Appropriate and Necessary Supplemental Finding,” 87 Fed. Reg. 7624 (Feb. 9, 2022), Docket ID No. EPA-HQ-OAR-2018-0794

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The Commonwealths of Massachusetts and Pennsylvania; the States of California, Connecticut, Delaware, Illinois, Iowa, Maine, Maryland, Minnesota, New Jersey, New Mexico, New York, North Carolina, Oregon, Rhode Island, Vermont, Washington, Wisconsin; the District of Columbia; the Cities of Baltimore, Chicago, and New York City (together “States and Local Governments”) respectfully submit these comments on the Environmental Protection Agency’s (“EPA”) proposal entitled “National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units—Revocation of the 2020 Reconsideration, and Affirmation of the Appropriate and Necessary Supplemental Finding,” 87 Fed. Reg. 7624 (Feb. 9, 2022) (“Proposal”). The States and Local Governments strongly support the Proposal and EPA’s reaffirmation that it is “appropriate and necessary” to regulate emissions of mercury and other hazardous air pollutants (“HAPs”) from power plants under section 112 of the Clean Air Act (“Act”), 42 U.S.C. § 7412.

INTRODUCTION

More than twenty years ago, EPA first found it “appropriate and necessary” to regulate power plants under section 112, based on an extensive record reflecting over a decade of scientific research and data on actual power plant emissions. 65 Fed. Reg. 79,825 (Dec. 20, 2000). EPA reaffirmed that finding in 2012 based on a growing body of scientific evidence, 77 Fed. Reg. 9304 (Feb. 16, 2012), and reaffirmed it again in 2016 after considering cost pursuant to the Supreme Court’s direction, 81 Fed. Reg. 24,420 (Apr. 25, 2016) (“Supplemental Finding”). The Mercury and Air Toxics Standards (“MATS”) Rule, promulgated in 2012 and based on the agency’s appropriate and necessary finding, has required power plants to substantially reduce their HAP emissions since that rule’s 2015 compliance date. 77 Fed. Reg. 9304, 9418. Nonetheless, years after industry had already installed the controls necessary to comply with MATS, EPA in 2020 attempted to disavow its appropriate and necessary finding in a rulemaking that, as many of the States and Local Governments explained in extensive comments, was illegal, unsupported, and unsupportable. 85 Fed. Reg. 31,286 (May 22, 2020) (“2020 Action”). EPA’s current Proposal corrects course, proposing to revoke the unlawful 2020 Action and reaffirming, yet again, that it is appropriate to control some of the most dangerous pollutants from the sources responsible for the greatest volume of emissions.

Industry compliance with MATS over the last several years has resulted in massive reductions of power plant HAP emissions, which have generated, and continue to generate, significant public health, environmental, and economic benefits for the States and Local Governments—and at a fraction of the originally predicted cost. Indeed, the pollutants reduced by MATS—including acid gases, mercury, and other toxic metals such as arsenic, chromium, and nickel—cause severe risks to human health and are especially harmful to certain highly exposed and sensitive populations, including children, communities that rely on subsistence fishing, and communities already disproportionately overburdened by exposure to pollution. Power plant mercury emissions, in particular, are a widespread environmental scourge, contributing to ubiquitous mercury contamination of U.S. waterways and necessitating fish consumption advisories in all fifty states. Overwhelming record evidence demonstrates that the public health and environmental benefits of reducing power plant emissions are vast and, by comparison, the costs of available emission controls are a bargain.

The States and Local Governments thus strongly support EPA's revocation of its 2020 Action and reaffirmation of its appropriate and necessary finding. We fully agree with EPA that the 2020 Action used a flawed methodology that, *inter alia*, inappropriately focused on the size of the small sliver of HAP-reduction benefits that could be monetized; failed to account for distributional impacts on the most exposed and historically marginalized and overburdened populations; improperly disregarded the extensive co-benefits of regulation; and failed to meaningfully account for the great mass of unquantified, but very real, benefits of reducing HAP emissions—such as reducing neurologic and cardiovascular harms, safeguarding Native American ways of life that rely on subsistence fishing, and protecting wildlife and ecosystems. The States and Local Governments also urge EPA to recognize that the 2020 Action was *ultra vires* because the agency attempted to take a deregulatory action outside of section 112's narrowly circumscribed delisting procedures, and to further recognize that the 2020 Action was arbitrary and capricious because, in addition to its unreasonable methodology, EPA failed to account for the reliance interests of states and other entities.

The States and Local Governments fully support EPA's return to a totality of the circumstances approach to the appropriate and necessary determination. That framework is the best way to effectuate the text and purpose of section 112, including Congress's intent that EPA account for all the benefits of HAP reductions, whether or not such benefits have been or can be quantified, and that EPA protect the most exposed and historically marginalized and overburdened populations. The States and Local Governments also commend EPA's work to update the record and provide new estimates of benefits and costs based on the latest science. But for a variety of reasons, even those updated figures remain extremely conservative and underestimate the true value of the MATS Rule.

The States and Local Governments also agree with EPA's conclusion that regulation of power plant HAP emissions is appropriate and necessary under any reasonable framework used to evaluate costs and benefits (either totality of the circumstances or a benefit cost analysis), and no matter which data is used to consider costs and benefits (the original record or an updated record accounting for new information). Although we believe that the law and sound policy favor using a totality of the circumstances approach with the most up-to-date information, we support the prudence of EPA's decision to look at multiple reasonable approaches, which inescapably lead to the same conclusion that regulation is appropriate.

Finally, the States and Local Governments support EPA's decision to seek more information to determine whether, and how, to strengthen the MATS standards as part of a risk and technology review. Because many members of our coalition are downwind of power plants with significant HAP emissions, our residents and natural resources continue to suffer from substantial exposure to mercury and other HAPs. Strengthening the standards would meaningfully reduce the ongoing risks posed by such pollutants, especially for our communities with environmental justice concerns and for populations that historically have been marginalized and overburdened.

DISCUSSION

I. Background

A. The States and Local Governments Face Significant Ongoing Harms from Power Plant Emissions of Mercury and Other HAPs.

For many decades, the States and Local Governments have been grappling with the substantial harms that HAPs emitted from power plants impose on our residents, natural resources, and economies. Yet because large amounts of airborne mercury and other HAPs are transported downwind across state borders, state regulation alone is insufficient, and strong federal standards are essential to curb the cross-border impacts of HAP emissions.

1. Power Plant HAP Emissions Cause Serious Public Health and Natural Resource Harms to the States and Local Governments.

Exposure to the hazardous air pollutants emitted by power plants can cause a wide range of human health harms, including injury to the nervous system and increased risk of pulmonary and cardiovascular disease.¹ But despite the substantial reductions in such pollutants resulting from the MATS standards, power plants remain the Nation's largest source of HAPs, emitting 2.6 tons of mercury (in 2020),² along with 4,831 tons of acid gases and 221 tons of non-mercury metals (in 2017). 87 Fed. Reg. at 7640, 7672; 84 Fed. Reg. at 2689, tbl. 4. Those emissions continue to pose significant environmental and health risks, particularly for certain sensitive populations, such as children, and highly exposed populations, such as subsistence fishers and individuals living near power plants, who are disproportionately likely to be communities experiencing poverty or communities of color. *See* 87 Fed. Reg. at 7646–47; 77 Fed. Reg. at 9347, 9441; 76 Fed. Reg. 24,976, 25,018 (May 3, 2011); 65 Fed. Reg. at 79,829; Env't Prot. Agency, *Regulatory Impact Analysis for the Final Mercury and Air Toxics Standards* ("MATS RIA") 7-26, 7-35 to 7-36, 7-40 to 7-41 (2011), Doc. ID No. EPA-HQ-OAR-2009-0234-20131.

Of particular concern to the States and Local Governments are the harms due to mercury emissions from power plants, the source category that contributed half of all domestic mercury emissions before the MATS Rule took effect. 76 Fed. Reg. at 25,002, tbl.3. Mercury emitted by power plants falls back to the earth, where microorganisms convert it to methylmercury, a potent neurotoxin.³ Methylmercury moves up the food chain in marine and freshwater ecosystems, increasing in concentration as larger predators consume contaminated prey.⁴ The primary route

¹ David L. MacIntosh et al., Env't Health & Eng'g, Inc., *Emissions of Hazardous Air Pollutants from Coal-Fired Power Plants* 5, tbl.1, 35 (2011), <https://www.lung.org/getmedia/25962184-d2fc-42f8-b5a3-8ece3257fbab/emissions-of-hazardous-air.pdf.pdf>.

² Env't Prot. Agency, 2020 Power Sector Programs—Progress Report, 40, 41, fig.1 (2020), https://www3.epa.gov/airmarkets/progress/reports/pdfs/2020_full_report.pdf.

³ *See* Philippe Grandjean et al., *Adverse Effects of Methylmercury: Environmental Health Research Implications*, 118(8) Env't Health Persp. 1137, 1140–41 (2010), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2920086/pdf/ehp-0901757.pdf>; MacIntosh, *supra* note 1, at 16.

⁴ MacIntosh, *supra* note 1, at 16.

of methylmercury exposure for humans is eating mercury-contaminated fish. 76 Fed. Reg. at 25,000.⁵

Acute or long-term exposure to methylmercury can lead to numerous harmful health effects. In adults, mercury exposure is linked to an increased risk of diabetes⁶ and autoimmune dysfunction,⁷ and is strongly correlated with adverse and fatal cardiovascular effects.⁸ Children *in utero* and in early developmental stages are particularly susceptible to mercury exposure,⁹ which can cause permanent neurological damage.¹⁰ 76 Fed. Reg. at 25,018. Between 2001 and 2018, approximately a hundred thousand children born in the U.S. each year had blood mercury levels exceeding EPA's reference dose.¹¹ During the same time period, annual testing of blood mercury levels in adults nationwide indicated that mercury exposure has put millions at risk of fatal heart disease and more than ten million at risk of non-fatal heart disease.¹²

Power plants also emit huge volumes of toxic acid gases and non-mercury metals. In 2010, power plants were the Nation's largest emissions source of many of those pollutants, including hydrogen chloride, hydrogen fluoride, and selenium, and a major emissions source of others, including arsenic, chromium, nickel, and cobalt. 87 Fed. Reg. at 7637, 7640. Arsenic, chromium, and nickel are classified as human carcinogens, while cadmium, selenium, and lead

⁵ Elsie M. Sunderland, Miling Li, & Kurt Bullard, *Decadal Changes in the Edible Supply of Seafood and Methylmercury Exposure in the United States*, 126(1) Env't Health Persp. 017006-1, 017006-2 (2018), <https://ehp.niehs.nih.gov/doi/pdf/10.1289/EHP2644> (finding that estuarine and marine seafood accounted for an estimated eighty-two percent of the U.S. population's methylmercury intake between 2010 and 2012).

⁶ Ka He et al., *Mercury Exposure in Young Adulthood and Incidence of Diabetes Later in Life: The CARDIA Trace Element Study*, 36 Diabetes Care 1584, 1587 (2013), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3661833/pdf/1584.pdf>.

⁷ Jennifer F. Nyland et al., *Biomarkers of Methylmercury Exposure Immunotoxicity among Fish Consumers in Amazonian Brazil*, 119(12) Env't Health Persp. 1733, 1736–37 (2011), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3261989/pdf/ehp.1103741.pdf>.

⁸ Giuseppe Genchi et al., *Mercury Exposure and Heart Diseases*, 14(1) Int'l J. Env't Rsch. & Pub. Health 1, 8–9 (2017), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5295325/pdf/ijerph-14-00074.pdf>.

⁹ Stephanie Bose-O'Reilly et al., *Mercury Exposure and Children's Health*, 40(8) Current Probs. in Pediatric & Adolescent Health Care 186, 186 (2010), <https://doi.org/10.1016/j.cppeds.2010.07.002>.

¹⁰ See also Pub. Health & Env't, World Health Org., *Exposure to Mercury: A Major Public Health Concern* 3 (2021), <https://www.who.int/publications-detail-redirect/9789240023567#:~:text=Mercury%20is%20highly%20toxic%20to,%2C%20methyl%2D%20and%20ethylmercury> (neurological symptoms of prenatal methylmercury exposure can include “intellectual disability, seizures, vision and hearing loss, delayed development, language disorders and memory loss”).

¹¹ Elsie Sunderland et al., *Mercury Science and the Benefits of Mercury Regulation* 23–24 & fig.11 (Dec. 16, 2021) (White Paper, Harvard T.H. Chan School of Health Center for Climate, Health, & the Glob. Env't), https://cdn1.sph.harvard.edu/wp-content/uploads/sites/2343/2021/12/Mercury_WhitePaper_121621.pdf.

¹² *Id.*

are considered probable human carcinogens. *Id.* at 7640. And more broadly, exposure to non-mercury HAPs is associated with a variety of other serious health conditions that include adverse neurological, cardiovascular, immunological, reproductive, liver, kidney, and respiratory effects. *Id.* at 7640; 77 Fed. Reg. at 9363; 76 Fed. Reg. at 25,003, 25,016; MATS RIA at 4-68 to 4-73.

As EPA has recognized, the serious human health harms caused by exposure to power plant HAP emissions disproportionately affect certain highly exposed populations within our borders. 87 Fed. Reg. at 7646–47; 77 Fed. Reg. at 9354, 9441; 76 Fed. Reg. at 24,977–78, 25,018. Communities living closest to power plants—generally within a three-mile radius—face greater exposure to most HAPs. MATS RIA at 7-36. And because seafood consumption is the main route for methylmercury exposure, populations that consume higher amounts of fish, including for socio-economic or cultural reasons, are at greater risk.¹³ In Tribal communities, where self-caught fish is often an important source of affordable protein and cultural and spiritual connection,¹⁴ methylmercury exposure through fish consumption is estimated to be three to ten times higher than that of the U.S. population as a whole.¹⁵ For example, in Wisconsin, many Anishinaabe People (the Ojibwe or Chippewa Peoples) consume walleye—a species both subject to mercury fish consumption advisories and essential to maintaining a traditional way of life¹⁶—at significantly higher rates than the rest of the state’s population.¹⁷ Similarly, fishers experiencing poverty in urban areas, especially members of communities of color and immigrant populations, face greater risk because self-caught fish tends to make up a

¹³ See Collin A. Eagles-Smith et al., *Modulators of Mercury Risk to Wildlife and Humans in the Context of Rapid Global Change*, 47(2) *Ambio* 170, 177–78 (2018), <https://pubmed.ncbi.nlm.nih.gov/29388128/>; Mass. Dep’t of Pub. Health, *Massachusetts State Health Assessment* 80 (2017), <https://www.mass.gov/doc/2017-massachusetts-state-health-assessment/download>; Nat’l Env’t Just. Advisory Council, *Fish Consumption and Environmental Justice* 2–4, 14, 26 (2002), https://www.epa.gov/sites/default/files/2015-02/documents/fish-consump-report_1102.pdf.

¹⁴ See Great Lakes Comm’n, *Issue Brief: Mercury Contamination in the Great Lakes Basin* 6 (2021), <https://www.glc.org/wp-content/uploads/GLC-Mercury-Issue-Brief-Final-Oct-2021.pdf>, (“Methylmercury contamination in Great Lakes fish is an environmental justice issue for indigenous communities that depend on fish as a large part of their diet.”); Eagles-Smith et al., *supra* note 13, at 1478; Nat’l Env’t Just. Advisory Council, *supra* note 13, at 4–7, 17–18, 138.

¹⁵ Jianping Xue et al., *Modeling Tribal Exposures to Methyl Mercury from Fish Consumption* 533 *Sci. Total Env’t* 102, 108 (2015), <https://pubmed.ncbi.nlm.nih.gov/26151654/>.

¹⁶ Adam D. DeWeese et al., *Efficacy of Risk-Based, Culturally Sensitive Oga (Walleye) Consumption Advice for Anishinaabe Tribal Members in the Great Lakes Region*, 29(5) *Risk Analysis* 729, 729–30 (2009), <https://pubmed.ncbi.nlm.nih.gov/19220800/> (importance of walleye to the Anishinaabe); Wis. Dep’t Nat. Res., *Choose Wisely: A Health Guide for Eating Fish in Wisconsin* 4 (2020), <https://widnr.widen.net/s/2zs8brgxcg/fh824> (consumption advisories for walleye).

¹⁷ Compare DeWeese et al., *supra* note 16, at 738 & tbl.III (mean consumption of 1.5 meals per month (18 meals per year)) with Nancy A. Connelly et al., *Factors Affecting Fish Consumption among Anglers Living in the Great Lakes Region*, 12-3 *Hum. Dimensions Rsch. Unit Publ’n Series* 37, tbl.28 (2012), <https://ecommons.cornell.edu/bitstream/handle/1813/40457/HDRUReport12-3.pdf?sequence=1&isAllowed=y> (mean consumption of 2.7 meals per year).

greater proportion of their diets.¹⁸ In addition, fishers in these populations are less likely to travel to safer fishing areas due to income and transportation limitations¹⁹ and are less likely to trust or follow fish advisories for a variety of reasons, including cultural, linguistic, and literacy barriers.²⁰ Within the U.S. population of “high-frequency” fish consumers, individuals with lower incomes and less than a high school education show the highest fish consumption rates, while individuals identifying as “Black, non-Hispanic” and “Asian, Pacific Islander, and Native American descent” are represented at a significantly higher proportion than in the general U.S. population.²¹

Blood mercury data show similar demographic trends. National data from 2000 to 2018 show that individuals identifying as Asian, Pacific and Caribbean Islander, or Native American, among others, have higher mercury blood levels than other demographic groups.²² Asian

¹⁸ See Mass. Dep’t Pub. Health, *supra* note 13, at 80 (“Greater health risks from consuming contaminated fish occur more often in EJ areas because residents often depend on locally-caught fish as a regular part of their diet.”); Susan L. Schantz et al., *Contaminant profiles in Southeast Asian immigrants consuming fish from polluted waters in northeastern Wisconsin*, 110(1) Env’t Res. 33, 39–40 (2010), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2795147/> (finding elevated contaminant levels in Hmong communities in Green Bay, Wisconsin area due to consumption of locally caught contaminated fish); Joanna Burger et al., *Fishing in Urban New Jersey: Ethnicity Affects Information Sources, Perception, and Compliance*, 19(2) Risk Analysis 217, 221–22, 225 (1999), <https://pubmed.ncbi.nlm.nih.gov/10765401/> (finding that Black and Hispanic urban fishers consumed greater proportion of self-caught fish and were less aware of fish consumption advisories and consumption risks than White fishers).

¹⁹ See Komal Basra, M. Patricia Fabian, & Madeleine K. Scammell, *Consumption of Contaminated Seafood in an Environmental Justice Community: A Qualitative and Spatial Analysis of Fishing Controls*, 11(1) Env’t Just. 6, 13 (2018), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5830855/>; Mass. Dep’t Pub. Health, *supra* note 13, at 80; Nat’l Env’t Just. Advisory Council, *supra* note 13, at 6.

²⁰ Basra et al., *supra* note 19, 11–12; Andrew L. Stevens, Ian G. Baird, & Peter B. McIntyre, *Differences in Mercury Exposure among Wisconsin Anglers Arising from Fish Consumption Preferences and Advisory Awareness*, 43(1) Fisheries 31, 33, 38, 39 (2018), <https://afspubs.onlinelibrary.wiley.com/doi/10.1002/fsh.10013>; Emily Oken et al., *Which Fish Should I Eat? Perspectives Influencing Fish Consumption Choices*, 120(6) Env’t Health Persp. 790, 794 (2012), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3385441/>; Nat’l Env’t Just. Advisory Council, *supra* note 13, at iv–v, 2–10, 91–98 (detailing the nutritional, economic, cultural, and other factors that prevent many environmental justice communities from following conventional fish consumption advisories).

²¹ Katherine von Stackelberg, Miling Li, & Elsie Sunderland, *Results of a National Survey of High-Frequency Fish Consumers in the United States*, 158 Env’t Rsch. 126, 128, 129, tbl.2, 130, fig.1 (2017), <https://www.sciencedirect.com/science/article/abs/pii/S0013935117304024>. An individual was defined as a “high frequency” consumer if they consumed three or more fish meals per week, corresponding to the 90-95th percentile seafood consumer in the National Health and Nutrition Examination Survey. *Id.* at 127.

²² Sunderland et al. (2021), *supra* note 11, at 25 & fig.12.

communities in both the San Francisco Bay Area²³ and New York City,²⁴ for example, have registered blood-mercury concentrations exceeding levels of concern because their diets include large amounts of fish.

2. Nationwide Emissions Standards Are Essential to Addressing Harmful Cross-Border Impacts of Power Plant Emissions of Mercury and Other HAPs.

Today, as before the MATS standards took effect, mercury contamination of U.S. waters is nearly ubiquitous. Nearly 73,000 river and stream miles and 8,508,000 acres of lakes, reservoirs, and ponds nationwide are designated as impaired under Clean Water Act section 303(d), 33 U.S.C. § 1313(d), due to mercury contamination.²⁵ In thirteen states—Connecticut, Florida, Maine, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, North Carolina, Rhode Island, South Dakota, and Vermont—mercury contamination has become significant enough to require the development of state- or region-wide “total maximum daily loads” or “TMDLs” to meet Clean Water Act water quality standards.²⁶ See 33 U.S.C.

²³ See Lauren Baehner, *Metal Levels in Asian/Pacific Island Community Exposures (ACE) Project*, BioMonitoring California Scientific Guidance Panel Meeting 6, 11, 21, 24 (Nov. 8, 2018), <https://biomonitoring.ca.gov/events/biomonitoring-california-scientific-guidance-panel-meeting-november-2018> (study participants with blood-mercury level exceedances had high rates of store-bought fish relative to those without exceedances).

²⁴ Wendy McKelvey et al., *A Biomonitoring Study of Lead, Cadmium, and Mercury in the Blood of New York City Adults*, 115(10) *Env’t Health Persp.* 1435, 1439–40 & tbl.3 (2007), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2022653/> (Asian participants had significantly higher blood-mercury levels and reported significantly higher fish consumption than other ethnic groups surveyed).

²⁵ Env’t Prot. Agency, *National Causes of Impairment, National Summary of Impaired Waters and TMDL Information*, https://iaspub.epa.gov/tmdl_waters10/attains_nation_cy.control#causes.

²⁶ See Env’t Prot. Agency, *Northeast Regional Mercury Total Maximum Daily Load* vi (2007), <https://www.mass.gov/doc/northeast-regional-mercury-total-maximum-daily-load-final-addendum-for-massachusetts/download> [Northeast TMDL]; Fla. Dep’t of Env’t Prot., *Mercury TMDL for the State of Florida* (2013), <https://floridadep.gov/sites/default/files/Mercury-TMDL.pdf> [Florida TMDL]; Mich. Dep’t of Env’t Quality & Env’t Prot. Agency, *Michigan Statewide Mercury Total Maximum Daily Load* (2018), http://www.michigan.gov/documents/deq/wrd-swas-hgtmdl-draft_415360_7.pdf [Michigan TMDL]; Minn. Pollution Control Agency, *Minnesota Statewide Mercury Total Maximum Daily Load* (2007), <http://www.pca.state.mn.us/index.php/view-document.html?gid=8507> [Minnesota TMDL]; N.J. Dep’t of Env’t Prot., *Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide* (2009), https://www.nj.gov/dep/wms/bears/docs/TMDL%20HG%20document%20final%20version%209-8-09_formated%20for%20web%20posting%20js.pdf [New Jersey TMDL]; N.C. Dep’t of Env’t Quality, *North Carolina Mercury TMDL* (2012), http://portal.ncdenr.org/c/document_library/get_file?uuid=aecb3619-c246-4b49-bfd8-fd5541775110&groupId=38364 [North Carolina TMDL]; S.D. Dep’t of Env’t and Nat. Res., *South Dakota Mercury Total Maximum Daily Load* (2016), https://ofmpub.epa.gov/waters10/attains_impaired_waters.show_tmdl_document?p_tmdl_doc_blobs_id=78603;

§ 1313(d)(1) (requiring development of TMDLs for impaired waters). Numerous other states have developed waterbody-specific mercury TMDLs within their borders.²⁷ That mercury contamination not only harms our residents when they consume contaminated fish, but also limits their ability to enjoy the benefits of recreational fisheries; it also reduces the economic value of the States and Local Governments’ recreational and commercial fisheries. *See infra* Section I.B.2.

For decades, the States and Local Governments have sought to reduce the public health and natural resource harms posed by the widespread mercury contamination of our waters. To limit public exposure, we have relied heavily on fish consumption advisories. Indeed, all fifty states have had mercury-related fish consumption advisories in place,²⁸ and as recently as 2018, over 4,000 fish advisories “affect[ed] almost half of the nation’s lake acreage, river miles, and coastlines.”²⁹ Such advisories, however, are often less effective in protecting many of our most highly exposed communities.³⁰ Many of the undersigned States also have taken regulatory action to reduce emissions of mercury from power plants and other sources within our borders.³¹ At least fourteen states have promulgated limits on mercury emissions from power plants,³² and

https://ofmpub.epa.gov/waters10/attains_impaired_waters.show_tmdl_document?p_tmdl_doc_bl_obs_id=78604 [South Dakota TMDL].

²⁷ *See* Env’t Prot. Agency, *TMDL Pollutant Group: Mercury*, https://iaspub.epa.gov/tmdl_waters10/attains_impaired_waters.tmdls?p_pollutant_group_id=693 (showing that thirty-two states have at least one mercury TMDL and some states have dozens).

²⁸ Env’t Prot. Agency, *2011 National Listing of Fish Advisories* 4 (2013), <https://19january2017snapshot.epa.gov/sites/production/files/2015-06/documents/technical-factsheet-2011.pdf>; *see also* IEc Report at 6–10 (describing fish consumption advisories and other actions taken by states, the federal government, and non-governmental actors to limit public exposure to mercury in fish and shellfish).

²⁹ Valoree S. Gagnon, Hugh S. Gorman, & Emma S. Norman, Great Lakes Rsch. Ctr., *Eliminating the Need for Fish Consumption Advisories in the Great Lakes Region* 3 (2018), <https://www.mtu.edu/social-sciences/docs/res-fishconsumption-policybrief-030718.pdf>.

³⁰ *See supra* notes 19 & 20.

³¹ *See* Barbara Morin & Paul J. Miller, Northeast States for Coordinated Air Use Mgmt. (“NESCAUM”), *It Remains “Appropriate and Necessary” to Regulate Toxic Air Emissions from Coal- and Oil-fired Electric Generating Units* 8–9 (Apr. 7, 2022), <https://www.nescaum.org/documents/nescaum-it-remains-approp-necess-reg-air-toxics-from-coal-oil-egus-update-20220407.pdf>; Great Lakes Comm’n, *supra* note 13, at 19–28 (describing Great Lakes states’ regulatory programs).

³² In fact, power plants in Connecticut, Massachusetts, and New Jersey were complying with those states’ mercury standards three to four years before EPA’s proposal of the MATS Rule in 2011. Conn. Gen. Stat. § 22a-199 (compliance by July 1, 2008); 310 Mass. Code Regs. § 7.29 (first phase compliance by Jan. 1, 2008); N.J. Admin. Code § 7:27-27.7 (compliance by Dec. 15, 2007); *see also* 5 Colo. Code Regs. § 1001-8:B.VIII (first phase compliance by Jan. 1, 2012); Del. Admin. Code tit. 7 § 1146-6 (first phase compliance by Jan. 1, 2009); Ill. Admin. Code tit. 35 § 225.230 (compliance by July 1, 2009); Md. Code Regs. tit. 26, § 11.27.03.D (first phase compliance by Jan. 1, 2010); Minn. R. 7011.0561 (first phase compliance by Jan. 1, 2018); Mont. Admin. R. 17.8.771 (compliance by Jan. 1, 2010); N.H. Rev. Stat. Ann. § 125-O:11-18

nearly every state with power plant mercury emission standards has imposed more health-protective limits than the MATS Rule.³³

State requirements, however, have not solved, and cannot solve, the problem of interstate hazardous air pollution. Mercury can travel hundreds of miles from the smokestack. *See* 77 Fed. Reg. at 9444. Thirty percent of Minnesota’s mercury deposition, for example, originates from out-of-state domestic sources.³⁴ And a significant portion of Northeast mercury deposition originates from uncontrolled power plants located in other states.³⁵ Unless those out-of-state power plant emissions are addressed, Northeast waters will not meet federal water quality standards, and our residents and fisheries will continue to suffer.³⁶ Further, mercury-contaminated fish are bought and sold in interstate commerce, and individuals who consume store-bought fish thus suffer the downstream effects of power plant toxic emissions even though they may not reside downwind of the source of the emissions.³⁷ Rigorous, nationally-uniform standards are thus essential to protect the States and Local Governments’ residents, natural

(compliance by July 1, 2013); N.Y. Comp. Codes R. & Regs. tit. 6 § 246.6 (first phase compliance by Jan. 1, 2010); Or. Admin. R. 340-228-0606 (compliance by July 1, 2012); Wis. Admin. Code NR § 446.13 (compliance by Apr. 16, 2016); *see also* Mich. Admin. Code r. 336.2503(1)(a)-(b) (2009) (compliance by Jan. 1, 2015), *modified by* Mich. Admin. Code r. 336.2502a (2013) (exempting covered power plants “for which [MATS] is an applicable requirement relative to emissions of mercury” and, if the Rule ceases to be an applicable requirement, extending compliance date to the sooner of three months from the date of inapplicability or April 16, 2015).

³³ The MATS Rule imposes a mercury emission standard of 1.2 lb/TBtu or 0.013 lb/GW-hr. *See* 77 Fed. Reg. at 9367 tbl.3. Most state rate-based standards are set at 0.6 lb/TBtu or 0.008 lb/GW-hr. *See* Conn. Gen. Stat. § 22a-199(b)(1) (0.6 lb/TBtu); Del. Admin. Code tit. 7 § 1146–6.2 (0.6 lb/TBtu); Ill. Admin. Code tit. 35 § 225.230(a)(1)(A) (0.008 lb/GW-hr); 310 Mass. Code Regs. § 7.29(5)(a)(3)(f) (0.0025 lb/GW-hr); Mich. Admin. Code r. 336.2503(1)(b) (0.008 lb/TBtu); Minn. R. 7011.0561 (0.008 lb/TBtu); Mont. Admin. R. 17.8.771(1)(b)(ii) (0.9 lb/TBtu); N.J. Admin. Code § 7:27-27.7(a) (3.00 mg/MWh (equivalent to 0.66 lb/TBtu)); N.Y. Comp. Codes R. & Regs. tit. 6 § 246.6(a) (0.6 lb/TBtu); Or. Admin. R. 340-228-0606(1) (0.6 lb/TBtu); Wis. Admin. Code NR § 446.13(1) (0.008 lb/GW-hr).

³⁴ Minnesota TMDL, *supra* note 26, at 20–21, 45 (stating that federal regulation of those sources, such as power plants, holds most promise for reaching Minnesota’s TMDL goals); *see also* New Jersey TMDL, *supra* note 26, at 31 (noting that twenty-six percent of New Jersey’s air deposition mercury load originates from five surrounding states); North Carolina TMDL, *supra* note 26, at 6 (noting that fifteen percent of North Carolina’s total mercury deposition originates from out-of-state regional sources); *see also Illinois Lake Michigan (nearshore) Mercury Final TMDL Report* 23 (2016), https://attains.epa.gov/attains-public/api/documents/actions/IL_EPA/IL-2019-002/135221 (relying on the MATS Rule to address out-of-state regional sources contributing twelve percent of the mercury deposition load).

³⁵ *See* NESCAUM, *supra* note 31, at 7.

³⁶ *See* Northeast TMDL, *supra* note 26, at 44 (concluding that EPA action to “implement significant reductions from upwind out-of-region sources, primarily coal-fired power plants” is necessary to return fish methylmercury concentrations to safe levels).

³⁷ *See* Baehner, *supra* note 23.

resources, and economies from the dangerous quantities of mercury and other hazardous air pollution that out-of-state power plants emit.

B. The States and Local Governments Have Benefited from the Reductions in Power Plant HAP Emissions Required by the MATS Rule.

Since the MATS Rule took effect, it has generated, and continues to generate, massive reductions in HAP emissions that are essential to protecting public health and the environment and leveling the regulatory playing field across the country.

1. Public Health Benefits

Power plant mercury emissions declined by 91 percent between 2010 and 2020 (from 29 tons to 2.6 tons), and acid gas and non-mercury metal HAP emissions declined by 96 and 81 percent, respectively, between 2010 and 2017. 87 Fed. Reg. at 7648; 84 Fed. Reg. at 2689, tbl. 4.³⁸ With regard to mercury, research confirms that the MATS Rule “has reduced mercury loadings to aquatic systems, in turn leading to a reduction in mercury levels in fish and shellfish.”³⁹ *Exhibit A*, Robert E. Unsworth et al., Industrial Economics, Inc., *The Economic Benefits of the Mercury and Air Toxics Standards (MATS) Rule to the Commercial and Recreational Fishery Sectors of Northeast and Midwest States* 3, 5–6 (2019) (“IEc Report”). For instance, studies have found that decreased mercury emissions corresponded with declines in mercury contamination in waterbodies and freshwater and saltwater fish species, including Atlantic Bluefin tuna,⁴⁰ mid-Atlantic bluefish,⁴¹ and largemouth bass and yellow perch in Massachusetts.⁴²

As EPA recognizes, the reductions in mercury contamination attributable to the MATS Rule have produced large, ongoing public health benefits for the residents of the States and Local Governments. EPA has estimated the annual benefits to include preventing the loss of thousands of IQ points in prenatally exposed children nationwide, and nearly a hundred fewer fatal heart attacks due to reduced mercury contamination in commercial fish. 87 Fed. Reg. at 7644. While those benefits, which EPA values annually at up to \$53 million and \$720 million, respectively, are substantial, they represent a small subset of the full benefits attributable to the Rule’s pollution reductions. *See id.* at 7646; Env’t Prot. Agency, *National-Scale Mercury Risk Estimates*

³⁸ Env’t Prot. Agency, *supra* note 2, at 40–41.

³⁹ *See also* NESCAUM, *supra* note 31, at 14–15; Sunderland et al. (2021), *supra* note 11, at 9.

⁴⁰ Cheng-Shiuan Lee et al., *Declining Mercury Concentrations in Bluefin Tuna Reflect Reduced Emissions to the North Atlantic Ocean*, 50(23) Env’t Sci. & Tech. 12,825, 12,829–30 (2016), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5161346/>.

⁴¹ Ford A. Cross, David W. Evans, & Richard T. Barber, *Decadal Declines of Mercury in Adult Bluefish (1972-2011) from the Mid-Atlantic Coast of the U.S.A.*, 49 Env’t Sci. Tech. 9064, 9068 (2015), <https://pubmed.ncbi.nlm.nih.gov/26148053/#:~:text=Concentrations%20of%20mercury%20decreased%20by,of%20about%2010%25%20per%20decade>; *see also* Brian Bienkowski, *Cleaner Bluefish Suggest Coal Rules Work*, Sci. American (July 20, 2015), <http://www.scientificamerican.com/article/cleaner-bluefish-suggest-coal-rules-work/>.

⁴² Michael S. Hutcheson et al., *Temporal and Spatial Trends in Freshwater Fish Tissue Mercury Concentrations Associated with Mercury Emissions Reductions*, 48(4) Env’t Sci. Tech. 2193, 2197-99 (2014), <https://www.ncbi.nlm.nih.gov/pubmed/24494622>.

for Cardiovascular and Neurodevelopmental Outcomes for the National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units – (“2021 TSD”) 25, 26 (Sept. 2, 2021), Doc. ID No. EPA-HQ-OAR-2018-0794-4605. Other studies considering a wider variety of avoided cardiovascular harms and broader economic impact have estimated significantly larger benefits from the MATS Rule. A 2016 study projected total Rule-related economy-wide benefits through 2050 of at least \$43 billion due to avoided IQ deficits and avoided fatal and non-fatal heart attacks.⁴³ And other research estimates the societal costs of decreased IQ, alone, from anthropogenic mercury exposure in the United States at billions of dollars per year.⁴⁴

The States and Local Governments have also benefitted from the MATS Rule’s massive reductions in power plant emissions of acid gases and toxic non-mercury metals. *See* 87 Fed. Reg. at 7648; 84 Fed. Reg. at 2689, tbl. 4. Although EPA has not been able to quantify these

⁴³ Amanda Giang & Noelle E. Selin, *Benefits of mercury controls for the United States*, 113(2) Proc. of the Nat’l Acad. of Sci. 286, 288 (2016), <https://www.pnas.org/content/pnas/113/2/286.full.pdf>; *see also* Elsie Sunderland et al., *A Template for a State-of-the-Science Assessment of the Public Health Benefits associated with Mercury Emissions Reductions for Coal-fired Electricity Generating Units* 12–13 (Apr. 11, 2022) (White Paper, Harvard T.H. Chan School of Health Ctr. for Climate, Health, & the Glob. Env’t), https://cdn1.sph.harvard.edu/wp-content/uploads/sites/2343/2022/04/MATSTemplateAnalysis_041122b.pdf (estimating that power plant mercury emissions reductions between 2010 and 2020 produced monetized benefits of \$1.2 billion from avoided cardiovascular deaths and \$25 million from avoided IQ deficits across the U.S. population); Vincent Nedellec & Ari Rabl, *Costs of Health Damage from Atmospheric Emissions of Toxic Metals: Part 2—Analysis for Mercury and Lead*, 36(11) Risk Analysis 1, 1, 4–5, & tbl.1 (2016), https://www.researchgate.net/profile/Nedellec-Vincent/publication/298908575_Costs_of_Health_Damage_from_Atmospheric_Emissions_of_Toxic_Metals_Part_2-Analysis_for_Mercury_and_Lead/links/5ae740c70f7e9b837d38255e/Costs-of-Health-Damage-from-Atmospheric-Emissions-of-Toxic-Metals-Part-2-Analysis-for-Mercury-and-Lead.pdf (estimating that the damage cost associated with one kilogram of mercury is 22,937 € (2013) if there is a no-effect threshold, and 52,129 € (2013) if there is none, with ninety-one percent of the cost due to mortality from heart disease and the rest from IQ loss); Glenn E. Rice, James K. Hammit, & John S. Evans, *A Probabilistic Characterization of the Health Benefits of Reducing Methyl Mercury Intake in the United States*, 44(13) Env’t Sci. & Tech. 5216, 5221 (2010), <https://pubs.acs.org/doi/10.1021/es903359u> (considering avoided IQ deficits and fatal heart attacks, annual benefit of \$860M associated with 10% reduction in MeHg exposure in U.S. population).

⁴⁴ Philippe Grandjean & Martine Bellanger, *Calculation of the disease burden associated with environmental chemical exposures: application of toxicological information in health economic estimation*, 16(123) Env’t Health 1, 4, tbl.1, 5 (2017), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5715994/pdf/12940_2017_Article_340.pdf; *see also* Leonardo Trasande et al., *Public Health and Economic Consequences of Methyl Mercury Toxicity to the Developing Brain*, 113(5) Env’t Health Persp. 590, 593–4, & tbl.1, fig.1 (2005), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1257552/> (documenting \$8.7 billion in annual costs from lost productivity alone of methylmercury toxicity, \$1.3 billion of which is attributable each year to mercury emissions from U.S. power plants).

benefits, it recognizes the significant health and environmental risks posed by the very high volumes of those HAPs emitted by power plants prior to implementation of the Rule. 87 Fed. Reg. at 7640; 77 Fed. Reg. at 9363. In addition, because of the way the pollution-control technologies installed to comply with the MATS Rule operate, the Rule has drastically reduced harmful criteria pollutants, such as sulfur dioxide and particulate matter, in addition to HAPs.⁴⁵ The value of those emission reductions is likewise enormous, including tens of thousands of fewer premature deaths each year and a wide array of other avoided adverse public health outcomes.⁴⁶ See *infra* Section III.B.1.

In terms of the distributional effects of the benefits of the MATS Rule's pollution reductions, EPA acknowledged that in 2010 populations living within three miles of coal-fired power plants disproportionately consisted of communities of color and individuals living in poverty. MATS RIA at 7-35 to 7-36. Similarly, EPA's watershed-based risk assessment indicates that low-income Black subsistence fishers in the Southeast, and likely also Tribal subsistence fishers in the Great Lakes region, face disproportionately high risks of fatal heart attacks from power plant methylmercury exposures. 87 Fed. Reg. at 7647, 2021 TSD at 20–22, tbl. 3.

2. Natural Resource and Fisheries Benefits

In addition to the substantial public health benefits attributable to reduced exposure to mercury and other HAPs, the MATS Rule has significantly reduced harms to natural resources within our borders that are, in many cases, owned or held in trust by State members of our coalition. Notably, methylmercury causes death and reproductive and behavioral harm in a wide range of piscivorous and insectivorous fish and wildlife.⁴⁷ 87 Fed. Reg. at 7640–42; 81 Fed. Reg. at 24,423; 65 Fed. Reg. at 79,830 (wildlife mercury exposures can be substantial because animals tend to consume fish from limited geographic areas). Mercury contamination of fisheries is of

⁴⁵ For instance, between December 2014 and April 2016, dry sorbent injection systems were installed on 15 gigawatts of coal capacity and flue gas desulfurization systems (also known as scrubbers) were installed on 12 gigawatts of coal capacity. U.S. Energy Info. Admin., *EIA Electricity Generator Data Show Power Industry Response to EPA Mercury Limits*, Today in Energy (July 7, 2016), <https://www.eia.gov/todayinenergy/detail.php?id=26972>. During 2015, those plants burned eighteen percent less coal than in 2014, but reduced their sulfur dioxide emissions by forty-nine percent. U.S. Energy Info. Admin., *Sulfur Dioxide Emissions from U.S. Power Plants Have Fallen Faster Than Coal Generation*, Today in Energy (Feb. 3, 2017), <https://www.eia.gov/todayinenergy/detail.php?id=29812>.

⁴⁶ Vivian E. Thomson, Kelsey Huelsman, & Dominique Ong, *Coal-fired power plant regulatory rollback in the United States: Implications for local and regional public health*, 123 Energy Pol'y 558, 559 (2018), <https://www.sciencedirect.com/science/article/pii/S030142151830627X>.

⁴⁷ See NESCAUM, *supra* note 31, at 15–16; D.C. Evers et al., *A Synthesis of Patterns of Environmental Mercury Inputs, Exposure and Effects in New York State*, 29(10) Ecotoxicology 1565, 1577–79 (2020), <https://pubmed.ncbi.nlm.nih.gov/33170395/>; Christopher D. Knightes et al., *Application of Ecosystem-Scale Fate and Bioaccumulation Models to Predict Fish Mercury Response Times to Changes in Atmospheric Deposition*, 28(4) Env't Sci. & Tech. 881, 881–88 (2009), <https://doi.org/10.1897/08-242R.1>. In addition, power plant acid gas emissions contribute to acidification of freshwater aquatic ecosystems and concomitant adverse effects to aquatic organisms. 87 Fed. Reg. at 7641.

special concern to the States and Local Governments because it can reduce the size and sustainability of those resources⁴⁸ and has necessitated the issuance of fish consumption advisories and other mercury-risk warnings, which in turn reduce recreational fishing as well as the consumption of commercially harvested fish and shellfish. IEc Report at 2–3, 10–13.

Because power plant mercury emissions “are a significant contributor to total mercury levels in fish and shellfish in the Northeast and Midwest states,” the MATS Rule has benefitted the States and Local Governments by reducing mercury in our recreational and commercial fisheries. IEc Report at 2–3. The value of those reductions to our economies is substantial. Recreational fishing directly contributes more than \$7.5 billion per year to the economies of the twelve Northeast and Midwest states considered in the IEc report. *Id.* at 3, 16. When jobs and expenditures associated with those states’ recreational and commercial fisheries are considered, the overall economic value is enormous. In total, “the \$12.0 billion in annual recreational fishing expenditures and the \$1.6 billion in annual commercial fish landings for th[o]se [twelve] states result in a regional economic contribution of 276,696 full-time and part-time jobs, \$8.7 billion in earnings, \$17.2 billion in value added, and \$28.1 billion in output.” *Id.* at 22. Thus, even small changes to recreator and consumer behavior associated with reduced contamination from power plant mercury emissions could produce “substantial economic impacts to related economic industries at the state or regional level.” *See id.* at 22–23.

3. Regulatory Benefits

Finally, in addition to the direct health, environmental, and economic benefits described above, many of the States and Local Governments also benefit from and rely on pollution reductions provided by the MATS Rule to satisfy other pollution-control requirements or goals, including to meet TMDL goals under the Clean Water Act. *See supra* Section I.A.2. Emissions reductions under the MATS Rule also play a key role in state compliance with other Clean Air Act programs, including satisfying national ambient air quality standards for various pollutants that are affected by the MATS Rule, such as sulfur dioxide and particulate matter, and achieving reasonable progress goals under regional haze plans.⁴⁹

In sum, the MATS Rule is providing enormous continuing health, environmental, economic, and regulatory benefits to the States and Local Governments.

C. The History of Regulation and Litigation Surrounding EPA’s Regulation of Power Plant HAP Emissions.

Because of our substantial interests in combating the harms of hazardous air pollutants, the States and Local Governments have been advocating for decades, in myriad ways, for strong federal regulation of power plant HAPs. EPA’s Proposal, which these comments support, is the latest in a long line of EPA actions addressing the question whether it is appropriate and necessary to regulate HAP emissions from power plants under section 112.

In the 1990 amendments to the Act, Congress directed EPA to regulate emissions of hazardous air pollutants from power plants under section 112 if, after studying the public health hazards of those emissions, the agency determined that such regulation was “appropriate and

⁴⁸ *See* Evers et al., *supra* note 47, at 1577–78.

⁴⁹ NESCAUM, *supra* note 31, at 19–20.

necessary.” 42 U.S.C. § 7412(n)(1)(A). EPA did just that in 2000, finding that it is “appropriate to regulate HAP emissions from coal- and oil-fired electric utility steam generating units under section 112 of the CAA because . . . [those] units are the largest domestic source of mercury emissions, and mercury in the environment presents significant hazards to public health and the environment,” and because “control options” exist that “effectively reduce HAP emissions from such units.” 65 Fed. Reg. 79,825, 79,830 (Dec. 20, 2000). EPA further explained that it is “necessary to regulate HAP emissions from coal- and oil-fired electric utility steam generating units under section 112 of the CAA because the implementation of other requirements under the CAA will not adequately address the serious public health and environmental hazards arising from such emissions.” *Id.* Accordingly, EPA listed power plants as a source category to be regulated under section 112. 67 Fed. Reg. 6521, 6522, 6524 (Feb. 12, 2002).

Five years after this appropriate and necessary determination, EPA sought—illegally—to reverse it and remove power plants from the list of regulated source categories. 70 Fed. Reg. 15,994 (Mar. 29, 2005); 70 Fed. Reg. 28,606 (May 18, 2005). A coalition of states, including many of those commenting here, filed suit. *New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008). In 2008, the D.C. Circuit vacated EPA’s action, holding that EPA could not meet section 112’s specific criteria allowing for delisting unless certain health and environmental thresholds were satisfied. 517 F.3d at 582 (citing 42 U.S.C. § 7412(c)(9)).

In 2012, EPA reaffirmed its 2000 appropriate and necessary finding, based on both the 2000 record and updated scientific and public health evidence (detailed in an extensive 2011 regulatory impact analysis), and issued the MATS Rule, imposing technology-based limits on mercury and other hazardous emissions from power plants. 77 Fed. Reg. 9304, 9310–11, 9363–64, 9366–76 (Feb. 16, 2012); MATS RIA. A state coalition intervened to defend EPA’s rulemaking in challenges from various groups, including members of the regulated industry. After the D.C. Circuit upheld EPA’s 2012 regulation in full, *White Stallion Energy Ctr., LLC v. EPA*, 748 F.3d 1222 (D.C. Cir. 2014) (per curiam), the Supreme Court granted review on a narrow question: whether EPA had improperly failed to consider costs when determining that it was appropriate to regulate hazardous air pollutant emissions from power plants, *Michigan v. EPA*, 135 S. Ct. 2699 (2015). The Supreme Court held that the agency had to consider costs, *id.* at 2712, and on remand EPA reaffirmed the appropriate and necessary finding after weighing both the massive public health and environmental benefits and the costs of regulation. 81 Fed. Reg. 24,420, 24,452 (Apr. 25, 2016). Many of the States and Local Governments again intervened to defend EPA’s rulemaking against another round of challenges in a case that is currently in abeyance. *See Murray Energy Corp. v. EPA*, No. 16-1127 (D.C. Cir.).

In 2019, EPA, again, proposed to reverse the appropriate and necessary finding. 84 Fed. Reg. 2,670 (Feb. 7, 2019). Despite comments from many of the States and Local Governments and other parties cautioning that this proposed action was unlawful, EPA finalized its 2020 Action purporting to reverse the appropriate and necessary finding in May 2020, though EPA (unlike in 2005) did leave power plants as a listed source category. 85 Fed. Reg. at 31,289–90. Many of the States and Local Governments, once again, sued the EPA, in a case that is now in abeyance, and also petitioned EPA for reconsideration of that rule in July of 2020. Pet. for Review, *Massachusetts v. EPA*, No. 20-1265 (D.C. Cir. July 20, 2020), Doc. No. 1853575; Attorneys General of Massachusetts, et al., *Pet. for Recons. EPA’s Final Rule* (June 21, 2020), Docket No. EPA-HQ-OAR-2018-0794. Many of the States and Local Governments also intervened to defend EPA’s regulation of power plants under section 112 as appropriate and

necessary in a suit, also currently in abeyance, brought by a coal mining company. *See Westmoreland Mining Holdings, LLC v. EPA*, No. 20-1160 (D.C. Cir.).

On February 9, 2022, EPA published the present Proposal to revoke the 2020 Action, to reaffirm its prior determination that regulating power plant HAP emissions is appropriate and necessary, and to solicit input on the agency’s ongoing consideration of its 2020 residual risk and technology review. 87 Fed. Reg. at 7624.

II. EPA Correctly Proposes to Revoke the Unlawful and Unsupportable 2020 Revised Finding.

The States and Local Governments support EPA’s proposed revocation of the 2020 Action. That rule was illegal because outside of a statutorily circumscribed process for deregulating under section 112, EPA lacks authority to reverse itself once it determines that regulation of power plant HAP emissions is appropriate and necessary and lists power plants as covered sources. EPA’s action was also unlawful and arbitrary and capricious because the agency applied a flawed analytical framework that failed to meaningfully account for key benefits of regulation, giving little or no weight to factors Congress intended that EPA consider, such as unquantified benefits, ancillary co-benefits, effects on the most vulnerable populations, and reliance interests.

A. The 2020 Action Was *Ultra Vires*.

The States and Local Governments urge EPA to acknowledge, as one independent basis for its action, that the 2020 Action was an *ultra vires* exercise of authority. This is a separate ground compelling that rule’s rescission that EPA should recognize as an additional, independent basis for revocation.

The text, structure, and legislative history of the Clean Air Act confirm that Congress intended EPA to make a time-sensitive threshold decision about whether regulation of power plant HAPs was appropriate and necessary. As the D.C. Circuit made clear in *New Jersey*, once EPA has made an appropriate and necessary finding and listed power plants, the only way (absent a court order)⁵⁰ that the agency may reverse course is by invoking section 112(c)(9) and demonstrating that no power plant poses an unacceptably high risk to human health or the environment. 517 F.3d at 583. Because EPA in 2020 sought to revoke its appropriate and necessary finding without using this single statutorily mandated procedure for deregulation—and without a court invalidating the 2016 Supplemental Finding made on remand from *Michigan*—the agency acted beyond its authority and EPA should now disavow its prior attempt to evade the Act’s procedures as *ultra vires*. *Cf.* 85 Fed. Reg. at 31,289–92.

⁵⁰ A reviewing court, subject to applicable judicial review procedures, may order EPA to revisit an appropriate and necessary finding by remanding the finding to the agency, as the D.C. Circuit did in 2015 on remand following *Michigan. White Stallion II* (D.C. Cir. Dec. 15, 2015) (order remanding the proceeding to EPA without vacatur of the MATS Rule), Doc. ID No. EPA-HQ-OAR-2009-0234-20567; *accord New Jersey*, 517 F.3d at 583 (confirming that “section 112(c)(9)’s delisting process or court-sanctioned vacatur” are the only avenues for deregulating power plants).

Once power plants are listed under section 112 based on a positive appropriate and necessary finding, the statute’s plain text unambiguously prohibits EPA from reversing course outside of section 112(c)(9)’s delisting procedures. Enacted as part of the 1990 Clean Air Act Amendments, section 112(n)(1)(A) directed EPA to make an initial finding as to whether power plants should be regulated under section 112, based on a public health study that was due, and in fact completed, decades ago.⁵¹ In the words of the statute, EPA “shall perform a study of the hazards to public health reasonably anticipated to occur as a result of emissions by [power plants]” and report the results of that study to Congress by 1993; and EPA further “shall regulate [power plants] under this section, if the Administrator finds such regulation is appropriate and necessary after considering the results of the study.” 42 U.S.C. § 7412(n)(1)(A). As EPA has long recognized, “[o]nce the appropriate and necessary finding is made, EGUs [electric utility steam generating units, or power plants] are subject to section 112 in the same manner as other sources.” 77 Fed. Reg. at 9330. Thus, upon finding that it is appropriate and necessary to regulate power plant hazardous air emissions—as EPA did in 2000, and reaffirmed in 2012 and 2016—the agency no longer has discretion to exercise; section 112(n)(1)(A) requires that EPA “shall regulate” power plants. *See Chevron*, 467 U.S. at 843–44 (agencies have discretion “only when Congress has left a gap for the agency to fill”); *Ethyl Corp. v. EPA*, 51 F.3d 1053, 1060 (D.C. Cir. 1995) (“level of specificity” in Clean Air Act provision “effectively closes any gap the Agency seeks to find and fill”).

Whether or not EPA later believes its initial determination was made in error, the only regulatory off-ramp Congress provided EPA is section 112(c)(9). Under that provision, titled “[d]eleitions from the list,” EPA “may delete any source category from the list” of categories regulated under section 112 if EPA can demonstrate that no source in that category poses an unacceptable risk to human health or the environment. Specifically, EPA would have to make two determinations: first, “that no source in the category” emits hazardous air pollution “in quantities which may cause a lifetime risk of cancer greater than one in one million” to the most exposed individual, and, second, “that emissions from no source . . . 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.” 42 U.S.C. § 7412(c)(9)(B)(i)–(ii). As the D.C. Circuit has confirmed, section 112(c)(9)’s “comprehensive delisting process” unambiguously applies to *all* listed sources, including power plants. *New Jersey*, 517 F.3d at 582–83. And when EPA took the 2020 Action, it did not purport to make the findings necessary to delist power plants. Nor could it have made such findings given, *inter alia*, indisputable record evidence that cancer risks far exceed the delisting threshold.⁵² *See* 84 Fed. Reg. at 2697 tbl.5, 2699 (inhalation risk assessment showing estimated maximum individual cancer risks of 9-in-1 million and about 193,000 people with cancer risks above 1-in-1 million).

⁵¹ *See* EPA, Off. of Air Quality Planning & Standards, *Study of Hazardous Air Pollutant Emissions from Electric Utility Steam Generating Units – Final Report to Congress* (1998), Doc. ID No. EPA–HQ–OAR–2009–0234–3052.

⁵² Nor could EPA have demonstrated the absence of any adverse environmental effect given the well-established environmental harms of power plant mercury emissions in particular. *See supra* Section I.B.2; *see also*, e.g., 81 Fed. Reg. at 24,423 (power plant mercury emissions “contribute to adverse impacts on fish-eating birds and mammals”); 65 Fed. Reg. at 79,830 (“[e]xposure to methylmercury can have serious toxicologic effects on wildlife”).

Other than the delisting process, Congress did not vest EPA with any authority to “correct flaws” that it might later perceive in its appropriate and necessary determination, including purported flaws arising from new policy preferences or legal interpretations. 85 Fed. Reg. at 31,289; *see also id.* at 31,290 (noting “change in administrations” as a driver of 2020 Action). The reasons that Congress so circumscribed EPA’s authority are apparent from the Clean Air Act’s history. When enacting the 1990 Clean Air Act Amendments, Congress intended to remedy “the slow pace of EPA’s regulation” that had hindered attainment of the Act’s pollution-prevention aims. *New Jersey*, 517 F.3d at 578; *see also Air All. Houston v. EPA*, 906 F.3d 1049, 1061–62 (D.C. Cir. 2018) (Congress enacted the Clean Air Act “to encourage and promote ‘pollution prevention’” (citing 42 U.S.C. § 7401(c))). Congress viewed EPA’s failure to regulate hazardous air pollutants as a “history of abuse and abdication,” S. Rep. No. 101-228 (1989), 1990 U.S.C.C.A.N. 3385, 3561, and designed the section 112 amendments to “entirely restructure the existing law, so that toxics might be adequately regulated by the Federal Government,” *id.* at 3513. To that end, Congress “altered section 112 by eliminating much of EPA’s discretion.” *New Jersey*, 517 F.3d at 578; *see also Nat’l Lime Ass’n v. EPA*, 233 F.3d 625, 634 (D.C. Cir. 2000) (Congress “believed EPA had failed to regulate enough [pollutants] under previous air toxics provisions”). For instance, Congress itself listed 189 hazardous air pollutants, including mercury, 42 U.S.C. § 7412(b)(1), gave EPA one year to list all source categories that emitted the listed pollutants, *id.* § 7412(c)(1), and directed EPA promptly to establish emissions standards for those categories, *id.* § 7412(e). And Congress deliberately “restricted the opportunities for EPA and others to intervene in the regulation of HAP sources” by establishing the demanding section 112(c)(9) criteria for removing a listed source category and by barring judicial review of listing decisions until EPA promulgated emission standards for the source category. *New Jersey*, 517 F.3d at 578 (citing 42 U.S.C. § 7412(c)(9), (e)(4)). EPA’s determination in the 2020 Action that it retained broad ongoing authority to reverse course flouted Congress’s intent to channel and limit the agency’s discretion.

Indeed, EPA’s attempt in 2020 to rely on purported “inherent authority” to reverse its appropriate and necessary finding, 85 Fed. Reg. at 31,290, unlawfully and unreasonably “construe[d] the statute in a way that completely nullifie[d] textually applicable provisions meant to limit its discretion,” *New Jersey*, 517 F.3d at 583 (quoting *Whitman*, 531 U.S. at 485). Courts, including the D.C. Circuit, have routinely struck down agency attempts to rely on “inherent authority” to evade statutory limits on their authority. *See, e.g., Ivy Sports Medicine, LLC v. Burwell*, 767 F.3d 81, 87 (D.C. Cir. 2014) (Kavanaugh, J., op.) (invalidating FDA order because “it would be unreasonable under this statutory scheme to infer that FDA retains inherent authority to short-circuit or end-run the carefully prescribed statutory reclassification process”); *see also New Jersey*, 517 F.3d at 583 (“Congress . . . undoubtedly can limit an agency’s discretion to reverse itself”); *American Methyl*, 749 F.2d at 835 (“when Congress has provided a mechanism capable of rectifying mistaken actions . . . it is not reasonable to infer authority to reconsider agency action”).⁵³ And in *New Jersey*, the D.C. Circuit specifically rejected EPA’s

⁵³ *Cf. Air All. Houston*, 906 F.3d at 1061 (EPA “may not circumvent specific statutory limits on its actions by relying on separate, general rulemaking authority”); *Humane Soc’y of United States v. Zinke*, 865 F.3d 585, 601–02 (D.C. Cir. 2017) (segmentation of listed species unlawful where, *inter alia*, Fish and Wildlife Service failed to analyze effect of segmentation on remnant’s status, as omitting such analysis would turn segmentation into “a backdoor route to the *de*

attempt to claim “inherent authority” as a basis for unwinding regulation of power plant HAPs, explaining that Congress “can limit an agency’s discretion to reverse itself, and in section 112(c)(9) Congress did just that,” thereby “preclud[ing] EPA’s [assertion of] inherent authority” to reverse course on its predicate regulatory determinations.

Congress commonly designs statutes to prevent an agency from deregulatory “backsliding” by eliminating or restricting an agency’s authority to undo regulatory determinations and/or to loosen the stringency of regulations once such determinations have been made. For example, the Energy Policy and Conservation Act “prohibits DOE from promulgating an amended [energy conservation] standard that is less stringent than the preexisting standard.” *Nat. Res. Def. Council v. Perry*, 940 F.3d 1072, 1075 (9th Cir. 2019). Section 172(e) of the Clean Air Act “protects against backsliding” by barring EPA from relaxing the stringency of controls for nonattainment areas even if the agency loosens an ambient air quality standard. *See S. Coast Air Quality Mgmt. Dist. v. EPA*, 472 F.3d 882 (D.C. Cir. 2006). And the National Highway Traffic Safety Administration (NHTSA), in administering the Corporate Average Fuel Economy (CAFE) standards program, has statutory authority to increase the amount of the penalty imposed on automakers that violate the standards, but no countervailing statutory authority to ratchet down the amount once it has been increased. 49 U.S.C. § 32912(c) (authorizing NHTSA to make discretionary increases to CAFE penalty amount); 28 U.S.C. § 2461 note § 3 (directing NHTSA and other federal agencies to increase penalties for inflation); *see New York v. Nat’l Highway Traffic Safety Admin.*, 974 F.3d 87, 100 (2d Cir. 2020) (holding that NHTSA had to follow “highly circumscribed schedule” to implement penalty increases and lacked freestanding authority to reverse a penalty increase once made). The scheme for regulating power plants under section 112 operates in a similar fashion to these other programs, constraining agency power to unwind certain regulatory determinations designed to protect public health and the environment, except in accordance with specifically enumerated statutory limits and procedures.

Because EPA in 2020 attempted to revoke the regulatory basis for the MATS Rule without following the statutory delisting procedures, the 2020 Action was not authorized by statute and was *ultra vires*. EPA should recognize as much and should ground its revocation of the 2020 Action on that additional and independent basis.

B. EPA Correctly Recognizes that the 2020 Action Should Be Revoked Because that Action Relied on a Flawed Methodology.

Regardless of EPA’s authority to rescind an affirmative appropriate and necessary finding once made, the States and Local Governments support EPA’s Proposal to revoke the 2020 Action on the ground that its 2020 methodology “was an approach ill-suited to making the appropriate and necessary determination.” 87 Fed. Reg. at 7659. EPA’s Proposal correctly recognizes that the approach taken in 2020 “places undue primacy on those HAP benefits that have been monetized, . . . fails to consider critical aspects of the” statutory framework under section 112(n)(1), and generally lacks sufficient justification. *Id.* at 7660. Furthermore, EPA’s

facto delisting of already-listed species, in open defiance of the Endangered Species Act’s specifically enumerated requirements for delisting”).

2020 Action was arbitrary and capricious because it failed to account for reliance interests of the States and other actors.

1. EPA's 2020 Analysis Improperly Devalued the MATS Rule's Vast Array of Unquantified Benefits.

EPA's analysis in the 2020 Action failed to give meaningful weight to the multitude of unquantified benefits stemming from the HAP reductions achieved by the MATS Rule. As the first (and ultimately dispositive) step in its 2020 approach, EPA directly weighed the full monetized costs of the MATS Rule (estimated to be several billion dollars) against the single subset of benefits that the agency was then able to monetize (estimated to be about \$5 million)—consisting only of IQ loss in children born to a subset of recreational fishers who consume fish while pregnant. That direct comparison was used as the benchmark that would control the agency's appropriate and necessary determination unless the agency, in subsequent steps, found a basis to believe that either the unquantified benefits of reducing HAPs or the ancillary benefits of reducing criteria pollutants were of sufficient weight to disturb its initial calculation. EPA then cursorily determined that unquantified benefits were “not likely to overcome the imbalance” between monetized costs and monetized benefits. 85 Fed. Reg. at 31,296.

By hinging its comparative benefit-cost analysis so predominantly on the single HAP benefit it could most easily monetize, and by giving short shrift to the unquantified benefits that comprised the majority of the actual HAP-related benefits of the MATS Rule, EPA impermissibly narrowed the proper focus of section 112. *See Michigan*, 135 S. Ct. at 2709 (noting that section 112(n)(1)(A)'s “broad reference to appropriateness encompasses *multiple* relevant factors”). The 2020 Action essentially gave no weight to the more than *sixty* distinct categories of unquantified health, environmental, and economic benefits that had previously been identified in the MATS RIA—contravening Congress's clear intent that EPA carefully analyze health hazards posed by power plant hazardous emissions. *See* 42 U.S.C. § 7412(n)(1)(A) (directing EPA to regulate after considering its study of health hazards reasonably anticipated to result from power plant hazardous emissions).

As EPA has long recognized, a great number of the benefits from regulation are difficult (or impossible) to quantify or assign monetary value, and where such quantification is not yet possible, such benefits should still be assessed qualitatively in a way that ensures they remain central to the analysis.⁵⁴ *See supra* at 10-12; *infra* at 26-27. In the MATS context, such unquantified benefits have included, for example, the fact that prenatal exposure to even low levels of mercury can cause serious harms limiting children's ability to learn and achieve, including by impairing their attention, fine motor function, language skills, visual-spatial abilities, and verbal memory. 76 Fed. Reg. at 25,018; *see also* 65 Fed. Reg. at 79,829. Those harms impose lifelong costs that are difficult to quantify. *See* 77 Fed. Reg. at 9353 (explaining that because IQ is “not the most sensitive neurodevelopmental endpoint affected by [methylmercury] exposure” reliance on IQ “underestimates the impact of reducing methylmercury in water bodies”); MATS RIA at 4-65. Similarly, a variety of other health

⁵⁴ *See, e.g.*, 77 Fed. Reg. at 9306 (noting “limitations and uncertainties” of monetary figures); MATS RIA at 4-2 (discussing uncertainty and concluding that mercury benefits were likely underestimated due to data limitations); *id.* at ES-9 to ES-13 (describing the particular difficulty in quantifying mercury-related neurologic, cardiovascular, genotoxic, and immunologic damage to humans and reproductive harm to fish, birds, and mammals).

conditions have not been quantified, such as cancer risks and adverse neurological, cardiovascular, immunological, reproductive, liver, kidney, and respiratory effects. 76 Fed. Reg. at 25,003; MATS RIA at 4-68 to 4-73. Nor has EPA quantified, for example, the benefits of the MATS standards in fostering the ability of many historically overburdened communities to maintain traditional ways of life based on subsistence fishing. *See infra* at 27–28.

EPA’s minimization of the overwhelming bulk of benefits that were not yet capable of being monetized is contrary to the specific concern Congress expressed about mercury harms, including from power plant mercury emissions. *See* 42 U.S.C. § 7412(c)(6) (prioritizing development of non-power-plant standards for certain persistent pollutants, including mercury); *id.* § 7412(n)(1)(B), (C) (requiring study of mercury emissions, including from power plants, and health risks); S. Rep. No. 101-228, 1990 U.S.C.C.A.N. at 3515 (noting widespread contamination of fish in northern lakes “attributable to mercury emissions from coal-fired power plants”). That approach is also contrary to Congress’s plain understanding that the potential harms of hazardous air pollutants would be extremely difficult to quantify in time for an appropriate and necessary determination, as assessments of those harms would instead become clearer over years and decades—more time than EPA would have to determine whether to list power plants and to set standards. *See Portland Cement Ass’n v. Ruckelshaus*, 486 F.2d 375, 387 (D.C. Cir. 1973) (rejecting argument that section 111(a) requires quantified benefit-cost analysis in part because of “the specific time constraints” imposed by Congress for listing sources and setting standards); Richard L. Revesz, *Quantifying Environmental Benefits*, 102 Cal. L. Rev. 1423, 1436 (2014) (noting that some of the most important categories of benefits of environmental regulation that were once considered unquantifiable have subsequently been quantified); *see also infra* at 26-27.

EPA’s present analysis confirms the importance of benefits that were unquantified in 2020. By using more up-to-date science, EPA is now able to provide estimates of certain benefits that had previously been unquantified, such as the cardiovascular benefits of reductions in mercury. *See infra* Section III.B.2. These benefits, unsurprisingly, are substantial. In fact, they drastically increase the monetized estimate of quantifiable benefits *more than a hundredfold*. *See id.* The States and Local Governments thus support EPA’s current determination that the 2020 Action unjustifiably “discount[ed] the social value (benefit)” of numerous impacts “simply because the Agency c[ould]not assign a dollar value to those impacts.” 87 Fed. Reg. at 7660.

2. EPA’s 2020 Analysis Failed to Properly Consider the Massive Benefits of the MATS Rule in Reducing Emissions of Particulate Matter and Sulfur Dioxide.

EPA also failed in 2020 to meaningfully account for the extensive reductions in harmful particulate matter and sulfur dioxide attributable to the MATS Rule. The predicted benefits of the MATS Rule for particulate matter reductions alone, for example, included an estimated 4,200 to 11,000 avoided premature deaths; 2,800 fewer cases of chronic bronchitis; 4,700 fewer non-fatal heart attacks; 830 fewer hospital admissions for respiratory symptoms; 1,800 fewer hospital admissions for cardiovascular symptoms; 540,000 fewer lost work days; and 3,200,000 fewer minor restricted activity days in adults. 77 Fed. Reg. at 9306; MATS RIA at 5-95. And even though EPA was unable to quantify all categories of co-benefits associated with reductions in sulfur dioxide and fine particulate matter (notably ecosystem and visibility effects), its estimates of the monetized benefits were massive, ranging from \$59 billion to \$140 billion. 76 Fed. Reg. at 25,085.

It defied common sense for EPA, after finding an inflated estimate of monetized costs to substantially exceed the small sliver of HAP-related benefits that had been monetized, to essentially disregard the extensive co-benefits that had been quantified and monetized and that, if properly considered, would weigh even further in favor of regulation. First, section 112(n)(1)(A) itself reflects a congressional intent that such “co-benefits” be a part of regulatory decisionmaking; that provision directs the agency, in making the appropriate and necessary determination, to consider the how the regulation of sulfur dioxide and nitrogen oxides under other Clean Air Act programs would lead to HAP reductions. *See* 80 Fed. Reg. 75,025, 75,041 (Dec. 1, 2015). Thus, section 112 plainly demonstrates that Congress understood the interplay between different regulatory schemes and intended for EPA to holistically account for environmental co-benefits under the Act’s interrelated procedures. Second, the co-benefits of the MATS Rule are a direct consequence of the emission controls required by MATS. Because the acid gases, selenium, and ionic mercury regulated under section 112 are readily captured by technologies that are typically used to control sulfur dioxide, sources are using those very sulfur dioxide control technologies as a means of complying with the MATS Rule.⁵⁵ And reducing emissions of hazardous non-mercury metals necessarily results in reductions of particulate matter because those toxic metals normally are found in particles and, like particle-bound mercury, are captured by removing the filterable particulate matter emitted by power plants. 80 Fed. Reg. at 75,041. Third, EPA’s attempt to ignore ancillary *benefits* on the basis that they are “indirect” cannot be squared with the agency’s determination in 2020 to consider ancillary *costs* in its rulemaking—for example, the knock-on costs of the MATS Rule to the power sector and to consumers beyond the direct compliance costs of installing pollution controls. Nor can EPA’s disregard of “indirect benefits” be squared with the Supreme Court’s direction in *Michigan*, 135 S. Ct. at 2707, that the agency should not blind itself to all of the effects of regulation, including, for example, indirect effects such as unintended “harms that regulation might do to human health or the environment.” Just as indirect harms must be considered, so too must indirect benefits.

While the States and Local Governments agree that the appropriate and necessary determination is supported even without looking to ancillary benefits, EPA’s failure to consider this massive set of benefits in concluding that regulation was not appropriate is another reason its 2020 Rule was illegal.

3. EPA’s Framework in 2020 Failed to Give Meaningful Weight to the Benefits Accruing to Historically Marginalized and Overburdened Populations, a Touchstone of Section 112.

The States and Local Governments also fully support EPA’s present recognition that its 2020 approach was illegal because it failed to adhere to Congress’s clear intent to reduce exposures to historically marginalized and overburdened populations, notably including the

⁵⁵ NESCAUM, *Control Technologies to Reduce Conventional and Hazardous Air Pollutants from Coal-Fired Power Plants*, 23–24 (2011), <https://www.nescaum.org/documents/coal-control-technology-nescaum-report-20110330.pdf>; *see also id.* at 13, 22 (noting that injection of dry sorbent reagents that react with acid gases (DSI), combined with downstream particulate matter control device to capture reaction products, can remove ninety percent of sulfur dioxide and ninety-eight percent of hydrochloric acid (regulated under section 112) present in power plant emissions). The MATS Rule thus targets fine particulate matter and sulfur dioxide as surrogates for certain hazardous air pollutants. *See* 81 Fed. Reg. at 24,438 n.29.

“most exposed and most sensitive subpopulations.” 87 Fed. Reg. at 7660. EPA’s 2020 analysis was arbitrary because it failed to account for that critical “relevant factor.” *See Michigan*, 135 S. Ct. at 2709.

The text and structure of the statute codify the concern for protecting the most vulnerable individuals through, for example, the residual risk review provision, which directs EPA to promulgate standards if even a single individual has a cancer risk exceeding a one-in-one-million threshold. 42 U.S.C. § 7412(f)(2)(A). Likewise, section 112’s circumscribed procedures for delisting sources and deleting regulated substances allow EPA to deregulate only under the narrowest circumstances: where substances are determined to have no adverse health or environmental effects, or where source categories do not cause any individual’s lifetime cancer risk to exceed one-in-one-million. *Id.* § 7412(c)(9)(B)(i). The legislative history to the 1990 Amendments further demonstrates Congress’s concern with the lifetime cancer risk to the most exposed individuals, by recognizing the synergistic effects on such individuals of multiple direct and indirect pathways of exposure to toxic pollutants. H.R. Rep. No. 101-190, at 315. These provisions collectively illustrate Congress’s concern with protecting individuals in the most exposed and vulnerable communities, which are often the same communities that have been historically marginalized and overburdened. Yet despite these clear indications of Congress’s concern that regulation be designed to eliminate even low levels of risk to the most exposed and sensitive persons in such communities, the framework adopted in 2020 centering on a direct comparison of costs to monetized benefits unlawfully and arbitrarily gave no weight to these impacts, as EPA now appropriately acknowledges. *See* 87 Fed. Reg. at 7660.

4. EPA’s Failure in 2020 to Consider Reliance Interests Is Another Basis for Rescinding the 2020 Action.

Another independent ground for revoking the 2020 Action is the agency’s failure to properly account for reliance interests. When an agency changes regulatory policy, it is “required to assess whether there [a]re reliance interests, determine whether they [a]re significant, and weigh any such interests against competing policy concerns.” *Dep’t of Homeland Sec. v. Regents of the Univ. of Cal.*, 140 S. Ct. 1891, 1915 (2020). EPA failed to do so in the 2020 Action.

As many of the States and Local Governments anticipated when commenting on the proposal preceding EPA’s 2020 Action, it was foreseeable that opponents of the MATS Rule would seek to leverage EPA’s 2020 determination to request that a court invalidate the MATS emissions standards that were predicated on the affirmative appropriate and necessary finding. And indeed, after the 2020 Action was promulgated, such a challenge was brought in the D.C. Circuit. *Westmoreland Mining Holdings LLC v. EPA*, No. 20-1160 (D.C. Cir.), Doc. No. 1857810 (challenger’s statement of issues). Yet EPA entirely failed to consider the risks posed by such a lawsuit, including the potential health, environmental, and economic consequences to States and Local Governments if the MATS emissions controls were no longer required.⁵⁶

⁵⁶ In the absence of enforceable emission standards, power plants would be unlikely to operate their HAP controls, leading to an enormous increase in HAP and criteria pollutants and wiping out the myriad health and environmental gains attributed to the MATS Rule, *supra* Section I.B.1, with particularly severe effects for vulnerable and sensitive subgroups, *supra* at 5–7, and with substantial economic impacts imposed on, *inter alia*, state fisheries, *supra* Section I.B.2.

Of note, EPA's 2020 Action threatened to undermine a wide variety of state planning, as certain states depend on the MATS Rule to meet TMDL goals, to develop strategies to attain and maintain ambient air quality standards, and to achieve reasonable progress goals under regional haze plans. *See supra* Section I.B.3. EPA also failed to consider the reliance interests of electricity customers, who might be forced to continue to bear the costs of controls that power plant owners and operators had turned off. Nor did EPA consider reliance interests of utilities that had made the substantial capital expenditures required by the MATS Rule and that might, in the absence of an affirmative appropriate and necessary finding, be unable to recover from ratepayers some or all of their investments if deemed imprudent by a public utility commission. EPA now recognizes the existence of these many "aligned" reliance interests, 87 Fed. Reg. at 7668, and it should acknowledge that its failure to account for them in the 2020 Action is yet another ground for that rule's rescission.

III. EPA's Approach to Affirming the Supplemental Finding Lawfully and Faithfully Comports with Congress's Intent and the Supreme Court's Direction in *Michigan*, and the Record Supports EPA's Conclusion under that Approach.

EPA's totality of the circumstances approach is faithful to the Clean Air Act's text and purpose, carefully evaluates the relevant statutory considerations, and rectifies flaws in the agency's 2020 analysis. *See* 87 Fed. Reg. at 7627. Moreover, abundant record evidence supports EPA's determination that regulation of power plant HAP emissions remains appropriate and necessary under this framework. And this is so, as EPA correctly finds, on both the original record previously before the agency as well as an updated record that accounts for more recent evidence on benefits and costs. In fact, even the updated record offers a conservative accounting of the justification for regulation, as additional evidence demonstrates that benefits are even higher and costs lower than EPA presently estimates.

A. EPA's Totality of the Circumstances Approach is Rational and Best Effectuates the Statute's Goals and Intent.

In its proposed totality of the circumstances approach, EPA carefully considers and weighs all statutorily relevant factors to determine whether to regulate hazardous air pollution from power plants. 87 Fed. Reg. at 7668. Taking its cue from Congress's focus on public health in section 112(n)(1)(A), EPA begins by considering the human health advantages. *Id.* at 7637–48. This analysis looks to the direct, quantified as well as unquantified, health effects of regulating hazardous air pollutants from power plants. *See id.* EPA pays particular attention to the distribution of the benefits of such regulation and how they affect the populations most exposed and most vulnerable to the health impacts of air pollutants. *See id.* Next, EPA, considers the environmental benefits to society of regulating hazardous air pollutant emissions from power plants, *id.* at 7640–41, 7647–48, as well as the overall volume of emissions of hazardous air pollutants from power plants, *see id.* at 7662 (citing 42 U.S.C. § 7412(n)(1)(B)). EPA then carefully considers, under several different contextual metrics, the varied costs of such regulation, including both the direct costs of compliance as well as the broader costs to society, such as potential increases in retail electricity prices associated with regulation and potential reductions in the reliability of electricity service. *See* 87 Fed. Reg. at 7628, 7663, 7666–68. Finally, EPA "proposes to conclude that the substantial benefits of reducing HAP from EGUs, which accrue in particular to the most vulnerable members of society, are worth the costs," and

that, “after weighing the totality of the circumstances, . . . regulation of HAP from [power plants] is appropriate.” *Id.* at 7668.

EPA’s totality of the circumstances approach is not only “rationally related to the goals of the statute,” *Good Fortune Shipping SA v. Comm’r of Internal Revenue Serv.*, 897 F.3d 256, 261 (D.C. Cir. 2018) (internal quotation marks omitted), but it is also the best effectuation of Congress’s intent. As EPA thoroughly explains in its Proposal, the totality of the circumstances approach to the section 112(n)(1)(A) determination aligns with the text and structure of the provision and furthers the statute’s purposes. *See* 87 Fed. Reg. at 7662–69; *cf. Spectrum Pharms., Inc. v. Burwell*, 824 F.3d 1062, 1067 (D.C. Cir. 2016) (upholding agency application of governing statute that “closely hews to the [statute’s] text” and “conforms to the statutory purposes”).

1. EPA’s Totality of the Circumstances Approach is the Best Approach to Faithfully Consider the Factors Congress Deemed Important.

The language and context of section 112’s appropriate and necessary determination indicate that EPA ought to account for the many relevant potential benefits of HAP regulation when making the finding. The totality of the circumstances approach is well-suited to carrying out this directive. First and foremost, this approach allows EPA to effectively prioritize the public health implications of regulating hazardous air pollution from power plants. Second, it allows EPA to consider other statutory factors that Congress highlighted, including critical considerations that other analytical approaches might overlook, such as the distributional and cumulative impact of hazardous air pollutants on overburdened and marginalized communities.

As the Supreme Court instructed, “‘appropriate’ is ‘the classic broad and all-encompassing term that naturally and traditionally includes consideration of all the relevant factors.’” *Michigan*, 576 U.S. at 751 (quoting *White Stallion Energy Ctr., LLC*, 748 F.3d at 1266 (Kavanaugh, J., dissenting)). It is thus eminently reasonable for EPA to make the appropriate and necessary determination by balancing a broad swath of considerations that Congress has indicated are relevant to this section’s goals, including public health, health impacts on the most vulnerable and exposed individuals, environmental effects, and costs. Indeed, courts have routinely blessed agency uses of a totality of the circumstances approach in analogous statutory contexts. *See Catawba Cty. v. EPA*, 571 F.3d 20, 39 (D.C. Cir. 2009) (holding that agency may “adopt a totality-of-the-circumstances test to implement a statute that confers broad authority”); *Chippewa & Flambeau Imp. Co. v. FERC*, 325 F.3d 353, 358–59 (D.C. Cir. 2003) (holding that Congress granted FERC significant discretion “by enacting [a] ‘necessary or appropriate’ standard” and that FERC’s “case-by-case approach” to making that determination based on a “series of relevant factors” was reasonable and consistent with the governing statute). Many of the undersigned States have also adopted similarly wide-ranging analytical frameworks that account for all relevant factors when enacting their own regulatory standards to address certain hazardous (and other) air pollutant emissions from power plants.⁵⁷

The States and Local Governments support EPA’s decision under a totality of the circumstances approach to prioritize all of the public health benefits of regulating hazardous air

⁵⁷ For example, in 2006, Delaware established regulations to reduce emissions of nitrogen oxides, sulfur dioxide, and mercury from power plants to “reduce the impact of those emissions

pollution from power plants, whether capable of quantification or not, in line with Congress’s clear intent. *See* 87 Fed. Reg. at 7637–48. While Congress did not define the precise methodology that EPA is to employ when making an appropriate and necessary determination, 42 U.S.C. § 7412(n)(1)(A), it clearly communicated that EPA should focus on the “hazards to public health . . . as a result of emissions” from power plants, explicitly directing EPA to conduct a formal study on that issue to inform its determination, 87 Fed. Reg. at 7662 (citing 42 U.S.C. § 7412(n)(1)(A)).

The other studies that Congress authorized EPA to conduct in section 112(n) further indicate Congress’s intent that EPA pay careful attention to the multiple insidious harms of hazardous air pollution from power plants; Congress directed the agency to study and consider: the “health and environmental effects of such emissions,” 42 U.S.C. § 7412(n)(1)(B); the amount (“rate and mass”) of those emissions, *id.*; and the health risks of even low levels of mercury to sensitive populations, *id.* § 7412(n)(1)(C). And, as EPA details in its Proposal, other references in section 112 highlight Congress’ concern that EPA exercise its section 112 authority to address even small health and environmental risks posed by hazardous air pollutants. *See, e.g., id.* § 7412(b)(3)(D) (prohibiting deletion of substance from regulated list unless data show that “the substance may not reasonably be anticipated to cause *any* adverse effects to human health or adverse environmental effects” (emphasis added)).

Additionally, EPA’s totality of the circumstances approach allows the agency to consider, as instructed by Congress, the distributional and cumulative impact of HAPs on already overburdened and marginalized communities. A more linear balancing of costs against general societal benefits would not capture these impacts. As EPA details in its Proposal, section 112 “is drafted in order to be protective of small cohorts of highly exposed and susceptible populations.” 87 Fed. Reg. at 7666. For example, Congress instructed the agency to account for the most vulnerable communities and persons by directing it to evaluate the “threshold level of mercury exposure below which adverse human health effects are not expected to occur,” specifically by taking into account consumption of fish tissue by “sensitive populations.” 42 U.S.C. § 7412(n)(1)(C). And the residual risk assessment that Congress requires in section 112(f)—mandating that the agency promulgate regulations if even a single person exceeds a threshold cancer risk level—indicates Congress’ intention that regulations under section 112 not only reduce overall pollution, but limit health risks to the most vulnerable and exposed individuals. *See id.* § 7412(f)(2) (requiring EPA to impose further regulations if existing standards for

on public health,” help the state meet attain National Ambient Air Quality Standards (NAAQS), help reduce particulate and mercury pollution related to coal and oil-fired power plants, satisfy the state’s obligations under federal rules, and “improve visibility” and reduce “EGU-related regional haze.” Del. Admin. Code tit. 7 § 1146, Electric Generating Unit (EGU) Multi-Pollutant Regulation (Dec. 2006), <https://regulations.delaware.gov/AdminCode/title7/1000/1100/1146.pdf>. Similarly, the Maryland Department of the Environment, when assessing air pollutant regulations for fossil-fuel burning power plants, evaluated the impacts of such regulation on compliance with federal standards, public health and welfare, pollution in the Chesapeake Bay, and vegetation and agriculture. *See* Md. Dep’t of the Env’t, Technical Support Document for Proposed COMAR 26.11.38 (May 26, 2015), https://mde.maryland.gov/programs/Regulations/air/Documents/TSD_Phase1_with_Appendix.pdf.

particular source of pollution fail to reduce “lifetime excess cancer risks to the individual most exposed to” emissions from that source below one in one million).

If EPA were to evaluate whether to regulate HAP emissions from power plants by comparing quantified costs and benefits on an aggregate, societal level, as the agency did in 2020, it would ignore Congress’ directive to consider impacts on specific vulnerable populations. *See supra* Section II.B.3. In contrast, by adopting a totality of the circumstances approach to the 112(n)(1) inquiry, EPA is able to weigh critical fact-specific data on that score, such as evidence that Black subsistence fisher women in the Southeast face disproportionately high levels of mercury exposure carrying a risk of prenatal neurodevelopmental harm. *See* 87 Fed. Reg. at 7647; *cf. PDK Lab’ys Inc. v. U.S. Drug Enf’t Admin.*, 438 F.3d 1184, 1194 (D.C. Cir. 2006) (affirming appropriateness of totality of the circumstances approach to make “fact-intensive determinations”).

In sum, EPA’s totality of the circumstances approach best allows the agency to evaluate the full range of benefits of power plant HAP regulation that Congress deemed relevant to the appropriate and necessary determination.

2. EPA Appropriately Considers Unquantified Benefits and Co-Benefits as Part of its Totality of the Circumstances Analysis.

EPA’s totality of the circumstances approach, unlike the approach taken in the 2020 Action, sensibly recognizes and accounts for those benefits that Congress required EPA to consider—health related and otherwise—that are unquantifiable or as-yet unquantified. Indeed, OMB has long cautioned agencies against “ignoring unquantifiable benefits, because the most efficient rule may not have the “largest quantified and monetized . . . estimate,” Office of Mgmt. & Budget, Circular A-4, at 2 (2003), and directed agencies to consider values that are difficult or impossible to quantify, including equity, human dignity, fairness, and distributive impacts, Exec. Order No. 13,563 § 1, 76 Fed. Reg. 3821, 3821 (Jan. 21, 2011) (affirming Exec. Order No. 12,866). *See also* Exec. Order No. 12,866 § 1, 58 Fed. Reg. 51,735 (Sept. 30, 1993) (“Costs and benefits shall be understood to include both quantifiable measures . . . and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider.”).⁵⁸ In this context, for example, a direct comparison of costs to social benefits fails to account for the impact of HAPs in threatening the traditional lifestyle of subsistence fishers.

Even for benefits where quantification is at least theoretically possible, EPA accurately recognizes that it can be extremely difficult and time-consuming to quantitatively estimate the manifold health and environmental benefits of reducing emissions of air toxics. 87 Fed. Reg. at 7645. Among other reasons, it is difficult to design population-based epidemiological studies, limited data exist that monitor ambient air pollutant concentrations and individual exposure, insufficient economic research exists that would permit analysts to monetize the health impacts

⁵⁸ *See, e.g.*, 87 Fed. Reg. 10,805–02, 10,812 (describing how FEMA must account for co-benefits that “may not be quantifiable” related to “disadvantaged communities; cultural, historic, and sacred sites; and subsistence-related resources and activities” when evaluating grants); 69 Fed. Reg. 38,958, 39,138–39 (June 29, 2004) (evaluating all effects of regulating emissions from non-road diesel engines and “not just those benefits and costs which could be expressed [] in dollar terms”); 64 Fed. Reg. 52,828, 53,023 (Sept. 30, 1999) (considering the “real, but unquantifiable, benefits” of section 112 standards for hazardous waste combustors).

associated with exposure to air toxics, logistical and ethical barriers make it difficult to conduct controlled scientific studies on the impacts of HAP exposures, and the effects of HAP exposures are dispersed less evenly than other types of impacts that are analyzed epidemiologically. *See id.* For these and other reasons, EPA remains unable to quantify, let alone monetize, anywhere near the full scope of benefits that accrue from regulation of hazardous air pollutants from power plants, including the prevention of myriad health effects like cognitive impairment, cancer, and adverse reproductive effects. The totality of the circumstances approach more effectively captures these unquantified or unquantifiable benefits than one that simply weighs monetized costs against those benefits that may currently be quantified.

In addition, while the States and Local Governments agree with EPA that the appropriate and necessary finding is lawful and supported on the basis of direct benefits alone, *see* 87 Fed. Reg. at 7668, EPA also can and should consider co-benefits of the MATS Rule,⁵⁹ as it does here as part of the totality of the circumstances framework. As discussed above, *supra* at 20–21, the co-benefits of the MATS rule include massive health and environmental benefits due to reductions in particulate matter and sulfur dioxide pollution attributable to the MATS controls.⁶⁰ 87 Fed. Reg. at 7668–69.

As the States and Local Governments have consistently articulated, *see, e.g.*, Comments of the Attorneys General of Massachusetts et al. (“2019 States’ Comments”), Doc. ID No. EPA-HQ-OAR-2018-0794-1175, at 34–37 (Apr. 17, 2019), and as explained in more detail above, *supra* Sections II.B.1 and II.B.2, multiple elements of the Clean Air Act’s text and structure show that Congress intended that EPA take a comprehensive view of regulation’s advantages and disadvantages when evaluating its appropriateness, including the full scope of its benefits. Notably, section 112(n)(1)(A)’s direction that EPA assess how effectively control technologies targeting other pollutants, under other provisions of the Act, were controlling hazardous air pollution from power plants, demonstrates that Congress did not intend that EPA take a blinkered view of benefits when regulating under section 112. That is especially true where, as here, doing so would give no weight to reductions in particulate matter and other pollutants that have led to massive public health benefits to the States and Local Governments and their residents.

Moreover, these benefits accrue to some of the same sensitive and highly exposed populations most at risk of adverse health effects from HAPs,⁶¹ and there is no reason to believe that Congress’s concern about protecting sensitive populations from adverse health impacts extends to some pollutants but not others. *See supra* Section II.B.2. Indeed, before taking its aberrant position in 2020, EPA itself maintained that the co-benefits from reduced emissions of other pollutants associated with HAP regulation were an important part of the agency’s determination. Courts have also agreed in other contexts that “considering co-benefits . . . is consistent with the [Clean Air Act]’s purpose—to reduce the health and environmental impacts

⁵⁹ Nonetheless, the States support EPA’s decision to analyze the totality of the circumstances both with and without consideration of co-benefits.

⁶⁰ These benefits include “decreased risk of premature mortality among adults, and reduced incidence of lung cancer, new onset asthma, exacerbated asthma, and other respiratory and cardiovascular diseases.” 87 Fed. Reg. at 7669.

⁶¹ *See* MATS RIA at 7-36 to 7-37; *see also infra* at 30–31 (summarizing co-benefits in MATS RIA).

of hazardous air pollutants.” *U.S. Sugar Corp. v. EPA*, 830 F.3d 579, 623–25 (D.C. Cir. 2016) (affirming EPA’s reliance on co-benefits, including “reductions in emissions of other pollutants,” to justify more stringent standards for hydrogen chloride emissions from boilers, process heaters, and incinerators).

3. EPA’s Focus on Sensitive and Vulnerable Populations Aligns with Important Federal and State Environmental Justice Policies.

The States and Local Governments commend EPA for focusing on the disproportionate burden of hazardous air pollution on the communities most sensitive and vulnerable to its impacts. This focus is not only required by the statute, *see supra* at 21–22, 25–26, but also furthers environmental justice policies that the federal government and the undersigned States have deemed critical in a wide range of contexts. For example, Executive Order 14,008 instructed EPA to “secure environmental justice . . . for disadvantaged communities that have been historically marginalized and overburdened by pollution and underinvestment in housing, transportation, water and wastewater infrastructure, and health care” by “address[ing] the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities” in its “programs, policies, and activities.” Exec. Order 14,008 § 219, 86 Fed. Reg. 7,619, 7,629–32 (Feb. 1, 2021). Likewise, many of the undersigned States have declared their own commitment to promoting environmental justice through an array of different laws and policies.⁶²

The totality of the circumstances analysis allows EPA to give adequate weight to the cumulative impact of HAP emissions on disadvantaged communities that already face disproportionate burdens in housing, transportation, infrastructure, and health care. The States

⁶² *See, e.g.*, Cal. Pub. Res. Code § 71113 (establishing working group on environmental justice); S. 2408, 102nd Gen. Assemb. (Ill. 2021) (requiring expedited emissions reductions of power plants operating near designated “environmental justice” and “equity investment eligible” communities and requiring meaningful participation to “protect[] and improve[] the well-being of communities . . . that bear disproportionate burdens imposed by environmental pollution”); 2021 Mass. Acts ch. 8 (incorporating environmental justice principles into Massachusetts climate policy); Mich. Exec. Order No. 2019-06 (establishing Interagency Environmental Justice Response Team); Minn. Pollution Control Agency, *Admin. Policy no. i-admin8-29* (Nov. 2020), (announcing policy to protect “[c]ommunities of color, indigenous communities, and low-income residents” and to “reverse generations of environmental inequities”); S. 232, 2020–2021 Sess. (N.J. 2020) (addressing “the environmental and public health impacts of certain facilities on overburdened communities”); N.C. Exec. Order No. 80 (2018) (requiring cabinet agencies to develop climate adaptation and resiliency plans that “support communities and sectors of the economy that are vulnerable to the effects of climate change”); Or. Admin. R. 182.538 (creating Environmental Justice Task Force); H. 8036, Jan. Sess. (R.I. 2022) (“Environmental Justice Act” requiring, among other things, permitting decision-making to consider cumulative impacts in overburdened areas).

commend EPA for considering the totality of burdens exacerbating health inequities and environmental injustice when making the appropriate and necessary determination.

4. EPA Appropriately Evaluates Costs Holistically.

On the other side of the ledger, EPA's methods of evaluating the costs of regulation are an effective means of paying "attention to . . . the disadvantages of [its] decision[]." 576 U.S. at 753. As the Supreme Court directed, EPA considers the costs of regulation, and the "cost of compliance" in particular, *id.* at 759, when assessing the appropriateness of regulating power plant HAP emissions. *See* 87 Fed. Reg. at 7648–59. EPA proposes to do this not simply by tallying estimated costs to generate a single numerical figure that can be weighed against benefits, but by conducting detailed analyses to contextualize the costs of EGU regulation along different axes.

The States and Local Governments support this holistic approach to assessing costs as part of the totality of the circumstances analysis. Indeed, this approach is especially apt here, where Congress has emphasized its concern with various types of benefits that cannot be translated into simple dollar figures, such as the distribution of regulation's benefits and the impacts on particularly vulnerable segments of society. *See supra* Section II.B.3. Understanding whether these types of benefits are worth the costs necessarily requires an inquiry into the reasonableness of imposing costs separate and apart from a simple comparison of monetized figures. *See* 87 Fed. Reg. at 7659.

The metrics EPA uses to assess costs all fit this bill as reasonable methods of placing costs in context. For example, EPA analyzes projected capital costs of compliance with MATS in the context of the power sector's overall annual capital expenditures. *See id.* at 7657. Such a comparison demonstrates that the investments required to comply with HAP regulations "would comprise a small percentage of the sector's historical annual capital expenditures . . . and also would fall within the range of historical variability in such capital expenditures." *Id.* at 7659. Similarly, EPA analyzes the impact of EGU regulation on retail electricity prices as well as the overall reliability of electricity supply for consumers. *Id.* at 7657–58. These contextualized analyses of the costs of compliance appropriately respond to the Supreme Court's direction in *Michigan* to consider costs and do so in a way that is faithful to the statute. *See Michigan*, 576 U.S. at 752–53.

B. The Record Evidence Justifies EPA's Determination that, Considering the Totality of the Circumstances, Regulating Power Plants Under Section 112 Is Appropriate.

Whether one considers the record before the agency when it issued the 2016 supplemental finding on remand from the *Michigan* decision (i.e., evidence of costs and benefits from the MATS RIA) or looks at an updated record that includes subsequently developed evidence of benefits and costs, EPA's proposed decision that it is appropriate to regulate power plant HAP emissions under a totality of the circumstances approach is amply supported. The States and Local Governments believe that the most reasonable and legally supportable course is for EPA to assess the most up-to-date information and science, rather than relying on old information, much of which is known to be inaccurate (most often because it erroneously inflates costs and minimizes benefits). No court has directly addressed whether the agency, in this type of reaffirmation action under this statute, should look to the original record, or whether the agency may (or must) look to the most recent information. The States and Local Governments

thus support as prudent EPA's proposal to analyze both records under its totality of the circumstances framework, with more recent information confirming the appropriateness of regulation on the initial record. In addition, the States and Local Governments note that EPA continues to rely on a series of conservative and limiting assumptions when evaluating new data, and that the benefits are even higher and the costs even lower than EPA finds based on an updated record, thus providing even more support for EPA's proposed conclusion that regulating power plant HAP emissions is appropriate and necessary.

1. The Record before the Agency in 2016 Demonstrates Abundant Public Health Benefits Sufficient to Justify Regulation in Light of the Costs.

The States and Local Governments support EPA's proposed conclusion that, looking to the initial record that was available to the agency in 2012 and that comprised the basis for the 2016 Supplemental Finding, regulation is appropriate because "the substantial benefits of reducing HAP from EGUs, which accrue in particular to the most vulnerable members of society, are worth the costs." 87 Fed. Reg. at 7668.

As EPA once again recognizes in its current Proposal, EPA's earlier rulemaking record established the extensive benefits of regulating power plant HAP emissions, both on a societal level and for the most vulnerable and exposed populations. *See* 87 Fed. Reg. at 7665. Mercury, for example, has long been known to cause neurologic, cardiovascular, immunologic, and genotoxic harms to humans, especially in fetuses and children; to have disparate impacts on certain vulnerable populations in certain watersheds, including communities experiencing poverty and communities of color; and to have adverse effects on wildlife and ecosystems. *See* 87 Fed. Reg. at 7666; MATS RIA at 4-5 to 4-10. In the initial record, EPA quantified a small subset of these benefits, consisting only of annual prenatal-methylmercury-related IQ loss in the children of recreational fishers attributable to power plant emissions, with EPA estimating that MATS-Rule emissions reductions would prevent the loss of 511 IQ points and yield lifetime earning benefits of \$4 to \$6 million. MATS RIA at ES-1, ES-6 tbl.ES-4; 4-56, 4-67. EPA has recognized that this estimate was extremely conservative even as to the specific subset of benefits measured,⁶³ and also that the MATS Rule would lead to a vast array of unquantified benefits, including, *inter alia*, reduced harm from cardiovascular and non-IQ neurological effects of mercury; reduced health risks of exposure to non-mercury hazardous air pollutants that cause cancers and neurological, cardiovascular, immunological, reproductive, liver, kidney, and respiratory effects; and reduced ecosystem harms to wildlife and ecosystem acidification. 76 Fed. Reg. at 25,003; MATS RIA at 4-68 to 4-73, 5-6 to 5-7 & tbl.5-3; 5-59 to 5-92; 77 Fed. Reg. at 9428, 9323, 9363, 9426-28; 87 Fed. Reg. at 7666.

⁶³ EPA acknowledged that both its mercury risk assessment and IQ-loss quantification analyses underestimated the risks of exposures to power plant mercury emissions, in particular because IQ is "not the most sensitive neurodevelopmental endpoint affected by [methylmercury] exposure" and reliance on it "underestimates the impact of reducing methylmercury in water bodies." 77 Fed. Reg. at 9353; MATS RIA at 4-64 to 4-65. It also recognized that its focus on neurological impacts from self-caught fish did not capture exposures from consumption of commercial fish and seafood. MATS RIA at 4-65; *see also* 80 Fed. Reg. at 75,040 (noting the limited nature of the MATS rulemaking IQ-loss benefit analysis, and that EPA did not consider ocean or estuarine waterbodies or commercially caught fish as part of its analysis).

The earlier record also highlighted the disproportionate impact of HAPs on sensitive and highly exposed populations, including children, Tribal communities, and historically marginalized and overburdened communities who rely on subsistence fishing or live near power plants.⁶⁴ 77 Fed. Reg. at 9444–45; MATS RIA at 7-35 to 7-36; 76 Fed. Reg. at 25,018–19; *see also* 81 Fed. Reg. at 24,429, 24,442. And that record predicted massive co-benefits through reductions in particulate matter and sulfur dioxide emissions that reduce health risks most likely to affect sensitive populations⁶⁵ and yield important environmental benefits.⁶⁶ The MATS RIA predicted, for example, up to 11,000 avoided premature deaths, as well as a slew of other non-mortality health benefits of the MATS Rule. 77 Fed. Reg. at 9306; MATS RIA at 5-95. And although EPA was unable to quantify all categories of co-benefits (particularly those associated with ecosystem and visibility effects), its 2016 estimates of the monetized co-benefits ranged from \$59 billion to \$140 billion. 76 Fed. Reg. at 25,085; MATS RIA at 5-103.

On the cost side of the ledger, EPA in 2011 projected compliance costs of \$9.6 billion to the power sector as a whole during the first year of compliance. MATS RIA at 3-31 tbl.3-16. As it determined in 2016 and proposes to reaffirm now, that costs figure, which is certainly an overestimate, is an appropriate sum to impose on industry to achieve the manifold benefits of the MATS Rule. EPA reasonably continues to assess that such costs would not impede the electric sector’s ability to “provide adequate, reliable, and affordable electricity to the American public.” 87 Fed. Reg. at 7649. And EPA continues to appropriately place the compliance costs in context by comparing them against annual power sector sales and capital expenditures and by assessing their impact on electricity prices and reliability. *Id.* at 7649, 7656–58. That contextual analysis demonstrates that MATS-related compliance costs would have minimal impact on the power sector—they would represent a small percentage of sales and capital expenditures on a sector-wide basis, result in retail price increases within the range of historic variability, and have little effect on generating capacity. *Id.*

⁶⁴ *See* Env’t Prot. Agency, *Revised Technical Support Document: National-Scale Assessment of Mercury Risk to Populations with High Consumption of Self-caught Freshwater Fish* (“2011 TSD”) at 81, tbl.2-6, 83 Doc. ID. No. EPA-HQ-OAR-2009-0234-3057 (noting that power plant attributable mercury risk estimates for the Southeastern low income White and low income Black scenarios and for the Laotian scenario are higher than those for the typical female subsistence fish consumer).

⁶⁵ MATS RIA at ES-12 to ES-13 (co-benefit reductions will have advantageous environmental effects including reductions in visibility impairment, reduced vegetation and ecosystem effects from exposure to ozone, reduced effects from acid deposition (e.g., improved ecosystem functions), and reduced effects from nutrient enrichment (e.g., coastal eutrophication)).

⁶⁶ *Id.* at 5-95 (providing estimates of significant improvements in children’s health, including reductions in acute bronchitis and asthma, from MATS Rule); *id.* at 7-36 to 7-37 (exposure to fine particulate matter can cause or contribute to adverse health effects, such as asthma and heart disease, that significantly affect many Tribal communities, communities of color, and communities experiencing poverty); *id.* at 7-38 (largest reductions in PM_{2.5} mortality risk will occur in counties facing the highest risk, with poorer counties experiencing a proportionally larger reduction as compared to other counties).

In short, EPA correctly concluded that, considering the totality of the circumstances and based upon the record before it in 2016, the benefits of regulating power plant HAP emissions through the MATS Rule far outweigh the costs of doing so.

2. As EPA Properly Recognizes, an Array of New Scientific and Cost Data Developed Since 2011 Further Confirms the Immense Advantages of Regulating Power Plants Under Section 112.

The States and Local Governments laud EPA's efforts to update the record to reflect the best available information. Given the availability of new evidence, it is reasonable for EPA to account for new information on costs and benefits in reaffirming its appropriate and necessary determination; indeed, as a general matter, case law and best agency practices strongly favor reliance on up-to-date information, rather than on stale data that an agency knows to be incomplete or inaccurate. *See, e.g., Med. Waste Inst. v. EPA*, 645 F.3d 420, 426 (D.C. Cir. 2011) (when an agency revises a rule on judicial remand, it should update data and procedures as appropriate); *Nat'l Ass'n of Regulatory Util. Comm'rs v. U.S. Dep't of Energy*, 680 F.3d 819, 824 (D.C. Cir. 2012) (agency should not "put [its] head in the sand" to ignore relevant and updated information). And nothing in this particular statutory scheme prohibits EPA from finding that newly developed evidence buttresses and confirms its determination that it remains appropriate and necessary to regulate power plants under Section 112. As EPA thus correctly proposes to find, such new information demonstrates that HAP impacts to human health and the environment, and the concomitant benefits of reducing power plant emissions, are substantially greater than it determined in 2011, and that costs are even lower than it had previously estimated, thus further justifying power plant HAP regulation.⁶⁷

In particular, the States and Local Governments support EPA's use of current scientific evidence to expand its assessments of the risks posed by power plant mercury emissions to include exposures related to commercial seafood consumption and cardiovascular harms—effects that many of the States and Local Governments urged EPA to quantify when seeking reconsideration of the 2020 Action.⁶⁸ *See* 87 Fed. Reg. at 7641–44. EPA has assessed increased risk of one kind of cardiovascular death, fatal heart attacks, finding that, in as many as 10 percent of the 3,141 watersheds studied, subsistence fishers face an increased risk of heart attack mortality due to power plant mercury emissions alone. 87 Fed. Reg. at 7642; 2021 TSD at 21–22, tbl. 3. And such impacts are not borne equally: for example, "low-income Black subsistence fisher females in the Southeast" and Tribal fishers in the Great Lakes region face an increased

⁶⁷ In addition to the new scientific studies and cost data EPA explicitly addresses, the States and Local Governments note that a large number of other studies and data published since the MATS Rule was promulgated further demonstrate that the Rule's health, environmental, and economic benefits are substantially greater than initially anticipated, and that its costs are lower than originally estimated. To that end, we have appended a letter submitted to EPA during the summer of 2021 compiling many relevant studies and data. *See Exhibit B* Letter from Megan Herzog to Erika Sasser & Nick Hutson, Re: Supplemental Comments on "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," RIN: 2060-AV12, Doc. ID No. EPA-HQ-OAR-2018-0794 (July 26, 2021).

⁶⁸ *See* 2019 States' Comments at 44, 46.

risk of fatal heart attack in up to twenty-five percent of studied watersheds in those regions. 87 Fed. Reg. at 7647 & n.70 (noting that fatal heart attack screening-analysis may have underestimated Tribal-associated risks). EPA also estimates that, without MATS-Rule mercury reductions, power plant emissions would cause five to ninety-one excess deaths each year in the general population through consumption of commercially sourced fish. 87 Fed. Reg. at 7643–44; 2021 TSD at 10–11, & tbl.1. Beyond this new analysis of cardiovascular risks, the States and Local Governments also support EPA’s expansion of its 2011 IQ analysis to include prenatally exposed children in the general U.S. population, in which EPA estimates that, absent the MATS Rule, children would lose 1,600 to 6,000 IQ points due to consumption of commercially sourced fish contaminated by power-plant-contributed methylmercury. 87 Fed. Reg. at 7644, 2021 TSD at 15–16, & tbl.2.

In being able to monetize these new categories of benefits for the first time, EPA determines that the annual value of avoided fatal heart attacks could range from \$40 to \$720 million, and avoided IQ loss from \$14 to \$53 million. 2021 TSD at 25–26, & tbls. 4 & 5. EPA’s present ability to assign such significant values to these previously unquantified benefits not only confirms the massive benefits of regulating power plant HAPs, but also demonstrates the appropriateness of regulation in the face of uncertainty about the exact degree of benefits—uncertainty that existed when EPA created the MATS RIA and that persists today in regard to a huge segment of still-unquantified, but certainly enormous, benefits of the MATS Rule.

EPA has also correctly considered updated information on the compliance costs of the MATS Rule. As EPA recognizes, since 2015, real-world studies confirm that its original \$9.6 billion cost estimate greatly overestimated—by billions of dollars—the actual compliance costs. 87 Fed. Reg. at 7651. The reasons for this are multifold, including that power plants have installed fewer controls at lower operating costs than predicted in the MATS RIA and that the price of natural gas has been lower than projected. *Id.* Many of the States and Local Governments have pointed to information demonstrating lower-than-anticipated costs in comments on prior MATS-related actions⁶⁹ and agree with EPA that it is reasonable (if not required) to consider such updated data in reaffirming the appropriate and necessary finding. *See Michigan*, 576 U.S. at 759 (“It will be up to the Agency to decide (as always, within the limits of reasonable interpretation) how to account for costs.”). Like the updated benefit information, the updated costs information further confirms that regulation is appropriate when considering the advantages and disadvantages of regulation.

3. EPA’s Updated Estimates Remain Conservative and Do Not Capture the Full Benefits of the MATS Rule.

Although EPA has done significant, important work to assess and monetize previously unquantified human health benefits of the MATS Rule’s mercury reductions, EPA’s estimates of the benefits of reducing power plant HAP emissions continue to provide an extremely conservative measure of the public health and environmental advantages of those reductions.

Research since 2011 has confirmed that the MATS RIA underestimated power plants’ contribution to local mercury deposition, and thus the role of power plants in creating health and environmental risks has also necessarily been underestimated in both the MATS RIA and the

⁶⁹ *See id.* at 42–43; Comments of the Attorneys General of Massachusetts et al. (“2016 States’ Comments”), Docket No. EPA-HQ-OAR-2009-0234-20551, at 8 (Jan. 15, 2016).

Proposal's expanded assessment.⁷⁰ Further, both the MATS RIA and the Proposal focus on quantifying IQ impacts from prenatal mercury exposure, however, studies have shown, and EPA acknowledges, that such exposure also causes serious, neurobehavioral harms, such as memory and learning difficulties.⁷¹ See *supra* Section II.B.1; 77 Fed. Reg. at 9353 (explaining that because IQ is “not the most sensitive neurodevelopmental endpoint affected by [methylmercury] exposure” reliance on it “underestimates the impact of reducing methylmercury in water bodies”); MATS RIA at 4-65. Research has also shown that when the confounding neurological benefits of the omega-3 fatty acids found in seafood are considered, the dose-response relationship between IQ and methylmercury exposure is steeper than EPA assumes—i.e., more significant adverse effects occur at the same dosage level.⁷² Additionally, the Proposal's quantification of cardiovascular benefits focuses only on the risk of fatal heart attacks without considering risks from other cardiovascular fatalities, as well as from non-fatal heart attacks and other cardiovascular disease, which studies have shown are substantial.⁷³

Further, the mercury-health-harms assessments in the MATS RIA and the Proposal are limited to adverse effects caused by methylmercury originating from power plants alone and thus do not address the cumulative nature of methylmercury exposure to individuals who face numerous sources of exposure. Because environmental mercury contamination is so widespread, see *supra* Section I.A.2, highly exposed individuals, like those consuming larger proportions of self-caught or commercial fish, are likely to have high blood methylmercury levels based on contamination from many sources, not just power plants. Thus, as EPA acknowledges, an additional benefit of power plant mercury emission reductions that it has not quantified is the health benefits to individuals for whom power plant emissions alone do not cause exceedances of EPA's methylmercury reference dose (RfD), but who nonetheless exceed the RfD due in part to power plant mercury emissions. See 2021 TSD at 18.

⁷⁰ Sunderland et al., *Benefits of Regulating Hazardous Air Pollutants from Coal and Oil-Fired Utilities in the United States*, 50 Env't Sci. Tech. 2117, 2118–19 (2018), <https://pubs.acs.org/doi/pdf/10.1021/acs.est.6b00239>; Yanxu Zhang et al., *Observed decrease in atmospheric mercury explained by global decline in anthropogenic emissions*, 113(3) Proceedings of the Nat'l Acad. Sci. 526, 527-28 (2016), <https://www.pnas.org/doi/10.1073/pnas.1516312113>.

⁷¹ See e.g., Sara T.C. Orenstein et al., *Prenatal Organochlorine and Methylmercury Exposure and Memory and Learning in School-Age Children in Communities Near the New Bedford Harbor Superfund Site, Massachusetts*, 122(11) Env't Health Persp. 1253, 1256, 1257–58 (2014), <https://ehp.niehs.nih.gov/doi/10.1289/ehp.1307804>.

⁷² See Sunderland et al. (2021), *supra* note 11, at 22; Anna L. Choi et al., *Negative Confounding in the Evaluation of Toxicity: The Case of Methylmercury in Fish and Seafood*, 38(10) Crit. Rev. in Toxicology 877-93 (2008), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2597522/pdf/nihms61457.pdf>.

⁷³ See Sunderland et al. (2022), *supra* note 43, at 10–12 (considering a broader range of cardiovascular mortalities in addition to fatal heart attacks); Giang et al., *supra* note 43, at 288 (monetizing life-time benefits and economy-wide benefits from avoided non-fatal heart attacks, as well as fatal heart attacks and IQ deficits, due to MATS mercury controls); see also Xue Fang Hu et al., *Mercury Exposure, Cardiovascular Disease, and Mortality: A Systematic Review and Dose-Response Meta-Analysis*, 193 Env't Rsch. 110538: 4–8 (2021), <https://doi.org/10.1016/j.envres.2020.110538>.

Declining to consider power plant contributions to cumulative mercury exposure also discounts the greater benefits that the MATS Rule is providing to disproportionately affected, highly exposed populations that include Tribal and immigrant communities, communities experiencing poverty, and communities of color. *See supra* Section I.A.1. For example, in northern Minnesota, Tribal communities, who depend heavily on self-caught fish as a healthy source of protein and for cultural and spiritual well-being, face mercury exposure not just from upwind coal-fired power plant emissions but also from the taconite iron ore processing industry,⁷⁴ which contributes approximately half of Minnesota’s in-state mercury inventory.⁷⁵ Significantly, waterbodies within such Tribal areas are highly contaminated by methylmercury⁷⁶ and ten percent of infants born in Minnesota’s Lake Superior Basin—an area containing environmental justice communities—have blood mercury levels exceeding EPA’s RfD.⁷⁷

⁷⁴ Comments of the Leech Lake Band of Ojibwe (“Leech Lake Band Comments”), Doc. ID No. EPA-HQ-OAR-2017-0664-0155, at 3–4 (Nov. 12, 2019); Comments of the Fond du Lac Band of Lake Superior Chippewa (“Fond du Lac Band Comments”), Doc. ID No. EPA-HQ-OAR-2017-0664-0156, at 4 (Nov. 12, 2019); Comments of the 1854 Treaty Authority (“1854 Treaty Authority Comments”), Doc. ID. No. EPA-HQ-OAR-2017-0664-0147, at 3–4 (Nov. 12, 2019).

⁷⁵ Minn. Pollution Control Agency, Statewide Mercury TMDL Emissions Inventory 8 (2021), <https://www.pca.state.mn.us/sites/default/files/wq-iw4-02i8.pdf>. The taconite iron ore processing industry is not currently regulated for mercury under section 112. 85 Fed. Reg. 45,476, 45,485 (July 28, 2020) (declining to regulate mercury emissions as part of section 112(d)(6) review because no mercury emission standard was imposed in 2003 taconite iron ore processing NESHAP).

⁷⁵ Minnesota Pollution Control Agency, *Statewide Mercury TMDL Emissions Inventory* 8 (2021), <https://www.pca.state.mn.us/sites/default/files/wq-iw4-02i8.pdf> (specifying draft 2019 mercury emissions of 676.3 pounds for “Ferrous Mining/Processing,” out of 1395 pounds for all state sources). The taconite iron ore processing industry is not currently regulated for mercury under section 112. 85 Fed. Reg. 45,476, 45,485 (Sep. 15, 2019) (declining to regulate mercury emissions as part of section 112(d)(6) review because no mercury emission standard was imposed in 2003 taconite iron ore processing NESHAP).

⁷⁶ *See* Leech Lake Band Comments, *supra* note 74, at 5; Fond du Lac Band Comments, *supra* note 74, at 5, 9–10 (describing how ditched areas and wetlands increase rate of methylation in a reservation watershed). Due to that mercury contamination, several Northern Minnesota Tribes have issued fish consumption advisories for waters within their lands, including the Leech Lake Band of Ojibwe which conducts regular mercury sampling of fish, water, and other media within its lands. Leech Lake Band Comments, *supra* note 74, at 5.

⁷⁷ Minn. Pollution Control Agency, *Environmental Justice: Overview of Areas of Concern*, <https://mpca.maps.arcgis.com/apps/MapSeries/index.html?appid=f5bf57c8dac24404b7f8ef1717f57d00> (map of environmental justice areas in Minnesota); Minn. Dep’t of Health, *Mercury in Newborns in the Lake Superior Basin*, <https://www.health.state.mn.us/communities/environment/fish/techinfo/newbornhglsp.html>, (noting that ten percent of tested infants born to mothers residing in Minnesota’s Lake Superior Basin exceeded the RfD); *see also* Patricia McCann, Minn. Dep’t of Health, *Mercury Levels in Blood from Newborns in the Lake Superior Basin* 10, 16 tbl.2 (2011), <https://www.health.state.mn.us/communities/environment/fish/docs/glnpo.pdf>.

Similarly, Hmong women in the Minneapolis-Saint Paul area are exposed to mercury both through consumption of contaminated fish and the use of mercury-containing skin-lightening products.⁷⁸ Reducing the incremental contribution of power plant mercury emissions to the cumulative mercury loads of such communities thus provides a real and important health benefit that EPA has yet to quantify.

Additionally, EPA's focus on quantifying the direct human-health benefits of mercury emission reductions is also a conservative measure of the advantages of regulation because it does not incorporate the wide range of human welfare⁷⁹ and ecological benefits such regulation provides. Of significant concern to the States and Local Governments are the benefits of reduced mercury contamination to recreational and commercial fisheries, *see* MATS RIA at 5-7 tbl.5-3, from which states derive substantial economic benefit. Studies show that mercury fish consumption advisories create enormous costs to those industries, including by reducing the number of fishing days and locations. *See* IEc Report at 3-4.⁸⁰ Such advisories also decrease consumer demand even in non-sensitive populations not targeted by the advisory. *Id.* at 3. In the twelve Northeast and Midwest states considered in the IEc Report, changes in recreator and consumer behavior in response to reduced mercury contamination "are likely to result in substantial benefits to the economies and residents of these states and the Nation as a whole." *Id.* at 4. Such benefits include economic welfare benefits as well as regional and national economic activity in the form of jobs and expenditures. *Id.* at 17-18. And they can be huge; for example, a ten percent per year reduction in recreational anglers' equipment- and trip-related expenditures across the twelve states could cause a negative economic impact on the order of \$1.5 billion annually. *Id.* at 23. Moreover, the value of reduced mercury levels in fish and shellfish also can be monetized through well-known quantification methods that are used by federal and state agencies bringing natural resource damages claims when acting as trustees for natural resources. *Id.* at 24.

The same natural resource damages quantification methods are, of course, also available to assess the numerous ecological benefits of reduced mercury emissions, including reduced mortality and other harms to wildlife and avoided degradation of habitats and loss of ecological services.⁸¹ *See also*, e.g., 87 Fed. Reg. at 7640; 81 Fed. Reg. at 24,423; 65 Fed. Reg. at 79,830.

⁷⁸ Minn. Family Env't Exposure Tracking, MN FEET Study Report 3-5 (2019), <https://www.health.state.mn.us/communities/environment/biomonitoring/docs/mnfeetcommreporten.pdf>.

⁷⁹ The substantial improvements in public health associated with decreased pollution reduce costs from lost school and work days, emergency room visits, and other health care-related costs. *N. Carolina ex rel. Cooper v. Tennessee Valley Auth.*, 593 F. Supp. 2d 812, 823 (W.D.N.C. 2009), *rev'd on other grounds*, 615 F.3d 291 (4th Cir. 2010); MATS RIA at 5-37 to 5-38, tbl.5-7; *see generally* Philip J. Landrigan et al., *The Lancet Commission on Pollution and Health*, 391 *Lancet* 462, 482-87 (2018), [https://doi.org/10.1016/S0140-6736\(17\)32345-0](https://doi.org/10.1016/S0140-6736(17)32345-0) (discussing the substantial welfare costs of pollution).

⁸⁰ For instance, research found that the decline in economic value for recreational fishing trips due to the presence of a fish consumption advisory at one New York fishing location was \$34.34 per fishing day at that site alone. IEc Report at 15, exh.4. Other research found that New York State property values within one mile of a lake subject to a mercury-related fish consumption advisory decrease by an average of six to seven percent. *Id.* at 23-24.

⁸¹ *See* NESCAUM, *supra* note 31, at 15-16.

There is reason to believe such quantification approaches would show substantial monetizable benefits from power plant mercury reductions. In Virginia, for example, federal and state trustees obtained a settlement valued at \$50 million for natural resource damages caused by mercury releases from an industrial facility that contaminated one hundred miles of river and floodplain.⁸² The Massachusetts and federal trustees have similarly obtained nearly \$10 million dollars as compensation for natural resource damages caused to aquatic habitats and wildlife by two different industrial mercury releases to rivers.⁸³ Given that nearly half the Nation's waterways are contaminated enough to be subject to mercury fish consumption advisories,⁸⁴ even if power plant emissions contribute only a fraction of that mercury contamination, the cumulative amount of monetizable natural resource damages is likely immense.

In sum, EPA's updated estimates of the monetized human health benefits from reduced mercury emissions under the MATS Rule represent a significant, but very conservative, estimate of the full public health and environmental advantages of reducing power plant HAP emissions.

⁸² Consent Decree, *United States v. E.I. du Pont*, No. 5:16-00082, 8, 10–12 (W.D. Va. Dec. 15, 2016), https://www.justice.gov/sites/default/files/enrd/pages/attachments/2016/12/15/env_enforcement-2631152-v1-lodged_consent_decree.pdf (obligating DuPont to pay \$42 million for natural resource restoration projects and, separately, to fund renovation of a fish hatchery); Laura Vozzella, *DuPont agrees to \$50 million deal to clean up mercury pollution from Va. plant*, Washington Post (Dec. 15, 2016), https://www.washingtonpost.com/local/virginia-politics/dupont-agrees-to-50-million-deal-to-clean-up-mercury-pollution-from-va-plant/2016/12/15/6bfd7a8c-c2e9-11e6-8422-eac61c0ef74d_story.html (fish hatchery renovation estimated to cost up to \$10 million).

⁸³ These releases occurred from a former munitions manufacturing, testing, and disposal site (the Fireworks Superfund Site) in Hanover, MA, to the Drinkwater, Indian Head, and North Rivers (\$6.8 million) and from the Nyanza Chemical Waste Dump Superfund Site in Ashland, MA, to the Sudbury River (\$3 million). See Env't Prot. Agency, *Case Summary: Settlement Agreement in Anadarko Fraud Case Results in Billions for Environmental Cleanups Across the Country*, <https://www.epa.gov/enforcement/case-summary-settlement-agreement-anadarko-fraud-case-results-billions-environmental#distribution> (\$4.475 billion payment (plus interest) to Anadarko Litigation Trust for environmental beneficiaries); Notice of Lodging of Proposed Consent Decree and Proposed Environmental Settlement, *In re Tronox, Inc.*, No. 09-10156, exh.1 (Consent Decree and Environmental Settlement), at 160, 176 (Bankr. S.D.N.Y. Nov. 23, 2010), <https://www.epa.gov/sites/default/files/2013-08/documents/tronox-sa.pdf> (Fireworks Superfund Site to receive \$94,797 plus 0.15% of Anadarko Litigation Trust for natural resource damages); Consent Decree, *United States v. PQ Corp.*, No. 98:10760, 16 (D. Mass. Jun. 22, 1998), <https://www.mass.gov/doc/nyanza-nrd-settlement-consent-decree/download>; see also Mass. Dep't Env't Prot., *Public Information Material for Upcoming NRD Funding Opportunity at Former National Fireworks Site*, <https://www.mass.gov/doc/public-information-material-for-upcoming-nrd-funding-opportunity-at-former-national-fireworks/download>; Stratus Consulting, Inc., *Restoration Plan and Environmental Assessment for the Nyanza Chemical Waste Dump Superfund Site* at 3–6 (Aug. 6, 2012), <https://www.mass.gov/doc/nyanza-nrd-final-restoration-plan/download>.

⁸⁴ Gagnon et al., *supra* note 29, at 3.

IV. EPA’s Alternative Benefit-Cost Analysis Approach is Also Permissible and Supports the Proposed Reaffirmed Finding.

EPA’s totality of the circumstances approach best effectuates Congress’ intent in section 112(n)(1)(A). Nonetheless, EPA’s alternative benefit-cost-analysis approach is also reasonable and permissible under the statute so long as EPA considers—as it does here—*all* of the factors that Congress deemed essential to the 112(n)(1)(A) determination, even if those factors are difficult to quantify and monetize. *See City of Arlington v. FCC*, 569 U.S. 290, 296 (2013) (agency interpretation must be a “permissible construction of the statute”); *cf. Southern Electric Power Co. v. EPA*, 920 F.3d 999, 1026 (5th Cir. 2019) (rejecting EPA’s “benefit-weighting approach” when it failed to account for factors that Congress expressly made relevant and was “incompatible . . . with the broader statutory scheme”).

Unlike the benefit-cost analysis that EPA employed in 2020, *see* 87 Fed. Reg. at 7660, EPA’s current approach to employing an economic efficiency analysis as part of its section 112(n)(1)(A) determination complies with OMB guidance and comports with the statute by accounting for all of the essential factors. First, the agency accounts for certain preexisting data gaps by developing conservative estimates for certain benefits that have been more challenging to monetize. *See Southwestern Elec. Power Co.*, 920 F.3d at 1031 (declining to accept “lack of data” as a “valid excuse” for failing to regulate). In so doing, EPA recognizes that evidence developed since 2016 further demonstrates the significance of the benefits associated with regulation of hazardous air pollution from power plants. *See* 87 Fed. Reg. at 7671. Second, EPA’s proposed alternative benefit-cost analysis approach comports with longstanding OMB guidance and the statute’s aims by considering the full scope of monetizable benefits, including co-benefits. *See id.* at 7670. Finally, EPA’s proposed alternative benefit-cost analysis approach is faithful to the statute because it accounts for factors that are difficult or impossible to quantify but are essential to the statutorily mandated determination, including the distributive impacts of hazardous air pollution and the risks to highly exposed and vulnerable individuals. *See id.* at 7669–70.

Despite the permissibility of this approach, however, the States and Local Governments, like EPA, continue to prefer the totality of the circumstances approach, which provides a more suitable methodology for giving sufficient weight to all of the factors Congress has identified explicitly and implicitly in section 112. For example, we share EPA’s concern that the benefit-cost approach, even while qualitatively considering distributional risks and the importance of protecting vulnerable populations, is not the best tool to “grapple with the equitable question of whether a subset of Americans should continue to bear disproportionate health risks in order to avoid the increased cost of controlling HAP from EGUs.” *Id.* at 7669.

V. The States and Local Governments Support Strengthening MATS Following a Revised Residual Risk and Technology Review.

To assist in its review of the 2020 Residual Risk and Technology Review (RTR), EPA also seeks input on several issues, including how to factor in the reductions in mercury and other hazardous air pollutants produced by the Rule, as well as information regarding the risks posed by current power plant emissions and post-2012 advances, including performance and cost changes, in the practices, processes, and control technologies used to control those emissions. 87 Fed. Reg. at 7672. The States and Local Governments support EPA’s review. We urge EPA to initiate a separate rulemaking to reconsider the 2020 RTR and strengthen MATS because we are

continuing to experience residual risks from power plant HAP emissions despite implementation of those standards and because the industry's actual experience in complying with the standards shows that lower emissions can be achieved at reasonable cost with available technology.

As EPA notes, power plant emissions continue to be the largest domestic source of mercury, 87 Fed. Reg. at 7672, and because many of the largest emitters are concentrated geographically, the risks posed by those residual emissions are significant. For example, the Midwest states of North Dakota and Missouri, upwind of certain members of our coalition, rank second and third in the Nation for power plant mercury emissions, emitting 829 and 345 pounds of mercury, respectively, in 2020.⁸⁵ Emissions from those plants and others in the region adversely affect downwind states by contributing to the cumulative mercury exposures faced by residents and natural resources in those states. Illinois, for instance, is downwind of numerous coal-fired plants in the region and borders Missouri, where several coal-fired units are situated just across the state-line.⁸⁶ Such continued out-of-state mercury emissions are of particular concern for communities overburdened by mercury exposure, such as Tribal communities in Minnesota, who are high consumers of self-caught-fish, and other Minnesota communities with environmental justice concerns, who are exposed to mercury emissions not only from neighboring North Dakota, but also from the in-state taconite iron ore processing industry. *See supra* Section III.B.3.

We strongly encourage EPA during its 2020 RTR review to include a robust evaluation of these kinds of cumulative exposure harms that current power plant HAP emissions exacerbate. That analysis is necessary to fully account for the risks those emissions pose to communities already facing disproportionate exposure to such pollutants. Further, in addition to such cumulative exposure harms, the myriad ways in which EPA's past and current assessments have underestimated the mercury risks posed by power plant emissions are relevant to its residual risk assessment under section 112(f)(2). *See supra* Section III.B.3.

⁸⁵ *See* Env't Prot. Agency, *Progress Report: Emissions Reductions: MATS State-by-State* (2020), https://www3.epa.gov/airmarkets/progress/reports/emissions_reductions_mats.html#figure2 (individual state power plant mercury emissions for 2020 available by selecting 2020 version of map and clicking on individual states in map); *see also* Adam Willis, *US coal plants slashed their mercury pollution. North Dakota accounts for a big share of what remains*, InForum, Mar. 4, 2022, https://www.inforum.com/news/north-dakota/us-coal-plants-slashed-their-mercury-pollution-north-dakota-accounts-for-a-big-share-of-what-remains?utm_source=ourcommunitynow&utm_medium=web.

⁸⁶ *See* Env't Prot. Agency, *supra* note 85; William Skipworth, *Labadie plant to stay open as Ameren moves to close Rush Island plant sooner than originally planned*, eMissourian.com (Dec. 26, 2021), https://www.emissourian.com/local_news/labadie-plant-to-stay-open-as-ameren-moves-to-close-rush-island-plant-sooner-than/article_66f7d5fe-6669-11ec-8bc0-3f4e19d96fd1.html?utm_medium=social&utm_source=email&utm_campaign=user-share (Labadie Energy Center, situated on the Missouri River, will continue operating until 2042); *see also* Kavahn Monsouri, *Midwest Coal-Fired Power Plants are Among the Country's Worst Polluters, but They Don't Break EPA Rules*, Nebraska Public Media, (Jan. 11, 2022), <https://nebraskapublicmedia.org/de/news/news-articles/midwest-coal-fired-power-plants-are-among-the-countrys-worst-polluters-but-they-dont-break-epa-rules/>.

With regard to EPA’s section 112(d)(6) consideration of “developments in practices, processes, and control technologies,” the States and Local Governments note, as EPA recognizes, 87 Fed. Reg. at 7634, 7651, 7655, that annual compliance costs for the industry have been significantly lower than EPA estimated in 2011, due in part to improvements and cost reductions in pollution controls, including the activated carbon technology used to control mercury.⁸⁷ Moreover, many of the undersigned States have for years been controlling mercury emissions under state law at reasonable cost and often under stricter standards than the MATS Rule.⁸⁸ *See supra* Section I.A.2. Thus, it is not surprising that nearly all power plant units reported 2020 emissions below the Rule’s mercury standards—and many significantly below those standards.⁸⁹ These facts strongly indicate that it is “necessary” for EPA to strengthen those standards as part of its review. *See* 42 U.S.C. § 7412(d)(6).

Respectfully submitted,

FOR THE COMMONWEALTH OF
MASSACHUSETTS

MAURA HEALEY
ATTORNEY GENERAL
DAVID S. FRANKEL
Special Assistant Attorney General
TRACY L. TRIPLETT
JULIA JONAS-DAY
Assistant Attorneys General
ALEKSANDRA GEORGE RUIZ
Special Assistant Attorney General for
Environmental Justice
Energy and Environment Bureau
One Ashburton Place, 18th Floor
Boston, MA 02108
(617) 963-2674

⁸⁷ *See* NESCAUM *supra* note 31, at 11.

⁸⁸ *See id.* at 10; Comments of the National Association of Clean Air Agencies on EPA’s Proposed Supplemental Finding, Doc. ID No. EPA-HQ-OAR-2009-0234-17620, at 7 (Aug. 4, 2011) (“To our knowledge, no source has failed to comply with state deadlines for achieving [mercury] limitations, and no significant adverse impacts on electric system reliability were encountered as units were upgraded to meet state requirements.”); *id.* at 6 (“Years, and in some cases decades, of experience demonstrates that [the technologies available to reduce power plant hazardous air pollutant emissions] can reliably deliver the expected performance at reasonable cost.”).

⁸⁹ *See* Nat. Res. Def. Council, *MATS Data Analysis* 7–10 (Aug. 2021), <https://www.nrdc.org/sites/default/files/mats-data-analysis-202108.pdf>.

FOR THE STATE OF CALIFORNIA

XAVIER BECERRA
ATTORNEY GENERAL
DAVID A. ZONANA
MYUNG J. PARK
Supervising Deputy Attorneys General
ERIN GANAHAL
JONATHAN WEINER
MICAELA M. HARMS
Deputy Attorneys General
Office of the Attorney General
1515 Clay Street, 20th Floor
Oakland, CA 94612
(510) 879-1300

*Attorneys for the State of California, by and
through Attorney General Rob Bonta and the
California Air Resources Board*

FOR THE STATE OF DELAWARE

KATHLEEN JENNINGS
ATTORNEY GENERAL
VALERIE S. EDGE
Deputy Attorney General
Delaware Department of Justice
102 West Water Street, 3rd Floor
Dover, DE 19904
(302) 739-4636

FOR THE STATE OF IOWA

THOMAS J. MILLER
ATTORNEY GENERAL
JACOB J. LARSON
Assistant Attorney General
Environmental Law Division
Hoover State Office Building
1305 E. Walnut Street
Des Moines, IA 50319
(515) 281-5341

FOR THE STATE OF CONNECTICUT

WILLIAM TONG
ATTORNEY GENERAL
MATTHEW I. LEVINE
Deputy Associate Attorney General
SCOTT N. KOSCHWITZ
Assistant Attorney General
Connecticut Office of the Attorney General
165 Capitol Avenue
Hartford, Connecticut 06106
(860) 808-5250

FOR THE STATE OF ILLINOIS

KWAME RAOUL
ATTORNEY GENERAL
MATTHEW J. DUNN
Chief, Environmental Enf./
Asbestos Litig. Div.
GERALD T. KARR
JASON E. JAMES
Assistant Attorneys General
69 W. Washington St., 18th Floor
Chicago, IL 60602
(312) 814-0660

FOR THE STATE OF MAINE

AARON M. FREY
ATTORNEY GENERAL
LAURA JENSEN
Assistant Attorneys General
Maine Office of the Attorney General
6 State House Station
Augusta, ME 04333
(207) 626-8800

FOR THE STATE OF MARYLAND

BRIAN E. FROSH
ATTORNEY GENERAL
MICHAEL F. STRANDE
Assistant Attorney General
Office of the Attorney General
Deputy Counsel
Maryland Department of the Environment
1800 Washington Blvd., Suite 6048
Baltimore, MD 21230
(410) 537-3421

JOSHUA M. SEGAL
Special Assistant Attorney General
Office of the Attorney General
200 St. Paul Place
Baltimore, MD 21202
(410) 576-6446

FOR THE STATE OF NEW JERSEY

MATTHEW J. PLATKIN
ACTING ATTORNEY GENERAL

LISA MORELLI
Deputy Attorney General
R.J. Hughes Justice Complex
25 Market Street
Trenton, NJ 08625
(609) 376-2745

FOR THE STATE OF NEW YORK

LETITIA JAMES
ATTORNEY GENERAL
MICHAEL J. MYERS
ANDREW FRANK
Assistant Attorneys General
JEREMY MAGLIARO
Policy Analyst
New York State Attorney General's Office
28 Liberty Street
New York, NY 10005
(212) 416-8271

FOR THE STATE OF MINNESOTA

KEITH ELLISON
ATTORNEY GENERAL
PETER SURDO
Assistant Attorney General
445 Minnesota Street, Suite 900
St. Paul, MN 55101-2127
(651) 757-1244

FOR THE STATE OF NEW MEXICO

HECTOR BALDERAS
ATTORNEY GENERAL
WILLIAM GRANTHAM
Assistant Attorney General
Environmental Protection Division
P.O. Box 1508
Santa Fe, NM 87504
(505) 717-3520

FOR THE STATE OF NORTH CAROLINA

JOSHUA H. STEIN
ATTORNEY GENERAL
FRANCISCO BENZONI
AMY BIRCHER
Special Deputy Attorneys General
North Carolina Department of Justice
114 W Edenton Street
Raleigh, NC 27603
(919) 716-6400

FOR THE STATE OF OREGON

ELLEN F. ROSENBLUM
ATTORNEY GENERAL
PAUL A. GARRAHAN
Attorney-in-Charge
STEVE NOVICK
Special Assistant Attorney General
Natural Resources Section
Oregon Department of Justice
1162 Court Street NE
Salem, OR 97301
(503) 947-4590

FOR THE STATE OF RHODE ISLAND

PETER F. NERONHA
ATTORNEY GENERAL
RANDELLE L. BOOTS
Special Assistant Attorney General
Rhode Island Department of Attorney General
150 South Main Street
Providence, RI 02903
(401) 274-4400

FOR THE STATE OF WASHINGTON

ROBERT W. FERGUSON
ATTORNEY GENERAL
CAROLINE E. CRESS
Assistant Attorney General
Washington State Attorney General's Office
P.O. Box 40117
Olympia, WA 98504
(360) 586-4613

FOR THE COMMONWEALTH OF
PENNSYLVANIA

JOSH SHAPIRO
ATTORNEY GENERAL OF
PENNSYLVANIA
MICHAEL J. FISCHER
Executive Deputy Attorney General
ANN JOHNSTON
Senior Deputy Attorney General
Office of Attorney General
Strawberry Square, 14th Floor
Harrisburg, Pennsylvania 17120
(717) 705-6938

FOR THE STATE OF VERMONT

THOMAS J. DONOVAN, JR.
ATTORNEY GENERAL
NICHOLAS F. PERSAMPIERI
Assistant Attorney General
Vermont Attorney General's Office
109 State Street
Montpelier, VT 05609
(802) 828-3186

FOR THE STATE OF WISCONSIN

JOSHUA L. KAUL
ATTORNEY GENERAL
GABE JOHNSON-KARP
Assistant Attorney General
Wisconsin Department of Justice
Post Office Box 7857
Madison, WI 53702-7857
(608) 267-8904

FOR THE DISTRICT OF COLUMBIA

KARL A. RACINE
ATTORNEY GENERAL
KATHLEEN A. KONOPKA
Deputy Attorney General,
Public Advocacy Division
DAVID S. HOFFMAN
Senior Assistant Attorney General
Office of the Attorney General
400 Sixth Street N.W.
Washington, D.C. 20001
(202) 442-9889

FOR THE CITY OF CHICAGO

CELIA MEZA
CORPORATION COUNSEL
MYRIAM ZRECHNY KASPER
Deputy Corporation Counsel
2 N. LaSalle Street, Suite 580
Chicago, Illinois 60602
312-744-7764

FOR THE CITY OF BALTIMORE

JAMES SHEA
CITY SOLICITOR
City of Baltimore
100 N. Holliday Street, Suite 101
Baltimore, MD 21202
(410) 396-8393

*Attorney for the Mayor and City Council of
Baltimore, Maryland*

FOR THE CITY OF NEW YORK

HON. SYLVIA O. HINDS-RADIX
CORPORATION COUNSEL
DEVON GOODRICH
AMY CASSIDY
Assistant Corporation Counsels
New York City Law Department
100 Church Street
New York, NY 10007
(212) 356-2316