ORAL ARGUMENT NOT YET SCHEDULED

No. 12-1100 and consolidated cases

UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

WHITE STALLION ENERGY CENTER, LLC, *et al*.,
Petitioners,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,
Respondent.

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

COMBINED BRIEF OF (I) INSTITUTE FOR POLICY INTEGRITY, (II) AMERICAN THORACIC SOCIETY, AMERICAN COLLEGE OF PREVENTIVE MEDICINE, AMERICAN COLLEGE OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE, NATIONAL ASSOCIATION FOR THE MEDICAL DIRECTION OF RESPIRATORY CARE, AND AMERICAN COLLEGE OF CHEST PHYSICIANS, AND (III) ENVIRONMENTAL LAW PROFESSORS WILLIAM W. BUZBEE, JODY FREEMAN, OLIVER A. HOUCK, RICHARD J. LAZARUS, ROBERT V. PERCIVAL, AND ZYGMUNT J.B. PLATER AS *AMICI CURIAE* IN SUPPORT OF RESPONDENT

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CERTIFICATE OF COUNSEL AS TO PARTIES, RULINGS, AND RELATED CASES

Pursuant to D.C. Circuit Rule 28(a)(1) and Federal Rule of Appellate Procedure 26.1, counsel for *Amici Curiae* the Institute for Policy Integrity at New York University School of Law (Policy Integrity), the American Thoracic Society, the American College of Preventive Medicine, the American College of Occupational and Environmental Medicine, the National Association for the Medical Direction of Respiratory Care, the American College of Chest Physicians, William Buzbee, Jody Freeman, Oliver Houck, Richard Lazarus, Robert Percival, and Zygmunt Plater certify as follows:

A. Parties and *Amici*. Except for the proposed Amici listed below, all parties, intervenors, and amici appearing in this Court are listed or referenced in the Brief for Respondent United States Environmental Protection Agency ("EPA") (filed January 22, 2013). EPA's brief references and supplements the list provided in the Joint Opening Brief of State, Industry and Labor Petitioners (filed October 23, 2012). The proposed amici are:

American Thoracic Society,

American College of Preventive Medicine,

American College of Occupational and Environmental Medicine,

National Association for the Medical Direction of Respiratory Care,

American College of Chest Physicians,

William W. Buzbee,

Jody Freeman,

Oliver A. Houck,

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Zygmunt J.B. Plater.

B. Rulings Under Review. This case addresses petitions for review of EPA's Final Rule, "National Emission Standards for Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units," 77 Fed. Reg. 9304 (Feb. 16, 2012).

C. Related Cases. *Amici* adopt the statement of related cases set forth in the Brief for Respondent.

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TABLE OF CONTENTS

CERTIFICATE OF COUNSEL
AS TO PARTIES, RULINGS, AND RELATED CASES i

TABLE OF CONTENTS iv

TABLE OF AUTHORITIES vi

GLOSSARY xiv

CORPORATE DISCLOSURE STATEMENT xv

STATUTES AND REGULATIONS 1

SUMMARY OF ARGUMENT AND STATEMENT OF COUNSEL AS TO IDENTITY OF AMICI CURIAE, INTERESTS IN THE CASE, AND SOURCE OF AUTHORITY TO FILE 1

ARGUMENT 3

I. EPA PROPERLY ASSESSED THE MATS RULE'S SUBSTANTIAL INDIRECT AND UNQUANTIFIABLE BENEFITS IN ITS REGULATORY IMPACT ANALYSIS. 3

A. Federal Law and Best Practices Support Including Indirect Benefits in Regulatory Impact Analyses 3

1. Accepted Methodologies and Prior Agency Practices Support Including Indirect Benefits 4

2. Case Law Supports Equal Treatment of Indirect Effects 7

B. EPA Properly Assessed Benefits from Particulate Matter Reductions beyond the National Ambient Air Quality Standards 9

C. EPA Properly Assessed Unquantifiable Benefits. 10

II. COAL- AND OIL-FIRED POWER PLANT EMISSIONS INCREASE RISKS OF DEATH AND DISEASE 13

A. Acid Gases from Power Plants Damage Human Health. 14

B. Mercury from Power Plants Harms Human Health. 16

C. Other Metals from Power Plants Harm Human Health. 19

D. Particulate Matter from Power Plants Injures People. 20

III. EPA CORRECTLY INTERPRETED SUBPARAGRAPH 112(n)(1)(A)....22

A. Congress Amended Section 112 in 1990 Because of the Failure of Regulation Under the Previous Version of that Section, and Ordered Further Study of EGUs.....23

B. The Language and Structure of Section 112 Support EPA's Interpretation 26

CONCLUSION.....31

CERTIFICATE OF COMPLIANCE WITH RULE 32(a)(7).....33

CERTIFICATE OF SERVICE 34

TABLE OF AUTHORITIES

Page(s)

CASES

Am. Dental Ass'n v. Martin,
984 F.2d 823 (7th Cir. 1993) 8

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559 F.3d 512 (D.C. Cir. 2009) 20

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467 U.S. 837 (1984) 31

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956 F.2d 321 (D.C. Cir. 1992) 7

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51 F.3d 1053 (D.C. Cir. 1995) 29

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233 F.3d 625 (D.C. Cir. 2000) 28

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517 F.3d 574 (D.C. Cir. 2008) 27, 29

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531 U.S. 457 (2001) 7, 9

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42 U.S.C. § 7409(b)(1).....9

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42 U.S.C. § 7412(d) 29

42 U.S.C. § 7412(d)(1).....24

42 U.S.C. § 7412(d)(2).....24

42 U.S.C. § 7412(e) 24

42 U.S.C. § 7412(f).....24

42 U.S.C. § 7412(n) 25

42 U.S.C. § 7412(n)(1)(A)..... 2, 22, 23, 25, 26, 27, 28, 29, 30

42 U.S.C. § 7412(q)(3).....29

42 U.S.C. §§ 7651-7651*o* 25

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GLOSSARY

COPD	Chronic Obstructive Pulmonary Disease
EPA	Environmental Protection Agency
EGU	Electric Utility Steam Generating Unit
FCC	Federal Communications Commission
MACT	Maximum Achievable Control Technology
MATS	Mercury and Air Toxics Standards
$\mu g/m^3$	Micrograms per cubic meter
NAAQS	National Ambient Air Quality Standards
NO_x	Nitrogen Oxides
NO_2	Nitrogen Dioxide
NRDC	Natural Resources Defense Council
PM	Particulate Matter
$PM_{2.5}$	Fine PM: PM less than or equal to 2.5 microns in diameter
RIA	Regulatory Impact Analysis
SO_2	Sulfur Dioxide

CORPORATE DISCLOSURE STATEMENT

Pursuant to D.C. Circuit Rule 26.1 and Federal Rule of Appellate Procedure 26.1, *amici curiae* state the following:

The Institute for Policy Integrity ("Policy Integrity") is a not-for-profit organization at New York University School of Law. Policy Integrity is dedicated to improving the quality of government decisionmaking through advocacy and scholarship in the fields of administrative law, economics, and public policy. No publicly-held entity owns an interest of more than ten percent in Policy Integrity. Policy Integrity does not have any members who have issued shares or debt securities to the public. Policy Integrity prepared Part I of this brief, but no part of this brief purports to present New York University School of Law's institutional views, if any.

The American Thoracic Society, American College of Preventive Medicine, American College of Occupational and Environmental Medicine, National Association for the Medical Direction of Respiratory Care, American College of Chest Physicians are all incorporated organizations of medical and health professionals with an interest in avoiding death and disease from, *inter alia*, air pollution. None of these organizations has a parent company and no publicly-held entity owns an interest of more than ten percent in any of them.

Dated: January 29, 2013

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STATUTES AND REGULATIONS

Applicable statutory and regulatory provisions are contained in the Brief for Respondent.

SUMMARY OF ARGUMENT AND STATEMENT OF COUNSEL AS TO IDENTITY OF AMICI CURIAE, INTERESTS IN THE CASE, AND SOURCE OF AUTHORITY TO FILE

Amici represent three distinct perspectives but all reach the same conclusion: whether starting from best principles for accurate economic analysis, sound public health science, or rigorous statutory interpretation, the MATS Rule is an economically efficient rule, grounded in science and justified in law.

First, the Institute for Policy Integrity at New York University School of Law shows that cost-benefit methodology and legal standards for rational decisionmaking support the Rule. The regulation will deliver immense public welfare gains—up to $80 billion in quantified, annual net benefits, alongside other crucial but unquantifiable health and environmental improvements. Federal law and long-accepted economic methodologies support EPA's assessment of all regulatory effects, including indirect and unquantifiable benefits, in its regulatory impact analysis. Policy Integrity's identity and interest in the case are outlined in its September 11, 2012 motion to participate as amicus; Policy Integrity was granted authority to file as amicus by the Court's September 26, 2012 order.

Second, the American Thoracic Society, the American College of Preventive

Medicine, the American College of Occupational and Environmental Medicine, the National Association for the Medical Direction of Respiratory Care, and the American College of Chest Physicians demonstrate that the medical and scientific literature strongly establishes the need to control the emissions at issue in the MATS rule. Emissions from coal- and oil-fired power plants cause avoidable death and disease in exposed populations and their reduction will have measurable public-health benefits.

Third, the Environmental Law Professors show that EPA correctly interpreted Clean Air Act 112(n)(1)(A) to require control of all hazardous air pollutants ("hazardous pollutants") from coal and oil fired power plants following the agency's finding that it is "appropriate and necessary" to regulate such plants as a source category. They file as individuals and not on behalf of the institutions with which they are affiliated. In submitting their part of the brief, they do not thereby join the other arguments.

The American Thoracic Society, et al., and the Environmental Law Professors filed on January 28, 2013, an unopposed motion for leave to file and to share the word limit granted by this Court to *amici* in support of Respondent in this Court's August 24, 2012 Order. Their identities and interests in the case are outlined in that motion.[1]

[1] Counsel for *amici* certify that no counsel for a party authored this brief in whole

ARGUMENT

I. EPA PROPERLY ASSESSED THE MATS RULE'S SUBSTANTIAL INDIRECT AND UNQUANTIFIABLE BENEFITS IN ITS REGULATORY IMPACT ANALYSIS.[2]

The MATS Rule will generate immense public health and welfare gains: up to $80 billion in quantifiable, annual net benefits, plus substantial though not yet monetizable environmental and health improvements. While EPA did not rely on cost-benefit analysis to justify the Rule, 77 Fed. Reg. 9304, 9320, 9323 (Feb. 12, 2012), the Agency acted consistently with federal law and best economic practices by assessing all significant economic impacts—both direct and indirect, quantifiable and unquantifiable—in its regulatory impact analysis, *id.* at 9305–06; EPA, *Regulatory Impact Analysis for the Final Mercury and Air Toxics Standards* (2011) ("MATS RIA").

A. Federal Law and Best Practices Support Including Indirect Benefits in Regulatory Impact Analyses.

Amicus for Petitioner alleges that counting the MATS Rule's substantial indirect benefits from particulate matter and greenhouse gas reductions is "controversial and legally dubious." Chamber Br. 1. To the contrary, including indirect benefits in regulatory impact analyses is required by federal administrative guidelines, recommended by standard economic methodologies and prior agency

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or in part and that no person, other than *amici*, their members, or their counsel, made a monetary contribution to the preparation or submission of this brief.

[2] This Part of the brief is submitted on behalf of the Institute for Policy Integrity.

practices, and consistent with case law.

1. Accepted Methodologies and Prior Agency Practices Support Including Indirect Benefits.

White House instructions, EPA's historical practices, and academic authorities all support the equal treatment of indirect benefits in economic analysis. Although such authorities are not legally binding, they are persuasive guidance regarding cost-benefit methodology.

Under the current Executive Order on regulatory review, the President requires federal agencies to conduct regulatory impact analysis of significant rulemakings. Exec. Order No. 12,866 § 6(3)(C), 58 Fed. Reg. 51,735 (Sept. 30, 1993). The Order broadly defines costs and benefits to encompass all regulatory impacts on the economy, government, health, safety, and environment, and does not differentiate between direct and indirect effects. *Id*. § 1; *see also* Exec. Order No. 13,563 §1(b), 76 Fed. Reg. 3821 (Jan. 18, 2011) (reaffirming Order 12,866).

To clarify the Order's requirements, the President charged the Office of Management and Budget with "standardizing the way benefits and costs of Federal regulatory actions are measured." Office of Mgmt. & Budget, *Circular A-4* 1 (2003). Circular A-4 instructs agencies to "look beyond the direct benefits and direct costs of rulemaking and consider any important ancillary benefits and

countervailing risks."[3] *Id*. at 26. Crucially, it stresses that "[t]he same standards of information and analysis quality that apply to direct benefits and costs should be applied to ancillary benefits and countervailing risks." *Id*.

Those White House guidelines align with academic authorities on best economic practices. The leading cost-benefit textbook explains that to assess a project proposal, like dam construction, analysts must give equal attention to both indirect benefits (like recreation) and indirect costs (like insect infestations). E.J. Mishan & Euston Quah, *Cost Benefit Analysis* 104 (5th ed. 2007). Economists and legal scholars concur that "failure to adequately consider ancillary benefits could lead to an incorrect assessment of the net costs," resulting in biased, inefficient policies. Dallas Burtraw et al., *Ancillary Benefits of Reduced Air Pollution in the U.S. from Moderate Greenhouse Gas Mitigation Policies in the Electricity Sector*, 45 J. Envtl. Econ. & Mgmt. 650, 651 (2003); *see also* Richard L. Revesz & Michael A. Livermore, *Retaking Rationality* 55–65 (2008).

EPA's own cost-benefit handbook, adopted after extensive peer review, likewise prescribes equal treatment of "all identifiable costs and benefits," without distinguishing between direct and indirect effects. Nat'l Ctr. for Envtl. Econ., EPA, *Guidelines for Preparing Economic Analyses* 11-1 (2010). Although

[3] "Ancillary benefits" and "countervailing risks" are alternate terms for indirect benefits and costs. EPA also refers to indirect benefits as "co-benefits" or "collateral benefits." Resp't Br. 90.

Petitioners attempt to characterize the MATS Rule as an unprecedented promotion of indirect benefits, EPA has assessed indirect benefits in its economic analyses since at least 1978, when the Agency noted that pesticide regulations would generate "indirect, longer-term benefits" like lower prices and reduced health risks. EPA, Economic Impact Analysis: Proposed Guidelines for Registering Pesticides in the United States, 43 Fed. Reg. 39,644, 39,654 (Sept. 6, 1978). EPA discussed the indirect benefits of reducing particulate matter by regulating toxic emissions as early as 1987. EPA, Assessment of Municipal Waste Combustor Emissions under the Clean Air Act, 52 Fed. Reg. 25,399 (July 7, 1987). More recently, EPA's Clean Air Interstate Rule, though designed to control particulate matter and ozone, would have also incidentally reduced mercury emissions. 70 Fed. Reg. 25,162, 25,170 (May 12, 2005).[4] John Graham, who directed the Office of Information and Regulatory Affairs when EPA promulgated that rule, lauded those mercury reductions as a "no-cost, ancillary benefit of efforts to reduce smog and soot." John D. Graham, *Lifesaving Regulation* 125 (2007), *available at* www.law.northwestern.edu/searlecenter/papers/Graham_CBApaper.pdf (quoted with author's permission).

In short, when analyzing its MATS Rule, EPA simply followed longstanding

[4] Though this Court remanded the Clean Air Interstate Rule, the indirect benefits played no role in the decision. *North Carolina v. EPA*, 531 F.3d 896 (D.C. Cir. 2008).

professional practices for assessing indirect regulatory effects.

2. Case Law Supports Equal Treatment of Indirect Effects.

This Court and other jurisdictions have found that, in cases where agencies either choose or are required by statute to consider regulatory costs and benefits, important indirect effects deserve equal treatment. Where EPA has voluntarily assessed costs and benefits in a regulatory impact analysis, it must have discretion to include indirect as well as direct effects.

Case law supports giving due consideration to indirect effects. *E.g.*, *Competitive Enterprise Inst. v. NHTSA*, 956 F.2d 321, 327 (D.C. Cir. 1992) (finding the agency "must exercise its discretion; that means conducting a serious analysis of the data and deciding whether the associated fuel savings [direct benefits] are worth the lives lost [indirect costs]"); *Am. Trucking Ass'ns v. EPA*, 175 F.3d 1027, 1051-52 (D.C. Cir. 1999), *rev'd on other grounds sub nom. Whitman v. Am. Trucking Ass'ns, Inc.*, 531 U.S. 457 (2001) (holding that "all identifiable effects" included indirect costs and benefits, and cautioning that "it seems bizarre that a statute [the Clean Air Act] intended to improve human health would . . . lock the agency into looking at only one half of a substance's health effects in determining the maximum level for that substance"); *U.S. Telecom Ass'n v. FCC*, 290 F.3d 415, 425 (D.C. Cir. 2002) (remanding an FCC rule for failure to consider indirect costs); *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201, 1225

(5th Cir. 1991); *Am. Dental Ass'n v. Martin*, 984 F.2d 823, 826 (7th Cir. 1993).

Though those cases concerned indirect costs, positive indirect effects (benefits) and negative indirect effects (costs) "are simply mirror images," Samuel J. Rascoff & Richard L. Revesz, *The Biases of Risk Tradeoff Analysis*, 69 U. Chi. L. Rev. 1763, 1792 (2002). The terms "benefit" and "cost" are merely convenient labels and do not reflect any distinction warranting different analytical treatment: for example, EPA's analysis of its greenhouse gas standards for passenger cars counted consumers' fuel savings "as a negative cost (i.e., positive benefit)." EPA, *Draft Regulatory Impact Analysis: Proposed Rulemaking to Establish Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards* xiv (2009). Courts have affirmed that costs and benefits deserve comparable analysis. *See Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1198 (9th Cir. 2008) (warning agencies not to "put a thumb on the scale by undervaluing the benefits and overvaluing the costs"). In short, there are "no legal, political, or intellectual . . . impediments to treating ancillary benefits and countervailing risks equally in cost-benefit analysis." Christopher C. DeMuth & Douglas H. Ginsburg, *Rationalism in Regulation*, 108 Mich. L. Rev. 877, 888 (2010). Thus, EPA properly included indirect benefits in the MATS Rule's regulatory impact analysis.

B. EPA Properly Assessed Benefits from Particulate Matter Reductions beyond the National Ambient Air Quality Standards.

Besides arguing that EPA unlawfully included indirect benefits in its regulatory impact analysis, amicus for Petitioner raises the related claim that EPA inappropriately accounted for health benefits resulting from particulate matter reductions beyond the level of the NAAQS. Chamber Br. 5. These reductions, however, will generate significant health benefits, and EPA correctly evaluated them. Treating the particulate matter NAAQS as an artificial endpoint for air quality benefits would undermine basic principles of public health science and cost-benefit analysis.

Under the Clean Air Act, EPA must set the NAAQS at a level "requisite to protect the public health." 42 U.S.C. § 7409(b)(1). As Justice Breyer recognized in his *American Trucking* concurrence, this language does not require eliminating all health risks. *Whitman*, 531 U.S. at 494 (Breyer, J., concurring) (characterizing a zero-risk standard as "impossible and undesirable"). At no point has EPA claimed that its NAAQS achieve zero risk, *see* 77 Fed. Reg. at 9431; thus, individuals can still receive health benefits from pollution reductions beyond the NAAQS.

As EPA's regulatory impact analysis for the 2006 particulate matter NAAQS illustrates, significant health benefits will flow from the MATS Rule's reductions in particulate matter below the NAAQS. In its 2006 rulemaking, EPA

considered two alternative NAAQS: 14 or 15 micrograms per cubic meter. EPA, *Regulatory Impact Analysis for the Final National Ambient Air Quality Standards for Particulate Matter* (2006). EPA eventually chose the 15 microgram option, but its cost-benefit analysis showed that the more stringent standard would have prevented an additional 1900 deaths, 3700 heart attacks, 5700 cases of acute bronchitis, 2000 emergency rooms visits by asthmatic children, and 200,000 lost work days. *Id*. at ES-8. These health improvements, among others, would have produced $9–10 billion *more* in monetized net benefits than the standard EPA ultimately chose. *Id*. at ES-7. While EPA concluded these incremental benefits were not "requisite to protect the public health," they are nonetheless real health benefits that cannot be ignored simply because they occur at pollution concentrations below the chosen NAAQS. Consequently, EPA properly accounted for health benefits accruing from the MATS Rule's particulate matter reductions beyond the 2006 NAAQS.

C. EPA Properly Assessed Unquantifiable Benefits.

Petitioners and their amicus also ignore the Rule's significant, unquantifiable benefits. Joint Br. 21, 54, 62; Chamber Br. 13, 15. EPA could only monetize a small subset of direct benefits. Nevertheless, EPA noted "substantial" unquantifiable health and environmental gains, listing 60 distinct categories, MATS RIA at ES-9–13, and describing them qualitatively, *e.g.*, *id.* at 4-1–4-9

(health risks from mercury, including from exposure to commercially-caught fish); *id.* at 4-72–4-79 (health risks from non-mercury metals and acid gases); *id.* at 5-59–5-88 (unquantifiable indirect health and welfare benefits). EPA also explained why data and methodological limitations prevented quantification, *e.g.*, *id.* at 4-1; discussed uncertainty, *e.g.*, *id* at 4-2; and exercised its professional judgment to determine the relative magnitude of the Rule's unquantifiable benefits, *e.g.*, *id.* (concluding mercury benefits were likely underestimated due to data limitations). Scientific evidence for some of the unquantifiable health effects associated with the neurotoxic, carcinogenic, and otherwise hazardous emissions controlled by the MATS Rule is discussed in Part II of this brief.

Federal administrative standards, best economic practices, and rulings from this Court all counsel that unquantifiable does not mean unimportant. Key policy effects are sometimes difficult to monetize, due to "[l]imitations in theory, data, or analytical resources." Anthony Boardman et al., *Cost-Benefit Analysis* 35 (1996). This Court has held, however, that uncertainty or insufficient data does not excuse agencies from qualitatively assessing regulatory effects. *Public Citizen v. FMCSA*, 374 F.3d 1209, 1219 (D.C. Cir. 2004) ("The mere fact that the magnitude of [an effect] is *uncertain* is no justification for *disregarding* the effect entirely."); *Am. Trucking Ass'ns*, 175 F.3d at 1053 ("[EPA] does not rigorously or uniformly demand either quantifiability . . . or any specific level of significance. . . . [W]e

can see no reason for imposing a higher information threshold for beneficent effects than for maleficent ones.").

Standard cost-benefit theory and practice require decisionmakers to describe and evaluate unquantifiable effects. *See* Kenneth J. Arrow, et al., *Benefit-Cost Analysis in Environmental, Health, and Safety Regulation* 8 (1996) ("[G]ive due consideration to factors that defy quantification but are thought to be important."); Robert W. Hahn & Cass R. Sunstein, *A New Executive Order for Improving Federal Regulation? Deeper and Wider Cost-Benefit Analysis*, 150 U. Pa. L. Rev. 1489, 1498 (2002) ("[C]ost-benefit analysis requires a full accounting of the consequences of an action, in both quantitative and qualitative terms."). Excluding important unquantifiable factors from analysis could lead to inefficiency by undervaluing cost-justified, life-saving regulations. John D. Graham, *Saving Lives Through Administrative Law and Economics*, 157 U. Pa. L. Rev. 395, 435–36 (2008).

Indeed, federal guidelines on economic analysis explicitly require evaluating unquantifiable benefits. Exec. Order No. 12,866, *supra*, at § 1(a) ("[I]nclude both quantifiable measures . . . and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider."); *Circular A-4*, *supra*, at 2–3; *Guidelines for Preparing Economic Analyses*, *supra*, at 7-49. In short, significant benefits should not be excluded from regulatory impact analysis or

discounted in regulatory decisionmaking simply because they are not yet fully quantifiable. EPA acted consistently with best practices by including a complete assessment of the MATS Rule's many important, unquantifiable benefits.

II. COAL- AND OIL-FIRED POWER PLANT EMISSIONS INCREASE RISKS OF DEATH AND DISEASE.[5]

Coal- and oil-fired power plants (hereinafter "power plants") emit pollutants that endanger the lives and health of U.S. citizens, including dioxins, formaldehyde, radium, and benzene, acid gases, metals, and other hazardous pollutants. These emissions include complex mixtures of hazardous substances such as acid gases, carcinogenic toxins, mercury and other metals, and airborne particles. Power plant emissions contain at least 84 separate air pollutants.[6] Further, the emitted vapors contribute to the formation of other toxic gases in the atmosphere. These emissions have both local and long-range impacts, as pollutants are carried throughout the country. Impacts include premature death, disease, abnormal brain and lung development in children, increased hospitalization and medication requirements, and lost work days. As shown below, the medical and scientific literature strongly establishes the need to control

[5] This Part of the brief is submitted on behalf of the American Thoracic Society, et al.

[6] EPA, National Emissions Inventory Data & Documentation (2002) (ALLNEI_HAP_Annual_01232008) (2007), http://www.epa.gov/ttn/chief/net/2002inventory.html#inventorydata.

these emissions.

A. Acid Gases from Power Plants Damage Human Health.

Power plants are the largest anthropogenic source of acid gas emissions (hydrofluoric and hydrochloric acid).[7] Even at trace levels highly corrosive and water-soluble acid gases can cause irritation and tissue damage to eyes, skin, and lungs. Inhalation of acids can cause irritation and constriction of asthmatic airways.[8] Continued exposure may contribute to development of chronic airway diseases including bronchitis, asthma, and reactive airway dysfunction syndrome.[9]

Hydrofluoric acid—one of the main acid gases in power plant emissions—is corrosive to the human respiratory tract and can cause severe disease.[10]

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[7] *Id.*

[8] J.M. Fine et al., *The Role of Titratable Acidity in Acid Aerosol-Induced Bronchoconstriction*, Am. Rev. Resp. Dis. 135(4): 826-830 (1987) (http://www.ncbi.nlm.nih.gov/pubmed/3551704); H.C. Franciset al., *Defining and Investigating Occupational Asthma: A Consensus Approach*, Occup. Env. Med. 64:361-365 (2007) (http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2078517).

[9] G. Leikauf, *Hazardous Air Pollutants and Asthma*, Env. Health Persp. 110:505-526 (2002); M. Medina-Ramon et al., *Asthma, Chronic Bronchitis, and Exposure to Irritant Agents in Occupational Domestic Cleaning: A Nested Case-Control Study*, Occup. Env. Med. 62:598-606 (2005) (http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1741089/); M.S. Shakeri et al., *Which Agents Cause Reactive Airways Dysfunction Syndrome (RADS)*? *A Systematic Review*, Occup. Med. (Lond.) 58:205-211 (2008) (http://www.ncbi.nlm.nih.gov/pubmed/18308694); S. Quirce & P. Barranco, *Cleaning Agents and Asthma*, J. Investig. Allergol. Clin. Immunol., 20(7):542-50 (2010) (http://www.jiaci.org/issues/vol20issue7/1.pdf).

[10] L. Tsonis et al., *Hydrofluoric Acid Inhalation Injury*, J. Burn Care Res. Sep-Oct; 29(5):852-5 (2008) (http://www.ncbi.nlm.nih.gov/pubmed/18695605); S. Skolnik,

Hydrogen chloride, another major acid gas emitted from power plants, rapidly converts to hydrochloric acid in the atmosphere and causes irritation and constriction of asthmatic airways.[11] The United Kingdom's Health Protection Agency reviewed the toxicology of hydrochloric acid/hydrogen chloride in 2007 and reported that acute exposure causes respiratory irritation, while chronic or repeated lower exposures cause lung function deficits and bronchial inflammation.[12]

Emission of nitrogen and sulfur-based gases from power plants contributes to formation of other strong acids in the atmosphere: nitric acid and sulfuric acid. Susceptible populations include the young, the elderly, and those with preexisting diseases like chronic obstructive pulmonary disease (COPD) and asthma.[13] Exposure of children to SO_2 is associated with active asthma and poor control of existing asthma.[14] Children exposed to NO_2, acids and $PM_{2.5}$ may suffer

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Acute Inhalation Exposure to Hydrogen Fluoride, J. Occup. Env. Hyg. Jun; 7(6):D31-3 (2010) (http://www.ncbi.nlm.nih.gov/pubmed/20383802).

[11] Fine et al., *supra* note 8.

[12] S. Bull, *Hydrogen Chloride / Hydrochloric Acid Toxicological Overview*, CHAPD HQ, HPA2007 Version 1 (2007) (http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1194947386706).

[13] A. Faustini et al, *Short-Term Effects of Air Pollution in a Cohort of Patients with Chronic Obstructive Pulmonary Disease*, Epidemiology 23(6): 861-879 (2012) (http://www.ncbi.nlm.nih.gov/pubmed/23018970).

[14] L. Deger et al., *Active and Uncontrolled Asthma Among Children Exposed to Air Stack Emissions of Sulphur Dioxide from Petroleum Refineries in Montreal*,

diminished lung function growth.[15] Exposure of healthy young adults to NO_2 and oxides of nitrogen is associated with acute airway inflammation and reduced lung function.[16] Further reductions in emissions of sulfur dioxide and nitrogen oxides would have substantial benefit to both human health and the environment.[17]

B. Mercury from Power Plants Harms Human Health.

Coal and oil-fired electric power plants are the largest source of anthropogenic mercury emissions in the United States.[18] Mercury emissions come in various forms, such as particulate-bound mercury and mercury in elemental or ionized forms. Microorganisms can convert ionized mercury into an organic form called methylmercury. While all chemical forms of mercury are extremely toxic to all cells in the human body,[19] methylmercury is a potent neurotoxin.[20] Once

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Quebec: A Cross-Sectional Study, Can. Resp. J. 19(2): 97-102 (2012) (http://www.ncbi.nlm.nih.gov/pubmed/22536578).

[15] W.J. Gauderman et al., *Association Between Air Pollution and Lung Function Growth in Southern California Children*, Am. J. Resp. Crit. Care. Med. 162(4 pt. 1): 1383-1390 (2000) (http://www.ncbi.nlm.nih.gov/pubmed/11029349).

[16] M. Strak et al., *Respiratory Health Effects of Airborne Particulate Matter: The Role of Particle Size, Composition, and Oxidative Potential-The RAPTES Project*, Env. Health Persp. 120(8): 1183-1189 (2012) (http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3440077/).

[17] L.G. Chestnut & D.M. Mills, *A Fresh Look at the Benefits and Costs of the US Acid Rain Program*, J. Env. Manage. 77(3): 252-266 (2005) (http://www.epa.gov/airmarkets/resource/docs/bandcofarp.pdf).

[18] EPA, *Mercury Study Report to Congress*, USEPA 1-VIII (EPA-4521R-97-003 through EPA4521R-97-010) (1997) (http://www.epa.gov/hg/report.htm).

[19] United Nations Environment Programme's Global Mercury Assessment (2002)

emitted, mercury returns to the earth in rain and snow—contaminating land and water. Elemental mercury persists in the atmosphere for up to 2 years and transports globally.[21] Several studies from eastern Ohio have found that nearby coal-fired power plants contribute as much as 76% of the mercury in local rainfall.[22]

Methylmercury bio-accumulates through the food chain, especially in fish.[23] High to moderate doses of methylmercury can cause debilitating health effects and, because methylmercury targets the nervous system and brain, damage from even low doses of methylmercury can persist over a lifetime.[24] Even very low level methylmercury exposures in adults who consume contaminated fish can result in

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(http://www.chem.unep.ch/mercury/report/Final%20report/final-assessment-report-25nov02.pdf).

[20] EPA, *Human Health*, http://www.epa.gov/mercury/health.htm.

[21] N.E. Selin et al., *Sources of Mercury Exposure for U.S. Seafood Consumers: Implications for Policy*, Env. Health Persp. 118(1): 137-143 (2010) (http://dspace.mit.edu/openaccess-disseminate/1721.1/70492).

[22] G.J. Keeler et al., *Sources of Mercury Wet Deposition in Eastern Ohio, USA*, Env. Sci. Technol. 40(19): 5874-5881 (2006) (http://pubs.acs.org/doi/abs/10.1021/es060377q); E.M. White et al., *Spatial Variability of Mercury Wet Deposition in Eastern Ohio: Summertime Meteorological Case Study Analysis of Local Source Influences*, Env. Sci. Technol. 43(13): 4946-4953 (2009) (http://www.ncbi.nlm.nih.gov/pubmed/19673290).

[23] S. Ekino, *Minamata Disease Revisited: An Update on the Acute and Chronic Manifestations of Methyl Mercury Poisoning*, J. Neurol. Sci. 262(1-2): 131-144 (2007) (http://www.sciencedirect.com/science/article/pii/S0022510X07004558).

[24] *Id*.; K. Murata et al., *Delayed Brainstem Auditory Evoked Potential Latencies in 14-Year-Old Children Exposed to Methylmercury*, J. Pediatr. 144(2): 177-183 (2004) (http://www.ncbi.nlm.nih.gov/pubmed/14760257).

sub-clinical neurobehavioral abnormalities.[25] Significant decreases in psycho-motor coordination have been found in consumers of fish.[26] All forms of mercury exposure damage the kidneys, liver, and immune systems in both adults and children.[27]

Mercury is particularly hazardous to infants and children, causing abnormal neurological development including brain damage, birth defects, diminished intelligence and developmental delays.[28] Methylmercury can accumulate in a fetus's blood to a concentration higher than that in the mother.[29] 300,000 to 600,000 U.S. children are born each year with blood methylmercury levels that exceed the EPA reference dose (the acceptable oral dose of a toxic substance).

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[25] P. Carta et al., *Sub-clinical Neurobehavioral Abnormalities Associated with Low Level of Mercury Exposure Through Fish Consumption*, Neurotoxicology 24(4-5): 617-623 (2003) (http://www.ncbi.nlm.nih.gov/pubmed/12900074).

[26] P. Carta et al., *Urinary and Blood Markers of Internal Mercury Dose in Workers from a Chlorakali Plant and in Subjects not Occupationally Exposed: Relation to Dental Amalgam and Fish Consumption*, Med. Lav. 93(3): 176-183 (2002) (http://www.ncbi.nlm.nih.gov/pubmed/12197267).

[27] Agency for Toxic Substances and Disease Registry (ATDSR), Toxicological Profile for Mercury (1999) (http://www.atsdr.cdc.gov/toxprofiles/tp.asp?id=115&tid=24) (Rec.: OAR-2002-0056-5816).

[28] *Id.*; L.P. Trasande et al., *Public Health and Economic Consequences of Methyl Mercury Toxicity to the Developing Brain*, Env. Health Persp. 113(5): 590-596 (2005) (http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1257552/); M.R. Karagas et al., *Evidence on the Human Health Effects of Low-Level Methylmercury Exposure*, Env. Health Persp. 120(6): 799-806 (2012) (http://www.ncbi.nlm.nih.gov/pubmed/22275730).

[29] ATDSR, *supra* note 27.

They have more mercury in their blood than will permit a healthy brain development as they grow—such that these children's capacity to see, hear, move, feel, learn and respond is compromised.[30]

Accumulation of mercury in fish, coupled with the known developmental hazards of mercury exposure on fetal, infant and child development prompted both the Federal Drug Administration and EPA to advise women of childbearing age to limit consumption of fish and to check local advisories.[31]

C. Other Metals from Power Plants Harm Human Health.

Power plants emit particles that contain metals besides mercury, including lead, arsenic, cadmium, nickel and chromium. Lead damages the developing nervous system. Arsenic is a carcinogen and highly toxic. Nickel and chromium

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[30] Trasande et al., *supra* note 28; K.R. Mahaffey et al., *Blood Organic Mercury and Dietary Mercury Intake: National Health and Nutrition Examination Survey, 1999 and 2000*, Env. Health Persp. 112(5): 562-570 (2004) (http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1241922/); Kathryn R. Mahaffey, Robert P. Clickner & Rebecca A. Jeffries, *Adult Women's Blood Mercury Concentrations Vary Regionally in the United States: Association with Patterns of Fish Consumption* (NHANES 1999–2004), Environ Health Perspect. 117(1): 47–53 (2009) (http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2627864/); P.W. Davidson et al., *Neurodevelopmental Effects of Maternal Nutritional Status and Exposure to Methylmercury from Eating Fish During Pregnancy*, Neurotoxicology 29(5): 767-775 (2008) (http://www.ncbi.nlm.nih.gov/pubmed/18590763); *see also* B.B. Gump et al., *Fish Consumption, Low-Level Mercury, Lipids, and Inflammatory Markers in Children*, Environ Res 112: 204-211 (2012) (http://www.sciencedirect.com/science/article/pii/S0013935111002465).

[31] EPA & FDA, *What You Need to Know about Mercury in Fish and Shellfish*, http://water.epa.gov/scitech/swguidance/fishshellfish/outreach/advice_index.cfm.

are associated with an increased risk of cancer.[32] While these metals are toxic on their own, their incorporation into particulates increases the risk—including the risk of death—posed by their inhalation.[33]

D. Particulate Matter from Power Plants Injures People.

Power plants emit small particles less than 2.5 microns in diameter ($PM_{2.5}$) which can penetrate deep into the lungs and also emit gases such as sulfur dioxide (SO_2), oxides of nitrogen (NO_x), and organic compounds that react to form additional $PM_{2.5}$ in the atmosphere. Exposure to $PM_{2.5}$ is strongly linked to premature death.[34] Epidemiologic and other data associate $PM_{2.5}$ with premature

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[32] R.J. Beveridge et al., *Lung Cancer Risk Associated with Occupational Exposure to Nickel, Chromium VI, and Cadmium in Two Population-Based Case–Control Studies in Montreal*, Am. J. of Ind. Med. 53(5): 476-485 (2010) (http://onlinelibrary.wiley.com/doi/10.1002/ajim.20801/pdf); J. Luo et al., *Association Between Six Environmental Chemicals and Lung Cancer Incidence in the United States*, J. Env. Pub. Health: 463701 (2011) (http://www.hindawi.com/journals/jeph/2011/463701/).

[33] M.L. Bell et al., *Hospital admissions and chemical composition of fine particle air pollution*, Am. J. Resp. & Crit. Care Med. 179: 1115-1120 (2009) (http://ajrccm.atsjournals.org/content/179/12/1115); *see also* S. Wu et al., *Blood Pressure Changes and Chemical Constituents of Particulate Air Pollution: Results from the Healthy Volunteer Natural Relocation (HVNR) Study*, Env. Health Persp. (2013) (http://ehp.niehs.nih.gov/2013/01/1104812/); K. Pasanen et al., *Mortality Among Population with Exposure to Industrial Air Pollution Containing Nickel and other Toxic Metals*, J. Occup. Env. Med. 54(5): 583-591 (2012) (http://www.ncbi.nlm.nih.gov/pubmed/22569477); P. Carta, *supra* note 25.

[34] EPA, Expanded Expert Judgment Assessment of the Concentration-Response Relationship Between PM2.5 Exposure and Mortality: Final Report, vii, 3-23, 3-24 (2006) (http://www.epa.gov/ttn/ecas/regdata/Uncertainty/pm_ee_report.pdf); *Am. Farm Bureau Fed'n v. EPA*, 559 F.3d 512, 515-16 (D.C. Cir. 2009).

mortality in infants and adults; systemic inflammation, altered vascular reactivity and cardiac rhythms, worsened asthma, chronic bronchitis, and other cardiopulmonary illnesses.[35] Chronic exposure to $PM_{2.5}$ increases the risk of dying from lung cancer and cardiovascular disease.[36] Acute exposure increases the risk of death from respiratory and cardiovascular failure.[37] $PM_{2.5}$ exposures are especially dangerous for vulnerable populations, including children and infants.[38] Infants face 9% greater risk of bronchiolitis for each 10 $\mu g/m^3$ increase in $PM_{2.5}$.[39]

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[35] *North Carolina v. Tennessee Valley Authority*, 593 F. Supp. 2d 812, 821-22 (W.D.N.C. 2009); Expanded Expert Judgment, *supra* note 34, vii, 3-23, 3-24.

[36] C. Arden Pope III et al., *Cardiovascular Mortality and Year-round Exposure to Particulate Air Pollution: Epidemiological Evidence of General Pathophysiological Pathways of Disease*, 109 Circulation 71 (2004) (http://www.ncbi.nlm.nih.gov/pubmed/14676145); C. Arden Pope III et al., *Lung Cancer, Cardiopulmonary Mortality, and Long-Term Exposure to Fine Particulate Air Pollution*, 287 J. Am. Med. Ass'n 9 (2002) (http://jama.jamanetwork.com/article.aspx?articleid=194704).

[37] Meredith Franklin et al., *Association Between PM2.5 and All-Cause and Specific-Cause Mortality in 27 U.S. Communities*, 17 J. Exposure Sci. & Envtl. Epidemiology 279, 285 (2007) (http://www.ncbi.nlm.nih.gov/pubmed/17006435); Cathryn Tonne et al., *A Case Control Analysis of Exposure to Traffic and Acute Myocardial Infarction*, 115 Envtl. Health Persp. 53, 53 (2007) (http://www.ncbi.nlm.nih.gov/pubmed/17366819); Yun-Chul Hong et al., *Effects of Air Pollutants on Acute Stroke Mortality*, 110 Env. Health Persp. 187, 190 (2002) (http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1240734/).

[38] Thais Mauad, *Chronic Exposure to Ambient Levels of Urban Particles Affects Mouse Lung Development*, 178 Am. J. Respiratory & Critical Care Med. 721, 727 (2008) (http://ajrccm.atsjournals.org/content/178/7/721.full.pdf).

[39] Catherine Karr et al. *Effects of Subchronic Exposure to Ambient Air Pollutants on Infant Bronchiolitis*, 165 Am. J. Epidemiology 553, 557 (2007) (http://aje.oxfordjournals.org/content/165/5/553.full).

Exposure to $PM_{2.5}$ can aggravate asthma.[40] Short-term increases in PM are linked to a rise in hospitalizations for children with aggravated asthma attacks.[41]

III. EPA CORRECTLY INTERPRETED SUBPARAGRAPH 112(n)(1)(A).[42]

In the MATS Rule, EPA interprets subparagraph 112(n)(1)(A) to create a threshold requirement—the "appropriate and necessary" finding—before subjecting coal- and oil-fired electric steam generating units ("EGUs") to regulation under the rest of section 112. This interpretation is correct, as a careful examination of the text of the provision, its statutory context, and the legislative history demonstrates. Congress delayed regulation of EGUs in 1990 to allow time for the study of the impact of EGU hazardous pollutant emissions and of the impact of other parts of the 1990 Clean Air Act Amendments on those emissions.

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[40] Verena Morgenstern et al., *Atopic Diseases, Allergic Sensitization, and Exposure to Traffic-Related Air Pollution in Children*, 177 Am. J. Respiratory & Critical Care Med. 1331 (2008) (http://ajrccm.atsjournals.org/content/177/12/1331.full.pdf).

[41] James C. Slaughter et al., *Effects of Ambient Air Pollution on Symptom Severity and Medication Use in Children with Asthma*, 91 Annals of Allergy, Asthma & Immunology 346 (2003) (http://www.ncbi.nlm.nih.gov/pubmed/14582813); S. Lin et al., *Childhood Asthma Hospitalization and Residential Exposure to State Route Traffic*, 88 Envtl. Res. 73 (2002); Gary Norris et al., *An Association Between Fine Particles and Asthma Emergency Department Visits for Children in Seattle*, 107 Envtl. Health Persp. 489 (1999) (http://www.jstor.org/stable/3434632); Paige E. Tolbert et al., *Air Quality and Pediatric Emergency Room Visits for Asthma in Atlanta, Georgia*, 151 Am. J. Epidemiology 798 (2000) (http://aje.oxfordjournals.org/content/151/8/798.full.pdf).

[42] This Part is submitted on behalf of the Environmental Law Professors, who do not thereby join the other arguments in the brief.

Now that EPA has resolved these scientific questions, however, the statute requires it to regulate EGUs under section 112 as a whole. Congress did not specify in subparagraph 112(n)(1)(A) any special procedure for regulating EGUs distinct from the procedures set forth in section 112 applicable to other sources of hazardous pollutant emissions.

A. Congress Amended Section 112 in 1990 Because of the Failure of Regulation Under the Previous Version of that Section, and Ordered Further Study of EGUs.

Congress first addressed hazardous pollutants in the 1970 Clean Air Act Amendments, when directing EPA to identify and list those air pollutants that "cause or contribute to an increase in mortality or an increase in serious irreversible, or incapacitating, reversible, illness" and then establish emissions standards to "provide an ample margin of safety to protect the public health." Pub. L. No. 91-604, § 112(a)(1), (b)(1)(B), 84 Stat. 1676, 1685 (1970). Because many potential hazardous pollutants are carcinogens, this risk-based approach and the "ample margin of safety" requirement arguably mandated a zero-emissions standard. EPA found itself in a quandary that resulted in regulatory paralysis. To avoid shutting down entire industries, EPA did virtually nothing. The Senate concluded that:

> The law has worked poorly. In 18 years, EPA has regulated only some sources of only seven chemicals. One reason the law has worked poorly is the standard of protection required. An ample margin of safety has been interpreted by many to mean zero exposure

> to carcinogens, because any amount of exposure may cause a cancer. EPA has not been willing to write standards so stringent because they would shutdown major segments of American industry.

S. Rep. No. 101-228, at 128 (1989) (internal quotation marks omitted), *reprinted in* 4 A Legislative History of the Clean Air Act Amendments of 1990 ("1990 Legis. Hist.") at 8468.

Determined to reduce emissions of dangerous hazardous pollutants, Congress completely overhauled section 112 in 1990. First, to overcome EPA's delays in listing hazardous pollutants, Congress itself listed 189 of them in subsection 112(b). 42 U.S.C. § 7412(b)(1). Second, in subsection 112(c), Congress ordered EPA to list within a year all categories of sources of the hazardous pollutants Congress had listed. *Id.* § 7412(c)(1).

Third, under subsection 112(d), Congress directed EPA to establish emissions standards for all categories of sources according to a strict timetable. *Id.* §§ 7412(d)(1), (e). In place of the risk-based "adequate margin of safety" approach of the 1970 Act, Congress adopted a technology-based approach, known as the Maximum Achievable Control Technology ("MACT") standard. *Id.* § 7412(d)(2). Finally, Congress ordered EPA to analyze the residual risks that might still exist after application of the MACT standard and, if necessary, to impose more stringent emissions standards. *Id.* § 7412(f).

Thus Congress completely transformed the regulatory approach for hazardous pollutants: no longer would there be a substance-by-substance weighing of the harms attributable to each. Instead, the emission standards for all hazardous pollutants are based on an objective assessment of the available control technologies.

In the 1990 Amendments, Congress addressed EGUs in subsection 112(n). It did not, however, do so in isolation. As part of the same legislation, Congress added the new Title IV acid rain program. Title IV created a cap-and-trade program for emissions of sulfur dioxide and nitrogen oxides from EGUs. 42 U.S.C. §§ 7651-7651*o*. At the time, some members of Congress believed that the technology used to reduce these emissions might also reduce hazardous pollutant emissions. *See* 136 Cong. Rec. 36,062 (1990) (statement of Sen. Durenberger), *reprinted in* 1 1990 Legis. Hist. at 871-72.

While it was understood in 1990 that EGUs were significant emitters of HAPs, especially mercury, there was disagreement in Congress in 1990 about the best approach to regulating EGUs under section 112. *Id.* As a compromise, Congress delayed application of the amended section 112 to EGUs, directing EPA to study "the hazards to public health reasonably anticipated to occur as a result of" EGU hazardous pollutant emissions "after imposition of the requirements of this chapter" and to report the results to Congress. 42 U.S.C. § 7412(n)(1)(A). If,

"after considering the results of th[is] study," EPA concluded that the regulation of EGUs was "appropriate and necessary," Congress mandated that EPA "shall regulate [EGUs] under this section." *Id.*

EPA completed the required study and submitted its report to Congress in February 1998. 65 Fed. Reg. 79,825, 79,827 (Dec. 20, 2000). Based on this report, and on additional studies, the agency in December 2000 issued a finding that "regulation of HAP emissions from coal- and oil-fired [EGUs] under section 112 is appropriate and necessary." *Id.* at 79,830. In particular, EPA concluded that the majority of harmful methylmercury in American waters originated from domestic emissions and that EGUs are "the largest source of mercury emissions in the U.S." *Id.* at 79,827.[43] The agency accordingly added coal- and oil-fired EGUs to the list of source categories under subsection 112(c). *Id.* at 79,830.

B. The Language and Structure of Section 112 Support EPA's Interpretation.

The correct reading of subparagraph 112(n)(1)(A) is the one advanced by EPA in this rulemaking. Under this interpretation, the "appropriate and necessary" finding was created as a triggering mechanism for application of the new, technology-based approach to regulating hazardous pollutants, not as an invitation

[43] EPA also identified other hazardous pollutants emitted from EGUs as of potential concern. 65 Fed. Reg. at 79,827. As discussed above, a substantial medical and scientific literature demonstrates the dangers of these emissions. Part II, *supra*.

to revive the old substance-by-substance safety-weighing approach for EGUs. This Court has already interpreted the subparagraph to operate in this fashion. *New Jersey v. EPA*, 517 F.3d 574, 579 (D.C. Cir. 2008) ("Congress required the Administrator to evaluate regulatory options with care and to meet certain conditions *before listing EGUs* as an HAP source under section 112(c)(1).") (emphasis added); *see also id.* at 582 ("Section 112(n)(1) governs how the Administrator decides *whether to list* EGUs.") (emphasis added).

Subparagraph 112(n)(1)(A) explicitly directs EPA to regulate EGUs following the procedures set out in section 112 as a whole. This Court recently reaffirmed the principle that "Congress 'ordinarily adheres to a hierarchical scheme in subdividing statutory sections,' which scheme uses, successively, 'subsections' (e.g., '(a)'), 'paragraphs' (e.g., '(1)'), subparagraphs (e.g., '(A)') and 'clauses' (e.g. '(i)')." *United States v. Hines*, 694 F.3d 112, 118 (D.C. Cir. 2012) (quoting *Koons Buick Pontiac GMC, Inc. v. Nigh*, 543 U.S. 50, 60-61 (2004)).

Hines involved a section of the Speedy Trial Act that provided two bases for dismissing criminal charges—either an excessive delay in filing an indictment or an excessive delay in bringing the case to trial. 694 F.3d at 117. The statute provided that "[f]ailure of the defendant to move for dismissal prior to trial or entry of a plea of guilty or nolo contendere shall constitute a waiver of the right to dismissal *under this section*." 18 U.S.C. § 3162(a)(2) (emphasis added). This

Court held that the waiver language applied to both types of dismissals, even though it occurred only in the subsection governing late-trial dismissals, because "the language provides for waiver of the right to dismissal under the *entire* section." *Hines*, 694 F.3d at 118.

The same analysis applies here. Congress directed EPA to regulate EGUs "under this *section*" if EPA finds "such regulation [to be] appropriate and necessary after considering the results of the study required *by this subparagraph*." 42 U.S.C. § 7412(n)(1)(A) (emphasis added). The juxtaposition of the source of authority to regulate EGUs—section 112 in its entirety—versus the source of authority to conduct the study of the health impacts of EGU hazardous pollutant emissions—only subparagraph 112(n)(1)(a)—could not be clearer. If Congress had intended to subject EGUs to a different, subparagraph 112(n)(1)(A)-specific, form of regulation after EPA completed the health study, Congress would have directed EPA to regulate these sources "under this subparagraph." It did not.

Furthermore, Congress plainly directed EPA to regulate the *source category* of EGUs rather than to regulate on a pollutant-by-pollutant basis. *Id.* ("The Administrator shall regulate electric utility steam generating units. . . ."). Under section 112, Congress mandated that EPA address *all* hazardous pollutant emissions from a listed source category. *National Lime Ass'n v. EPA*, 233 F.3d 625, 634 (D.C. Cir. 2000). When Congress wanted to provide separate treatment

for particular hazardous pollutants, it did so explicitly. *See*, *e.g.*, 42 U.S.C. § 7412(q)(3) (addressing radionuclide emissions). Therefore, subparagraph 112(n)(1)(A)'s direction that EPA regulate EGUs *as a source category* necessarily implies that EPA is to regulate all hazardous pollutant emissions from EGUs. As this Court has observed, "where Congress wished to exempt EGUs from specific requirements of section 112, it said so explicitly." *New Jersey*, 517 F.3d at 582 (citing 42 U.S.C. § 7412(c)(6)). Subparagraph 112(n)(1)(A) contains no such explicit exemption and Petitioners' pollutant-by-pollutant approach is thus inconsistent with both the language and structure of section 112. *Cf. Ethyl Corp. v. EPA*, 51 F.3d 1053, 1061 (D.C. Cir. 1995) (invoking "the familiar maxim of statutory construction: *expressio unius est exclusio alterius*, meaning, mention of one thing implies exclusion of another thing") (citation and internal quotation marks omitted).

The legislative history also supports EPA's interpretation of subparagraph 112(n)(1)(A). For example, even Representative Oxley, on whom Petitioners rely, understood the statute to require emissions standards for EGUs to be set under section 112(d) following the Administrator's "appropriate and necessary" finding. 136 Cong. Rec. 35,075 (1990) (statement of Rep. Oxley), *reprinted in* 1 1990 Legis. Hist. at 1416 (observing that regulation of EGUs after the appropriate-and-

necessary finding would involve the adoption of source category standards).[44]

Finally, the legacy of ineffective risk-based regulation under section 112 before 1990 makes it particularly implausible that Congress would have *sub silentio* provided for the same form of regulation under subparagraph 112(n)(1)(A). Petitioners suggest that this provision should be read to require separate findings that it is "appropriate and necessary" to regulate each hazardous pollutant, and for each increment of regulation of each pollutant. This interpretation would effectively resurrect for EGUs the old risk-based approach Congress had so dramatically rejected in the rest of section 112.

For all of these reasons, subparagraph 112(n)(1)(A) mandates the listing and establishment of emissions standards for EGUs following EPA's "appropriate and

[44] Contemporaneous statements by EPA, academic commentators, and industry (including one of the Petitioners in this case) also reflect the understanding that EGUs would be listed under subsection 112(c) and subject to emissions standards under subsection 112(d) if EPA issued a positive "appropriate and necessary" finding. *See, e.g.*, Comments of Edison Electric Institute, Docket No. A-90-49, at 1 (July 19, 1991) ("It would be contrary to the intent of the law to list electric utility steam generating units as major sources *at this time*. The referenced study will determine *whether they should be listed*.") (emphasis added); Comments of the Utility Air Regulatory Group, Docket No. A-90-49, at 4 (July 22, 1991) (arguing that Congress "*initially* excluded [EGUs] from the listing process" and that "[m]aking listing decisions after completion of the study will therefore allow any necessary categorization and subcategorization decisions to be based on better information than is now available") (emphasis added); 56 Fed. Reg. 28,548, 28,551 (June 21, 1991); Howard M. Shanker, *Cogeneration and the Clean Air Act Amendments of 1990*, 2 U. Balt. J. Envtl. L. 111, 119 n.35 (1992); Norman W. Fichthorn, *Command-and-Control vs. the Market: The Potential Effects of Other Clean Air Act Requirements on Acid Rain Compliance*, 21 Envtl. L. 2069, 2083 (1991).

necessary" finding. To the extent there is any ambiguity, this interpretation is well within the scope of that ambiguity, and EPA's interpretation is accordingly entitled to deference under step two of *Chevron U.S.A. Inc. v. NRDC*, 467 U.S. 837 (1984).

CONCLUSION

For all of the foregoing reasons, the Petitions for Review should be DISMISSED.

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Respectfully submitted,

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CERTIFICATE OF COMPLIANCE WITH RULE 32(A)(7)

Pursuant to Federal Rule of Appellate Procedure 32(a)(7)(C) and the Court's Order dated August 24, 2012, I hereby certify that the foregoing brief is in 14-point, proportionately spaced, Times New Roman typeface and contains 6,974 words, excluding the parts of the brief exempted by Fed. R. App. P. 32(a)(7)(B)(iii). The word processing software used to prepare this brief was Microsoft Word 2007.

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CERTIFICATE OF SERVICE

I hereby certify that on January 29, 2013, I electronically filed the foregoing brief with the Clerk of the Court by using the appellate CM/ECF system, which will send a notice of electronic filing to all registered counsel.

Dated: January 29, 2013

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