
ORAL ARGUMENT NOT YET SCHEDULED

No. 16-1127 (and consolidated cases)

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

MURRAY ENERGY CORPORATION, *et al.*,
Petitioners,

v.

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

**On Petitions for Review of Final Agency Action of the
United States Environmental Protection Agency
81 Fed. Reg. 24,420 (Apr. 25, 2016)**

OPENING BRIEF OF STATE AND INDUSTRY PETITIONERS

F. William Brownell
Makram B. Jaber
Andrew D. Knudsen
HUNTON & WILLIAMS LLP
2200 Pennsylvania Avenue, N.W.
Washington, D.C. 20037
Tel: (202) 955-1500
Fax: (202) 778-2201
bbrownell@hunton.com
mjaber@hunton.com
aknudsen@hunton.com
*Counsel for Petitioner Utility Air Regulatory
Group*

Bill Schuette
ATTORNEY GENERAL
FOR THE PEOPLE OF MICHIGAN
Aaron D. Lindstrom,
Solicitor General
Neil D. Gordon
Brian J. Negele
Assistant Attorneys General
ENRA Division
525 W. Ottawa Street
P.O. Box 30755
Lansing, MI 48909
Tel: (515) 373-7540
Fax: (517) 373-1610
gordonn1@michigan.gov
negeleb@michigan.gov
*Counsel for Petitioner Michigan Attorney
General Bill Schuette, on behalf of the People of
Michigan*

DATED: November 18, 2016

Additional counsel listed on following pages

Geoffrey K. Barnes
J. Van Carson
Wendlene M. Lavey
John D. Lazzaretti
Robert D. Cheren
SQUIRE PATTON BOGGS (US) LLP
4900 Key Tower
127 Public Square
Cleveland, OH 44114
Tel: (216) 479-8646
geoffrey.barnes@squirepb.com

Counsel for Petitioner Murray Energy Corporation

Bart E. Cassidy
Katherine L. Vaccaro
MANKO, GOLD, KATCHER & FOX, LLP
401 City Avenue, Suite 901
Bala Cynwyd, PA 19004
Tel: (484) 430-5700
bcassidy@mankogold.com
kvaccaro@mankogold.com

Counsel for Petitioner ARIPPA

Stacey Turner
SOUTHERN COMPANY SERVICES, INC.
600 18th Street North
BIN 14N-8195
Birmingham, AL 35203
Tel: (205) 257-2823
staturne@southernco.com

Counsel for Petitioner Southern Company Services, Inc.

Luther Strange
ATTORNEY GENERAL OF ALABAMA
Robert D. Tambling
State of Alabama
Office of the Attorney General
501 Washington Avenue
Montgomery, AL 36130
Tel: (334) 242-7445
Fax: (334) 242-2433

Counsel for Petitioner State of Alabama

Mark Brnovich
ATTORNEY GENERAL OF ARIZONA
John R. Lopez IV
Solicitor General
Keith J. Miller
Assistant Solicitor General
James T. Skardon
Assistant Attorney General
1275 West Washington Street
Phoenix, AZ 85007
Tel: (602) 542-3333
keith.miller@azag.gov

Counsel for Petitioner State of Arizona

Leslie Rutledge
ATTORNEY GENERAL OF ARKANSAS
Lee Rudofsky
Solicitor General
Nicholas J. Bronni
Deputy Solicitor General
Office of the Attorney General
323 Center Street, Suite 200
Little Rock, AR 72201
Tel: (501) 682-8090

Counsel for Petitioner State of Arkansas

C. Grady Moore, III
BALCH & BINGHAM LLP
1901 Sixth Avenue North, Suite 1500
Birmingham, AL 35303-4642
Tel: (205) 226-8718
Fax: (205) 488-5704
gmoore@balch.com

Counsel for Petitioner Alabama Power Company

Angela J. Levin
TROUTMAN SANDERS LLP
580 California Street, Suite 1100
San Francisco, CA 94104
Tel: (415) 477-5787
Fax: (415) 477-5710
angela.levin@troutmansanders.com

Margaret Claiborne Campbell
TROUTMAN SANDERS LLP
600 Peachtree Street, NE, Suite 5200
Atlanta, GA 30308-2216
Tel: (404) 885-3000
Fax: (404) 962-6521
margaret.campbell@troutmansanders.com

*Counsel for Petitioners Georgia Power Company
and Southern Company Services, Inc.*

Terese T. Wyly
BALCH & BINGHAM LLP
1310 Twenty Fifth Avenue
Gulfport, MS 39501-1931
Tel: (228) 214-0413
Fax: (888) 897-6221
twyly@balch.com

*Counsel for Petitioner Mississippi Power
Company*

Derek Schmidt
ATTORNEY GENERAL OF KANSAS
Jeffrey A. Chanay
Chief Deputy Attorney General
Office of the Attorney General
120 S.W. 10th Avenue, 3rd Floor
Topeka, KS 66612-1597
Tel: (785) 368-8435
jeff.chanay@ag.ks.gov

Counsel for Petitioner State of Kansas

Andy Beshear
ATTORNEY GENERAL OF KENTUCKY
Mitchel T. Denham
Assistant Deputy Attorney General
Joseph A. Newberg, II
Assistant Attorney General
Kentucky Office of the Attorney General
The Capitol Building
700 Capitol Avenue, Suite 118
Frankfort, KY 40601
Tel: (502) 696-5300
mitchel.denham@ky.gov
joe.newberg@ky.gov

*Counsel for Petitioner Commonwealth of
Kentucky*

Douglas J. Peterson
ATTORNEY GENERAL OF NEBRASKA
Dave Bydalek
Chief Deputy Attorney General
Justin D. Lavene
Assistant Attorney General
2115 State Capitol
Lincoln, NE 68509
Tel: (402) 471-2682
justin.lavene@nebraska.gov

Counsel for Petitioner State of Nebraska

Jeffrey A. Stone
BEGGS & LANE, RLLP
501 Commendencia Street
Pensacola, FL 32502
Tel: (850) 432-2451
JAS@beggslane.com

Robert A Manning
Joseph A. Brown
HOPPING GREEN & SAMS, P.A.
119 S. Monroe Street, Suite 300
Tallahassee, FL 32301
Tel: (850) 222-7500
Fax: (850) 224-8551
robertm@hgslaw.com
josephb@hgslaw.com

Counsel for Petitioner Gulf Power Company

Wayne Stenehjem
ATTORNEY GENERAL OF NORTH
DAKOTA
Margaret Olson
Assistant Attorney General
North Dakota Attorney General's Office
500 North 9th Street
Bismarck, ND 58501-4509
Tel: (701) 328-3640
Fax: (701) 328-4300
maiolson@nd.gov

Counsel for Petitioner State of North Dakota

Michael DeWine
ATTORNEY GENERAL OF OHIO
Eric E. Murphy
State Solicitor
Counsel of Record
30 E. Broad Street, 17th Floor
Columbus, OH 43215
Tel: (614) 466-8980
eric.murphy@ohioattorneygeneral.gov

Counsel for Petitioner State of Ohio

E. Scott Pruitt
ATTORNEY GENERAL OF OKLAHOMA
P. Clayton Eubanks
Deputy Solicitor General
313 N.E. 21st Street
Oklahoma City, OK 73105
Tel: (405) 522-8992
Fax: (405) 522-0085
clayton.eubanks@oag.ok.gov
fc.docket@oag.state.ok.us

Counsel for Petitioner State of Oklahoma

P. Stephen Gidiere III
C. Grady Moore, III
Julia B. Barber
BALCH & BINGHAM LLP
1901 6th Ave. N., Suite 1500
Birmingham, AL 35203
Tel: (205) 251-8100
sgidiere@balch.com

Stephanie Z. Moore
Executive Vice President & General
Counsel
VISTRA ENERGY CORP.
1601 Bryan Street, 22nd Floor
Dallas, TX 75201

Daniel J. Kelly
Vice President and Associate General
Counsel
VISTRA ENERGY CORP.
1601 Bryan Street, 43rd Floor
Dallas, TX 75201

*Counsel for Petitioner Oak Grove Management
Company LLC*

Alan Wilson
ATTORNEY GENERAL OF SOUTH
CAROLINA
James Emory Smith, Jr.
Deputy Solicitor General
Office of the Attorney General
P.O. Box 11549
Columbia, SC 29211
Tel: (803) 734-3680
esmith@scag.gov

Counsel for Petitioner State of South Carolina

Ken Paxton
ATTORNEY GENERAL OF TEXAS
Jeffrey C. Mateer
First Assistant Attorney General
Brantley Starr
Deputy First Assistant Attorney
General
James E. Davis
Deputy Attorney General for Civil
Litigation

Priscilla M. Hubenak
Chief, Environmental Protection
Division

Mary E. Smith
Assistant Attorney General
Office of the Attorney General of Texas
Environmental Protection Division
P.O. Box 12548, MC-066
Austin, TX 78711-2548
Tel: (512) 475-4041
Fax: (512) 320-0911
mary.smith@texasattorneygeneral.gov

*Counsel for Petitioners State of Texas, Texas
Commission on Environmental Quality, Public
Utility Commission of Texas, and Railroad
Commission of Texas*

Patrick Morrissey

ATTORNEY GENERAL OF WEST
VIRGINIA

Elbert Lin

Solicitor General

Counsel of Record

State Capitol Building 1, Room 26-E
Charleston, WV 25305

Tel: (304) 558-2021

Fax: (304) 558-0140

elbert.lin@wvago.gov

Counsel for Petitioner State of West Virginia

Brad D. Schimel

ATTORNEY GENERAL OF WISCONSIN

Misha Tseytlin

Solicitor General

Counsel of Record

Wisconsin Department of Justice
17 West Main Street
Madison, WI 53707

Tel: (608) 267-9323

tseytlinm@doj.state.wi.us

Counsel for Petitioner State of Wisconsin

Peter K. Michael
ATTORNEY GENERAL OF WYOMING
James Kaste
Deputy Attorney General
Michael J. McGrady
Senior Assistant Attorney General
Elizabeth A. Morrisseau
Assistant Attorney General
Wyoming Attorney General's Office
2320 Capitol Avenue
Cheyenne, WY 82002
Tel: (307) 777-6946
Fax: (307) 777-3542
james.kaste@wyo.gov
mike.mcgrady@wyo.gov
elizabeth.morrisseau@wyo.gov

Counsel for Petitioner State of Wyoming

CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

Pursuant to Circuit Rule 28(a)(1), Petitioners state as follows:

A. Parties, Intervenors, and Amici Curiae

These cases involve the following parties:

Petitioners:

No. 16-1127: Murray Energy Corporation.

No. 16-1175: ARIPPA.

No. 16-1204: Michigan Attorney General Bill Schuette, on behalf of the People of Michigan; State of Alabama; State of Arizona; State of Arkansas; State of Kansas; Commonwealth of Kentucky; State of Nebraska; State of North Dakota; State of Ohio; State of Oklahoma; State of South Carolina; State of Texas; State of West Virginia; State of Wisconsin; State of Wyoming; Texas Commission on Environmental Quality; Public Utility Commission of Texas; and Railroad Commission of Texas.

No. 16-1206: Oak Grove Management Company LLC.

No. 16-1208: Southern Company Services, Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; and Mississippi Power Company.

No. 16-1210: Utility Air Regulatory Group.

Respondents:

Respondents are the United States Environmental Protection Agency (in Nos. 16-1175, 16-1204, 16-1208, and 16-1210) and the United States Environmental Protection Agency and Gina McCarthy, Administrator (in Nos. 16-1127 and 16-1206).

Intervenors and *Amici Curiae*:

Conservation Law Foundation; Environmental Defense Fund; Natural Resources Council of Maine; The Ohio Environmental Council; Sierra Club; Commonwealth of Massachusetts; Commonwealth of Virginia; State of California; State of Connecticut; State of Delaware; State of Iowa; State of Illinois; State of Maine; State of Maryland; State of Minnesota; State of New Hampshire; State of New Mexico; State of New York; State of Oregon; State of Rhode Island; State of Vermont; Washington, the District of Columbia; City of Baltimore; City of Chicago; City of New York; County of Erie, New York; American Lung Association; American Public Health Association; Chesapeake Bay Foundation; Chesapeake Climate Action Network; Citizens for Pennsylvania's Future; Clean Air Council; Downwinders at Risk; Environmental Integrity Project; National Association for the Advancement of Colored People; Natural Resources Defense Council; Physicians for Social Responsibility; Calpine Corporation; and Exelon Corporation are Intervenors in support of Respondents.

There are no Intervenors in support of Petitioners.

The Institute for Policy Integrity at New York University School of Law is *amicus curiae* in support of Respondents.

There are no *amicus curiae* in support of Petitioners.

B. Rulings Under Review

These consolidated cases involve final agency action of the United States Environmental Protection Agency titled, “Supplemental Finding That It Is Appropriate and Necessary to Regulate Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units,” and published on April 25, 2016, at 81 Fed. Reg. 24,420.

C. Related Cases

These consolidated cases have not previously been before this Court or any other court. Counsel is aware of the following related case that, as of the time of filing, has appeared before this Court:

(1) *White Stallion Energy Center, LLC v. EPA*, 748 F.3d 1222 (D.C. Cir. 2014), *rev'd*, *Michigan v. EPA*, 135 S. Ct. 2699 (2015) (No. 12-1100 and consolidated Nos. 12-1101, 12-1102, 12-1147, 12-1170, 12-1172, 12-1173, 12-1174, 12-1175, 12-1176, 12-1177, 12-1178, 12-1180, 12-1181, 12-1182, 12-1183, 12-1184, 12-1185, 12-1186, 12-1187, 12-1188, 12-1189, 12-1190, 12-1191, 12-1192, 12-1193, 12-1194, 12-1195, 12-1196).

Counsel is aware of the following related case that, as of the time of filing, is currently before this Court:

(1) *ARIPPA v. EPA*, No. 15-1180 (and consolidated Nos. 15-1191 and 15-1192) regarding EPA’s “Reconsideration on the Mercury and Air Toxics Standards (MATS) and the Utility New Source Performance Standards; Notice of Final Action Denying Petitions for Reconsideration,” 80 Fed. Reg. 24,218 (Apr. 30, 2015).

Recognizing the relationship between the instant case and *ARIPPA*, this Court has ordered that the two cases be scheduled for argument on the same day and before the same panel. Order at 2, *ARIPPA v. EPA*, No. 15-1180, and *Murray Energy Corp. v. EPA*, No. 16-1127 (D.C. Cir. Aug. 29, 2016), ECF No. 1632520.

Counsel is aware of the following related cases that, as of the time of filing, have appeared before the United States Supreme Court:

- (1) *Michigan v. EPA*, 135 S. Ct. 2699 (2015) (No. 14-46).
- (2) *Utility Air Regulatory Grp. v. EPA*, 135 S. Ct. 2699 (2015) (No. 14-47, consolidated with No. 14-46).
- (3) *Nat’l Mining Ass’n v. EPA*, 135 S. Ct. 2699 (2015) (No. 14-49, consolidated with No. 14-46).

CORPORATE DISCLOSURE STATEMENTS

Non-governmental Petitioners submit the following statements pursuant to

Rule 26.1 of the Federal Rules of Appellate Procedure and Circuit Rule 26.1:

Alabama Power Company is a wholly-owned subsidiary of Southern Company, which is a publicly held corporation. Other than Southern Company, no publicly-held company owns 10% or more of Alabama Power Company's stock. No publicly-held company holds 10% or more of Southern Company's stock. Southern Company stock is traded publicly on the New York Stock Exchange under the symbol "SO."

ARIPPA is a non-profit trade association that represents a membership primarily comprised of electric generating plants using environmentally-friendly circulating fluidized bed boiler technology to convert coal refuse and/or other alternative fuels such as biomass into alternative energy and/or steam, with the resultant alkaline ash used to reclaim mine lands. ARIPPA was organized in 1988 for the purpose of promoting the professional, legislative and technical interests of its member facilities. ARIPPA has no outstanding shares or debt securities in the hands of the public and does not have any parent, subsidiary, or affiliate that has issued shares or debt securities to the public.

Georgia Power Company is a wholly-owned subsidiary of Southern Company, which is a publicly held corporation. Other than Southern Company, no publicly-held company owns 10% or more of Georgia Power Company's stock. No publicly-held company holds 10% or more of Southern Company's stock. Southern Company stock is traded publicly on the New York Stock Exchange under the symbol "SO."

Gulf Power Company is a wholly-owned subsidiary of Southern Company, which is a publicly held corporation. Other than Southern Company, no publicly-held company owns 10% or more of Gulf Power Company's stock. No publicly-held company holds 10% or more of Southern Company's stock. Southern Company stock is traded publicly on the New York Stock Exchange under the symbol "SO."

Mississippi Power Company is a wholly-owned subsidiary of Southern Company, which is a publicly held corporation. Other than Southern Company, no publicly-held company owns 10% or more of Mississippi Power Company's stock. No publicly-held company holds 10% or more of Southern Company's stock. Southern Company stock is traded publicly on the New York Stock Exchange under the symbol "SO."

Murray Energy Corporation has no parent corporation and no publicly held corporation owns ten percent (10%) or more of its stock. Murray Energy Corporation

is the largest privately-held coal company and the largest underground coal mine operator in the United States, with combined operations that currently produce and ship about eighty-seven (87) million tons of bituminous coal annually.

Oak Grove Management Company, LLC is a wholly owned subsidiary of Vistra Asset Company LLC, which is a Delaware limited liability company and is a wholly owned subsidiary of Vistra Operations Company LLC, which is a Delaware limited liability company and is a wholly owned subsidiary of Vistra Intermediate Company LLC, which is a Delaware limited liability company and is a wholly owned subsidiary of Vistra Energy Corp., which is a publicly held corporation. Vistra Energy Corp. is traded publicly on the OTCQX market under the symbol “VSTE.” Apollo Management Holdings L.P., Brookfield Asset Management Private Institutional Capital Adviser (Canada), L.P., and Oaktree Capital Management, L.P. are publicly held entities and each have subsidiaries that own more than 10% of Vistra Energy Corp.’s stock.

Southern Company Services, Inc. is a wholly-owned subsidiary of Southern Company, which is a publicly held corporation. Other than Southern Company, no publicly-held company owns 10% or more of Southern Company Services, Inc.’s stock. No publicly-held company holds 10% or more of Southern Company’s stock. Southern Company stock is traded publicly on the New York Stock Exchange under the symbol “SO.”

Utility Air Regulatory Group (“UARG”) is a not-for-profit association of individual electric generating companies and national trade associations. UARG participates on behalf of certain of its members collectively in Clean Air Act administrative proceedings that affect electric generators and in litigation arising from those proceedings. UARG has no outstanding shares or debt securities in the hands of the public and has no parent company. No publicly held company has a 10% or greater ownership interest in UARG.

TABLE OF CONTENTS

	<u>Page</u>
CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES.....	i
CORPORATE DISCLOSURE STATEMENTS	v
TABLE OF CONTENTS.....	vii
TABLE OF AUTHORITIES.....	x
GLOSSARY OF TERMS.....	xvii
JURISDICTIONAL STATEMENT	1
STATEMENT OF ISSUES	1
STATUTES AND REGULATIONS	2
INTRODUCTION	2
STATEMENT OF THE CASE.....	4
I. The Clean Air Act’s Regulation of HAPs.....	4
A. Section 112 Program Prior to 1990.....	4
B. Section 112 Program After the 1990 CAA Amendments.....	5
II. EPA’s § 112 Rulemakings for EGU HAPs.....	8
III. <i>Michigan v. EPA</i>	17
IV. The Supplemental Finding.....	19
SUMMARY OF ARGUMENT.....	24
STANDING	26
STANDARD OF REVIEW	27
ARGUMENT	28
I. EPA’s “Affordability” Analysis Does Not Satisfy Its Obligation To Determine Whether the Benefits of Regulating EGUs Under § 112 Are Worth the Costs.....	28

A.	EPA Must Consider Costs in Relation to Benefits To Justify its “Appropriate and Necessary” Determination.	29
B.	EPA’s “Preferred Approach” Ignores <i>Michigan</i> and the Statute.....	33
1.	EPA Unlawfully Failed To Weigh Costs Against Benefits.....	33
2.	EPA Errs By Interpreting § 112(n)(1)(A) Not To Require Any Comparison of Costs and Benefits.	37
3.	EPA Unlawfully Fails To Assess the Costs and Benefits of Each of the Three, Multi-Billion Dollar Control Mandates.....	40
II.	EPA’s “Alternative” Benefit-Cost Approach Is Also Invalid Because It Is Based on the “Co-Benefits” of Reducing Pollutants Other than HAPs.....	41
A.	Congress Did Not Authorize EPA To Regulate EGU HAP Emissions Under § 112 Based on Reductions in Pollutants Regulated Under Other CAA Programs.	42
1.	Section 112(n)(1)(A) Limits EPA’s Consideration to Whether the Benefits of Reducing <i>HAPs</i> Are Worth the Costs.....	43
2.	Predicating § 112 Regulation of EGU HAP Emissions on PM _{2.5} Co-Benefits Resulting from SO ₂ Reductions Is an End-Run Around CAA Programs That Already Regulate These Non-HAPs.	47
B.	EPA’s Arguments for Relying on Co-Benefits Are Unavailing.....	49
1.	EPA’s Invocation of General “Economic Principles” Is Irrelevant.	49
2.	EPA’s Justification for Considering Co-Benefits Relies on a Logical Fallacy.	50
3.	EPA Relies on the Illusory Co-Benefits of Reducing PM _{2.5} Below Levels That the Agency Has Already Found Protect the Public Health.....	51
C.	EPA’s Vague Reference to Unquantifiable Benefits Does Not Support Its “Appropriate and Necessary” Finding.	55

III. EPA’s Refusal To Consider Alternative Control Strategies and All Relevant Costs, Is Contrary to the Statute and the Supreme Court’s Direction.58

A. EPA Impermissibly Ignores Less Costly Alternative Control Strategies for Reducing Emissions from EGUs.58

B. EPA Cannot Find § 112 “Appropriate” for EGUs Without Considering all Costs, Including Important Disadvantages and Localized Impacts.63

CONCLUSION71

CERTIFICATE OF COMPLIANCE

CERTIFICATE OF SERVICE

TABLE OF AUTHORITIES

FEDERAL CASES

	<u>Page</u>
<i>Am. Lung Ass'n v. EPA</i> , 134 F.3d 388 (D.C. Cir. 1998).....	52
<i>Am. Petroleum Inst. v. EPA</i> , 52 F.3d 1113 (D.C. Cir. 1995)	45, 46, 47
<i>Bond v. United States</i> , 134 S. Ct. 2077 (2014).....	62
<i>Burlington Truck Lines v. United States</i> , 371 U.S. 156 (1962)	54
<i>Entergy Corp. v. Riverkeeper, Inc.</i> , 556 U.S. 208 (2009)	30, 31
<i>Ethyl Corp. v. EPA</i> , 51 F.3d 1053 (D.C. Cir. 1995)	45
<i>FCC v. Fox Television Stations, Inc.</i> , 556 U.S. 502 (2009)	54
<i>Indus. Union Dep't, AFL-CIO v. Am. Petroleum Inst.</i> , 448 U.S. 607 (1980).....	31, 35, 39
<i>Int'l Ladies' Garment Workers' Union v. Donovan</i> , 722 F.2d 795 (D.C. Cir. 1983)	62, 63
<i>Lead Indus. Ass'n v. EPA</i> , 647 F.2d 1130 (D.C. Cir. 1980).....	52, 53
<i>Lujan v. Defenders of Wildlife</i> , 504 U.S. 555 (1992).....	26, 27
* <i>Michigan v. EPA</i> , 135 S. Ct. 2699 (2015)	1, 2, 3, 18, 22, 24, 25, 26, 28, 29, 30
.....	31, 32, 35, 36, 37, 38, 39, 41, 43, 44
.....	45, 55, 56, 57, 58, 59, 62, 63, 64, 68
<i>Mingo Logan Coal Co. v. EPA</i> , 829 F.3d 710 (D.C. Cir. 2016).....	26, 64
<i>Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.</i> , 463 U.S. 29 (1983).....	28, 42, 46, 54, 63, 67, 68
<i>New Jersey v. EPA</i> , 517 F.3d 574 (D.C. Cir. 2008).....	4, 5, 13

* Authorities upon which we chiefly rely are marked with asterisks.

NRDC v. EPA, 529 F.3d 1077 (D.C. Cir. 2008) 15

Pillai v. Civil Aeronautics Bd., 485 F.2d 1018 (D.C. Cir. 1973)..... 63

Texas v. EPA, 829 F.3d 405 (5th Cir. 2016)..... 68

White Stallion Energy Ctr., LLC v. EPA, 748 F.3d 1222 (D.C. Cir. 2014) 17

White Stallion Energy Ctr., LLC v. EPA, No. 12-1100, 2015 WL 11051103
(D.C. Cir. Dec. 15, 2015)..... 19

Whitman v. Am. Trucking Ass’ns, Inc., 531 U.S. 457 (2001)..... 44, 45, 52

FEDERAL STATUTES

2 U.S.C. § 1535 63

5 U.S.C. § 602(c)..... 63

5 U.S.C. § 706 27

Clean Air Act § 112, 42 U.S.C. § 1857c-7(a)(1) (1970)..... 4

Clean Air Act § 112, 42 U.S.C. § 1857c-7(b)(1)(B) (1970)..... 4

Clean Air Act, 42 U.S.C. §§ 7401, *et seq.* (2015)

 CAA § 102(a), 42 U.S.C. § 7402(a) 61

 CAA § 108, 42 U.S.C. § 7408 45

 CAA § 109, 42 U.S.C. § 7409 45

 CAA § 109(b), 42 U.S.C. § 7409(b) 44, 52

 CAA § 109(b)(1), 42 U.S.C. § 7409(b)(1)..... 52

 CAA § 109(b)(2), 42 U.S.C. § 7409(b)(2)..... 52

 CAA § 109(d)(1), 42 U.S.C. § 7409(d)(1)..... 5

CAA § 111(d), 42 U.S.C. § 7411(d).....	26, 60, 61
CAA § 112, 42 U.S.C. § 7412	4
CAA § 112(a)(1), 42 U.S.C. § 7412(a)(1).....	5
CAA § 112(b), 42 U.S.C. § 7412(b)	3
CAA § 112(b)(1), 42 U.S.C. § 7412(b)(1).....	5
CAA § 112(c), 42 U.S.C. § 7412(c)	12
CAA § 112(c)(9), 42 U.S.C. § 7412(c)(9).....	13
CAA § 112(d), 42 U.S.C. § 7412(d).....	6, 30
CAA § 112(d)(2), 42 U.S.C. § 7412(d)(2).....	6
CAA § 112(d)(3), 42 U.S.C. § 7412(d)(3).....	6, 58
CAA § 112(d)(3)(A), 42 U.S.C. § 7412(d)(3)(A)	58
CAA § 112(f), 42 U.S.C. § 7412(f)	6, 64
CAA § 112(k)(4), 42 U.S.C. § 7412(k)(4)	61
CAA § 112(l)(3), 42 U.S.C. § 7412(l)(3)	61
CAA § 112(n)(1)(A), 42 U.S.C. § 7412(n)(1)(A)	7, 8, 32, 33, 40
.....	41, 43, 45, 50, 58, 61
CAA § 112(n)(1)(B), 42 U.S.C. § 7412(n)(1)(B).....	8, 33, 44
CAA § 112(n)(1)(C), 42 U.S.C. § 7412(n)(1)(C).....	44
CAA § 116, 42 U.S.C. § 7416	23, 61
CAA § 211(k), 42 U.S.C. § 7545(k).....	46
CAA § 302(h), 42 U.S.C. § 7602(h)	52

CAA § 307(b)(1), 42 U.S.C. § 7607(b)(1).....	1
CAA § 307(d)(9), 42 U.S.C. § 7607(d)(9).....	27
CAA §§ 401 <i>et seq.</i> , 42 U.S.C. §§ 7651 <i>et seq.</i>	43
CAA § 401(b), 42 U.S.C. § 7651(b)	48

LEGISLATIVE HISTORY

136 CONG. REC. 3493 (Mar. 6, 1990).....	6, 32
136 CONG. REC. 35,013 (Oct. 26, 1990).....	48, 59
136 CONG. REC. 35,075 (Oct. 26, 1990).....	32
<i>Energy Policy Implications of the Clean Air Act Amendments of 1989: Hearing Before the S. Comm. on Energy & Natural Resources, 101st Cong. (1990) (testimony of William G. Rosenberg, Assistant Adm'r, Air & Radiation, EPA)</i>	<i>7, 32</i>
H.R. 3030, 101st Cong. (1989) (as introduced)	8
Pub. L. No. 91-604, 84 Stat. 1676 (1970)	4
Pub. L. No. 101-549, 104 Stat. 2399 (1990).....	7, 8
S. 1490, 101st Cong. (1989) (as introduced)	8
S. Rep. No. 101-228 (1989), <i>reprinted in</i> 1990 U.S.C.C.A.N. 3385	5
<i>The American Energy Initiative, Part 15: What EPA's Utility MACT Rule Will Cost U.S. Consumers: Hearing Before the Subcomm. on Energy & Power of the H. Comm. on Energy & Commerce, 112th Cong. (2012) (statement of Anne E. Smith, Ph.D.)</i>	<i>16</i>

FEDERAL REGULATIONS

40 C.F.R. § 50.13	52
40 C.F.R. § 50.18.....	52

40 C.F.R. pt. 60, subpt. B.....23

40 C.F.R. § 60.24(f)60

FEDERAL REGISTER

40 Fed. Reg. 48,292 (Oct. 14, 1975)..... 4

52 Fed. Reg. 8724 (Mar. 19, 1987)..... 5

54 Fed. Reg. 38,044 (Sept. 14, 1989)..... 4

54 Fed. Reg. 51,654 (Dec. 15, 1989) 5

63 Fed. Reg. 64,632 (Nov. 23, 1998).....27

65 Fed. Reg. 79,825 (Dec. 20, 2000) 11

69 Fed. Reg. 4652 (Jan. 30, 2004) 11, 60

70 Fed. Reg. 15,994 (Mar. 29, 2005).....9, 11, 12, 43

70 Fed. Reg. 28,606 (May 18, 2005) 12

71 Fed. Reg. 33,388 (June 9, 2006)..... 12

76 Fed. Reg. 24,976 (May 3, 2011) 9, 13, 14, 15, 39, 40, 56, 62, 69

77 Fed. Reg. 9304 (Feb. 16, 2012)13, 14, 15, 16, 17, 36

78 Fed. Reg. 3086 (Jan. 15, 2013) 51, 52, 53

80 Fed. Reg. 75,025 (Dec. 1, 2015)..... 19, 20, 21, 28, 29, 34, 35, 37, 55, 56, 57, 67

81 Fed. Reg. 22,977 (Apr. 19, 2016).....55

81 Fed. Reg. 24,420 (Apr. 25, 2016).....1, 19, 20, 21, 22, 23, 34, 35, 36, 37, 39
..... 40, 41, 44, 49, 50, 56, 59, 62, 64, 67, 68, 70

CASE MATERIALS

Br. for the Fed. Resp'ts in Opp'n, <i>Michigan v. EPA</i> , 135 S. Ct. 2699 (2015) (No. 14-46).....	15
Final Br. of Resp't EPA, <i>New Jersey v. EPA</i> , 517 F.3d 574 (D.C. Cir. 2008) (No. 05-1097).....	12
Order, <i>ARIPPA v. EPA</i> , No. 15-1180, and <i>Murray Energy Corp. v. EPA</i> , No. 16-1127 (D.C. Cir. Aug. 29, 2016), ECF No. 1632520	14
Tr. of Oral Arg., <i>Michigan v. EPA</i> , 135 S. Ct. 2699 (2015) (No. 14-46).....	47

MISCELLANEOUS

Docket, Warren, <i>How to drink like Winston Churchill</i> , THE TELEGRAPH (Jan. 28, 2015), http://www.telegraph.co.uk/news/winston-churchill/11374144/How-to-drink-like-Winston-Churchill.html	34
EPA, Air Pollution Control Technology Fact Sheet; Dry Electrostatic Precipitator (ESP) – Wire-Plate Type, EPA-452/F-03-028 (undated).....	10
EPA, Guidelines for Preparing Economic Analyses (Dec. 17, 2010, updated May 2014), https://www.epa.gov/environmental-economics/guidelines-preparing-economic-analyses	49
EPA, Mercury Study Report to Congress, Vol. 1, EPA-452/R-97-003 (Dec. 1997), EPA-HQ-OAR-2009-0234-3054.....	9
EPA, Regulatory Impact Analysis for the Final Mercury and Air Toxics Standards, EPA-452/R-11-011 (Dec. 2011), EPA-HQ-OAR- 2009-0234-20131	16, 17, 22, 51, 54, 55, 57
EPA, Response to Comments for Supplemental Finding that it is Appropriate and Necessary to Regulate Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units (Apr. 2016), EPA-HQ-OAR-2009-0234-20578	23, 40, 64, 65, 66, 67, 68

EPA, Revised Technical Support Document: National-Scale Assessment of Mercury Risk to Populations with High Consumption of Self-caught Freshwater Fish In Support of the Appropriate and Necessary Finding for Coal- and Oil-Fired Electric Generating Units, EPA-452/R-11-009 (Dec. 2011), EPA-HQ-OAR-2009-0234-19913.....	14
EPA, Study of Hazardous Air Pollutant Emissions from Electric Utility Steam Generating Units, Final Report to Congress, Vol. 1, EPA-453/R-98-004a (Feb. 1998), EPA-HQ-OAR-2009-0234-3052.....	9, 10, 13, 14, 15, 17
EPA, The Benefits and Costs of the Clean Air Act, 1970 to 1990 (Oct. 1997), https://www.epa.gov/clean-air-act-overview/benefits-and-costs-clean-air-act-1970-1990-retrospective-study	5
EPA, The Benefits and Costs of the Clean Air Act 1990 to 2010, EPA-410-R-99-001 (Nov. 1999), https://www.epa.gov/sites/production/files/2015-07/documents/fullrept.pdf	16
Legal Memorandum Accompanying the Proposed Supplemental Finding that it is Appropriate and Necessary to Regulate Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units (EGUs) (undated), EPA-HQ-OAR-2009-0234-20519	20, 28, 33, 34, 35, 37, 38
National Acid Precipitation Assessment Program, National Acid Precipitation Assessment Program Report to Congress 2011: An Integrated Assessment (Dec. 2011), www.whitehouse.gov/sites/default/files/microsites/ostp/2011_napap_508.pdf	6
Reilly, William K., Adm'r, EPA, Letter to Members of the Senate (Jan. 26, 1990).....	7, 8, 60
U.S. Energy Information Administration, Today in Energy: EIA electricity generator data show power industry response to EPA mercury limits (July 7, 2016), http://www.eia.gov/todayinenergy/detail.php?id=26972	66

GLOSSARY OF TERMS

Act (or CAA)	Clean Air Act
EGU	Electric Generating Unit
EPA (or Agency)	United States Environmental Protection Agency
GW	Gigawatts
HAP	Hazardous Air Pollutant
JA	Joint Appendix
MATS	Mercury and Air Toxics Standards, 77 Fed. Reg. 9304 (Feb. 16, 2012)
NAAQS	National Ambient Air Quality Standards
PM _{2.5}	Fine Particulate Matter
RIA	Regulatory Impact Analysis
Rule	Supplemental Finding That It Is Appropriate and Necessary To Regulate Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units; Final Rule, 81 Fed. Reg. 24,420 (Apr. 25, 2016)
SO ₂	Sulfur Dioxide
UARG	Utility Air Regulatory Group

JURISDICTIONAL STATEMENT

These consolidated cases challenge a final action of the U.S. Environmental Protection Agency (“EPA” or “Agency”) under the Clean Air Act (“CAA” or “Act”), published at 81 Fed. Reg. 24,420 (Apr. 25, 2016) (the “Rule”), Joint Appendix (“JA”) ___-___. This Court has jurisdiction under CAA § 307(b)(1).¹ Petitions for review were timely filed.

STATEMENT OF ISSUES

The Supreme Court held in *Michigan v. EPA*, 135 S. Ct. 2699 (2015), that EPA must consider cost in determining whether it is “appropriate and necessary” to regulate emissions of hazardous air pollutants (“HAPs”) from electric generating units (“EGUs”) under § 112 of the Act. The Rule consists of EPA’s supplemental finding that such regulation is appropriate and necessary, notwithstanding estimated quantifiable annual costs of \$9.6 billion and benefits of \$4 to \$6 million.

1. Whether EPA’s “preferred approach,” under which EPA finds that § 112 regulation is appropriate and necessary if it is affordable for the industry as a whole, is contrary to *Michigan* and § 112(n)(1)(A), and is otherwise arbitrary, capricious, or unlawful.

2. Whether EPA’s alternative “formal benefit-cost analysis,” which relies on the “co-benefits” of incidental reductions of non-HAPs to justify the \$9.6 billion

¹ The Table of Authorities provides parallel citations to the U.S. Code.

annual cost of regulating EGU HAPs under § 112, is contrary to *Michigan* and § 112(n)(1)(A), and is otherwise arbitrary, capricious, or unlawful.

3. Whether EPA's refusal to consider alternative strategies in lieu of regulating EGUs under § 112 and to consider *all* relevant costs and disadvantages, is contrary to *Michigan* and § 112(n)(1)(A), and is otherwise arbitrary, capricious, or unlawful.

STATUTES AND REGULATIONS

This case involves EPA's finding made pursuant to a claim of authority under CAA § 112(n)(1)(A). The addendum reproduces pertinent portions of cited statutes and regulations.

INTRODUCTION

There is no escaping these facts: the most expensive rulemaking in EPA's history—costing at least \$9.6 billion annually by EPA's estimation—would result in a paltry \$4 to \$6 million in purported public health benefits from reducing the pollutants it aims to address. In its previous attempt to justify regulating EGUs under § 112, EPA sought to avoid these inconvenient facts by asserting that costs do not matter at all under § 112(n)(1)(A). The Supreme Court emphatically rejected EPA's position, admonishing that “[o]ne would not say that it is even rational, never mind ‘appropriate,’ to impose billions of dollars in economic costs in return for a few dollars in health or environmental benefits.” *Michigan*, 135 S. Ct. at 2707.

Instead of developing a thoughtful comparison of costs and benefits on remand, EPA fell back on its prior determination of small, uncertain, and largely unquantifiable benefits associated with regulation of HAPs² under § 112 and concluded those benefits are justified so long as the industry can afford to spend \$9.6 billion on this regulation annually. But affordability cannot satisfy the Supreme Court's direction that EPA weigh benefits and costs to ensure they are not disproportionate. *Id.* at 2707 (“No regulation is ‘appropriate’ if it does significantly more harm than good.”). In fact, EPA never examined whether the benefits of regulation under § 112 outweigh the substantial costs. EPA did not ask whether it is “even rational, never mind ‘appropriate,’ to impose billions of dollars in economic costs in return for” the particular benefits it identified. *Id.* And it did not ask whether \$9.6 billion annual costs are “disproportionate to the[se particular] benefits.” *Id.* at 2710.

EPA alternatively relies on the co-benefits of reducing a non-HAP—fine particulate matter (“PM_{2.5}”), which in turn would result from mandating reductions in another non-HAP: sulfur dioxide (“SO₂”)—to justify the costs of regulating EGU HAPs under § 112. But the benefit-cost analysis EPA cites, which was developed for the original rulemaking, shows unequivocally that the costs dwarf the benefits attributable to reducing the regulated pollutants (i.e., the HAPs). EPA cannot properly

² In this brief, “HAPs” refers to substances listed under § 112(b).

conclude that it is “appropriate and necessary” to regulate HAPs under § 112 if virtually all the benefits of doing so derive from incidental reductions in non-HAPs that are regulated under numerous other CAA programs.

STATEMENT OF THE CASE

I. The Clean Air Act’s Regulation of HAPs

A. Section 112 Program Prior to 1990

Prior to 1990, § 112 required EPA to identify hazardous substances for regulation and develop emission standards for each to provide an “ample margin of safety” to protect public health. Pub. L. No. 91-604, § 112, 84 Stat. 1676, 1685 (1970); 42 U.S.C. § 1857c-7(a)(1), (b)(1)(B) (1970). EPA interpreted the phrase “ample margin of safety” to authorize a risk management decision considering “all health information ... as well as other relevant factors including costs and economic impacts, technological feasibility, and other factors relevant to each particular decision.” 54 Fed. Reg. 38,044, 38,045 (Sept. 14, 1989), JA____.

EPA listed eight hazardous substances and regulated seven of them before 1990, for a limited number of source categories. *See New Jersey v. EPA*, 517 F.3d 574, 578 (D.C. Cir. 2008). In part because emissions of these substances comprise a minuscule percentage of overall EGU emissions, every EPA evaluation of EGUs before 1990 under the “ample margin of safety” standard concluded their hazardous-substance emissions did not pose a significant public health risk. *See, e.g.*, 40 Fed. Reg. 48,292, 48,297, 48,298 (Oct. 14, 1975) (examining EGU mercury emissions), JA____,

____; 52 Fed. Reg. 8724, 8725 (Mar. 19, 1987) (same), JA____; 54 Fed. Reg. 51,654, 51,671-72 (Dec. 15, 1989) (radionuclides), JA____-____.

Over this same period, other CAA programs required EGUs to install controls for a variety of conventional (non-hazardous) pollutants, including flue gas desulfurization systems (known as “scrubbers”) for SO₂ emissions and fabric filters or electrostatic precipitators for particulate matter emissions. Hazardous substances emitted during EGU combustion were also “incident[ally]” reduced by these controls.³

B. Section 112 Program After the 1990 CAA Amendments

In 1990, Congress amended the CAA to substantially broaden the scope of substances to be addressed under § 112 and also transformed § 112 from a strictly health-based program to a control technology-driven program. S. Rep. No. 101-228, at 131-33 (1989), *reprinted in* 1990 U.S.C.C.A.N. 3385, 3516-18, JA____-____; *New Jersey*, 517 F.3d at 578. Congress listed 189 HAPs, CAA § 112(b)(1), and required EPA to regulate any source category containing at least one source that emits more than either 10 tons per year of any one HAP or 25 tons per year of all HAPs, *id.* § 112(a)(1), (c)(1).

³ EPA, The Benefits and Costs of the Clean Air Act, 1970 to 1990, at 39 (Oct. 1997), <https://www.epa.gov/clean-air-act-overview/benefits-and-costs-clean-air-act-1970-1990-retrospective-study>, JA____.

For listed categories, Congress directed EPA initially to promulgate “technology-based” emission standards under § 112(d), which are set at the levels of control achieved by the best performers in the category. *Id.* § 112(d)(2), (3). It directed EPA to later consider more stringent standards under § 112(f) if needed to protect public health with an “ample margin of safety.”

Congress in 1990 also enacted significant additional requirements to reduce EGU emissions of conventional pollutants (i.e., non-HAPs), such as SO₂, nitrogen oxides, and PM. These programs included the regional haze and acid rain programs, and imposed new criteria pollutant nonattainment requirements. These programs reduced EGU emissions of non-HAP, conventional pollutants by many millions of tons. The additional controls EGUs installed to comply with these programs also lowered EGU HAP emissions beyond already low, pre-1990 levels.⁴

Congress was concerned that regulating EGUs under § 112 also “would increase power rates, while potentially providing little or no public health benefit.”

136 CONG. REC. 3493 (Mar. 6, 1990) (statement of Sen. Steve Symms), JA____.

Indeed, EPA reported to Congress that regulating EGUs under § 112 “may result in several billion dollars of unnecessary costs with unknown environmental benefits.”

⁴ See National Acid Precipitation Assessment Program, National Acid Precipitation Assessment Program Report to Congress 2011: An Integrated Assessment (Dec. 2011), www.whitehouse.gov/sites/default/files/microsites/ostp/2011_napap_508.pdf, JA____-____.

Letter from William K. Reilly, Adm'r, EPA, to Members of the Senate (Jan. 26, 1990) (“Administrator 1990 Letter to Senate”), JA____. The Agency also warned that doing so would cost “billions of dollars” and yield only “very marginal environmental benefit.”⁵

To address the fact that Congress adopted in 1990 in other parts of the Act several comprehensive new programs to reduce EGU emissions, and recognizing the cost-benefit imbalance of further constraining EGU HAP emissions, Congress enacted an EGU-specific regulatory threshold: § 112(n)(1). Pub. L. No. 101-549, 104 Stat. 2399, 2558-59 (1990), JA____-____. That provision instructs EPA to conduct “a study of the hazards to public health reasonably anticipated to occur as a result of [the EGU HAP] emissions” that remain “*after* imposition of the [other] requirements of this [Act].” CAA § 112(n)(1)(A) (emphasis added). As part of that evaluation (commonly known as the “Utility Study”), EPA must “develop and describe ... alternative control strategies for [any HAP] emissions which may warrant regulation under this section.” *Id.* Then, for those HAP emissions that might “warrant” regulation, Congress authorized EPA to regulate them “under this section” *only* if it

⁵ *Energy Policy Implications of the Clean Air Act Amendments of 1989: Hearing Before the S. Comm. on Energy & Natural Resources*, 101st Cong. 241 (1990) (testimony of William G. Rosenberg, Assistant Adm'r, Air & Radiation, EPA) (“Energy Policy Hearing”), JA____; *see also* Comments of Murray Energy Corporation on EPA’s Proposed Supplemental Finding at 14-29 (Jan. 15, 2016), EPA-HQ-OAR-2009-0234-20536 (“Murray Comments”), JA____-____ (presenting extensive legislative history).

determines that “such regulation is appropriate and necessary after considering the results of the study.” *Id.* Congress also directed EPA to perform a study (commonly known as the “Mercury Study”) to evaluate the “rate and mass” of EGU mercury emissions, “the health and environmental effects of such emissions,” and the cost of available control technologies for mercury. *Id.* § 112(n)(1)(B).

As a companion to § 112(n)(1), which required EPA to consider alternative control strategies, Congress agreed to the Administration’s proposal to provide one particular such alternative: flexible, cooperative state and federal regulation of existing EGU emissions under § 111(d). *See* H.R. 3030, 101st Cong. § 108(d) (1989) and S. 1490, 101st Cong. § 108(d) (1989) (as introduced), JA____, ____; Pub. L. No. 101-549, § 108(g), 104 Stat. 2399, 2467 (1990), JA____. EPA explained this proposal would “allow[] the needed flexibility to identify and address the most significant toxic chemicals from utilities without mandating expensive controls that may be unnecessary.” Administrator 1990 Letter to Senate, JA____.

II. EPA’s § 112 Rulemakings for EGU HAPs

Most HAP emissions from EGUs result from chemical elements that are naturally present in trace amounts in the fuels they burn. They include mercury, non-mercury metals (such as chromium), and acid gases (such as hydrogen chloride).

The Mercury and Utility Studies – After the 1990 CAA Amendments, EPA began updating information on HAPs emitted by EGUs, and conducted modeling to determine how those emissions may affect public health. The results of these efforts

were reported in the December 1997 Mercury Study⁶ and the February 1998 Utility Study.⁷

EPA's studies found EGU HAPs presented limited exposure to humans. In particular, humans are exposed to mercury chiefly through consuming fish containing methylmercury formed in the first instance by aquatic microbes. 76 Fed. Reg. 24,976, 24,983 (May 3, 2011), JA____; Comments of the Utility Air Regulatory Group on EPA's Proposed Supplemental Finding at 10 (Jan. 15, 2016), EPA-HQ-OAR-2009-0234-20557 ("UARG Comments"), JA____. EPA found in 1998 that U.S. coal-fired EGUs emitted about 51.5 tons of mercury, or about 1 percent of the 5,000 tons of worldwide mercury emissions, Utility Study at 7-8, Tbl. 7-1, which by 2010 had fallen dramatically to 29 tons, 76 Fed. Reg. at 25,002, JA____. Of the nine tons of domestic EGU mercury emissions deposited in the U.S., a very small portion ends up as methylmercury in fish people eat, and consequently human exposure to methylmercury resulting from coal-fired EGUs is exceedingly small. UARG Comments at 10 (citing, e.g., 70 Fed. Reg. 15,994, 16,019-21 (Mar. 29, 2005)), JA____.

Likewise, trace amounts of non-mercury metals, naturally present in coal and oil, adhere to particulate ash, virtually all of which is captured by control devices.⁸ In

⁶ EPA, Mercury Study Report to Congress, Vol. 1, EPA-452/R-97-003 (Dec. 1997), EPA-HQ-OAR-2009-0234-3054 ("Mercury Study"), JA____-____.

⁷ EPA, Study of Hazardous Air Pollutant Emissions from Electric Utility Steam Generating Units, Final Report to Congress, Vol. 1, EPA-453/R-98-004a (Feb. 1998), EPA-HQ-OAR-2009-0234-3052 ("Utility Study"), JA____-____.

the Utility Study, EPA found that only two coal-fired facilities had cumulative carcinogenic risks from HAP metals greater than one in one million, and neither exceeded three in one million. Utility Study at 6-3 to 6-4, JA____-____. Exposure levels for non-carcinogenic effects were far below the reference concentration. *Id.*

And emission of the non-carcinogenic “acid gases” like hydrogen chloride, meanwhile, result in exposures an order of magnitude or more below health-protective thresholds, according to EPA’s own models. *Id.* at 6-7, JA____.

Given the uncertainties, however, EPA stated it “believes that mercury from coal-fired utilities is the HAP of greatest potential concern” and that “[f]urther research and evaluation are needed to gain a better understanding of the risks and impacts of utility mercury emissions.” *Id.* at ES-27, JA____. For other HAPs, EPA noted “potential concerns and uncertainties that may need further study.” *Id.*

The December 2000 “Notice of Finding” – In December 2000, well before EPA could complete the data collection and research on mercury it said was necessary, then-departing Administrator Browner published a “[n]otice of regulatory finding,” announcing her conclusion that regulation of two EGU HAPs—mercury from coal-fired EGUs and nickel from oil-fired EGUs—was “appropriate and

⁸ EGUs generally use electrostatic precipitators or fabric filters to capture 99 percent or more of particulate matter emissions to comply with other CAA requirements. *See, e.g.*, EPA, Air Pollution Control Technology Fact Sheet; Dry Electrostatic Precipitator (ESP) – Wire-Plate Type at 1, Tbl. 1, EPA-452/F-03-028 (undated), JA____.

necessary” under § 112. 65 Fed. Reg. 79,825, 78,829 (Dec. 20, 2000) (“2000 Finding”), JA____. EPA claimed “it is unnecessary to solicit ... public comment on today’s finding [because] ... [t]he regulation developed subsequent to the finding will be subject to public review and comment.” *Id.* at 79,831, JA____. In that future rulemaking, she explained, EPA would invite comment on the “notice of regulatory finding,” develop refined risk estimates, and consider alternative control strategies. *Id.* at 79,830, JA____.

The 2005 “Not Appropriate” Rulemaking Determination – In 2004, EPA initiated rulemaking to address emissions from coal- and oil-fired EGUs under § 112(n)(1)(A). 69 Fed. Reg. 4652 (Jan. 30, 2004), JA____. The Agency solicited comments on its 2000 “notice of regulatory finding” and a number of regulatory options including: (1) no further regulation of EGU mercury emissions; (2) adoption of a § 112(d) rule regulating only EGU mercury emissions; (3) adoption of rules under § 112(n)(1)(A) addressing any EGU emissions that warrant regulation as “appropriate and necessary”; and (4) adoption of rules under other CAA sections to confirm that further control under § 112 is not appropriate and necessary. *Id.* at 4659-62, JA____-____.

In support of this rulemaking, EPA’s modeling showed that only a small fraction of the mercury deposited in the U.S. comes from domestic EGUs, and that EGUs contribute a “relatively small percentage” to fish tissue methylmercury levels after implementation of other CAA requirements. 70 Fed. Reg. at 16,019-20, JA____-

____. “Because this new information demonstrates that the level of [mercury] emissions projected to remain ‘after imposition of’ section 110(a)(2)(D) does not cause hazards to public health,” consistent with earlier findings, *supra* pp. 4, 9-10, EPA “conclude[d] that it is not appropriate to regulate coal-fired Utility Units under section 112 on the basis of [mercury] emissions,” 70 Fed. Reg. at 16,004, JA_____.

As it had under the 1970 and 1977 versions of the Act, EPA found that EGU emissions of non-mercury HAPs were too insignificant to warrant regulation. *Id.* at 16,006, JA_____. Indeed, EPA found the excessive costs of § 112 regulation showed such regulation was not appropriate because “the lower bound cost of regulating under CAA § 112 beyond CAIR [a § 110 regulation for EGUs] (e.g., \$750 million) exceeds the upper bound estimate of the benefits of such regulation (e.g., \$210 million).” 71 Fed. Reg. 33,388, 33,394 (June 9, 2006), JA_____. EPA instead regulated mercury emissions from EGUs under § 111 to ensure use of advanced emission controls regardless of public health risk, 70 Fed. Reg. 28,606 (May 18, 2005) (Clean Air Mercury Rule), JA_____, reversed the 2000 Finding, and removed EGUs from the § 112(c) list of source categories, 70 Fed. Reg. at 15,994, JA_____.

New Jersey v. EPA – In litigation over EPA’s 2005 finding and delisting of EGUs, no party challenged the determination that it is “not ‘appropriate’ to regulate power plants under section 112 because to do so would not be cost-effective.” *See* Final Br. of Resp’t EPA at 84, *New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008) (No. 05-1097); *see also id.* at 10 (EPA’s counsel informing this Court that the costs of

regulating EGUs under the § 112 program are “extreme” while the health benefits are “nominal”). Nonetheless, this Court vacated both EPA’s decision to remove EGUs from the § 112(c) source category list and its rule regulating mercury emissions under § 111. *New Jersey*, 517 F.3d 574. The Court held that, once included on the § 112(c) list by way of the December 2000 “notice of finding,” the only way for EPA to remove EGUs from that list was by making the “de-listing” showings required by § 112(c)(9) for all other source categories. *Id.* at 581-82. Because EPA did not follow the § 112(c)(9) procedure, the Court vacated the § 112 finding and the § 111 Clean Air Mercury Rule. *Id.* at 583. The Court did *not* rule on EPA’s 2005 determination that regulation of EGU emissions under § 112 was not “appropriate and necessary.”

The MATS Rule – On remand from *New Jersey*, EPA proposed the Mercury and Air Toxics Standards (“MATS”) rule in May 2011, 76 Fed. Reg. 24,976 (May 3, 2011), JA____, and finalized it in February 2012, 77 Fed. Reg. 9304 (Feb. 16, 2012), JA____. In that rulemaking, EPA asserted, based on newer information, that EGU HAP emissions presented several public health and environmental risks. But those risks, in fact, were relatively small and had not changed much from EPA’s previous assessments.

For mercury, the only HAP for which EPA could quantify *any* benefits of regulation, the Agency found, as it had before, “potential health risks do not likely result from [mercury] inhalation exposures associated with [mercury] emissions from utilities.” 76 Fed. Reg. at 25,000, JA____; *see also* Utility Study at 6-3, Tbl. 6-1, 7-44, 7-

45, JA____, ____, _____. But the greatest health concern associated with mercury, EPA asserted, was consumption of methylmercury, 76 Fed. Reg. at 24,999, JA____, of which only an exceedingly small portion results from EGU emissions.⁹ EPA identified \$4 to \$6 million in benefits to reduce these emissions due to a very small calculated IQ loss for some hypothetically exposed persons, 77 Fed. Reg. at 9428, JA____, and asserted that there could be other unquantifiable benefits, *id.* at 9306, 9323, 9426-32, JA____, ____, ____-____.

For trace non-mercury metals, EPA found only four coal-fired EGUs in the entire industry presenting a cancer risk greater than the de minimis risk threshold of one in one million, with the highest just five in one million. *Id.* at 9319, JA____. While the results of these higher risks were associated with contaminated sampling data, *see* UARG Comments at 11-12, JA____-____,¹⁰ even if correct, a risk of five in one million from just a few units is well within the range that EPA has previously determined is

⁹ EPA, Revised Technical Support Document: National-Scale Assessment of Mercury Risk to Populations with High Consumption of Self-caught Freshwater Fish In Support of the Appropriate and Necessary Finding for Coal- and Oil-Fired Electric Generating Units at 65, EPA-452/R-11-009 (Dec. 2011), EPA-HQ-OAR-2009-0234-19913 (“U.S. [mercury] deposition is generally dominated by sources other than U.S. EGUs”), JA____; *id.* at 64, Tbl. 2-2 (median “percent of total mercury deposition attributable to U.S. EGUs” in a given watershed is about 1%), JA____.

¹⁰ The issue of EPA’s arbitrary and capricious reliance on contaminated sampling data in its “appropriate and necessary” finding is the subject of an appeal by Petitioner UARG in a related case, *ARIPPA v. EPA*, No. 15-1180 (D.C. Cir. filed June 22, 2015), which will be submitted and argued before the same panel as the instant case. Order at 2, *ARIPPA v. EPA*, No. 15-1180, and *Murray Energy Corp. v. EPA*, No. 16-1127 (D.C. Cir. Aug. 29, 2016), ECF No. 1632520.

sufficient to protect public health and the environment with an “ample margin of safety.” *See NRDC v. EPA*, 529 F.3d 1077, 1081-83 (D.C. Cir. 2008). Accordingly, EPA did not quantify any benefits from regulating trace non-mercury metals.

For acid gases, EPA’s modeling showed, as it had before, that human exposures to EGU acid gas emissions are an order of magnitude or more below conservative health-protective levels. 76 Fed. Reg. at 25,016, JA____; *see* Utility Study at 6-7, JA____. Therefore, the only *potential* environmental risk EPA could identify was that in areas where acidification already exists, hydrogen chloride emissions “*could* exacerbate these impacts.” 76 Fed. Reg. at 25,050 (emphasis added), JA____.¹¹

Because risks associated with EGU emissions remained so small, EPA interpreted § 112(n)(1)(A) to require regulation of all HAPs emitted by EGUs under § 112 if *any* HAP emitted by *any* EGU was projected to create either an environmental risk or a public health risk greater than a “one-in-one million” risk level. *See* 77 Fed. Reg. at 9310-11, 9325-26, 9358, JA____-____, ____-____, _____. Because it found such risks for non-mercury metals and acid gases, and because mercury is a neurotoxin, EPA reversed its 2005 rulemaking determination that regulation of EGU HAP

¹¹ Arguing it had no obligation to do so, EPA did not quantify “the precise contribution of power-plant acid gas emissions to ecosystem acidification,” Br. for the Fed. Resp’ts in Opp’n at 31, *Michigan v. EPA*, 135 S. Ct. 2699 (2015) (No. 14-46), and did not identify any EGU contributing to such “exacerbation,” *see* 77 Fed. Reg. at 9404 (noting “information gaps regarding facility-specific emissions”), JA____.

emissions under § 112 was not “appropriate and necessary.” *Id.* at 9355-56, 9363, JA____-____, ____.

EPA found the annual cost of complying with the § 112(d) standards was \$9.6 billion,¹² even though the predicted health benefits were extraordinarily low (only about \$4 to \$6 million of quantified benefits, all from reducing mercury). *See id.* at 9428, JA____. The imbalance between costs and benefits is especially stark when examining the three control requirements EPA promulgated:

- EPA found that the controls required to meet the standards for mercury would cost \$3 billion per year, Regulatory Impact Analysis for the Final Mercury and Air Toxics Standards at 3-10, EPA-452/R-11-011 (Dec. 2011), EPA-HQ-OAR-2009-0234-20131 (“MATS RIA”), JA____, to achieve only 20 tons of emission reductions, *id.* at Tbl. 3-4, JA____, and yield \$4 to \$6 million in quantified benefits, *id.* at 4-67, JA____.
- EPA found that the controls required to meet the standards for non-mercury metals would cost at least \$1 to \$2 billion per year to achieve an unspecified amount of emission reductions and *zero* quantified benefits.¹³
- EPA found that the controls required to meet the standards for acid gases (primarily scrubbers) would cost \$5 billion per year, Smith Statement at 6, Tbl. 1, JA____, to achieve 39.8 thousand tons of hydrogen chloride emission

¹² EPA’s \$9.6 billion cost figure focuses only on compliance costs, not other costs that EPA has recognized elsewhere, like effects on work force and consumers of electricity. EPA, *The Benefits and Costs of the Clean Air Act 1990 to 2010*, at iii, EPA-410-R-99-001 (Nov. 1999), <https://www.epa.gov/sites/production/files/2015-07/documents/fullrept.pdf>, JA____.

¹³ UARG Comments, Ex. 1, *The American Energy Initiative, Part 15: What EPA’s Utility MACT Rule Will Cost U.S. Consumers: Hearing Before the Subcomm. on Energy & Power of the H. Comm. on Energy & Commerce*, 112th Cong. (2012) (statement of Anne E. Smith, Ph.D., at 6, Tbl. 1), EPA-HQ-OAR-2009-0234-20557 (“Smith Statement”), JA____.

reductions, MATS RIA at 3-10, Tbl. 3-4, JA____, an unspecified amount of other acid gas emission reductions, and yield *zero* quantified benefits.

EPA interpreted § 112(n)(1)(A), however, to preclude consideration of these costs of regulation. 77 Fed. Reg. at 9326-27, JA____-____. EPA also claimed in its MATS RIA that the benefits of regulating EGUs under § 112 were substantially more than the costs of compliance because the SO₂ emission standard it promulgated as a “surrogate” for acid gas regulation would produce reductions in PM_{2.5}. MATS RIA at ES-3, JA____. According to EPA, the “co-benefits” of reductions in PM_{2.5} were the “great majority” of the quantifiable benefits to be achieved by the MATS rule. 77 Fed. Reg. at 9305, JA,____.¹⁴ At the same time, EPA emphatically maintained that these co-benefits played no role in its threshold “appropriate and necessary” finding. *Id.* at 9320, JA____.

III. *Michigan v. EPA*

Numerous parties petitioned for review of the MATS rule, including EPA’s finding that regulating EGU HAP emissions is “appropriate and necessary” without consideration of cost. The D.C. Circuit upheld EPA’s determination. *White Stallion Energy Ctr., LLC v. EPA*, 748 F.3d 1222 (D.C. Cir. 2014). The Supreme Court reversed, holding that “EPA strayed far beyond [the] bounds [of reasonable

¹⁴ In fact, the SO₂ standard for regulation of acid gases constitutes both the bulk of the costs for the MATS rule (about \$5 billion annually) and 95% of the alleged PM_{2.5}-related co-benefits (about \$32 to \$87 billion annually). Smith Statement at 6, JA____; *see also* MATS RIA at 5-14, JA____.

interpretation] when it read § [112](n)(1) to mean that it could ignore cost when deciding whether to regulate power plants.” *Michigan*, 135 S. Ct. at 2707. The Court rejected EPA’s attempt to “harmonize[]” Congress’s treatment of EGUs under § 112(n)(1) with its treatment of other sources, noting that such an approach “overlooks the whole point of having a separate provision about power plants: treating power plants *differently* from other stationary sources.” *Id.* at 2710.

Moreover, the Court explained that its underlying concern was not just that EPA ignored cost, but that EPA had “refused to consider whether the costs of its decision outweighed the benefits.” *Id.* at 2706. The Court held that “[n]o regulation is ‘appropriate’ if it does significantly more harm than good.” *Id.* at 2707. And while the Court did not require EPA to conduct “a formal cost-benefit analysis in which each advantage and disadvantage is assigned a monetary value,” *id.* at 2711, it stressed that EPA must weigh the benefits against the costs of regulating EGU HAP emissions under § 112, *id.* at 2707 (explaining “reasonable regulation ordinarily requires paying attention to the advantages *and* the disadvantages of agency decisions”). The Court emphasized that “[o]ne would not say that it is even rational, never mind ‘appropriate,’ to impose billions of dollars in economic costs in return for a few dollars in health or environmental benefits.” *Id.*

For these reasons, the Supreme Court remanded the case for “further proceedings consistent with this opinion,” *id.* at 2712, and this Court remanded to the

Agency with the same instruction, *White Stallion Energy Ctr., LLC v. EPA*, No. 12-1100, 2015 WL 11051103 (D.C. Cir. Dec. 15, 2015).

IV. The Supplemental Finding

On remand, EPA proposed to address the Court's decision in *Michigan* by issuing a "supplemental finding" that "consideration of cost does not alter the agency's previous determination that it is appropriate and necessary to regulate coal- and oil-fired EGUs under section 112 of the CAA." 80 Fed. Reg. 75,025, 75,026 (Dec. 1, 2015), JA____. In doing so, EPA made clear it would "accept[] comment *only* on the consideration of cost in making the appropriate determination." *Id.* at 75,027 (emphasis added), JA____. Neither the basis for EPA's previous determination that "regulation under [§ 112]" was "appropriate," nor the magnitude or significance of any public health or environmental risk associated with that determination, nor any opportunities to reduce those risks in less costly ways, were open for discussion. As EPA said, it "ha[d] already determined [in the MATS rulemaking] that HAP emissions from EGUs present significant hazards to public health and the environment," *id.* at 75,038, JA____, and that prior determination would stand unless EPA found industry compliance costs excessive, *id.* at 75,026, JA____.

EPA offered two alternative justifications for affirming, after a siloed consideration of costs, its prior finding that regulation of EGU HAPs under § 112 is "appropriate." First, under its "preferred" alternative, EPA "interpret[s] CAA section 112(n)(1)(A) as not requiring a benefit-cost analysis." *Id.* at 75,039, JA____; 81

Fed. Reg. at 24,429, JA____. Rather, the “focus” of EPA’s justification is whether the electric utility industry as a whole could “reasonably absorb” the costs of regulating under § 112 all of the HAPs emitted from EGUs. 80 Fed. Reg. at 75,030, JA____. In other words, if the industry were “ab[le] to afford compliance” with the MATS rule without disrupting “the generation, transmission, and distribution of affordable and reliable electricity,” regulation of all EGU HAPs would be automatically “appropriate” based on the benefits, however small, identified as the basis for the prior “appropriate and necessary” determination. Legal Memorandum Accompanying the Proposed Supplemental Finding that it is Appropriate and Necessary to Regulate Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units (EGUs) at 19-20 (undated), EPA-HQ-OAR-2009-0234-20519 (“Legal Memorandum”), JA____-____; *see also* 80 Fed. Reg. at 75,031, 75,038, JA____, ____; 81 Fed. Reg. at 24,424, 24,427, JA____, ____.

To determine whether the costs of regulating EGUs under § 112 are “affordable,” EPA relied on the RIA performed in 2011 for the MATS rule, which predicted compliance costs of \$9.6 billion per year. 80 Fed. Reg. at 75,032-33, JA____-____. This estimate reflects only the compliance costs with the MATS standards for the electric utility industry projected in 2011, and does not include more recent cost information or costs imposed on other sectors of the economy, nor even the full implications and attendant disadvantages and costs of regulating EGUs under § 112. EPA evaluated these projected costs using four metrics, *id.* at 75,033-36, JA____-____,

and concluded that “every one of [these metrics] supports its conclusion that costs are reasonable,” *id.* at 75,036, JA____. The Agency then concluded that because “the costs imposed by MATS are reasonable, it is appropriate for the EPA to regulate HAP emissions from EGUs in light of the meaningful progress the rule makes toward achieving key statutory goals and reducing the previously identified significant hazards to public health and the environment.” *Id.* at 75,038-39, JA____-____.

Second, EPA’s “alternative” approach purported to show that regulation of EGU HAPs is “appropriate” based on a “formal benefit-cost analysis” pulled from the 2011 RIA for the MATS rule. *Id.* at 75,039, JA____. The Agency explained a formal benefit-cost analysis “attempts to quantify all significant consequences of an action in monetary terms in order to determine whether an action ... [has] positive net benefits (i.e., benefits exceed costs).” 81 Fed. Reg. at 24,423 n.13, JA____.

Under this alternative approach, EPA compared the MATS rule’s estimated \$9.6 billion annual compliance costs to EPA’s estimated \$37 to \$90 billion in annual benefits. 80 Fed. Reg. at 75,040, JA____. Those cited benefits, however, almost exclusively consisted of the purported benefits of reductions in pollutants that are *not* regulated as HAPs under § 112, but are instead regulated under other CAA programs. EPA acknowledged that the monetary benefits from HAP reductions—due to health benefits from reducing mercury in fish—are worth no more than \$4 to \$6 *million* per year. *Id.* The remaining benefits—representing the overwhelming majority of EPA’s purported \$37 to \$90 *billion* in benefits—reflect reductions in PM_{2.5} ambient

concentrations due to lower SO₂ emissions (which form PM_{2.5} in the atmosphere) resulting from the acid gas SO₂ standard.¹⁵ When only HAP-related benefits are considered, the costs of compliance are “between 1,600 and 2,400 times as great as the quantifiable benefits from reduced emissions of hazardous air pollutants.”

Michigan, 135 S. Ct. at 2706.

In the final Rule, EPA adopted its supplemental finding largely as proposed, relying on both its “preferred” and “alternative” approaches to considering cost. 81 Fed. Reg. at 24,425, JA____. At the same time, EPA rejected commenters’ requests to consider less costly alternative control strategies when “evaluating the cost reasonableness of” using § 112 to regulate EGUs, insisting that “EPA is not required to consider the potential cost of alternative approaches to regulating HAP emissions from EGUs before finding that regulation is appropriate and necessary.” *Id.* at 24,447 (emphasis removed), JA____. These alternatives included § 111, which EPA can use to impose less costly national standards for new sources under § 111(b) and to require States to impose individually achievable control requirements for existing EGUs under § 111(d), and can do so without requiring EPA to regulate every HAP.

EPA rejected considering § 111 as an alternative strategy, claiming commenters failed to “suggest a clear framework for developing standards” under § 111, 81 Fed. at

¹⁵ MATS RIA at 5-14 (explaining co-benefits), JA____; *id.* (“[T]he SO₂ emission reductions are the main driver for the health co-benefits of this rule.”).

24,447, JA____, even though commenters outlined the process, EPA itself has detailed regulations for using § 111, and EPA had previously promulgated regulations for new and existing EGU emissions of mercury under § 111. Murray Comments at 33; 40 C.F.R. pt. 60, subpt. B.

Another alternative strategy presented by commenters was to defer to States using their reserved authority under § 116 to regulate EGU emissions they conclude are worth reducing. Murray Comments at 32-33, JA____-____. In refusing “to evaluate the potential for state action” as an alternative control strategy, EPA interpreted § 112(n)(1) to *prohibit* EPA from considering such an alternative due to a purported “limitation” on its authority found in a reference in one of the studies to the “imposition of the requirements” of the CAA. EPA, Response to Comments for Supplemental Finding that it is Appropriate and Necessary to Regulate Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units at 23-24 (Apr. 2016), EPA-HQ-OAR-2009-0234-20578 (“RTC”), JA____-____; *see* 81 Fed. Reg. at 24,447 n.57, JA____.

Finally, EPA refused to consider the full range of disadvantages resulting from regulating EGUs under § 112, limiting its evaluation to four sector-wide cost metrics, 81 Fed. Reg. at 24,424-25, JA____-____. EPA’s narrow cost analysis thus ignored the costs imposed more broadly on States, workers, communities and electricity consumers. *See, e.g.*, RTC at 65, 90, JA____, ____.

SUMMARY OF ARGUMENT

In determining that it was “appropriate and necessary” to regulate EGUs under § 112 of the Act in the 2012 MATS rule, “EPA refused to consider whether the costs of its decision outweighed the benefits.” *Michigan*, 135 S. Ct. at 2706. The Supreme Court emphatically rejected EPA’s determination, explaining “[o]ne would not say that it is even rational, never mind ‘appropriate,’ to impose billions of dollars in economic costs in return for a few dollars in health or environmental benefits.” *Id.* at 2707.

On remand, EPA recognizes *Michigan* requires the Agency to weigh the costs and benefits of regulating EGU HAPs under § 112 and advances two rationales for reaffirming the appropriate and necessary determination rejected by the Supreme Court. In its “preferred approach,” EPA concludes that its previously-determined benefits of such regulation—benefits that at best are small, uncertain, and in most instances unquantifiable—are justified, so long as the utility industry, as a whole, can afford to spend \$9.6 billion annually to obtain them. And other than a bald, conclusory declaration that these benefits outweigh the costs, EPA nowhere actually weighs anything, much less explains *how* it weighed the purported benefits against these very large costs. Nor does EPA ask whether it is “rational, never mind ‘appropriate,’ to impose billions of dollars in economic costs in return for” these particular benefits, 135 S. Ct. at 2707, or whether a cost of \$9.6 billion annually is

“disproportionate to the[se particular] benefits,” *id.* at 2710. EPA’s “preferred approach”—its affordability analysis—ignores *Michigan* and violates § 112(n)(1)(A).

Alternatively, EPA repackages its earlier MATS regulatory impact analysis into a “formal benefit-cost analysis” to claim large, monetized benefits from regulating EGUs under § 112. But EPA reaches this conclusion by ignoring the HAP-specific focus of § 112 and relying on purported benefits associated with incidental reductions in other, non-HAP pollutants (PM_{2.5}, as a result of SO₂ reductions). When the inquiry is properly limited to the effects of regulating EGU HAPs, EPA’s own evaluation shows that the \$9.6 billion price tag unequivocally outweighs the meager \$4 to \$6 million in benefits that EPA calculates, even accounting for unquantified benefits. EPA cannot lawfully rely on the purported benefits of reducing non-HAP pollutants—ones regulated under numerous other CAA programs—as the basis for concluding that regulation of *HAPs* under § 112 is “appropriate and necessary.”

In addition, considering costs in determining whether it is “appropriate” to regulate EGU HAPs under § 112 necessarily requires consideration of whether alternative, less costly control strategies are available. As the Supreme Court noted, this is reinforced by statutory context—which directs EPA to perform studies that focus on HAPs emitted by EGUs after other requirements of the Act have been implemented, to evaluate alternative control strategies for such HAPs that may warrant regulation, and to make the appropriate and necessary determination after considering these studies. *Michigan*, 135 S. Ct. at 2708. EPA’s refusal to consider such

alternative control strategies (especially regulation under § 111(d)—an alternative that Congress unlocked in the 1990 Amendments specifically for this purpose when it also enacted the current § 112) disregards the statutory framework and is inconsistent with *Michigan*.

Finally, EPA’s supplemental finding considers only the costs of compliance of meeting the § 112(d) MATS standards. EPA’s adamant refusal to consider *all* costs and disadvantages, including the impacts on coal companies, communities, and workers, as well as localized impacts, is contrary to the Supreme Court’s direction for EPA on remand to “consider cost—including, most importantly, cost of compliance—before deciding whether regulation is appropriate and necessary.” *Id.* at 2711; *see also Mingo Logan Coal Co. v. EPA*, 829 F.3d 710, 737, (D.C. Cir. 2016) (Kavanaugh, J., dissenting) (Agency must consider “*all* of the relevant costs.”).

STANDING

Petitioners have standing to challenge the Rule. The Rule sets forth EPA’s finding that it is “appropriate and necessary” to regulate HAP emissions from coal- and oil-fired EGUs under CAA § 112. This finding is a necessary legal prerequisite to such regulation. Several Petitioners own and operate EGUs or have members who own or operate them. By enabling EPA to regulate these units, the Rule subjects these Petitioners to emission standards that have, in some instances, required affected units to be idled; in others have required emission control technologies that are costly to install or to operate; and that have otherwise constrained EGUs’ operations. *See Lujan*

v. Defenders of Wildlife, 504 U.S. 555, 561-62 (1992) (when a party is the object of government regulation “there is ordinarily little question that the [governmental] action ... has caused him injury”).

The other petitioners also have standing. The Rule harms State Petitioners by raising the prices that State Petitioners themselves (not just their citizens) must pay as consumers of electricity. The Rule also subjects State Petitioners to ongoing regulatory burdens that require them to incur costs, including staff time. For example, the Michigan Department of Environmental Quality, operating under a delegation of authority from EPA, must “implement and enforce without changes the Section 112 standards promulgated by EPA,” which include the MATS rule. 63 Fed. Reg. 64,632, 64,633 (Nov. 23, 1998), JA____.

Likewise, because the Rule subjects coal-fired EGUs to costly regulation, it discourages the construction of new units and causes existing units to retire or operate less often. This has the effect of harming Petitioner Murray Energy Corporation by diminishing the demand for coal in the electric generating sector.

Both this Court in *White Stallion* and the Supreme Court in *Michigan* have recognized that Petitioners have standing to challenge the underlying MATS rule.

STANDARD OF REVIEW

The Court must set aside EPA’s action under the CAA if it is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” CAA § 307(d)(9); 5 U.S.C. § 706. Agency action is invalid if the agency failed to consider an

important aspect of a problem, offered an explanation for its decision that runs counter to the evidence, or is so implausible that the decision could not be ascribed to a difference in view or the product of agency expertise. *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

ARGUMENT

I. EPA's "Affordability" Analysis Does Not Satisfy Its Obligation To Determine Whether the Benefits of Regulating EGUs Under § 112 Are Worth the Costs.

In *Michigan*, the Supreme Court directed EPA to weigh the benefits of regulation against the costs before determining whether it is "appropriate and necessary" to regulate HAP emissions from EGUs under § 112. 135 S. Ct. at 2707-11. In response, EPA's "preferred approach" is to simply determine that the costs of regulation are "afford[able]" for the electric utility industry as a whole, and are therefore reasonable. Legal Memorandum at 19, JA____; *see also* 80 Fed. Reg. at 75,030 ("focus [of cost inquiry is] on whether the power sector can reasonably absorb the cost of compliance"), JA____. Other than a bald claim that it weighed those costs against previously-identified benefits of regulation, EPA never explained how and what standard it used for such weighing, much less why "it is even rational, never mind 'appropriate,' to impose billions of dollars in economic costs in return for" these uncertain and unquantifiable purported benefits. *Michigan*, 135 S. Ct. at 2707. Instead, EPA "interpret[ed] ... section 112(n)(1)(A) as not requiring a benefit-cost analysis"—i.e., that EPA need not compare benefits to costs in order to determine whether the

benefits outweigh the costs. 80 Fed. Reg. at 75,039, JA____. EPA’s “preferred approach” ignores *Michigan* and violates the statute.

A. EPA Must Consider Costs in Relation to Benefits To Justify its “Appropriate and Necessary” Determination.

The Supreme Court held that the cost of regulation is an essential factor that EPA must consider when determining whether regulation of EGU HAP emissions under § 112 is “appropriate and necessary.” *Michigan*, 135 S. Ct. at 2707 (“Agencies have long treated cost as a centrally relevant factor when deciding whether to regulate.”). The Court did not simply direct EPA to consider cost in the abstract: its underlying concern was that EPA had “refused to consider whether the costs of its decision outweighed the benefits” in any way. *Id.* at 2706. To be sure, the Court did not require “a formal cost-benefit analysis in which each advantage and disadvantage is assigned a monetary value.” *Id.* at 2711. But the Court repeatedly stressed that EPA must weigh the benefits against the costs of regulating EGU HAP emissions under § 112. *Id.* at 2707 (explaining “reasonable regulation ordinarily requires paying attention to the advantages *and* the disadvantages of agency decisions”). As the Court succinctly put it, “[n]o regulation is ‘appropriate’ if it does significantly more harm than good.” *Id.*

The Court’s emphasis on the need to compare the costs and benefits of § 112 regulation of EGU HAPs pervades its opinion in *Michigan*. The Court specifically faulted EPA’s refusal to “consider whether the costs of its decision outweighed the

benefits,” *id.* at 2706, stating unequivocally that “[o]ne would not say that it is even rational, never mind ‘appropriate,’ to impose billions of dollars in economic costs in return for a few dollars in health or environmental benefits,” *id.* at 2707. The Court indicated that the fundamental aim of considering cost in the “appropriate and necessary” analysis is to “ensure that the costs are not disproportionate to the benefits.” *See id.* at 2710. Even the dissent acknowledged an agency “acts unreasonably” in ignoring costs and benefits because “such a process would ‘threaten[] to impose massive costs far in excess of any benefit.’” *See id.* at 2716-17 (Kagan, J., dissenting) (quoting *Entergy Corp. v. Riverkeeper, Inc.*, 556 U.S. 208, 234 (2009) (Breyer, J., concurring in part and dissenting in part)).¹⁶

This emphasis on evaluating the costs of regulating EGU HAP emissions under § 112 in relation to their benefits is not novel: comparing costs and benefits is

¹⁶ The dissent argued, however, that the § 112(d) standard-setting process itself would ensure the costs of the regulation are reasonable because the standards are set at levels that are achieved in practice, albeit by only the best performing units in the category. *Michigan*, 135 S. Ct. at 2719 (Kagan, J., dissenting). The majority rejected that reasoning, not just because it was not advanced by EPA, but because it does not compare benefits to costs. Using a hypothetical example, the Court observed that if “regulating power plants would yield \$5 million in benefits, the prospect of mitigating cost from \$11 billion to \$10 billion at later stages of the program would not by itself make regulation appropriate.” *Id.* at 2711. That approach does nothing to “ensure cost-effectiveness,” *id.*, or to ensure “that the costs are not disproportionate to the benefits,” *id.* at 2710. EPA’s “preferred approach,” which considers costs merely by finding that they are “affordable,” is similar to the dissent’s argument in that it is divorced from any measure of cost-effectiveness and is thus inconsistent with *Michigan*.

an “established administrative practice” that has long been recognized as an essential feature of rational agency decisionmaking. *Id.* at 2707-08. The Court has long held an agency’s interpretation of its standard-setting authority “unreasonable” where it “would give [the agency] power to impose enormous costs that might produce little, if any, discernible benefit.” *Indus. Union Dep’t, AFL-CIO v. Am. Petroleum Inst.*, 448 U.S. 607, 645 (1980). A standard “is neither ‘reasonably necessary’ nor ‘feasible’ ... if it calls for expenditures wholly disproportionate to the expected health and safety benefits.” *Id.* at 667 (Powell, J., concurring in part and concurring in the judgment). More recently, the Court recognized that when an agency considers costs, “whether it is ‘reasonable’ to bear a particular cost may well depend on the resulting benefits.” *Entergy Corp.*, 556 U.S. at 225-26. Justice Breyer observed that “every real choice requires a decisionmaker to weigh advantages against disadvantages,” *id.* at 232 (Breyer, J., concurring in part and dissenting in part); *see also id.* at 232-33 (“[I]t would make no sense to require plants to spend billions to save one more fish or plankton ... even if the industry might somehow afford those billions.”) (internal quotation marks and citation omitted).

Congress had these very concerns in mind when it chose to “treat[] power plants differently from other sources for purposes of the hazardous-air-pollutants program.” *Michigan*, 135 S. Ct. at 2707. Congress and the Administration, which was heavily involved in drafting the 1990 CAA Amendments, understood that, given the reductions in HAP emissions expected to result from the Act’s new Acid Rain

Program, the substantial costs of also regulating EGUs under § 112 (particularly for a pollutant such as SO₂ that is already extensively regulated under these other programs) “would increase power rates, while potentially providing little or no health benefit.” 136 CONG. REC. 3493 (Mar. 6, 1990) (statement of Sen. Steve Symms), JA____; *see supra* pp. 6-8.

To avoid this result, Congress adopted § 112(n)(1)(A) so that EPA would be required to examine whether regulating EGU emissions under § 112 would be worth the costs. As Representative Oxley (co-sponsor of the 1990 CAA Amendments) explained, the purpose of § 112(n)(1)(A) was to “protect[] ... the public health while avoiding the imposition of excessive and unnecessary costs on residential, industrial, and commercial consumers of electricity.” *See* 136 CONG. REC. 35,075 (Oct. 26, 1990) (statement of Rep. Michael Oxley), JA____. Administration officials likewise noted that the provision’s purpose was that “cost benefit and environment improvements to be achieved by application of these costs and technologies can be considered.” Energy Policy Hearing at 436, JA____.

The importance of comparing costs and benefits under § 112(n)(1)(A) is also evident in the studies that Congress mandated under that section, which “provide a framework” for EPA’s decision. *Michigan*, 135 S. Ct. at 2708. EPA was required to study “the hazards to public health reasonably anticipated to occur” from EGU HAP emissions after implementation of other CAA provisions—that is, to identify the benefits that could be gained by further regulation under § 112. CAA § 112(n)(1)(A).

Rather than addressing those emissions collectively, EPA's report must describe "alternative control strategies for emissions *which may warrant regulation* under this section." *Id.* (emphasis added). Likewise, Congress directed EPA to perform the Mercury Study to evaluate the "rate and mass" of EGU mercury emissions and "the health and environmental effects of such emissions" in addition to the cost of available control technologies, *id.* § 112(n)(1)(B), demonstrating that Congress was concerned with not just *whether* mercury emissions would remain after imposition of other CAA programs, but *how much* and *how significant* those emissions would be in relation to the costs of reducing them.

Thus, the statute, congressional purpose, and "established administrative practice," all require that EPA determine whether the benefits are worth the costs when deciding whether regulation under § 112 is "appropriate and necessary."

B. EPA's "Preferred Approach" Ignores *Michigan* and the Statute.

Despite the Court's directive, EPA in its "preferred approach" carefully walled off its cost analysis from any comparison to the benefits that regulating EGU HAP emissions under § 112 might achieve. As a result, the "preferred approach" is inconsistent with *Michigan* and violates § 112(n)(1)(A).

1. EPA Unlawfully Failed To Weigh Costs Against Benefits.

EPA asserts that "the regulation of and reduction in the significant amounts of HAP emissions from EGUs, *and the presumed reduction in risk* attendant to such reductions, is the benefit" that justifies EGU HAP regulation under § 112. Legal

Memorandum at 18 (emphasis added), JA____. As to the “risks” from EGU HAP emissions, EPA “maintain[s] [its] position from the MATS rule that *the volume* of HAP emissions from EGUs, including acid gas HAP emissions, may form the basis for finding that HAP emissions from EGUs pose a hazard to public health and the environment that is appropriate to regulate.” 81 Fed. Reg. at 24,450 (emphasis added), JA____. Otherwise, EPA merely points to its prior findings (findings EPA said were not open for comment, *see* 80 Fed. Reg. at 75,027, JA____) that at least one HAP emitted from EGUs (non-mercury metals) presents a public health risk above a one in one million risk level, that acid gases present an environmental risk, and that mercury is a known neurotoxin. 81 Fed. Reg. at 24,449, JA____; 80 Fed. Reg. 75,038, JA____.

Nowhere in its preferred approach did EPA actually evaluate whether purported benefits outweigh a cost of \$9.6 billion annually. Nor did EPA explain *how* purported benefits were weighed against such exceptionally large costs. Instead, EPA relied on an *ipse dixit*, declaring that it “weigh[ed] ... [costs] against the many identified advantages to regulation.”¹⁷ 81 Fed. Reg. at 24,421, JA____. All but ignoring *Michigan*, EPA did not even ask whether it was “rational, never mind ‘appropriate,’ to impose

¹⁷ EPA’s *ipse dixit* is reminiscent of a Churchill Martini. Reportedly, Sir Winston Churchill, when asked how much vermouth he wanted in his martini, replied, “I would like to observe the vermouth from across the room while I drink my martini.” Warren Dockter, *How to drink like Winston Churchill*, THE TELEGRAPH (Jan. 28, 2015), <http://www.telegraph.co.uk/news/winston-churchill/11374144/How-to-drink-like-Winston-Churchill.html>. Similarly, EPA here “weighs costs” by observing them from across the room.

billions of dollars in economic costs in return for” these particular benefits, 135 S. Ct. at 2707, or whether a cost of \$9.6 billion annually is “disproportionate to the[se particular] benefits,” *id.* at 2710.

Rather, as EPA described it, its focus was solely on whether the electric utility industry as a whole could “absorb” the costs of regulating all of the HAPs emitted from coal- and oil-fired EGUs under § 112. 81 Fed. Reg. at 24,424, JA____. In other words, if at least *one HAP emitted by one EGU* presented a one in one million public health risk of carcinogenic effects or an environmental risk, and the industry was “ab[le] to afford compliance” with the MATS rule without disrupting “the generation, transmission, and distribution of affordable and reliable electricity,” then regulation of *all EGUs for all HAPs they emit* would be “appropriate” regardless of the magnitude of the benefit. *See* Legal Memorandum at 19-20, JA____-____; 80 Fed. Reg. at 75,030, JA____; *see also id.* at 75,031, 75,038, JA____, ____; 81 Fed. Reg. at 24,424, 24,427, JA____, ____.

But finding that regulating EGUs under § 112 is “affordable” is a far cry from demonstrating its advantages are worth the burdens imposed, as § 112(n)(1)(A) and *Michigan* require. *See AFL-CIO*, 448 U.S. at 668 n.4 (Powell, J., concurring in part and concurring in the judgment) (“The cost of complying with a standard may be ‘bearable’ and still not reasonably related to the benefits expected.”).

Stated another way, under EPA’s “affordability” analysis, the fact that over 99 percent of EGUs present risks of carcinogenic effects from non-mercury metal

emissions of less than one in one million—and that *all* present risks of less than five in one million, 77 Fed. Reg. at 9319, JA____—is irrelevant. That EGU acid gas emissions present no public health risk and constitute less than one percent of U.S. emissions with acidification potential,¹⁸ is irrelevant. That EPA can quantify only \$4 to \$6 million in public health benefits associated with reducing EGU mercury emissions is irrelevant. Indeed, according to EPA, Congress determined that HAPs are “inherently harmful,” and the only way to avoid regulating EGUs under § 112 for HAP emissions that present no public health risk is not through a § 112(n)(1)(A) determination that “such regulation” is *not* appropriate, but rather “to petition the Administrator to remove those pollutants from the CAA section 112(b) list” for all sources, including non-EGU sources for which no cost-benefit analysis is allowed or required under § 112. *See* 81 Fed. Reg. at 24,450, JA____. This is not the cost-benefit analysis called for by *Michigan* or the statute. *See supra* Section I.A.

EPA’s rationale continues to ignore the fact that Congress treated EGUs differently from every other source of HAPs. *See Michigan*, 135 S. Ct. at 2707. If the main consideration for whether to regulate EGUs under § 112 was that EGUs emit a certain volume of HAPs—a basic fact that Congress and the other parties involved in drafting the 1990 CAA Amendments understood—then it would have made no sense

¹⁸ Comments of Electric Power Research Institute on EPA’s Proposed MATS Rule at 3-46 to 3-48 (Aug. 4, 2011), EPA-HQ-OAR-2009-0234-17621, JA____-____.

to enact § 112(n)(1) at all. *See id.* at 2710 (“[I]f uncertainty about the need for regulation were the *only* reason to treat power plants differently, Congress would have required the Agency to decide only whether regulation remains ‘necessary,’ not whether regulation is ‘appropriate *and* necessary.’”). By relying simply on its finding that the costs are “affordable” and failing to weigh these costs against the benefits of its decision, EPA’s new determination continues to violate the statute and *Michigan*.

2. EPA Errs By Interpreting § 112(n)(1)(A) Not To Require Any Comparison of Costs and Benefits.

EPA attempts to justify its refusal to compare the costs and benefits of regulation under § 112 on the grounds that neither the statute nor *Michigan* require “benefit-cost analysis ... to support a finding that regulation is appropriate.” Legal Memorandum at 26, JA____; *see also* 80 Fed. Reg. at 75,031 (“[A] benefit-cost analysis is not required to support a threshold finding that regulation is appropriate.”), JA____; *id.* at 75,039 (EPA “interprets CAA section 112(n)(1)(A) as not requiring a benefit-cost analysis.”), JA____; 81 Fed. Reg. at 24,429 (“EPA disagrees that a benefit-cost analysis, particularly one that only ... monetized HAP ... benefits, ... is required by CAA section 112(n).”), JA____. In fact, EPA asserts the statute requires no “finding of an economic positive net benefit” associated with regulation “under this section” at all. 81 Fed. Reg. at 24,429, JA____. EPA says this position is consistent with what EPA calls § 112’s focus on “whether the *collective* HAP emissions from EGUs should be

regulated, not the manner in which they should be regulated” under § 112. Legal Memorandum at 18, 25 (emphasis omitted and added), JA____, ____.

To begin, the focus of § 112(n)(1)(A) is not on collective EGU HAP emissions, but only those posing “hazards to public health” “which warrant regulation.” EPA’s refusal to balance costs and benefits is inconsistent with § 112(n)(1)(A), as construed in *Michigan*, see *supra* Section I.A. There is no material difference between EPA’s “preferred approach” in the Rule and its 2012 “appropriate and necessary” analysis the Supreme Court rejected in *Michigan*. In the MATS rule, EPA found that regulation was “appropriate” because EGU HAP emissions pose some remaining but indeterminate risk to health or the environment that can be reduced through regulation. *Michigan*, 135 S. Ct. at 2705 (summarizing EPA’s rationale). The Supreme Court rejected this approach because, by focusing on the “need for regulation”—i.e., the existence of some remaining HAP emissions to reduce and the means to do so—EPA effectively read the term “appropriate” out of “appropriate and necessary.” See *id.* at 2710.

On remand, EPA essentially doubles down on its rationale, adding only one caveat that cannot possibly change the result. Now, EPA says, regulation is “appropriate” because EGU HAP emissions pose some remaining but indeterminate risk to health or the environment that can be reduced through regulation that the industry, as a whole, can afford. “Affordability” to the industry, however, imposes no constraint on EPA’s authority at all—especially with respect to this industry, in which

customers are heavily dependent on the service provided and there is a well-established process for regulated sources to recover costs of compliance. As the Supreme Court recognized in *AFL-CIO*, a program of “pervasive regulation limited only by the constraint of feasibility” would reflect “unprecedented power over American industry” and “would give [the agency] power to impose enormous costs that might produce little, if any, discernible benefit.” 448 U.S. at 645. Yet that is precisely how EPA envisions its authority under § 112(n)(1)(A).

EPA suggests in the Rule that it may refuse to evaluate costs in relation to benefits because the benefits of reducing EGU HAP emissions are not easy to quantify. *See* 81 Fed. Reg. at 24,429, JA____. But even if true, this difficulty does not relieve EPA of its burden to weigh costs against benefits. Whether EPA conducts a formal cost-benefit analysis or not, reasoned decision-making, *Michigan*, and the CAA require EPA to explain why and how the benefits outweigh the costs. At a minimum, EPA must evaluate and explain whether the specific benefits it identified are worth the costs it estimated, or that the costs would not “do[] significantly more harm than good.” *See Michigan*, 135 S. Ct. at 2707.

Moreover, as explained in Section II below, EPA routinely quantifies the benefits of regulation even where uncertain (as it did here when it quantified the purported IQ benefits of reducing mercury emissions). In fact, as the *Michigan* dissent noted, EPA is required to do so by Executive Order 12866. *See id.* at 2721. EPA was able to quantify the benefits associated with “the predominant exposure pathway,” 76

Fed. Reg. at 24,999, JA____, for EGU HAP emissions—and the record shows these benefits are far outweighed by the costs. EPA’s assertion that the collective volume of EGU HAP reductions can be a substitute for “benefit,” and its generalized reference to the “significant hazards to public health and the environment,” 81 Fed. Reg. at 24,428, JA____, is plainly an attempt to mask the minuscule benefits of regulating EGUs under § 112, especially as compared to its \$9.6 billion sticker price, *see supra* p. 16.

3. EPA Unlawfully Fails To Assess the Costs and Benefits of Each of the Three, Multi-Billion Dollar Control Mandates.

The cost-benefit imbalance is especially stark when examining each of the three control requirements EPA promulgated in MATS. *See supra* pp. 16-17. Any costs and benefits that exist derive solely from the pollutant-specific control requirements. Just because it may be appropriate to control one HAP under § 112 does not mean it is reasonable to control other HAPs under § 112 as well.

The statute focuses on each EGU HAP “*which may warrant regulation* under this section.” CAA § 112(n)(1)(A). Accordingly, and especially in light of alternatives available to EPA to regulate particular HAPs and not others, *see infra* Section III.A, EPA must consider the cost and benefits of regulating each HAP (or group of related HAPs, such as non-mercury metals) emitted by EGUs in evaluating whether it is appropriate and necessary to regulate each. EPA flatly refused to do so. RTC at 21-22, JA____. Thus, in a situation where the benefits of regulating mercury *did* outweigh the

costs, but controlling acid gases cost \$5 billion and yielded minuscule or no benefit, EPA would still illogically conclude it appropriate to regulate both (or even all) HAPs from EGUs. But in such a circumstance, “it is [not] even rational, never mind ‘appropriate’” for EPA to regulate under § 112 those HAPs that yield no benefit at all. *Michigan*, 135 S. Ct. at 2707. This is especially so where Congress unlocked the option of regulating only mercury under § 111 specifically to avoid such a result. *See infra* Section III.A.

EPA’s “preferred approach” cannot be squared with § 112(n)(1)(A) and the Supreme Court’s directive in *Michigan* to weigh costs against benefits in determining whether regulation is “appropriate and necessary.”

II. EPA’s “Alternative” Benefit-Cost Approach Is Also Invalid Because It Is Based on the “Co-Benefits” of Reducing Pollutants Other than HAPs.

EPA’s “alternative” approach to considering costs fares no better. The Agency claims that a “formal benefit-cost analysis” shows that the benefits of regulating EGUs’ HAP emissions outweigh the costs. 81 Fed. Reg. at 24,421, JA____. But EPA reaches this conclusion by ignoring the HAP-specific focus of § 112 and relying on purported benefits associated with incidental reductions in other pollutants (PM_{2.5}, resulting from SO₂ reductions) that are already regulated under other provisions of the Act.

Section 112(n)(1)(A) directs EPA to determine whether, after the implementation of other CAA requirements (with attendant reductions in HAP

emissions), the benefits of addressing the remaining risks posed by EGU HAP emissions justify the costs of regulating those HAP emissions under § 112. EPA cannot answer that question by relying on reductions in pollutants that are not the target of § 112—particularly when, as here, those reductions may not yield benefits at all. When the inquiry is properly limited to the effects of regulating *HAPs*, the costs unequivocally outweigh the benefits.

A. Congress Did Not Authorize EPA To Regulate EGU HAP Emissions Under § 112 Based on Reductions in Pollutants Regulated Under Other CAA Programs.

EPA has no authority to base its decision to regulate EGU HAP emissions under § 112 on the “co-benefits” of reducing pollutants that are not HAPs (i.e., pollutants that are not listed under § 112). Congress directed EPA in § 112(n)(1)(A) to address a specific problem: the hazards to public health caused by any HAPs emitted by EGUs after implementing other CAA programs. Congress explicitly required EPA to decide whether regulation of EGUs under § 112 is “appropriate and necessary” to address *that* problem, not to address health hazards caused by PM_{2.5} resulting from SO₂ or other emissions not listed under § 112. Nothing in Congress’s singular focus on HAPs in § 112(n)(1) suggests EPA may impose costly controls on EGU HAP emissions based on reductions in other pollutants that are already extensively regulated through entirely separate programs in the Act. EPA’s alternative finding impermissibly “relied on factors which Congress has not intended it to consider.”

State Farm, 463 U.S. at 43.

1. Section 112(n)(1)(A) Limits EPA's Consideration to Whether the Benefits of Reducing HAPs Are Worth the Costs.

Both the history and the text of § 112(n)(1)(A) demonstrate EPA has no authority to determine it is appropriate to regulate EGU HAP emissions under § 112 based on the benefits of reducing non-HAPs. As the Supreme Court noted in *Michigan*, Congress in 1990 “subjected power plants to various regulatory requirements” that “were expected to have the collateral effect of reducing power plants’ emissions of hazardous air pollutants.” 135 S. Ct. at 2705. These other regulatory requirements included, among others, the ongoing national ambient air quality standards (“NAAQS”) program and a new program to address acid rain under Title IV of the Act. CAA §§ 401 *et seq.* To comply with the latter, many plants installed “scrubbers” to reduce SO₂ emissions that contribute to acid rain. 70 Fed. Reg. at 16,003, JA____. Those measures also reduced HAP emissions.

Congress also enacted § 112(n)(1)(A) in 1990, requiring EPA to satisfy two conditions before it can regulate EGU HAPs. First, EPA was required to undertake the Utility Study to assess “the hazards to public health reasonably anticipated to occur as a result of emissions” of HAPs from EGUs “after imposition of the requirements” of the Act. CAA § 112(n)(1)(A). Second, EPA had to find that “such regulation is appropriate and necessary *after considering the results of the study.*” *Id.* (emphasis added). Thus, the operative statutory provision explicitly limits EPA’s

authority to regulate any remaining EGU HAPs to the extent that the effects of *those HAP emissions* justify regulation.

Nothing elsewhere in § 112(n)(1) gives EPA authority to base its “appropriate” finding on the benefits of regulating non-HAPs. For example, the next subsection—§ 112(n)(1)(B)—requires EPA to conduct a second study (the Mercury Study) on the costs of technologies that can control “mercury emissions from electric utility steam generating units.” And the following subsection requires EPA to conduct a third study on “the threshold level of mercury exposure below which adverse human health effects are not expected to occur.” *Id.* § 112(n)(1)(C). These additional studies confirm that Congress in § 112(n)(1) focused on the hazards to public health caused by EGU HAP emissions (including mercury), and required that EPA base its decision on the health risks from those pollutants, not the risks from non-HAPs. *See Michigan*, 135 S. Ct. at 2708 (studies required by § 112(n)(1)(B) and (C) inform scope of “appropriate and necessary” analysis).

EPA’s claim, 81 Fed. Reg. at 24,438-39, JA____-____, that § 112(n)(1) implicitly allows the Agency to rely on PM_{2.5} co-benefits as the basis for regulating EGU HAPs is also foreclosed by the Supreme Court’s ruling in *Whitman v. American Trucking Ass’ns, Inc.*, 531 U.S. 457 (2001). *American Trucking* focused on whether EPA could consider cost when setting a NAAQS where the governing statutory provision—§ 109—expressly requires the standard to be set at a level “requisite to public health” with an “adequate margin of safety.” CAA § 109(b). The Court refused to interpret

the statute as providing implicit authority to consider cost where authority to do so had “elsewhere, and so often, been expressly granted.” *American Trucking*, 531 U.S. at 467. As the Supreme Court in *Michigan* explained, “*American Trucking* thus establishes the modest principle that where the Clean Air Act expressly directs EPA to regulate on the basis of a factor that on its face does not include cost, the Act normally should not be read as implicitly allowing the Agency to consider cost anyway.” 135 S. Ct. at 2709.

That principle of statutory interpretation applies with equal force here. Section 112(n)(1)(A) expressly directs EPA to make its “appropriate and necessary” finding on the basis of a factor (hazards to public health from HAPs emitted by EGUs) that on its face only addresses the benefits of reducing exposure to listed HAPs, which does not include PM_{2.5}. Because Congress expressly addressed regulation of PM_{2.5} health effects in the NAAQS program, *see* CAA §§ 108-109, and directed that EPA make its appropriate finding in § 112(n)(1)(A) based on health hazards from EGU HAP emissions, EPA has no implicit authority to consider PM_{2.5} co-benefits.

This Court has previously rejected EPA’s similar attempts to rely on factors other than those specified by Congress when deciding whether and how to regulate. *See Am. Petroleum Inst. v. EPA*, 52 F.3d 1113 (D.C. Cir. 1995) (“*APP*”) (EPA may not base fuel requirements for reducing toxics on incidental global warming benefits); *Ethyl Corp. v. EPA*, 51 F.3d 1053 (D.C. Cir. 1995) (EPA may not deny fuel additive waiver on public health grounds when statute only permits denial on emission control

interference grounds); *see also State Farm*, 463 U.S. at 43 (“Normally, an agency rule would be arbitrary and capricious if the agency has relied on factors which Congress has not intended it to consider.”). In *API*, the Court addressed a provision that directed EPA to promulgate regulations governing reformulated gasoline with the aim of reducing emissions of volatile organic compounds and toxic air pollutants. 52 F.3d at 1115 (citing CAA § 211(k)). In response, EPA adopted a regulatory program that promoted renewable oxygenates over others—not because it achieved greater reductions in volatile organic compounds and toxics, but because it would promote “global warming benefits” and would otherwise “effect the purposes of the Act” generally. *Id.* at 1116-17.

This Court held EPA exceeded its authority: “[t]he sole purpose of the [reformulated gasoline] program is to reduce air pollution ... through specific performance standards for reducing VOCs and toxics emissions,” and not to advance other goals not specified by Congress. *Id.* at 1119. This was true even though the statute allowed EPA to consider the “nonair-quality and other air-quality related health and environmental impacts and energy requirements” of its reformulated gasoline regulations. CAA § 211(k). Those considerations were “subordinate” to that section’s overarching goal of reducing specific pollutants, and “the statute does not authorize [EPA] to use these factors as a basis for imposing any additional restrictions on [reformulated gasoline], even if the additional restrictions would yield some benefit among the factors to be taken into consideration.” *API*, 52 F.3d at 1120.

Here, reducing emissions of non-HAP pollutants is not even a subordinate goal of § 112. “[T]he aims and limits of the section as a whole” are focused entirely on HAP emissions. *Id.* Because the “sole purpose” of § 112(n)(1) is to address EGU HAP emissions, *id.* at 1119, EPA erred by basing its decision that regulation is “appropriate and necessary” on the potential benefits of reducing non-HAPs.

2. Predicating § 112 Regulation of EGU HAP Emissions on PM_{2.5} Co-Benefits Resulting from SO₂ Reductions Is an End-Run Around CAA Programs That Already Regulate These Non-HAPs.

EPA’s lack of authority to consider PM_{2.5} co-benefits is further reinforced by the fact that PM_{2.5} is addressed under a completely different CAA provision—the § 109 NAAQS program. Under that program, EPA regulates PM_{2.5} and other “criteria” pollutants according to detailed legislative instructions regarding the manner and extent to which those pollutants are to be controlled. EPA cannot base a decision that it is “appropriate” to establish § 112 standards for EGU HAPs on alleged benefits of reducing another pollutant (PM_{2.5}) beyond the levels EPA has already determined meet the statutory directives applicable to that pollutant. Indeed, at oral argument in *Michigan*, Chief Justice Roberts described relying on co-benefits as “an end run” around § 109’s restrictions. Tr. of Oral Arg. at 59-61, *Michigan v. EPA*, 135 S. Ct. 2699 (2015) (No. 14-46); *see also id.* at 62-63 (noting EPA’s citation of co-benefits “raises the red flag”).

EPA’s reliance on PM_{2.5} co-benefits is particularly egregious here, because these co-benefits largely result from reductions in SO₂ obtained through the installation and

upgrade of scrubbers forced by the § 112(d) standard for acid gases. In the 1990 Amendments, Congress decided to treat EGUs differently from all other source categories under § 112 in no small part because of concerns that § 112(d) standards would undo the efficiency of the Title IV program by mandating uniform controls of acid gases so as to eliminate the flexibility, freedom of choice, and efficiency that are the core goals of Title IV. *See, e.g.*, Murray Comments at 16 (statement of Sen. Gerry Sikorski) (“[F]reedom of choice would be wasted” if § 112 is used to “require most, if not all coal-fired units to scrub.”), JA____; 136 CONG. REC. 35,013 (Oct. 26, 1990) (statement of Rep. Howard Nielson) (“It is the sense of the conferees that EPA’s ultimate decision avoid any conflict with title IV implementation, including the compliance flexibility and cost-effectiveness goals which are central to the acid rain program.”), JA____; Murray Comments at 18-19 (quoting statements of Sens. Malcolm Wallop and Wendell Ford), JA____-____.

Title IV’s Acid Rain Program was exhaustively negotiated by Congress to reduce EGU SO₂ emissions using “prescribed emission limitations,” “specified deadlines,” and an “emission allocation and transfer system.” CAA § 401(b). The trading program was included to provide for the strategic and non-universal deployment of scrubbers while allowing those with the highest retrofit costs to avoid installing them in exchange for subsidizing emission reductions achieved at other EGUs. Thus, Congress itself determined the best approach to cost-effectively reduce EGU SO₂ emissions. EPA’s attempt to justify using § 112 based on additional

reductions of this very same pollutant from these very same sources, but in a command-and-control program that is the antithesis of Title IV's market-based program, is plainly an "end run" around the latter.

B. EPA's Arguments for Relying on Co-Benefits Are Unavailing.

1. EPA's Invocation of General "Economic Principles" Is Irrelevant.

EPA maintains that its "formal" benefit-cost analysis may include incidental co-benefits because doing so is consistent with "standard economic principles." 81 Fed. Reg. at 24,439, JA____. "Standard economic principles," however, cannot override the requirements of § 112(n)(1)(A). Indeed, no economic principle endorses the consideration of costs or benefits that are irrelevant for a given context. And the context here, as discussed above, is Congress's command in § 112(n)(1)(A) for EPA to determine whether the risks from EGU HAP emissions justify the costs of regulating those emissions under § 112. Whatever role co-benefits may play in other economic analyses, they have no place in EPA's "appropriate and necessary" analysis.

Indeed, EPA's own policy for conducting benefit-cost analyses demonstrates this very point. *See* EPA, Guidelines for Preparing Economic Analyses (Dec. 17, 2010, updated May 2014), <https://www.epa.gov/environmental-economics/guidelines-preparing-economic-analyses>. The Guidelines do not advise that EPA consider all conceivable effects of a regulation: they state that EPA must identify the "*relevant economic variables*" based on the "environmental problem that the regulation addresses." *Id.* at 5-3 (emphasis added), JA____. The "environmental problem" that

Congress instructed EPA to address in § 112(n)(1)(A) is the hazard to public health from EGU HAP emissions after implementation of other CAA programs, not the risks posed by emissions of other pollutants already regulated under other provisions of the Act. Under EPA's own guidelines, PM_{2.5} co-benefits are not a "relevant economic variable" and cannot be used as the basis for a determination to regulate EGU HAPs.

2. EPA's Justification for Considering Co-Benefits Relies on a Logical Fallacy.

Congress understood that programs targeted at reducing pollutants other than HAPs (like SO₂ in Title IV's Acid Rain Program) may result in collateral reductions of HAPs. Congress therefore required EPA to perform the Utility Study to determine "the hazards to public health reasonably anticipated to occur as a result of emissions by" EGUs of HAPs "after imposition of" these programs. CAA § 112(n)(1)(A).

EPA asserts that because it must determine in the Utility Study the extent to which CAA programs addressing *non-HAP pollutants* will reduce risks from EGU *HAP* emissions, it may conversely consider risks from *non-HAP pollutants* when determining whether regulation of EGU *HAP* emissions is "appropriate and necessary." 81 Fed. Reg. at 24,438-39, JA____-____. The Agency's argument is a red herring.

Had Congress intended that EPA regulate under § 112 based on health effects of HAP and non-HAP EGU emissions, it would have said so. It did not. Congress in the Utility Study asked EPA to address two questions: (1) what EGU HAP emissions

remain after controls under other programs; and (2) what HAP risks are posed by those remaining HAP emissions. Congress's exclusive focus in § 112(n)(1)(A) is on EGU HAP emissions. The sole purpose of the Utility Study and the "appropriate and necessary" requirement in § 112(n)(1)(A) is thus to determine whether EGUs' *remaining* HAP emissions pose significant risks and should be regulated under § 112. Ancillary PM_{2.5} "co-benefits" play no role in answering that question.

3. EPA Relies on the Illusory Co-Benefits of Reducing PM_{2.5} Below Levels That the Agency Has Already Found Protect the Public Health.

Even if EPA had the legal authority to consider PM_{2.5} co-benefits for its "appropriate and necessary" finding, the PM_{2.5} co-benefits on which it relies are illusory. The Agency determined in 2013 when it analyzed the PM_{2.5} NAAQS that its confidence in the association between reducing PM_{2.5} below the level already required by the NAAQS (12 µg/m³) and the health benefits from such additional reductions is inadequate to conclude that any additional reductions are warranted. 78 Fed. Reg. 3086, 3116 (Jan. 15, 2013), JA____; *see also id.* at 3089 (stating that 12 µg/m³ provides the "*appropriate* degree of increased public health protection") (emphasis added), JA____. Yet most of the PM_{2.5} reductions EPA cites to support its "appropriate and necessary" finding occur in areas that have already attained the NAAQS. MATS RIA at ES-4, JA____. EPA cannot justify its decision to regulate EGU HAPs under § 112 based on asserted public health benefits it only recently concluded did not justify regulation of those non-HAPs.

Section 109 requires EPA to promulgate “primary” NAAQS for criteria pollutants, like PM_{2.5}. CAA § 109(b). Primary NAAQS are defined as standards “which in the judgment of the Administrator, based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health.” *Id.* § 109(b)(1).¹⁹

When setting a primary NAAQS with an “adequate margin of safety,” the Administrator must decide “what margin of safety will protect the public health from the pollutant's adverse effects—not just known adverse effects, but those of scientific uncertainty or that ‘research has not yet uncovered.’” *Am. Lung Ass’n v. EPA*, 134 F.3d 388, 389 (D.C. Cir. 1998) (quoting *Lead Indus. Ass’n, Inc. v. EPA*, 647 F.2d 1130, 1153 (D.C. Cir. 1980)). The NAAQS must protect “not only average healthy individuals, but also ‘sensitive citizens.’” *Id.* at 389; see *American Trucking*, 531 U.S. at 475-76.

In 2013, EPA reviewed the most recent scientific research and revised the NAAQS for PM_{2.5}. 78 Fed. Reg. 3086, JA____. The Administrator explained that when selecting the ambient concentration that would protect public health with an adequate margin of safety, her judgment was informed by “the degree of confidence in the observed associations in the epidemiological studies” between exposure to PM_{2.5} and

¹⁹ The Act also requires EPA to promulgate “secondary” standards to protect the public welfare, including crops and buildings, from the effects of air pollution. CAA §§ 109(b)(2), 302(h). The secondary NAAQS for PM_{2.5} are all less stringent than or equal to the corresponding primary NAAQS. See 40 C.F.R. §§ 50.13, 50.18.

adverse health effects. *Id.* at 3161, JA____. As to the level of the standard, EPA found, “the available evidence interpreted in light of the remaining uncertainties does not justify a standard level set below 12 $\mu\text{g}/\text{m}^3$ as necessary to protect public health with an adequate margin of safety.” *Id.* at 3162, JA____. Put another way, although NAAQS are “precautionary and preventive” in nature, *Lead Indus. Ass’n, Inc.*, 647 F.2d at 1155, and intended to protect the most sensitive subgroups in the population, EPA did not have confidence that a level below 12 $\mu\text{g}/\text{m}^3$ was needed to provide the rigorous protections the Act requires.

Indeed, EPA explained any health benefits that may occur at $\text{PM}_{2.5}$ concentrations below 12 $\mu\text{g}/\text{m}^3$ are not merely “less certain”—they are so uncertain that it is not appropriate to include exposures below 12 $\mu\text{g}/\text{m}^3$ within the “adequate margin of safety” provided by the NAAQS. *See* 78 Fed. Reg. at 3161, JA____. EPA’s lack of confidence in any such benefits was so low that a standard below 12 $\mu\text{g}/\text{m}^3$ “would not be warranted.” *Id.*

Yet EPA now claims that reductions of $\text{PM}_{2.5}$ (as a result of a § 112(d) standard that forces installation of scrubbers to reduce SO_2) below the current $\text{PM}_{2.5}$ NAAQS level will provide additional health benefits worth \$37 to \$89 billion each year. EPA has not identified any new scientific information that would overcome its 2013 determination that an ambient $\text{PM}_{2.5}$ concentration of 12 $\mu\text{g}/\text{m}^3$ is not only sufficient to protect the public health—including sensitive citizens—but will do so with an adequate margin of safety. Nor has it explained why it now has sufficient confidence

in the existence of health benefits from further reductions in PM_{2.5} when in 2013 it did not.

In fact, EPA asserts that almost all of the “estimated avoided premature deaths” on which the purported co-benefits are based would occur in areas where the concentration of PM_{2.5} in the ambient air is below 10 µg/m³—lower than even the current 12 µg/m³ PM_{2.5} NAAQS. MATS RIA at ES-4, JA____. Nevertheless, EPA, without explanation, “considers them to be legitimate components of the total benefits estimate.” *Id.*

In sum, EPA’s recent findings establish that reductions in PM_{2.5} concentrations beyond those already required by the revised NAAQS do not provide any reliable benefits at all, much less benefits that could amount to \$37 to \$89 billion every year. Equally important for this case, EPA has not explained its reliance on the “benefits” of reducing PM_{2.5} concentrations below the NAAQS in light of its 2013 conclusion that it has no confidence in the existence of those benefits. *See FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515-16 (2009) (Where action “rests upon factual findings that contradict those which underlay its prior policy a reasoned explanation is needed for disregarding facts and circumstances that underlay or were engendered by the prior policy.”). Because EPA has not provided an “explanation for its action” that includes “a ‘rational connection between the facts found and the choice made,’” the appropriate finding is arbitrary and capricious. *State Farm*, 463 U.S. at 43 (quoting *Burlington Truck Lines v. United States*, 371 U.S. 156, 168 (1962)).

Finally, even if EPA now has greater confidence that health benefits would accrue from further reductions in PM_{2.5} levels, the Act's NAAQS provisions—and not § 112(n)(1)—provide a mechanism for implementing such reductions. Each NAAQS and the related scientific evidence supporting it must be reviewed at least every five years, resulting in NAAQS revision if appropriate. CAA § 109(d)(1). In fact, EPA has already begun to review the 12 µg/m³ PM_{2.5} NAAQS. *See* 81 Fed. Reg. 22,977 (Apr. 19, 2016), JA____. Any health benefits potentially available from further reducing PM_{2.5} levels are properly addressed and accounted for through the NAAQS program, not through regulating EGU HAP emissions under § 112.

C. EPA's Vague Reference to Unquantifiable Benefits Does Not Support Its "Appropriate and Necessary" Finding.

The cited PM_{2.5} co-benefits of \$36 to \$89 billion per year are the primary justification for EPA's conclusion in its alternative approach that the benefits of regulating EGU HAP emissions under § 112 outweigh its costs. *See* MATS RIA at ES-3, JA____. When these co-benefits are eliminated from EPA's analysis, the quantified net benefits are overwhelmingly negative: as the Supreme Court noted, the costs of the MATS rule are "between 1,600 and 2,400 times as great as the quantifiable benefits from reduced emissions of [HAPs]." *Michigan*, 135 S. Ct. at 2706. In light of this imbalance, regulating EGU HAP emissions under § 112 clearly "does significantly more harm than good" and is not "appropriate." *Id.* at 2707. The vague un-monetized HAP-related benefits EPA alludes to cannot alter this conclusion. *See* 80 Fed. Reg. at

75,040 (claiming EPA “accounted for” unquantified benefits “by adding a ‘+B’ to denote the sum of all unquantified benefits”), JA____.

Aside from the meager \$4 to \$6 million in benefits EPA quantified for “the predominant exposure pathway by which humans are affected by [methylmercury],” 76 Fed. Reg. at 24,999, JA____, the Agency otherwise points to empty generalities and speculative claims regarding health and environmental effects. For example, EPA asserts that the benefits of regulation include “the statutory goal of reducing the inherent hazards associated with HAP emissions.” 81 Fed. Reg. at 24,429, JA____. But the Supreme Court has already rejected this rationale, noting that the fact some reduction in HAPs will occur is not sufficient to make such regulation “appropriate.” *See Michigan*, 135 S. Ct. at 2710 (“[I]f uncertainty about the need for regulation were the *only* reason to treat power plants differently, Congress would have required the Agency to decide only whether regulation remains ‘necessary,’ not whether regulation is ‘appropriate *and* necessary.’”).

EPA also claims that, even though it was able to quantify highly uncertain IQ benefits purportedly resulting from mercury emissions, other health and environmental benefits of reducing EGU mercury, acid gas, and non-mercury metals emissions simply could not be quantified. 81 Fed. Reg. at 24,441, JA____; 80 Fed. Reg. at 75,040, JA____. But these purported benefits are too speculative to support an “appropriate and necessary” finding for the same reasons the Agency cannot quantify them: they are not supported by the scientific literature. *See* 80 Fed. Reg. at 75,040,

JA____. As the Agency acknowledges, at the low exposures presented by EGU HAP emissions, benefits cannot be quantified due to

gaps in toxicological data, uncertainties in extrapolating results from high-dose animal experiments to estimate human effects at lower doses, limited monitoring data, difficulties in tracking diseases such as cancer that have long latency periods, and insufficient economic research to support the valuation of the health impacts often associated with exposure to individual HAP.

Id. at 75,040 n.53, JA____; *see also, e.g.*, MATS RIA at 64-66, JA____-____.

Finally, even if the science allowed one to establish additional benefits of reducing EGU HAP emissions with any confidence, EPA makes no effort to demonstrate that these benefits would be significant enough—in combination with the \$4 to \$6 million in quantifiable benefits—to justify the \$9.6 *billion* in compliance costs required by the MATS rule. Even if the unquantified benefits EPA cites are worth ten times the benefits for the “predominant exposure pathway” it *can* quantify, they would still be orders of magnitude less than the costs of this regulation. The Court stated that “[i]f (to take a hypothetical example) regulating power plants would yield \$5 million in benefits, the prospect of mitigating cost from \$11 billion to \$10 billion ... would not by itself make regulation appropriate.” *Michigan*, 135 S. Ct. at 2711. Likewise, if regulating EGU HAP emissions would cost nearly \$10 billion, increasing the benefits from \$5 million to \$6 million (or even \$50 million) would not make regulation appropriate.

III. EPA’s Refusal To Consider Alternative Control Strategies and All Relevant Costs, Is Contrary to the Statute and the Supreme Court’s Direction.

A. EPA Impermissibly Ignores Less Costly Alternative Control Strategies for Reducing Emissions from EGUs.

In the final Rule, EPA limited its analysis to the costs of MATS (and only to some of those costs, *see* Section III.B *infra*), and refused to consider alternative control strategies that would avoid many of the disadvantages resulting from costly regulation of EGUs under § 112, which requires emission standards based on uniform national standards set at the levels achieved by the best performing EGUs. CAA § 112(d)(3), (d)(3)(A). EPA’s refusal to consider such alternatives as part of its “appropriate and necessary” determination is contrary to *Michigan* and violates the statute.

Congress directed EPA to perform the Utility Study and, in reporting on that study, to “develop and describe” “alternative control strategies for emissions which may warrant regulation under this section.” *Id.* § 112(n)(1)(A). EPA may regulate EGUs under § 112 *only* if it finds “such regulation is appropriate and necessary after considering the results of the study required by this subparagraph.” *Id.* This “[s]tatutory context reinforces the relevance” of considering less costly and more flexible alternatives in assessing cost and deciding whether § 112 regulation—as opposed to regulation under another program or not at all—is “appropriate and necessary.” *Michigan*, 135 S. Ct. at 2708 (recognizing that “all three studies ‘provide a framework for [EPA’s] determination.’”).

EPA's Rule disregards this statutory framework. EPA insists it "is not required to consider the potential cost of alternative approaches to regulating HAP emissions from EGUs before finding that regulation is appropriate and necessary" under § 112. 81 Fed. Reg. at 24,447 (emphasis omitted), JA____. EPA's refusal even to consider how § 112 regulation compares to less costly and more flexible alternatives "overlooks the whole point" of § 112(n)(1), *Michigan*, 135 S. Ct. at 2710: to address the many warnings from EPA and others that regulating EGUs under § 112 could lead to massive costs with little benefits, *see supra* pp. 6-7 (discussing these warnings). This is why Congress directed EPA to identify alternative control strategies for reducing HAP emissions before concluding that regulation under § 112 was both "necessary" and "appropriate." Section 112(n)(1) requires EPA to address alternatives that would "avoid any conflict with title IV implementation, including the compliance flexibility and cost-effectiveness goals which are central to the acid rain program." 136 CONG. REC. 35,013 (Oct. 26, 1990) (statement of Rep. Howard Nielson), JA____.²⁰

EPA did not need to look far in performing the required statutory analysis. As EPA itself has previously recognized, *supra* pp. 11-12 (discussing 2005 rulemaking),

²⁰ Title IV is "flexible" and "cost-effective" because it allows some sources to install larger and more expensive scrubbers such that others can install smaller and less expensive scrubbers or avoid installing scrubbers at all, all while still achieving the desired SO₂ emission reductions. *See* Murray Comments at 10, 13, JA____, _____. By contrast, the § 112 acid gas emission standard requires that nearly every EGU install or upgrade SO₂ controls.

the CAA provides more effective alternative strategies for controlling EGU emissions. Indeed, Congress provided in the 1990 Amendments one such alternative precisely to “allow[] the needed flexibility to identify and address the most significant toxic chemicals from utilities without mandating expensive controls that may be unnecessary.” Administrator 1990 Letter to Senate, JA____.

Specifically, § 111(d) of the Act allows EPA and States to regulate EGU emissions without imposing unreasonable burdens on existing sources, permitting States to tailor requirements for “any particular source” based on “consideration” of “remaining useful life” and “other factors.” EPA’s regulations allow States to establish “less stringent emission standards or longer compliance schedules” “on a case-by-case basis for particular” sources or “classes” of sources whenever necessary to avoid imposing any “[u]nreasonable cost of control resulting from plant age, location, or basic process design,” or to account for “[p]hysical impossibility” or any “[o]ther factors” “that make application of a less stringent standard or final compliance time significantly more reasonable.” 40 C.F.R. § 60.24(f).

EPA has recognized that the 1990 Amendments to § 111(d) “reflect[] a desire to change the pre-1990 approach and to expand EPA’s authority as to the scope of pollutants that could be regulated under section 111(d)” so as not to “preclude EPA from regulating under section 111(d) those pollutants emitted from source categories which were not actually being regulated under section 112” including “existing Utility Units.” 69 Fed. Reg. at 4685, JA____. Thus, *if* mercury is the HAP emitted by EGUs

after imposition of the requirements of the Act that “may warrant regulation,” CAA § 112(n)(1)(A), then EPA can regulate that pollutant under § 111(d) without regulating other pollutants—such as acid gases—at great cost, even though those other pollutants pose no public health risk. That is what EPA did in the Clean Air Mercury Rule, promulgated under § 111(d). *See supra* pp. 11-12. EPA’s disregard of a less costly option that Congress unlocked specifically for the purpose of providing an alternative for regulating EGUs is especially egregious.

In addition, Congress provided EPA with opportunities to defer regulation of EGU emissions to States, including using States’ preserved authority to regulate “emissions of air pollutants” under § 116. *See also* CAA § 102(a). To that end, § 112 requires EPA to provide States the technical information and assistance required for States to regulate HAPs, directing EPA to “establish and maintain an air toxics clearinghouse and center to provide technical information and assistance to State and local agencies ... on control technology, health and ecological risk assessment, risk analysis, ambient monitoring and modeling, and emissions measurement and monitoring.” *Id.* § 112(l)(3).

Congress also instructed EPA to “encourage and support areawide strategies developed by State or local air pollution control agencies that are intended to reduce risks from emissions by area sources within a particular urban area,” with at least ten percent of funding to support “innovative and effective” areawide strategies. *Id.* § 112(k)(4). By interpreting § 112(n)(1) to *prohibit* EPA from considering the

alternative of deferring to State regulation of EGU emissions as part of the appropriate and necessary determination, 81 Fed. Reg. at 24,447 n.57, JA____, EPA “strayed far beyond” the “bounds of reasonable interpretation,” *Michigan*, 135 S. Ct. at 2707 (internal quotation marks omitted).

Besides avoiding the conflict with Title IV and the unreasonable results of imposing § 112(d) standards on EGUs, EPA’s § 111 and § 116 alternatives would give States far more say in the regulation of emissions from power plants. By interpreting § 112(n)(1) to require nationally-uniform § 112 regulation of EGU emissions if EPA found regulation was “appropriate,” EPA ignored the federalism implications of undoing a century of State and local effort and supplanting traditional State authority with the strict and inflexible § 112 program.²¹ EPA chose a regulatory program EPA knows will “level” the power industry by imposing national uniform emission standards. 76 Fed. Reg. at 24,979, JA____. Congress did not tie EPA’s hands in § 112(n)(1) to regulate EGUs the same as all other industries. Indeed, that was the point of § 112(n)(1), as the Supreme Court emphasized—treat EGUs differently.

In addition, well-settled principles of administrative law require “consideration of alternatives” and “an adequate explanation when ... alternatives are rejected.” *Int’l*

²¹ See Murray Comments at 4-11 (detailing state and local efforts and traditional state authority over EGUs) & 47-48 (identifying and explaining the need to consider federalism concerns), JA____-____, ____-____; see generally *Bond v. United States*, 134 S. Ct. 2077, 2088 (2014) (statutes “must be read consistent with principles of federalism inherent in our constitutional structure”).

Ladies' Garment Workers' Union v. Donovan, 722 F.2d 795, 817 (D.C. Cir. 1983); *see also id.* (“It is absolutely clear ... that ... an ‘artificial narrowing of options,’ ... is antithetical to reasoned decisionmaking and cannot be upheld.” (quoting *Pillai v. Civil Aeronautics Bd.*, 485 F.2d 1018, 1027 (D.C. Cir. 1973)).²² EPA’s decision “is lawful only if it rests ‘on a consideration of the relevant factors.’” *Michigan*, 135 S. Ct. at 2706 (quoting *State Farm*, 463 U.S. at 43). Thus, EPA may not “fail to consider an important aspect of the problem when deciding whether regulation” under § 112 “is appropriate” for EGUs. *Id.* at 2707 (internal quotation marks and alteration omitted). EPA’s refusal to consider alternatives and explain why it rejected them is a “complete failure to satisfy these quintessential aspects of reasoned decisionmaking.” *Donovan*, 722 F.2d at 818.

B. EPA Cannot Find § 112 “Appropriate” for EGUs Without Considering all Costs, Including Important Disadvantages and Localized Impacts.

The Rule is also flawed because it provides an incomplete account of the costs of regulating HAP emissions from EGUs under § 112. The Supreme Court directed EPA to account for “more than the expense of complying with regulations.” *Michigan*, 135 S. Ct. at 2707. Instead, EPA must consider “any disadvantage” of using § 112. *Id.*; *see also State Farm*, 463 U.S. at 43 (EPA must “consider ... important aspect[s] of the

²² *See also* 2 U.S.C. § 1535 (Unfunded Mandates Reform Act, requiring, *inter alia*, EPA to explain why the least costly method of achieving its objectives was not adopted); 5 U.S.C. § 602(c) (Regulatory Flexibility Act, requiring, *inter alia*, EPA to consider “significant” alternatives that minimize “significant economic impact” on small entities”).

problem”). EPA concedes it must “determine” that using § 112 “will, on the whole, be beneficial as opposed to detrimental to society.” 81 Fed. Reg. at 24,430, JA____. EPA cannot make that determination without considering “*all* of the relevant costs.” *See Mingo Logan*, 829 F.3d at 737 (Kavanaugh, J., dissenting).

Because EPA did not examine alternative control strategies, *see supra* Section III.A, it ignored the relative costs of available alternative control strategies that would—and should—have informed its decision whether “regulation under this section” was “appropriate.” Indeed, *if* EPA is going to interpret § 112 as requiring that EGUs be regulated the same as other source categories, it must address the full implications of that decision, including the applicability of all aspects of “regulation under this section.” This includes the disadvantage of a possible second round of regulation under the § 112(f) residual risk review provision.²³ *See* Murray Comments at 40, JA____. That possibility is a “cost” that must be considered as part of the § 112(n)(1)(A) determination, and EPA’s refusal to do so, RTC at 35, JA____, is contrary to *Michigan*, 135 S. Ct. at 2711.²⁴

²³ If this Court upholds the Rule, it would be unlawful for EPA to impose on EGUs in the future additional compliance costs that were not accounted for in the “appropriate and necessary” determination required by *Michigan*.

²⁴ EPA refused to consider § 112(f) because it said it was not possible, at this time, to look into the future to project precisely the contours of potential § 112(f) regulation. *See* RTC at 35, JA____. But even if true, in *Michigan*, the Court rejected EPA’s similar argument that it could not consider costs of a future § 112(d) rule at the time of a § 112(n)(1)(A) determination. 135 S. Ct. at 2706-08.

EPA's evaluation ignores myriad costs and disadvantages, including the localized impacts of § 112 regulation of EGUs on certain States, the coal mining industry, and consumers. Congress itself identified many disadvantages of using § 112 to regulate EGUs. *See generally* Murray Comments at 14-29, JA____-____. For example, Senator Ford specifically expressed concern that coal miners would be “out of work, absolutely out of work.” *See id.* at 19 (quoting statement of Sen. Ford, Hearing Before the Sen. Comm. on Energy & Nat. Res. (Jan. 24-25, 1990)), JA____. Members of industry raised important localized concerns before Congress in 1990, including impacts on consumers. *See, e.g., id.* at 15 (“[A] rate increase of this magnitude upon the rural impoverished people in our service territory would cause them undue harm.”) (quoting testimony of Gen. Counsel of Iowa Southern (June 22, 1989)), JA____; *id.* at 20 (“This drastic restructuring of section 112 would impose enormous cost[s] ... that are especially punishing to the poor and those on fixed income”) (quoting testimony of Dr. Goodman, Southern Co. Vice President of Research & Envtl. Affairs, Hearing Before the Sen. Comm. on Energy & Nat. Res. (Jan. 24-25, 1990)), JA____.

EPA refused to consider these disadvantages, asserting that “examining highly localized impacts ... is not required by Section 112(n)(1)(A).” RTC at 90, JA____. EPA also defended its refusal to consider impacts on coal companies, communities, and workers by citing EPA's projection in 2012 that “coal production for the electric power sector in 2015 would decrease about 1 percent.” *Id.* at 92-94, JA____-____.

But EPA was presented with data showing that it had vastly underestimated EGU retirements. For example, the State of Ohio identified roughly 6 GW of EGU closures *in Ohio alone* resulting from the decision to regulate EGUs under § 112, Comments of Ohio Environmental Protection Agency at 3 & Enclosure (Jan. 15, 2016), EPA-HQ-OAR-2009-0234-20542, JA____, ____, which is more than EPA predicted for *the entire country*. EPA rejected this evidence in favor of blindly relying on its erroneous 2012 projections. RTC at 76 (“EPA disagrees with the commenter’s assertion that the EPA must rely on a consideration of costs that includes data on recent plant closures”), JA____. EPA also ignored without explanation the estimate of 19 GW of EGU closures provided by NERA Economic Consulting, *id.* at 78, JA____, an estimate that is consistent with the Energy Information Administration’s finding of approximately 20 GW of closures and 5.6 GW of conversions from coal to natural gas as a result of EPA’s MATS rule. U.S. Energy Information Administration, Today in Energy: EIA electricity generator data show power industry response to EPA mercury limits at 1 (July 7, 2016), <http://www.eia.gov/todayinenergy/detail.php?id=26972>, JA____.

Thus, actual data confirm the numerous comments showing that impacts on coal companies, communities, and workers were far greater than EPA projected, and therefore even more important to consider. Reasoned decisionmaking requires that EPA “consider ... important aspect[s] of the problem” and “examine the relevant

data,” *State Farm*, 463 U.S. at 43, but EPA gave no thought at all to these especially concerning “highly localized impacts” of its decision. RTC at 90, JA____.

Instead of considering *all* costs of regulating EGUs under § 112, EPA restricted its evaluation in the Rule to the ability of the utility sector to “absorb” compliance costs. *See* 81 Fed. Reg. at 24,424-25, JA____-____; *supra* p. 20. EPA’s sector-wide approach to assessing costs masks the real impacts of § 112 regulation. For example, EPA included States with little or no coal generation in its cost metrics, 81 Fed. Reg. at 24,435, JA____, diluting the impact of the Rule in coal-generating States. *See also* Murray Comments at 41-46, JA____-____.

That EPA’s approach was unreasonable is further illustrated by EPA’s refusal to consider the impact of the MATS rule in the ERCOT market in Texas and on ARIPPA members. In finding the cost of the rule reasonable across the entire power sector, EPA repeatedly generalizes that “many of these sources are able to pass-through compliance costs to ratepayers.” 81 Fed. Reg. at 24,436, JA____; 80 Fed. Reg. at 75,035, JA____. Indeed, EPA’s assumption that compliance costs were recoverable was a key part of its (erroneous) conclusion that overall costs were *reasonable* (i.e., affordable). 81 Fed. Reg. at 24,424-25, JA____-____. But, as Luminant and other commenters pointed out, that is not true for the competitive ERCOT market, where costs are not passed on through rates and producers alone must bear the compliance costs, Comments of Luminant on EPA’s Proposed Supplemental Finding at 8-9 (Jan. 15, 2016), EPA-HQ-OAR-2009-0234-20533, JA____-____, or for Texas, ninety percent

of which “is covered by a single isolated grid with limited connections to external power supplies,” *see Texas v. EPA*, 829 F.3d 405, 431 (5th Cir. 2016). EPA’s response that it “consider[ed] all expenditures required under MATS whether these costs are borne either by electricity consumers or electricity producers,”²⁵ is no response at all; it confirms that EPA has given costs in the ERCOT market “no thought at all,” *Michigan*, 135 S. Ct. at 2706. EPA’s recognition elsewhere of the economic strains on generators in the ERCOT market and Luminant units in particular, 81 Fed. Reg. at 24,433 n.24, JA____, underscores the arbitrariness of its refusal to “analyze costs to ERCOT independently” when assessing the *reasonableness* of the rule’s costs, RTC at 67, JA____, as well as the fact that its conclusions run counter to the evidence before the Agency (*i.e.*, the acute economic pressures in ERCOT). *State Farm*, 463 U.S. at 43.

The impropriety of EPA’s approach in considering only *certain* costs imposed by MATS is further illustrated by EPA’s failure to evaluate the cost corresponding to the lost environmental benefits resulting from the forced shutdown of bituminous coal refuse-fired sources operated by ARIPPA members. ARIPPA facilities provide a unique environmental benefit by utilizing state-of-the-art circulating fluidized bed combustion technology to convert coal refuse into energy. Comments of ARIPPA on EPA’s Proposed Supplemental Finding at 2-3 (Jan. 14, 2016), EPA-HQ-OAR-2009-0234-20535 (“ARIPPA Comments”), JA____-____. ARIPPA facilities combust coal

²⁵ RTC at 67, JA____; *see also* 81 Fed. Reg. at 24,434, JA____.

refuse from both past and current mining activities, and thereby abate acid mine drainage from coal refuse piles, reclaim existing and idle or abandoned strip mines, and prevent uncontrolled air emissions caused by accidental burning of coal refuse piles, all at no cost to taxpayers.²⁶ *Id.* at 3, JA____. By converting coal refuse into alternative energy, ARIPPA members are removing one of the principal sources of contamination to surface water and groundwater in coal mining regions of the United States, a long-term environmental benefit estimated to amount to billions of dollars. *Id.* Moreover, in the absence of continued operation of these ARIPPA facilities, the removal and clean-up of the remaining hundreds of millions of tons of coal refuse using traditional methods would perpetuate indefinitely, with the costs fully borne by taxpayers. *Id.*

Due to the unique technical characteristics of circulating fluidized bed technology²⁷ and the importance of preserving ash characteristics essential to the

²⁶ In promulgating MATS, EPA itself recognized these benefits, acknowledging that “[u]nits that burn coal refuse provide multimedia environmental benefits by combining the production of energy with the removal of coal refuse piles and by reclaiming land for productive use. Consequently, because of the unique environmental benefits that coal refuse-fired EGUs provide, these units warrant special consideration” 76 Fed. Reg. at 25,066, JA____. Yet, EPA failed to consider the cost of these lost benefits in conducting its supplemental finding analysis.

²⁷ Because EPA’s cost assessment in response to *Michigan* was limited to conventional coal- and oil-fired units, EPA also failed to consider the additional compliance costs associated with the unique technical and operational characteristics inherent in circulating fluidized bed design and operational configuration, including limitations on the technical and economic feasibility of both add-on emission systems

beneficial reuse of ash in mine reclamation,²⁸ those ARIPPA circulating fluidized bed units firing bituminous coal refuse cannot satisfy the hydrogen chloride standard (or the SO₂ surrogate) imposed by the MATS rule. Absent a revision to such standard, these plants will be forced to close and the environmental benefits they provide will be eliminated. Although ARIPPA specifically reminded EPA of these critical and substantial benefits in its comments, *id.* at 2-4, JA____-____, EPA failed to acknowledge or respond to these comments. EPA's failure to consider the cost associated with the loss of these benefits as part of its Rule further confirms that EPA's evaluation of the costs imposed by the MATS rule was unreasonable and inconsistent with the Supreme Court's directive in *Michigan*.

At bottom, EPA's conclusion that "the record amply demonstrates that the advantages ... for society ... outweigh the disadvantages," 81 Fed. Reg. at 24,429, JA____, depends on its refusal to consider every cost identified in the record other than EPA's carefully selected system-wide "affordability" cost metrics. EPA cannot find advantages outweigh disadvantages unless EPA actually considers *all* of the relevant disadvantages.

and sorbent injection strategies for reducing hydrogen chloride emissions. ARIPPA Comments at 9-18, JA____-____.

²⁸ The continued ability to direct ash for beneficial use in mine reclamation, rather than dispose of the ash as a waste material, is not only central to the environmental benefits provided by these units, but also critical to the facilities' continued financial viability.

CONCLUSION

For the foregoing reasons, the petitions for review should be granted.

Dated: November 18, 2016

Respectfully submitted,

/s/ Makram B. Jaber

F. William Brownell

Makram B. Jaber

Andrew D. Knudsen

HUNTON & WILLIAMS LLP

2200 Pennsylvania Avenue, N.W.

Washington, D.C. 20037

Tel: (202) 955-1500

Fax: (202) 778-2201

bbrownell@hunton.com

mjaber@hunton.com

aknudsen@hunton.com

*Counsel for Petitioner Utility Air Regulatory
Group*

/s/ Neil D. Gordon

Bill Schuette

ATTORNEY GENERAL FOR THE PEOPLE
OF MICHIGAN

Aaron D. Lindstrom

Solicitor General

Neil D. Gordon

Brian J. Negele

Assistant Attorneys General

ENRA Division

525 W. Ottawa Street

P.O. Box 30755

Lansing, MI 48909

Tel: (515) 373-7540

Fax: (517) 373-1610

gordonn1@michigan.gov

negeleb@michigan.gov

*Counsel for Petitioner Michigan Attorney
General Bill Schuette, on behalf of the People of
Michigan*

/s/ Geoffrey K. Barnes
Geoffrey K. Barnes
J. Van Carson
Wendlene M. Lavey
John D. Lazzaretti
Robert D. Cheren
SQUIRE PATTON BOGGS (US) LLP
4900 Key Tower
127 Public Square
Cleveland, OH 44114
Tel: (216) 479-8646
geoffrey.barnes@squirepb.com

Counsel for Petitioner Murray Energy Corporation

/s/ Bart E. Cassidy
Bart E. Cassidy
Katherine L. Vaccaro
MANKO, GOLD, KATCHER & FOX, LLP
401 City Avenue, Suite 901
Bala Cynwyd, PA 19004
Tel: (484) 430-5700
bcassidy@mankogold.com
kvaccaro@mankogold.com

Counsel for Petitioner ARIPPA

/s/ Stacey Turner
Stacey Turner
SOUTHERN COMPANY SERVICES, INC.
600 18th Street North
BIN 14N-8195
Birmingham, AL 35203
Tel: (205) 257-2823
staturne@southernco.com

Counsel for Petitioner Southern Company Services, Inc.

/s/ Robert D. Tambling
Luther Strange
ATTORNEY GENERAL OF ALABAMA
Robert D. Tambling
State of Alabama
Office of the Attorney General
501 Washington Avenue
Montgomery, AL 36130
Tel: (334) 242-7445
Fax: (334) 242-2433

Counsel for Petitioner State of Alabama

/s/ Keith J. Miller
Mark Brnovich
ATTORNEY GENERAL OF ARIZONA
John R. Lopez IV
Solicitor General
Keith J. Miller
Assistant Solicitor General
James T. Skardon
Assistant Attorney General
1275 West Washington Street
Phoenix, AZ 85007
Tel: (602) 542-3333
keith.miller@azag.gov

Counsel for Petitioner State of Arizona

/s/ C. Grady Moore, III
C. Grady Moore, III
BALCH & BINGHAM LLP
1901 Sixth Avenue North, Suite 1500
Birmingham, AL 35303-4642
Tel: (205) 226-8718
Fax: (205) 488-5704
gmoore@balch.com

Counsel for Petitioner Alabama Power Company

/s/ Angela J. Levin
Angela J. Levin
TROUTMAN SANDERS LLP
580 California Street, Suite 1100
San Francisco, CA 94104
Tel: (415) 477-5787
Fax: (415) 477-5710
angela.levin@troutmansanders.com

Margaret Claiborne Campbell
TROUTMAN SANDERS LLP
600 Peachtree Street, NE, Suite 5200
Atlanta, GA 30308-2216
Tel: (404) 885-3000
Fax: (404) 962-6521
margaret.campbell@troutmansanders.com

*Counsel for Petitioners Georgia Power Company
and Southern Company Services, Inc.*

/s/ Nicholas J. Bronni
Leslie Rutledge
ATTORNEY GENERAL OF ARKANSAS
Lee Rudofsky
Solicitor General
Nicholas J. Bronni
Deputy Solicitor General
Office of the Attorney General
323 Center Street, Suite 200
Little Rock, AR 72201
Tel: (501) 682-8090

Counsel for Petitioner State of Arkansas

/s/ Jeffrey A. Chanay
Derek Schmidt
ATTORNEY GENERAL OF KANSAS
Jeffrey A. Chanay
Chief Deputy Attorney General
Office of the Attorney General
120 S.W. 10th Avenue, 3rd Floor
Topeka, KS 66612-1597
Tel: (785) 368-8435
jeff.chanay@ag.ks.gov

Counsel for Petitioner State of Kansas

/s/ Terese T. Wyly

Terese T. Wyly
BALCH & BINGHAM LLP
1310 Twenty Fifth Avenue
Gulfport, MS 39501-1931
Tel: (228) 214-0413
Fax: (888) 897-6221
twyly@balch.com

*Counsel for Petitioner Mississippi Power
Company*

/s/ Jeffrey A. Stone

Jeffrey A. Stone
BEGGS & LANE, RLLP
501 Commendancia Street
Pensacola, FL 32502
Tel: (850) 432-2451
JAS@beggslane.com

Robert A Manning
Joseph A. Brown
HOPPING GREEN & SAMS, P.A.
119 S. Monroe Street, Suite 300
Tallahassee, FL 32301
Tel: (850) 222-7500
Fax: (850) 224-8551
robertm@hgslaw.com
josephb@hgslaw.com

Counsel for Petitioner Gulf Power Company

/s/ Mitchel T. Denham

Andy Beshear
ATTORNEY GENERAL OF KENTUCKY
Mitchel T. Denham
Assistant Deputy Attorney General
Joseph A. Newberg, II
Assistant Attorney General
Kentucky Office of the Attorney General
The Capitol Building
700 Capitol Avenue, Suite 118
Frankfort, KY 40601
Tel: (502) 696-5300
mitchel.denham@ky.gov
joe.newberg@ky.gov

*Counsel for Petitioner Commonwealth of
Kentucky*

/s/ Justin D. Lavene

Douglas J. Peterson
ATTORNEY GENERAL OF NEBRASKA
Dave Bydalek
Chief Deputy Attorney General
Justin D. Lavene
Assistant Attorney General
2115 State Capitol
Lincoln, NE 68509
Tel: (402) 471-2682
justin.lavene@nebraska.gov

Counsel for Petitioner State of Nebraska

/s/ P. Stephen Gidiere III

P. Stephen Gidiere III
C. Grady Moore, III
Julia B. Barber
BALCH & BINGHAM LLP
1901 6th Ave. N., Suite 1500
Birmingham, AL 35203
Tel: (205) 251-8100
sgidiere@balch.com

Stephanie Z. Moore
Executive Vice President & General
Counsel
VISTRA ENERGY CORP.
1601 Bryan Street, 22nd Floor
Dallas, TX 75201

Daniel J. Kelly
Vice President and Associate General
Counsel
VISTRA ENERGY CORP.
1601 Bryan Street, 43rd Floor
Dallas, TX 75201

*Counsel for Petitioner Oak Grove Management
Company LLC*

/s/ Margaret Olson

Wayne Stenehjem
ATTORNEY GENERAL OF NORTH
DAKOTA
Margaret Olson
Assistant Attorney General
North Dakota Attorney General's Office
500 North 9th Street
Bismarck, ND 58501-4509
Tel: (701) 328-3640
Fax: (701) 328-4300
maiolson@nd.gov

Counsel for Petitioner State of North Dakota

/s/ Eric E. Murphy

Michael DeWine
ATTORNEY GENERAL OF OHIO
Eric E. Murphy
State Solicitor
Counsel of Record
30 E. Broad Street, 17th Floor
Columbus, OH 43215
Tel: (614) 466-8980
eric.murphy@ohioattorneygeneral.gov

Counsel for Petitioner State of Ohio

/s/ P. Clayton Eubanks _____

E. Scott Pruitt

ATTORNEY GENERAL OF OKLAHOMA

P. Clayton Eubanks

Deputy Solicitor General

313 N.E. 21st Street

Oklahoma City, OK 73105

Tel: (405) 522-8992

Fax: (405) 522-0085

clayton.eubanks@oag.ok.gov

fc.docket@oag.state.ok.us

Counsel for Petitioner State of Oklahoma

/s/ James Emory Smith, Jr. _____

Alan Wilson

ATTORNEY GENERAL OF SOUTH

CAROLINA

James Emory Smith, Jr.

Deputy Solicitor General

Office of the Attorney General

P.O. Box 11549

Columbia, SC 29211

Tel: (803) 734-3680

esmith@scag.gov

Counsel for Petitioner State of South Carolina

/s/ Mary E. Smith
Ken Paxton
ATTORNEY GENERAL OF TEXAS
Jeffrey C. Mateer
First Assistant Attorney General
Brantley Starr
Deputy First Assistant Attorney
General
James E. Davis
Deputy Attorney General for Civil
Litigation
Priscilla M. Hubenak
Chief, Environmental Protection
Division
Mary E. Smith
Assistant Attorney General
Office of the Attorney General of Texas
Environmental Protection Division
P.O. Box 12548, MC-066
Austin, TX 78711-2548
Tel: (512) 475-4041
Fax: (512) 320-0911
mary.smith@texasattorneygeneral.gov

*Counsel for Petitioners State of Texas, Texas
Commission on Environmental Quality, Public
Utility Commission of Texas, and Railroad
Commission of Texas*

/s/ Elbert Lin

Patrick Morrissey

ATTORNEY GENERAL OF WEST
VIRGINIA

Elbert Lin

Solicitor General

Counsel of Record

State Capitol Building 1, Room 26-E

Charleston, WV 25305

Tel: (304) 558-2021

Fax: (304) 558-0140

elbert.lin@wvago.gov

Counsel for Petitioner State of West Virginia

/s/ Misha Tseytlin

Brad D. Schimel

ATTORNEY GENERAL OF WISCONSIN

Misha Tseytlin

Solicitor General

Counsel of Record

Wisconsin Department of Justice

17 West Main Street

Madison, WI 53707

Tel: (608) 267-9323

tseytlinm@doj.state.wi.us

Counsel for Petitioner State of Wisconsin

/s/ James Kaste
Peter K. Michael
ATTORNEY GENERAL OF WYOMING
James Kaste
Deputy Attorney General
Michael J. McGrady
Senior Assistant Attorney General
Elizabeth A. Morrisseau
Assistant Attorney General
Wyoming Attorney General's Office
2320 Capitol Avenue
Cheyenne, WY 82002
Tel: (307) 777-6946
Fax: (307) 777-3542
james.kaste@wyo.gov
mike.mcgrady@wyo.gov
elizabeth.morrisseau@wyo.gov

Counsel for Petitioner State of Wyoming

CERTIFICATE OF COMPLIANCE

Pursuant to Rule 32(a)(7)(C) of the Federal Rules of Appellate Procedure and Circuit Rules 32(e)(1) and 32(e)(2)(C), I hereby certify that the foregoing Opening Brief of State and Industry Petitioners contains 17,884 words, as counted by a word processing system that includes headings, footnotes, quotations, and citations in the count, and therefore is within the word limit set by the Court.

Dated: November 18, 2016

/s/ Makram B. Jaber
Makram B. Jaber

CERTIFICATE OF SERVICE

I hereby certify that, on this 18th day of November 2016, a copy of the foregoing Opening Brief of State and Industry Petitioners was served electronically through the Court's CM/ECF system on all ECF-registered counsel.

/s/ Makram B. Jaber
Makram B. Jaber