ORAL ARGUMENT NOT YET SCHEDULED

No. 19-1140 and consolidated cases

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

AMERICAN LUNG ASSOCIATION, *et al.*,

Petitioners,

v.

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

Respondents.

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

INITIAL OPENING BRIEF OF PUBLIC HEALTH AND ENVIRONMENTAL PETITIONERS

Ann Brewster Weeks
James P. Duffy
Clean Air Task Force
114 State Street, 6th Floor
Boston, MA 02109
(617) 359-4077
aweeks@catf.us
jduffy@catf.us

Counsel for American Lung Association, American Public Health Association, Appalachian Mountain Club, Clean Air Council, Clean Wisconsin, Conservation Law Foundation, and Minnesota Center for Environmental Advocacy

Sean H. Donahue
Susannah L. Weaver
Donahue, Goldberg, Weaver, & Littleton
1008 Pennsylvania Ave., SE
Washington, DC 20003
(202) 277-7085
sean@donahuegoldberg.com
susannah@donahuegoldberg.com

Counsel for Environmental Defense Fund

Dated: April 17, 2020

Additional counsel listed on following pages

Joanne Spalding
Sierra Club
2101 Webster Street, Suite 1300
Oakland, CA 94612
(415) 977-5725
joanne.spalding@sierraclub.org

Andres Restrepo
Sierra Club
50 F Street NW, 8th Floor
Washington, DC 20001
(215) 298-0335
andres.restrepo@sierraclub.org

Vera Pardee
Law Office of Vera Pardee
726 Euclid Avenue
Berkeley, CA 94708
(858) 717-1448
pardeelaw@gmail.com

Counsel for Sierra Club

Clare Lakewood
Howard M. Crystal
Center for Biological Diversity
1212 Broadway, Suite 800
Oakland, CA 94612
(415) 844-7121
clakewood@biologicaldiversity.org
hcrystal@biologicaldiversity.org

Counsel for Center for Biological Diversity

David Doniger
Benjamin Longstreth
Melissa J. Lynch
Lucas May
Natural Resource Defense Council
1152 15th Street, NW, Suite 300
Washington, DC 20005
(202) 289-2403
ddoniger@nrdc.org
blongstreth@nrdc.org
llynch@nrdc.org
lmay@nrdc.org

Counsel for Natural Resources Defense Council

Vickie L. Patton
Tomás Carbonell
Benjamin Levitan
Lance Bowman*
Environmental Defense Fund
1875 Connecticut Ave., NW
Suite 600
Washington, DC 20009
(202) 387-3500
vpatton@edf.org
tcarbonell@edf.org
blevitan@edf.org
lbowman@edf.org

*D.C. Bar application pending

Counsel for Environmental Defense Fund

Brittany E. Wright
Jon A. Mueller
Chesapeake Bay Foundation, Inc.
6 Herndon Avenue
Annapolis, MD 21403
(443) 482-2077
bwright@cbf.org
jmueller@cbf.org

Counsel for Chesapeake Bay Foundation Inc.

Howard Learner
Scott Strand
Alda Yuan
Environmental Law & Policy Center
35 E Wacker Dr. Suite 1600
Chicago, IL 60601
(312) 673-6500
hlearner@elpc.org
sstrand@elpc.org
ayuan@elpc.org

Counsel for Environmental Law & Policy Center

CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

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

A. Parties

Petitioners:

No. 19-1140: American Lung Association and American Public Health Association

No. 19-1165: State of New York, State of California, State of Colorado, State of Connecticut, State of Delaware, State of Hawaii, State of Illinois, State of Maine, State of Maryland, Commonwealth of Massachusetts, People of the State of Michigan, State of Minnesota, State of New Jersey, State of New Mexico, State of North Carolina, State of Oregon, Commonwealth of Pennsylvania, State of Rhode Island, State of Vermont, Commonwealth of Virginia, State of Washington, State of Wisconsin, District of Columbia, City of Boulder (CO), City of Chicago, City of Los Angeles, City of New York, City of Philadelphia, and the City of South Miami (FL)

No. 19-1166: Appalachian Mountain Club, Center for Biological Diversity, Clean Air Council, Clean Wisconsin, Conservation Law Foundation, Environmental Defense Fund, Environmental Law & Policy Center, Minnesota Center for Environmental Advocacy, Natural Resources Defense Council, and Sierra Club

No. 19-1173: Chesapeake Bay Foundation

No. 19-1175: Robinson Enterprises, Inc., Nuckles Oil Company, Inc., dba Merit Oil Company, Construction Industry Air Quality Coalition, Liberty Packing

Company LLC, Dalton Trucking, Inc., Norman R. "Skip" Brown, Joanne Brown, the Competitive Enterprise Institute, and the Texas Public Policy Foundation

No. 19-1176: Westmoreland Mining Holdings LLC

No. 19-1177: City and County of Denver (CO)

No. 19-1179: North American Coal Corporation

No. 19-1185: Biogenic CO2 Coalition

No. 19-1186: Advanced Energy Economy

No. 19-1187: American Wind Energy Association and Solar Energy Industries Association

No. 19-1188: Consolidated Edison, Inc., Exelon Corporation, National Grid USA, New York Power Authority, Power Companies Climate Coalition, Public Service Enterprise Group Incorporated, and Sacramento Municipal Utility District

Respondents:

United States Environmental Protection Agency and Andrew Wheeler, Administrator, United States Environmental Protection Agency.

Intervenors for Petitioners:

State of Nevada

Intervenors for Respondents:

In Consolidated Cases: National Rural Electric Cooperatives Association; Chamber of Commerce; National Mining Association; America's Power; Appalachian Power Company, AEP Generating Company, AEP Generation Resources Inc.,

Indiana Michigan Power Company, Kentucky Power Company, Public Service Company of Oklahoma, Southwestern Electric Power Company, and Wheeling Power Company; Westmoreland Mining Holdings; Murray Energy Corporation; State of North Dakota; Indiana Energy Association and Indiana Utility Group; International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers and Helpers, AFL-CIO; International Brotherhood of Electrical Workers, AFL-CIO; United Mine Workers of America, AFL-CIO; Basin Electric Power Cooperative; Georgia Power Company; Nevada Gold Mines LLC and Newmont Nevada Energy Investment; PowerSouth Energy Cooperative

In Nos. 19-1175, 19-1176, 19-1179, 19-1185: American Lung Association, American Public Health Association, Appalachian Mountain Club, Center for Biological Diversity, Chesapeake Bay Foundation, Inc., Clean Air Council, Clean Wisconsin, Conservation Law Foundation, Environmental Defense Fund, Environmental Law & Policy Center, Minnesota Center for Environmental Advocacy, Natural Resources Defense Council, and Sierra Club

In Nos. 19-1175, 19-1176, 19-1179: States of New York, California, Colorado, Connecticut, Delaware, Hawaii, Illinois, Maine, Maryland, Michigan, Minnesota, Nevada, New Jersey, New Mexico, North Carolina, Oregon, Rhode Island, Vermont, Washington, the Commonwealths of Massachusetts, Pennsylvania and Virginia, the District of Columbia, the Cities of Boulder, Chicago, Los Angeles, New York, Philadelphia and South Miami, and the City and County of Denver

Amici Curiae for Petitioners:

In support of State and Municipal, Public Health and Environmental, Power Company, and Clean Energy Trade Association Petitioners: Maximilian Auffhammer, Philip Duffy, Kenneth Gillingham, Lawrence H. Goulder, James Stock, Gernot Wagner, and the Union of Concerned Scientists; Institute for Policy Integrity at New York University School of Law; National Parks Conservation Association and the Coalition to Protect America's National Parks; Thomas C. Jorling; The American Thoracic Society, The American Academy of Allergy, Asthma, & Immunology, The American College of Occupational and Environmental Medicine, The National Medical Association, and The American College of Chest Physicians; Professors of Administrative Law Todd Aagaard, Blake Emerson, Daniel Farber, Kathryn Kovacs, Richard Lazarus, Ronald Levin, and Nina Mendelson

Amicus Curiae for Respondents:

National Association of Home Builders of the United States

B. Ruling Under Review

These consolidated cases involve final agency action of the U.S. Environmental Protection Agency titled, "Repeal of the Clean Power Plan; Emission Guidelines for Greenhouse Gas Emissions From Existing Electric Utility Generating Units; Revisions to Emission Guidelines Implementing Regulations," which appears in the Federal Register at 84 Fed. Reg. 32,520 (July 8, 2019).

C. Related Cases

These have not previously been before this Court or any other court. There are no related cases currently pending in this Court or any other court.

RULE 26.1 DISCLOSURE STATEMENT

Pursuant to Federal Rule of Appellate Procedure 26.1 and D.C. Circuit Rule 26.1, Public Health and Environmental Organization Petitioners make the following disclosures:

American Lung Association

The American Lung Association is a not-for-profit corporation organized under the laws of the State of Maine and incorporated under Section 501(c)(3) of the Internal Revenue Code. The American Lung Association's mission is to save lives by improving lung health and preventing lung disease through education, advocacy and research. The American Lung Association works to protect public health from unhealthy air pollution by supporting the Clean Air Act and pressing the U.S. Environmental Protection Agency to ensure that all Americans have air that is safe and healthy to breathe. This includes encouraging more protective limits on ozone and particle pollution, reducing power plant carbon dioxide emissions, and cleaner gasoline and vehicle standards. The American Lung Association has no parent companies, and no publicly held company has a ten percent or greater ownership interest in the American Lung Association.

American Public Health Association

The American Public Health Association (APHA) is incorporated in Massachusetts and headquartered in Washington, DC. APHA has 54 state and regional Affiliates representing all 50 states, the District of Columbia and Puerto Rico.

APHA is recognized as a not-for-profit corporation under Section 501(c)(3) of the United States Internal Revenue Code. The American Public Health Association champions the health of all people and all communities. We represent more than 23,000 individual members and strengthen the public health profession. We speak out for public health issues and policies backed by science. We are the only organization that combines a nearly 150-year perspective, a broad-based member community and the ability to influence federal policy to improve the public's health. APHA has long advocated in support of the Clean Air Act, including as a tool to combat climate change and for strong public health protections from ozone and other dangerous air pollutants. The American Public Health Association has no parent companies, and no publicly held company has a ten percent or greater ownership interest in the American Public Health Association.

Appalachian Mountain Club

Appalachian Mountain Club is a not-for-profit environmental and recreation corporation organized and existing under the laws of the Commonwealth of Massachusetts. The Club has a mission of promoting the protection, enjoyment and understanding of mountains, forest, waters, and trails of the Appalachian Region. Appalachian Mountain Club has no parent corporations, and no publicly held company has a ten percent or greater ownership interest in it.

Center for Biological Diversity

The Center for Biological Diversity is a non-profit corporation organized and existing under the laws of the State of California that works through science, law, and advocacy to secure a future for all species, great and small, hovering on the brink of extinction, with a focus on protecting the lands, waters, and climate that species need to survive. The Center for Biological Diversity has no parent corporations, and no publicly held corporation has a ten percent or greater ownership interest in it.

Chesapeake Bay Foundation

The Chesapeake Bay Foundation, Inc. is a non-profit, tax exempt organization incorporated in the State of Maryland whose purpose is to "Save the Bay" and keep it saved, as defined by reaching a 70 on the Chesapeake Bay Foundation's Health Index. The Chesapeake Bay Foundation has no parent corporation, and no publicly held company has a ten percent or greater ownership in the Chesapeake Bay Foundation.

Clean Air Council

Clean Air Council is a non-profit environmental organization, organized under the laws of the Commonwealth of Pennsylvania. Clean Air Council's mission is to protect and defend everyone's right to breathe clean air. Clean Air Council does not have any parent corporations, and no publicly held corporation has a ten percent or greater ownership interest in it.

Clean Wisconsin

Clean Wisconsin, created in 1970 as Wisconsin's Environmental Decade, is a non-profit membership corporation organized and existing under the laws of Wisconsin, whose mission is to protect Wisconsin's air, water, and special places by being an effective voice in the legislature, state and federal agencies, and the courts. Clean Wisconsin does not have any parent corporations, and no publicly held corporation has a ten percent or greater ownership interest in it.

Conservation Law Foundation

Conservation Law Foundation ("CLF") is a non-profit corporation organized and existing under the laws of the Commonwealth of Massachusetts. CLF protects New England's environment for the benefit of all people by using the law, science and the market to create solutions that preserve our natural resources, build healthy communities, and sustain a vibrant economy. CLF does not have any parent corporations, and no publicly held corporation has a ten percent or greater ownership interest in it.

Environmental Defense Fund

Environmental Defense Fund ("EDF") is a national non-profit organization, organized under the laws of the State of New York, that links science, economics, and law to create innovative, equitable, and cost-effective solutions to urgent environmental problems. EDF does not have any parent corporations, and no publicly held corporation has a ten percent or greater ownership interest in it.

Environmental Law & Policy Center

The Environmental Law & Policy Center ("ELPC") is a non-profit corporation organized and existing under the laws of the State of Illinois. ELPC is the Midwest's leading public interest environmental legal advocacy and eco-business innovation organization that works to improve public health and to protect our natural resources across the Great Lakes states and the Midwest region. ELPC has no parent corporations, and no publicly held corporation has a ten percent or greater ownership interest in it.

Minnesota Center for Environmental Advocacy

Minnesota Center for Environmental Advocacy ("MCEA") is a non-profit corporation organized and existing under the laws of the state of Minnesota. MCEA uses law, science, and research to protect Minnesota's environment, its natural resources and the health of its people. MCEA does not have any parent corporations, and no publicly held corporation has a ten percent or greater ownership interest in it.

Natural Resources Defense Council

Natural Resources Defense Council ("NRDC"), a corporation organized and existing under the laws of the State of New York, is a national non-profit organization dedicated to improving the quality of the human environment and protecting the nation's endangered natural resources. NRDC does not have any parent corporations and no publicly held corporation has a ten percent or greater ownership in it.

Sierra Club

Sierra Club is a non-profit corporation organized under the laws of the State of California. Sierra Club's mission is to explore, enjoy, and protect the wild places of the Earth; to practice and promote the responsible use of the Earth's resources and ecosystems; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives. Sierra Club does not have any parent corporations, and no publicly held corporation has a ten percent or greater ownership interest in Sierra Club.

TABLE OF CONTENTS

CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES i

RULE 26.1 DISCLOSURE STATEMENT vi

TABLE OF CONTENTS xii

TABLE OF AUTHORITIES xiv

GLOSSARY OF ABBREVIATIONS xix

JURISDICTIONAL STATEMENT 1

STATEMENT OF ISSUES 1

STATUTES AND REGULATIONS 2

INTRODUCTION 2

STATEMENT OF THE CASE 5

SUMMARY OF ARGUMENT 5

STANDING 6

STANDARD OF REVIEW 7

ARGUMENT 7

I. EPA'S RULE UNLAWFULLY IGNORES CLIMATE CHANGE, THE VERY DANGER THE AGENCY IS OBLIGATED TO ADDRESS 7

II. SECTION 111 DOES NOT BAR THE MOST EFFECTIVE AND WIDELY-USED SYSTEM OF EMISSION REDUCTION FOR POWER PLANTS 14

III. ACE VIOLATES THE CLEAN AIR ACT AND IS ARBITRARY AND CAPRICIOUS 19

A. ACE Unlawfully Abdicates EPA's Core Statutory Responsibility to Determine the Required Level of Emission Reduction. 19

1. Section 111 Requires EPA to Specify a Minimum Emission Level that Standards of Performance Must Achieve. 19

2. ACE Unlawfully Fails to Establish a Binding, Quantitative Emission Guideline. 21

3. ACE Misapplies Section 111(d)'s Variance Provision. 24

B. An Ineffectual "Best System" Comprised Only of Heat-Rate Improvements Is Unlawful, Arbitrary, and Capricious. 26

1. Heat-Rate Improvements Alone Achieve No Meaningful Emission Reductions. 27

2. EPA Arbitrarily Rejected Far More Effective Systems. 31

C. EPA Unlawfully Deregulated Existing Gas- and Oil-Fired Plants. 40

CONCLUSION AND REQUESTED RELIEF 45

CERTIFICATE OF COMPLIANCE 48

CERTIFICATE OF SERVICE 49

TABLE OF AUTHORITIES

Cases

Adamo Wrecking Co. v. United States,
434 U.S. 275 (1978) 20

Air Alliance Houston v. EPA,
906 F.3d 1049 (D.C. Cir. 2018) 13

American Electric Power Co. v. Connecticut,
564 U.S. 410 (2011) 2, 14, 19

ANR Storage Co. v. FERC,
904 F.3d 1020 (D.C. Cir. 2018) 36, 44

Blue Water Navy Viet. Veterans Ass'n, Inc. v. McDonald,
830 F.3d 570 (D.C. Cir. 2016) 45

Coal. for Responsible Regulation v. EPA,
684 F.3d 102 (D.C. Cir. 2012) 8

**FCC v. Fox Television Stations*,
556 U.S. 502 (2009) 13, 28, 34, 42

Gresham v. Azar,
950 F.3d 93 (D.C. Cir. 2020) 11

Interstate Nat. Gas Ass'n of Am. v. FERC,
494 F.3d 1092 (D.C. Cir. 2007) 43

**Massachusetts v. EPA*,
549 U.S. 497 (2007) 2, 15

**Michigan v. EPA*,
135 S. Ct. 2699 (2015) 8, 29

**Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto Ins. Co.*,
463 U.S. 29 (1983) 11, 27, 43

NARUC v. Interstate Commerce Comm'n,
41 F.3d 721 (D.C. Cir. 1994) 16

New York v. EPA,
443 F.3d 880 (D.C. Cir. 2006) 18

NRDC v. Wheeler,
2020 U.S. App. LEXIS 10846 (D.C. Cir. 2020) 7

Portland Cement Ass'n v. EPA,
665 F. 3d 177 (D.C. Cir. 2011) 45

**Prill v. NLRB*,
755 F.2d 941 (D.C. Cir. 1985) 16

SEC v. Chenery Corp.,
318 U.S. 80 (1943) 19

**Sierra Club v. Costle*,
657 F.2d 298 (D.C. Cir. 1981) 10, 26, 29, 30, 34, 35, 37

Sierra Club v. EPA,
551 F.3d 1019 (D.C. Cir. 2008) 40

Small Refiner Lead Phase-Down Task Force v. EPA,
705 F.2d 506 (D.C. Cir. 1983) 37, 45

Transitional Hosps. Corp. of Louisiana v. Shalala,
222 F.3d 1019 (D.C. Cir. 2000) 19

U.S. Sugar Corp. v. EPA,
830 F.3d 579 (D.C. Cir. 2016) 45

Util. Air Regulatory Grp. v. EPA,
573 U.S. 302 (2014) 18

Statutes

42 U.S.C. §7401(a)(3) 30

42 U.S.C. §7411 2

*42 U.S.C. §7411(a)(1) 3, 7, 14, 16, 25, 40

42 U.S.C. §7411(b)(1).....10

42 U.S.C. §7411(b)(2).....37

*42 U.S.C. §7411(d).....14

*42 U.S.C. §7411(d)(1).....19, 24, 41

*42 U.S.C. §7411(d)(1)(A) 17

*42 U.S.C. §7411(d)(1)(B) 25

*42 U.S.C. §7411(d)(2).....19, 20

42 U.S.C. §7411(h).....20

42 U.S.C. §7475.....38

42 U.S.C. §7607(b)(1).....1

42 U.S.C. §7607(d)(6)(B) 10

Code of Federal Regulations

40 C.F.R. §60.24(f) 24

40 C.F.R. §60.21a(e) 17, 21

40 C.F.R. §60.21a(f).....20

40 C.F.R. §60.22a(b).....14

40 C.F.R. §60.24a(c) 21, 22

40 C.F.R. §60.24a(e) 24

40 C.F.R. §60.27a(c)(2) 24

40 C.F.R. §60.5740a(a)(1) 23

40 C.F.R. §60.5740a(a)(2)(i) 23

40 C.F.R. §60.5755a(a)(2) 23

40 C.F.R. §60.5780a(a)(2) 39

40 C.F.R. §60.5780a(a)(3) 41

Federal Register Notices

40 Fed. Reg. 53,340 (Nov. 17, 1975) 20, 21, 26

80 Fed. Reg. 64,662 (Oct. 23, 2015) 8, 11, 13, 15, 27, 28, 34, 39, 41

82 Fed. Reg. 16,093 (Mar. 31, 2017) 13

83 Fed. Reg. 44,746 (Aug. 31, 2018) 30, 42, 44

84 Fed. Reg. 32,520 (July 8, 2019) .....1, 13, 15, 16, 17, 21, 23, 25, 29, 30 ..... 31, 32, 34, 35, 36, 38, 39, 40, 42

Legislative History

H.R. Rep. No. 95-294 (1977) 40

Other Authorities

Andover Technology Partners, *Natural Gas Conversion and Cofiring for Coal-Fired Utility Boilers*, EPA-HQ-OAR-2017-0355-24423 (2014) 32, 33

Andover Technology Partners, *Improving Heat Rate on Combined Cycle Power Plants*, EPA-HQ-OAR-2017-0355-24423 (Dec. 2016) 43

EPA, *ACE Regulatory Impact Analysis*, EPA-HQ-OAR-2017-0355-26743 (July 2019) 4, 12, 13, 23, 27, 32, 33, 36, 38

EPA, *Responses to Public Comments on EPA's Proposed Emission Guidelines*, EPA-HQ-OAR-2017-0355-26741 (June 2019) 10, 11, 37, 39, 43

EPA, *Basis for Denial of Petitions to Reconsider the Clean Power Plan*, EPA-HQ-OAR-2013-0602-37338 (Jan. 2017) 3, 8, 9, 10, 27, 32, 42

EPA, *Clean Power Plan Regulatory Impact Analysis*,
EPA-HQ-OAR-2017-0355-0011 (Oct. 2015) 11, 12, 13

EPA, *Greenhouse Gas Mitigation Measures Technical Support Document*,
EPA-HQ-OAR-2017-0355-24423 (2014) 31

EPA, *IPM State-Level Emissions: Illustrative ACE Scenario*,
EPA-HQ-OAR-2017-0355-26724 (2019) 28

EPA, *IPM State-Level Emissions: EPAv6 November 2018 Reference Case*,
EPA-HQ-OAR-2017-0355-26720 (2019) 28

EPA, *Legal Memorandum Accompanying Clean Power Plan for Certain Issues*,
EPA-HQ-OAR-2013-0602-36872 (2015) 38

EPA, *Proposed ACE Regulatory Impact Analysis*,
EPA-HQ-OAR-2017-0355-21182 (2018) 29, 30

Intergovernmental Panel on Climate Change, *Global Warming of 1.5°C: An IPCC Special Report* (2018) 9

Amelia Keyes *et al.*, *The Affordable Clean Energy Rule and the Impact of Emissions Rebound on Carbon Dioxide and Criteria Air Pollutant Emissions*,
EPA-HQ-OAR-2017-0355-26648 (2019) 28

M.J. Bradley & Associates, *Pipeline Analysis - Results*,
EPA-HQ-OAR-2017-0355-24419 (Oct. 31, 2018) 32, 35

U.S. Energy Information Administration,
March 2020 Monthly Energy Review (Mar. 26, 2020) 41

U.S. Energy Information Administration, *Today in Energy*, "U.S. natural gas-fired combined-cycle capacity surpasses coal-fired capacity" (Apr. 10, 2019) 42

U.S. Global Change Research Program, *Fourth National Climate Assessment Volume II: Impacts, Risks, and Adaptation in the United States* (2018) 9, 10

Authorities chiefly relied upon are marked with an asterisk.

GLOSSARY OF ABBREVIATIONS

ACE	Affordable Clean Energy Rule
CAA	Clean Air Act
CPP	Clean Power Plan
CO_2	Carbon dioxide
EPA	Environmental Protection Agency
JA	Joint Appendix
RIA	Regulatory Impact Analysis
RTC	Response to Comments

JURISDICTIONAL STATEMENT

This Court has jurisdiction under Section 307(b)(1) of the Clean Air Act ("Act" or "CAA"), 42 U.S.C. §7607(b)(1), to review the Final Rule, 84 Fed. Reg. 32,520 (July 8, 2019) ("Rule"), Joint Appendix ("JA") __, and these petitions were timely.

STATEMENT OF ISSUES

Rather than cutting dangerous carbon dioxide ("CO_2") pollution from power plants, the Environmental Protection Agency ("EPA") issued a rule that distorts the law and facts, accomplishes negligible emission reduction, and hamstrings the agency's future authority. The issues presented are:

1. Whether Congress, in directing EPA to identify the "best system of emission reduction," unambiguously precluded the agency from considering the principal methods actually employed by power companies and states to reduce CO_2 emissions from power plants.
2. Whether EPA contravened the Act by: failing to establish any quantitative and binding federal emission guideline; adopting a putative "best system of emission reduction" that achieves little to no emission reduction and is worse than available alternatives; and completely deregulating the enormous volumes of CO_2 pollution emitted by existing oil and natural gas plants.
3. Whether EPA arbitrarily disregarded its prior findings and the administrative record about, among other things, the urgency of reducing emissions in light of

the worsening climate crisis, the inefficacy of the newly chosen control system, and the availability of more effective means of emission reduction.

STATUTES AND REGULATIONS

Pertinent statutes and regulations are reproduced in the Addendum to the Brief of the State and Municipal Petitioners ("State Pet. Br.").

INTRODUCTION

Climate change, principally caused by burning fossil fuels, is a grave danger to public health and welfare. Since the Supreme Court confirmed EPA's authority to regulate greenhouse-gas pollution, *Massachusetts v. EPA,* 549 U.S. 497, 528 (2007), millions of Americans (and billions around the globe) have endured heat waves, wildfires, floods, and storms of unprecedented scale and frequency. It has been nine years since the Court ruled in *American Electric Power Co. v. Connecticut* that CAA Section 111, 42 U.S.C. §7411, "speaks directly" to CO_2 emissions from fossil fuel-fired power plants, by far the nation's largest industrial source of such pollution. 564 U.S. 410, 424 (2011) ("*AEP*"). But rather than faithfully execute its acknowledged duty to protect human health and welfare from this danger, in the Rule challenged here, EPA attempted to frustrate the Act's capacity to do so.

In 2015, EPA exercised its Section 111 authority in the Clean Power Plan, a substantial initial effort to cut CO_2 pollution from existing power plants. That rulemaking carefully applied the required statutory factors—including the "degree of emission limitation achievable" by "the best system of emission reduction" and "the

cost of achieving such reduction," 42 U.S.C. §7411(a)(1)—to an immense factual record. It covered CO_2 from coal-, gas-, and oil-fired plants, and established significant, achievable, and cost-effective emission reduction requirements for these sources.

Since then, two things have become clear:

First, the climate crisis is far more advanced than was recognized even in 2015. Unabated emissions are increasing atmospheric concentrations of greenhouse-gases and shifting weather patterns, intensifying droughts, heat waves, and storms; spreading infectious diseases; raising sea levels; melting polar ice; and overheating and acidifying oceans more rapidly than previously understood.[1] Major new scientific studies published in late 2018—with EPA's participation—document these impacts in the United States and the urgent need to reduce emissions sharply over the next decade. *Infra* p. 8-9.

Second, recent changes in the power sector have made cleaner electricity generation cheaper and more abundant, leading to faster deployment of measures reflected in the Clean Power Plan's "best system," and more rapid reductions in power-sector CO_2 emissions than EPA projected in the 2015 rule.[2] These

[1] *See* ACE Climate Comments, EPA-HQ-OAR-2017-0355-24415, JA__.

[2] *See* Clean Power Plan Reconsideration Denial ("CPP Recon. Denial"), App. 2, 8-13, EPA-HQ-OAR-2013-0602-37338 (Jan. 2017), JA__; Joint Best System Comments 23-

developments demonstrate that much deeper reductions are now possible at lower cost than previously anticipated. Indeed, a revised rule, based on the Plan's framework but using current data, could achieve nearly twice as much CO_2 reduction by 2030 at less than the original estimated cost.[3]

An agency responsive to evidence and its statutory mandate would have *strengthened* public health and welfare protections in light of these developments. But EPA did the opposite, repealing the Clean Power Plan and adopting the cynically misnamed "Affordable Clean Energy" rule ("ACE"). Through these actions, EPA attempted to tie its own hands so that meaningful regulation of CO_2 will be expensive, difficult, or even impossible.

In the repeal, EPA concocted a tortured reading of the Act that ostensibly prohibits the most effective systems of emission reduction by inserting limitations into the statute that simply are not there. The same reading underlies ACE, which can achieve only minuscule (if any) CO_2 emission reduction. In ACE, EPA also renounced its Section 111(d) obligation to establish minimum pollution-reduction requirements and relinquished to states the decision of what emission reduction, if any, to require from regulated sources based on EPA's optional menu of techniques

---

25, EPA-HQ-OAR-2017-0355-24260, JA__; ACE Regulatory Impact Analysis ("ACE RIA") 2-7, EPA-HQ-OAR-2017-0355-26743 (July 2019), JA__.

[3] Natural Resources Defense Council ("NRDC") ACE Comments 10-25, EPA-HQ-OAR-2017-0355-24271, JA__; *see also* Joint Best System Comments 23-27, JA__.

to improve coal plants' operating efficiency ("heat-rate"). ACE wholly exempts existing gas- and oil-fired power plants. EPA projected ACE will reduce sector-wide CO_2 emissions by *less than one percent* beyond business-as-usual and will increase emissions of CO_2 and other pollutants in many states.

STATEMENT OF THE CASE

Petitioners adopt State and Municipal Petitioners' statement of the case.

SUMMARY OF ARGUMENT

The Rule is a blatant abdication of EPA's statutory duty to protect the public from air pollution that the agency itself has repeatedly found poses grave and imminent dangers to health and welfare.

Although purportedly addressed to the largest stationary sources of climate-destabilizing CO_2 pollution, the Rule barely mentions climate change, ignores record facts highlighting the urgent need for immediate reductions, and disregards EPA's statutory mandate when interpreting and applying the law. Pervasively, EPA failed to rationally weigh the massive public health and environmental dangers of unrestrained climate pollution against industry costs.

Both the Clean Power Plan repeal and ACE are predicated upon a fundamentally erroneous new reading of the Act as unambiguously precluding anything like the Clean Power Plan's "best system." EPA's interpretation, however, adds words to the statute that are not there and shirks Congress's deliberately broad command that EPA identify the "best system" considering real-world, demonstrated,

cost-effective techniques. Because both the repeal and replacement rule rest upon EPA's misreading of its statutory authority, both are unlawful.

ACE is legally deficient in numerous other ways as well. EPA abdicated its statutory duty to define the minimum emission reduction level that standards of performance must achieve, permitting states to mandate little or no pollution reduction at regulated sources. EPA ignored record evidence showing that its chosen "best system" will cut coal plants' emissions only by trivial amounts and will, in much of the country, increase emissions of CO_2 and other pollutants. EPA arbitrarily dismissed other measures, including gas co-firing, carbon capture, and reduced utilization of higher-emitting plants, which would affordably achieve much larger emission reduction. And, in defiance of a clear statutory mandate, EPA removed all limits on CO_2 pollution from existing gas- and oil-fired plants.

STANDING

Petitioners represent millions of members whose lives, health, careers, property, and recreational interests are harmed by CO_2 emissions and other pollution from power plants. *See* Addendum of Standing Declarations. EPA's actions fail to abate those harmful emissions consistent with statutory requirements or reasoned decision-making. A favorable ruling would require that EPA reduce those harmful emissions. Petitioners have standing. *See NRDC v. Wheeler*, 2020 U.S. App. LEXIS 10846, *10-14 (D.C. Cir. 2020).

STANDARD OF REVIEW

Petitioners adopt State and Municipal Petitioners' standard of review.

ARGUMENT

I. EPA'S RULE UNLAWFULLY IGNORES CLIMATE CHANGE, THE VERY DANGER THE AGENCY IS OBLIGATED TO ADDRESS

Pervading the Rule is EPA's abject failure to acknowledge the severe and urgent danger of climate change, and power plants' outsized contribution to that danger. Despite the Rule's ostensible goal of reducing emissions from the nation's largest industrial source of the most important climate pollutant, the preamble mentions climate change only twice, in passing, and (in stark contrast to the Clean Power Plan and other EPA climate pollution standards) nowhere mentions the vast collection of new studies, reports, and analyses in the record concerning CO_2 pollution and intensifying climate impacts. Faced with copious and credible evidence that, absent strong action this decade, climate change will increasingly endanger health, economies, and ecosystems, EPA never attempted to connect its choices to any plan to mitigate that danger.

The agency's indifference is manifest in basic legal errors: for example, as explained in Part III, EPA failed to evaluate the danger posed by power plant CO_2 emissions when determining the "degree of emission limitation achievable…taking into account the cost." 42 U.S.C. §7411(a)(1). EPA also made no effort to justify an extremely weak rule for coal plants (and total deregulation of CO_2 emissions from

existing gas and oil plants) in the face of grave and worsening dangers, even while opportunities for much greater emission reduction are readily available. *See Michigan v. EPA*, 135 S. Ct. 2699, 2707 (2015) ("[R]easonable regulation ordinarily requires paying attention to the advantages *and* the disadvantages of agency decisions.").

By sharp contrast, the Clean Power Plan emphasized that "urgent and severe public health and welfare threats"[4] from climate change presented a "worsening global environmental crisis"[5] necessitating significant emission reduction. In that rule, EPA found the benefits of curbing power plants' emissions of CO_2 and other pollutants, including fine particles and ozone precursors, vastly exceeded compliance costs.[6]

Since then, two major reports undertaken or approved by the United States government have demonstrated that the danger is even more urgent than EPA understood in 2015. The November 2018 National Climate Assessment—of which EPA was one of 13 institutional authors—concluded that "the evidence of human-caused climate change is overwhelming and continues to strengthen, that the impacts of climate change are intensifying across the country, and that climate-related threats

---

[4] 80 Fed. Reg. 64,662, 64,775 (Oct. 23, 2015) (mentioning climate change 166 times and discussing throughout).

[5] CPP Recon. Denial 5, JA__. *See also Coal. for Responsible Regulation v. EPA*, 684 F.3d 102, 123 (D.C. Cir. 2012) (describing the "ocean of evidence" supporting EPA's 2009 endangerment finding).

[6] 80 Fed. Reg. at 64,679-80.

to Americans' physical, social, and economic well-being are rising," repeatedly emphasizing the urgent need to reduce greenhouse-gas emissions.[7] The Intergovernmental Panel on Climate Change's October 2018 *Special Report* found that such emissions must be sharply curtailed *within the next decade* to avoid exceeding a 1.5° Celsius global temperature increase, which would cause devastating and irreversible harms.[8]

The rulemaking record includes these studies and extensive additional evidence showing: (1) the cumulative, long-lived character of CO_2 pollution;[9] (2) the pervasive and worsening hazards resulting from climate change;[10] (3) the need to reduce net greenhouse-gas emissions to zero within the next three decades to avoid extreme,

---

[7] USGCRP, *Fourth National Climate Assessment, Vol. II*, 36 (2018) (NCA4-II), JA__. *See also id.* at 25-34, 55, JA__, __. *See also* Joint Supp. Comment, EPA-HQ-OAR-2017-0355-26637, JA__ (summarizing report and explaining its relevance to rulemaking); State Supp. Comment, EPA-HQ-OAR-2017-0355-26640, JA__ (same).

[8] IPCC, *Global Warming of 1.5°C: An IPCC Special Report,* SPM-7 to SPM-17 (2018), Att. 75 to EDF ANPR Comments, EPA-HQ-OAR-2017-0355-24423, JA__; *see also* ACE Climate Comments 2-4, JA__.

[9] Joint Repeal Climate Comments 19-20, EPA-HQ-OAR-2017-0355-20637, JA__; ACE Climate Comments, Att. B 5-6, JA__.

[10] *See, e.g.,* ACE Climate Comments 2-4, JA__; Joint Repeal Climate Comments 1-2, 6-24, JA__, __; Joint Repeal Comments 4-6, EPA-HQ-OAR-2017-0355-20656, JA__; States/Cities ACE Comments 4-8, 86-92, EPA-HQ-OAR-2017-0355-24817, JA__, __; Climate Scientist Comments 2-8, EPA-HQ-OAR-2017-0355-25881, JA__; *see also* CPP Recon. Denial, App. 4, Climate Science Update, JA__.

irreversible harms;[11] (4) the urgent need for deep reductions in power plant emissions;[12] and (5) the feasibility of an updated rule reducing nearly twice as much CO_2 by 2030 as the Clean Power Plan, at a lower cost.[13]

Despite EPA's mandate to protect "health [and] welfare" from pollution that "endanger[s]" the public, 42 U.S.C. §7411(b)(1), and its duty to "respon[d] to each of the significant comments, criticisms, and new data" received during the rulemaking, *id.* §7607(d)(6)(B), EPA ignored the record on all of these points, offering only two dismissive sentences under "Miscellaneous" in its Response to Comments and wholly failing to explain how the dangers informed EPA's regulatory choices.[14] EPA adopted a rule that would at best achieve minuscule pollution reductions in arbitrary disregard of a record showing that deep emission reduction *this decade* is necessary to constrain warming to 1.5° Celsius and avoid severe, cascading harms.[15]

EPA's Rule unlawfully ignores the central statutory objective of mitigating pollution. *See Sierra Club v. Costle*, 657 F.2d 298, 326 (D.C. Cir. 1981) (EPA's decision-

---

[11] *See*, *e.g.*, ACE Climate Comments 3-4, JA__; Joint Supp. Comment 7, JA__; CPP Recon. Denial, App. 4, 5-6, JA__; ACE Climate Comments, Att. B, 4-6, JA__.

[12] ACE Climate Comments 11, JA__; Repeal Climate Comments 24-27, JA__.

[13] NRDC ACE Comments 10-25, EPA-HQ-OAR-2017-0355-20348, JA__.

[14] *See* ACE RTC 10-7, EPA-HQ-OAR-2017-0355-26741, JA__.

[15] *See*, *e.g.*, *Special Report*, SPM-8 to SPM-15, 153-65, 177-182, JA__, __, __; NCA4-II 45-46, JA__.

making under Section 111 must "incorporate the amount of air pollution as a relevant factor to be weighed"). EPA's failure "to address 'important aspect[s] of the problem'" is arbitrary and capricious. *Gresham v. Azar*, 950 F.3d 93, 102 (D.C. Cir. 2020) (quoting *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 43 (1983)).

EPA's use of an "interim" estimate of the "social cost of carbon" did not satisfy its obligation to rationally assess the benefits of reducing CO_2 given a record of severe danger. First, EPA repeatedly insisted that this metric was "not a part of the basis" of its decision.[16] Second, even if EPA had relied on its "interim" social cost estimate as a proxy for CO_2-reduction benefits, this improvised measure of the benefit of curbing CO_2 was arbitrary. In the Clean Power Plan, EPA relied on estimates developed through a comprehensive federal interagency process using the best peer-reviewed models and analysis available,[17] which yielded a "central" estimate of the value of reducing CO_2 of approximately $48 per metric ton in 2030. 80 Fed. Reg. at 64,751, 64,933. In ACE, EPA replaced that state-of-the-art analytic framework with a

[16] ACE RTC 7-18, JA__; *see also id.* at 7-25, 7-26, JA__, __.

[17] Clean Power Plan RIA ("CPP RIA") ES-14 to ES-16, EPA-HQ-OAR-2017-0355-0011 (Oct. 2015), JA__.

series of unsupported and unreasonable changes that reduced the estimated 2030 value to as little as $1 per ton.[18]

As commenters demonstrated, these changes in the estimated benefits were neither reasonable nor empirically sound.[19] EPA's "interim" approach narrowed its focus to reflect only climate effects within the contiguous United States, despite the fact that the National Academy of Sciences concluded that a "domestic" estimate of the social cost of carbon is not possible using existing methodologies.[20] EPA disregarded the basics of climate change, including that each country's emissions mix evenly to cause harm worldwide, disrupting interconnected natural, social, and economic systems and spurring a critical need to encourage reciprocal action by other countries.[21] Ignoring its prior recognition that "the true costs of climate change to the U.S. are larger than the direct impacts that simply occur within the U.S.,"[22] EPA disregarded major harms to the United States from cross-border spillovers of economic disruption, political instability, migration, disease spread, and ecological

[18] *See* ACE RIA 4-4, JA__. *See also* Joint Social Cost of Carbon Comments ("Joint SCC Comments") 1, EPA-HQ-OAR-2017-0355-24812, JA__.

[19] Joint SCC Comments 2-39, JA__.

[20] *See id.* at 15, JA__.

[21] CPP RIA ES-15, JA__; Joint SCC Comments 3-6, 12-13, JA__, __.

[22] CPP RIA 4-5, JA__; Joint SCC Comments 5-15, JA__.

damage.[23] Furthermore, EPA disregarded the risk that climate change impacts could be greater than the "central" damage estimate and ignored the significant risk of tipping points with "potentially catastrophic outcomes."[24] A presidential order summarily "withdrawing" the interagency working group's analysis[25] did not excuse EPA from providing sound reasons for its changed methodology. *See FCC v. Fox Television Stations*, 556 U.S. 502, 515-16 (2009).

EPA's disregard for its mandate to protect health and welfare is apparent in matters of regulatory implementation as well: it greatly extended implementation deadlines for ACE and all future Section 111(d) rules, adding years to the process for reducing dangerous air pollution from existing sources. *See* 84 Fed. Reg. at 32,568 (extending plan submittal deadlines from nine months to three years, and for EPA action on submissions from four months to 12 months). Delaying public health protections requires justification, *see Air Alliance Houston v. EPA*, 906 F.3d 1049, 1066-67 (D.C. Cir. 2018), yet EPA arbitrarily failed to consider the public health impacts of these amendments.[26]

---

[23] ACE RIA ES12-ES14, 6-9, JA__, __; CPP RIA ES-15, 4-5, JA__, __.

[24] 80 Fed. Reg. at 64,932; Joint SCC Comments 28-30, 38-39, JA__, __.

[25] Exec. Order No. 13,783 §5, 82 Fed. Reg. 16,093 (Mar. 31, 2017); ACE RIA 4-2, JA__.

[26] *See* Joint Framework Comments 26-27, EPA-HQ-OAR-2017-0355-24258, JA__.

In short, at every turn, and despite its statutory mandate, EPA avoided any reasoned engagement with the severe dangers documented in the record and its own findings.

II. SECTION 111 DOES NOT BAR THE MOST EFFECTIVE AND WIDELY-USED SYSTEM OF EMISSION REDUCTION FOR POWER PLANTS

State Petitioners detail the flaws in EPA's strained reinterpretation of the "best system of emission reduction." State Pet. Br. Part I. We briefly summarize the central defects in EPA's effort to straitjacket itself.

Section 111(d) requires the establishment of standards of performance for existing sources; as provided by Section 111(a)(1), such standards must "reflect[] the degree of emission limitation achievable through application of the best system of emission reduction which…the Administrator determines has been adequately demonstrated." 42 U.S.C. §7411(a)(1), (d). "Congress delegated to EPA the decision whether and how to regulate carbon-dioxide emissions from power plants." *AEP*, 564 U.S. at 426. "For existing sources, EPA issues emissions guidelines; in compliance with those guidelines and subject to federal oversight, the States then issue performance standards for stationary sources within their jurisdiction." *Id.* at 424 (citations omitted). In the guideline, EPA determines the best system of emission reduction for a category of sources and the emission limit achievable through its use. 40 C.F.R. §60.22a(b).

Congress's use of the broad terms "best system of emission reduction" instructs EPA to take a practical approach to diverse sources and pollutants and to recognize the range of emission reduction measures actually available and utilized in a given industrial category. *See Massachusetts*, 549 U.S. at 532 ("broad language…reflects an intentional effort to confer the flexibility to forestall…obsolescence").

In the Clean Power Plan, EPA determined that the "best system of emission reduction" for existing fossil fuel-fired power plants included substituting a portion of generation at regulated sources with lower- and zero-emitting generation, effectuated through a system of emission credits—an effective and economical emissions-reducing approach that was already in widespread use in the power sector and that underpinned numerous prior EPA and state power-sector regulations. The rule's emission guideline provided uniform emission rates for regulated sources that reflected application of those measures along with heat-rate improvements at coal plants. 80 Fed. Reg. at 64,667. States could then either establish standards of performance for each source consistent with the emission guideline or allow EPA to do so. *Id.* at 64,668-69.

However, EPA claimed that the Clean Power Plan must be repealed because "[S]ection 111 unambiguously limits the [best system] to those systems that can be put into operation *at* a building, structure, facility, or installation." 84 Fed. Reg. at 32,524. Even though the Act nowhere says so, EPA variously contended that the "best system" must be limited to measures "applied to" or "put into operation at"

individual sources. *See, e.g.*, *id.* at 32,524, 32,528. According to EPA, this limitation precludes consideration of the large, low-cost emission reduction achievable by shifting generation from dirtier plants to cleaner plants, and the use of emission credits to access those benefits.

Far from adhering to the Act's "plain language," EPA contrived words that do not appear in the statutory text and cannot be reasonably—let alone unambiguously—inferred. EPA invented "a legal constraint…that is simply not there." *NARUC v. Interstate Commerce Comm'n*, 41 F.3d 721, 728 (D.C. Cir. 1994). This fundamental mistake of law underlies and thus renders invalid both the Clean Power Plan repeal and ACE. *See Prill v. NLRB*, 755 F.2d 941, 947 (D.C. Cir. 1985).

EPA tried to infer the missing "applied to" or "put into operation at" limitation by stringing together bits of text found elsewhere in Section 111. 84 Fed. Reg. at 32,523-24. The number and complexity of EPA's steps belie its "plain language" argument. For the first time in the final rule, EPA purported to discover a gigantic unwritten limitation in the statute, asserting that: "the *application* of the best system," 42 U.S.C. §7411(a)(1) (emphasis added), requires an "indirect object;" the indirect object must be an individual regulated source; and the "best system" must therefore be limited to measures physically applied to or put into operation at that source. 84 Fed. Reg. at 32,524. This exercise in hand-tying is not a reasonable, much less mandatory, interpretation of the statute.

First, the word "application" is often used without an indirect object in plain English and in statutes. *See* State Pet. Br. 44 (providing examples). EPA had no need to resort to obscure grammatical rules when the phrase "through the application of" has a simple and obvious meaning, referring to the emission reduction achievable "by using" the best system.[27] However, even if "application" of the best system implied an indirect object, EPA has through long-standing regulations and consistent practice described the best system as being "for designated facilities," plural. *See*, *e.g.*, 40 C.F.R. §60.21a(e).

Second, it is the standard of performance which must be "for" the individual regulated source, not the system. In search of an explicit indirect object, the agency jumped from Section 111(a)(1) to Section 111(d)(1)(A), which says just that: an approvable state plan must contain "*standards of performance for* any existing source." 42 U.S.C. §7411(d)(1)(A) (emphasis added). EPA, however, made the unwarranted assertion that the *"best system of emission reduction"* must be for each such source. 84 Fed. Reg. at 32,523-24. Once again, EPA rejected the simplest, most obvious meaning of Section 111(d)(1)(A), which is that the state plan must establish a standard of performance—an enforceable emission limit—for each existing source, leaving none unregulated. That each *source* must be subject to a standard does not determine the

[27] As EPA notes, "application" means the "act of putting to use." 84 Fed. Reg. at 32,524.

scope of the "best system," which EPA must identify based on the factors listed in Section 111(a)(1).

Third, even if the system were required to be "for" an individual source, that does not limit it exclusively to measures that can be physically "put into operation at" or "applied to" each plant—words that do not appear in the Section and do not logically follow from the word "for." If Congress had wanted to restrict the "best system" to measures physically installed at or carried out by a source, it had far more direct ways to say so, as it did for other CAA programs. *See, e.g.*, Power Co. Pet. Br. 21-22 (noting examples, including "best available retrofit technology," elsewhere in the Act).

By importing limitations on "best system of emission reduction" that are not there, EPA "ignore[d] [the] expansive word[s] that Congress did use." *New York v. EPA,* 443 F.3d 880, 887 (D.C. Cir. 2006). The result—and purpose—of EPA's tortured exercise is to disqualify the "system of emission reduction" most widely used by power plants to actually reduce CO_2, and to endorse a replacement that is both rigid and wildly ineffective, *see infra* Part III. These perverse outcomes "should have alerted EPA that it had taken a wrong interpretive turn." *Util. Air Regulatory Grp. v. EPA*, 573 U.S. 302, 328 (2014).

In Section 111, Congress instructed EPA to select the "best system of emission reduction"—not the "best physical or operational change applicable to or at an individual source." EPA's "miscon[ception]" of the law "must be declared invalid."

Transitional Hosps. Corp. of Louisiana v. Shalala, 222 F.3d 1019, 1029 (D.C. Cir. 2000) (citing *SEC v. Chenery Corp.*, 318 U.S. 80, 94 (1943)).

III. ACE VIOLATES THE CLEAN AIR ACT AND IS ARBITRARY AND CAPRICIOUS

In addition to EPA's erroneous interpretation of "best system," ACE is unlawful and arbitrary and capricious in myriad other ways.

A. ACE Unlawfully Abdicates EPA's Core Statutory Responsibility to Determine the Required Level of Emission Reduction.

ACE flouts EPA's core statutory responsibility to determine the required minimum emission limitation for existing power plants. Instead, the rule merely suggests that states consider a menu of marginally effective (and often counterproductive) heat-rate improvements and gives states carte blanche to require whatever emission reduction they wish, including no reduction at all.

1. Section 111 Requires EPA to Specify a Minimum Emission Level that Standards of Performance Must Achieve.

In Section 111(d), Congress adopted a cooperative federalism framework, in which EPA first issues emission guidelines for categories of existing sources and states then adopt plans establishing standards of performance consistent with EPA's guidelines. *AEP,* 564 U.S. at 425; *see supra* Part II. EPA must approve "satisfactory" state plans and adopt and implement federal plans for states whose plans fall short or that decline to participate. 42 U.S.C. §7411(d)(1), (2).

Under the statute, it is EPA's responsibility to specify the minimum degree of emission limitation to be incorporated in standards of performance. Section 111(a)(1) requires "the Administrator" to determine the "best system of emission reduction" *and* the "achievable" "degree of emission limitation" therefrom. That federal minimum emission limitation provides states and EPA with the "substantive… criteria," 40 Fed. Reg. at 53,342-43 (Nov. 17, 1975), for determining whether a state plan is "satisfactory," 42 U.S.C. §7411(d)(2).

A standard of performance translates EPA's technical determination of what pollution reductions are "achievable" into an enforceable emission limit that regulated sources cannot exceed. Accordingly, EPA's regulations provide that a "standard of performance" must include "a legally enforceable regulation setting forth an allowable rate or limit of emissions into the atmosphere." 40 C.F.R. §60.21a(f). *See also Adamo Wrecking Co. v. United States*, 434 U.S. 275, 286 (1978) ("a standard is a quantitative 'level'"); *see also* 42 U.S.C. §7602(k) (defining an "emission standard" or "emission limitation" as a requirement limiting the "quantity, rate, or concentration" of emissions).[28]

[28] A non-quantitative "work practice" standard is permitted only where it is infeasible to route emissions through a conveyance or to measure them, 42 U.S.C. §7411(h), circumstances inapplicable to power-plant CO_2 emissions.

EPA's regulations—adopted in 1975 and re-promulgated in this very rulemaking—have consistently recognized the agency's obligation to establish the minimum stringency level for state-issued standards of performance. 40 Fed. Reg. 53,340; 84 Fed. Reg. at 32,575. The regulations define "emission guideline" in terms that mirror Section 111(a)(1): as an emission limit reflecting the degree of emission limitation achievable through the EPA-determined "best system." 40 C.F.R. §60.21a(e). In turn, standards of performance in a satisfactory state plan must be "no less stringent than the corresponding emission guideline(s)." *Id.* §60.24a(c).

2. ACE Unlawfully Fails to Establish a Binding, Quantitative Emission Guideline.

ACE unlawfully fails to establish any such quantitative emission limit. Instead, EPA merely provided an advisory table of heat-rate improvements associated with seven vaguely-described "candidate" techniques that can be implemented at coal plants. This menu of techniques comprises ACE's "best system." 84 Fed. Reg. at 32,537 & tbl. 1 ("Table 1").

Although EPA "agree[d] that it has a responsibility under the [Act] to identify the degree of emission reduction that it determines to be achievable through the application of the [best system of emission reduction]," *id.* at 32,537, the agency identified no specific quantitative emission rate or limit to which standards of performance must adhere. Rather, Table 1 merely lists a percentage range of heat-rate improvement—from undetermined baselines—for each of the seven candidate

techniques. Table 1 provides no metric or methodology for determining the emission reduction achievable using any of the techniques.

Further, EPA admitted that these techniques "interact with one another," that their percentage improvements in combination are "not necessarily additive," and that if installed "in parallel," they could "mitigate" (i.e., undercut) one another. *Id.* at 32,554. Yet EPA has not provided any information about the effects of applying techniques in combination, leaving states without guidance for establishing standards of performance if multiple techniques are implementable at a source. Table 1 thus fails to inform states what emission rate is required for the standards of performance in a satisfactory state plan, and it leaves EPA with no basis for determining whether the standards in such plans are "no less stringent than the corresponding emission guideline." 40 C.F.R. §60.24a(c).

Even if Table 1 had identified a required minimum percentage improvement in *heat-rate*, which it does not, that would not be a numerical limit on *emissions*. As explained *infra* Part III.B.1, heat-rate improvements do not guarantee reductions in power plants' CO_2 emissions. Indeed, they can *increase* overall emissions by allowing plants to increase their annual operating levels (known as the "rebound effect"). In fact, the two techniques with the greatest potential to improve heat-rates—blade-path upgrades and economizer replacements—would likely increase annual emissions and

trigger the Act's New Source Review requirements.[29] For this reason, EPA projected that not a single source in the country will be required to implement either technology.[30]

Further, when states translate whatever heat-rate percentages they select from Table 1 into performance standards, ACE allows them to consider an even broader range of vaguely-defined factors, including "maintenance schedules," operating patterns, and even "weather." 84 Fed. Reg. at 32,552. Nowhere does ACE place any bounds on how states may assess such factors to establish standards of performance.

Indeed, ACE requires no minimum emissions performance level at all. It requires only that states (a) "*consider*" the applicability of the seven candidate techniques, (b) summarize "*how* [the state] determined" the standard for each source, and (c) submit "an *evaluation* of" the candidate technologies for each source. 40 C.F.R. §60.5755a(a)(2); *id.* §60.5740a(a)(1), (2)(i) (emphasis added). Instead of setting uniform standards for the category (or even sub-categories) of similar coal plants, states must adopt individually "tailored" standards of performance for sources within their jurisdiction, and these standards may "reflect a value…that falls outside of [Table 1's] ranges." 84 Fed. Reg. at 32,537-38, 32,550-51. EPA even allows states to adopt standards for some sources that require only business-as-usual. *See id.* at 32,554.

---

[29] 84 Fed. Reg. at 32,537.

[30] *Id.*; ACE RIA 1-15, JA__.

In short, EPA defaulted on its statutory responsibility to identify a minimum required emission limit. ACE allows states to set any standards they choose for the country's largest industrial sources of climate-disrupting CO_2 pollution, even if the result is no reductions at all.

3. ACE Misapplies Section 111(d)'s Variance Provision.

Attempting to justify this basic deficiency, EPA cited language in Section 111(d)(1) that permits states to consider a source's "remaining useful life" and "other factors" when "applying" a standard of performance to a "particular source." 42 U.S.C. §7411(d)(1). That clause allows states to issue variances from a standard of performance if a particular plant exhibits special characteristics warranting a different standard. A provision allowing variances from standards, however, provides no authority for dispensing with uniform standards altogether.

Indeed, a variance presupposes a generally applicable rule. This is clear in EPA's implementing regulations, both as adopted in 1975 and as re-promulgated in this rulemaking. The variance provision permits a state to set a different standard for a specific source only if the state "demonstrates" a need based on "plant age, location, or basic process design," "[p]hysical impossibility of installing necessary control equipment," or "[o]ther factors specific to the facility…that make application of a less stringent standard…significantly more reasonable." 40 C.F.R. §60.24a(e); *id.* §60.24(f). EPA must approve any such demonstration of need before approving a state plan as "satisfactory." *See id.* §60.27a(c)(2).

In ACE, EPA unlawfully allowed the variance exception to swallow the rule. The statute and regulations plainly contemplate that states must *first* set standards of performance that reflect the "degree of emission limitation" the Administrator deems achievable for the category of sources, 42 U.S.C. §7411(a)(1), (d)(1)(A), and only *then* consider whether specific, extraordinary technical or economic circumstances warrant a variance when "applying" a standard to a particular plant, *id.* §7411(d)(1)(B). EPA disregarded this clear two step-procedure in allowing states to consider remaining useful life, and other source-specific factors, when "establishing" the standard of performance in the first instance. *See* 84 Fed. Reg. at 32,550 (endorsing a "hybridized approach which blends the two sequential steps [setting the standard and applying any variance factors] into one combined step"); *see also id.* at 32,551, 32,553. In so doing, ACE allows states to "tailor" individual emission limits for each source without first establishing a generally applicable standard. This violates both the statute itself and EPA's implementing regulations.

In sum, ACE allows states to write virtually any standards they choose, however minimal and however different for each source, after mere pro forma consideration of seven optional, vaguely-described heat-rate technologies from Table 1. Lacking a mandatory, generally applicable emission limit established by EPA and any meaningful constraints on states' ability to grant source-specific variances, ACE effectively allows the very outcome that EPA cautioned against in 1975, where states may "set extremely lenient standards—even standards permitting greatly increased

emissions—so long as EPA's procedural requirements [are] met," thereby creating "a gaping loophole in a statutory scheme otherwise designed to force meaningful action." 40 Fed. Reg. at 53,343. These deficiencies undermine the core objective of Section 111 and render ACE unlawful.

B. An Ineffectual "Best System" Comprised Only of Heat-Rate Improvements Is Unlawful, Arbitrary, and Capricious.

For over 40 years, EPA has understood Section 111(d) to require that the "best system of emission reduction" achieve "maximum feasible control of pollutants." 40 Fed. Reg. at 53,342. As this Court has held, any "sensible interpretation" of Section 111 must consider "the amount of air pollution" a given system would reduce. *Sierra Club*, 657 F.2d at 326. Yet ACE's "best system" does almost nothing to reduce CO_2 emissions from coal plants, and is even projected to *increase* CO_2 and other pollutants in many states. EPA provided no reasonable explanation for how such an ineffectual and counterproductive system can be "best" at reducing emissions, especially in light of the catastrophic threat of climate change and the large contribution of power-plant CO_2 pollution to that threat. EPA arbitrarily rejected other, much more effective emission reduction measures, including some that are widely available at reasonable cost while still conforming to EPA's new (and unjustifiably narrow) interpretation of "best system."

1. Heat-Rate Improvements Alone Achieve No Meaningful Emission Reductions.

According to EPA's own analysis, the seven candidate heat-rate technologies comprising ACE's "best system" do not achieve any meaningful emission reduction. EPA's lone analytic scenario shows that the rule will reduce coal plants' CO_2 emissions by approximately one percent relative to business-as-usual, with overall power-sector emissions reduced by considerably less than one percent.[31] EPA unlawfully failed to explain how a system providing minuscule reductions in power-plant emissions satisfies the agency's statutory mandate to address emissions that endanger public health and welfare or how EPA weighed that central statutory factor when determining the "best system." *See State Farm,* 463 U.S. at 43.

Moreover, EPA arbitrarily failed to explain why it reversed its prior conclusion that an emission reduction on this scale would be inadequate. In the Clean Power Plan, EPA determined that heat-rate improvements by themselves would yield a CO_2 emission reduction "too small" to constitute the "best system," particularly "in the context of this pollutant and this industry," 80 Fed. Reg. at 64,727, 64,787, and would be "grossly insufficient to address the public health and environmental impacts from CO_2 emissions."[32] In ACE, EPA arbitrarily ignored this earlier conclusion, even while

[31] ACE RIA 3-11, tbl. 3-3, 3-15, tbl. 3-8, (projections for 2025, 2030, and 2035), JA__, __.

[32] CPP Recon. Denial 55 n.75, JA__.

the danger to public health and welfare has only become more urgent. *See Fox Television*, 556 U.S. at 515-16.

EPA also arbitrarily dismissed its prior concerns regarding the emissions "rebound effect," 80 Fed. Reg. at 64,748, 64,787, which occurs when a power plant operates more frequently, and thus pollutes more, after improving its heat-rate. In the Clean Power Plan, EPA found that the rebound effect could "partially or even entirely offset" CO_2 emission rate reductions. *Id.* at 64,727 n.370. Indeed, EPA's own modeling projects that ACE will *increase* sector-wide CO_2 emissions in 15 states and the District of Columbia in 2030 compared to no regulation.[33]

Perversely, ACE produces even worse outcomes if more-aggressive heat-rate measures are deployed. A recent peer-reviewed study projects that CO_2 emissions in 2030 will increase in 18 states plus the District of Columbia and at 28 percent of the nation's coal plants if all seven of EPA's candidate heat-rate technologies are implemented (including blade-path upgrades and economizer replacements).[34] The

---

[33] *Compare* EPA, *IPM State-Level Emissions: Illustrative ACE Scenario*, EPA-HQ-OAR-2017-0355-26724, JA__ (projecting state-by-state CO_2, sulfur dioxide, and nitrogen oxides emissions under ACE), *with* EPA, *IPM State-Level Emissions: EPAv6 November 2018 Reference Case*, EPA-HQ-OAR-2017-0355-26720, JA__ (projecting emissions under "business-as-usual").

[34] Amelia Keyes *et al.*, *The Affordable Clean Energy Rule and the Impact of Emissions Rebound on Carbon Dioxide and Criteria Air Pollutant Emissions* 4-5, EPA-HQ-OAR-2017-0355-26648 (2019), JA__.

study also found that under that scenario, ACE would increase *nationwide* power-sector CO_2 emissions in certain years, compared to no regulation.[35]

Due to the rebound effect, ACE will also increase health-harming criteria pollution in many locations. EPA modeling projects that, in 2030, ACE would increase emissions of sulfur dioxide and nitrogen oxides in 13 states compared to no regulation.[36] EPA modeling accompanying the ACE proposal shows that full implementation of the candidate heat-rate technologies could result in net *increases* in deaths from particulate matter and ozone pollution in 2035 relative to no regulation.[37] "Control technologies cannot be 'best' if they create greater problems than they solve." *Sierra Club*, 657 F.2d at 326; *see also Michigan*, 135 S. Ct. at 2707 ("No regulation is 'appropriate' if [the regulation] does significantly more harm than good.").

Although ACE would still be wholly inadequate, EPA could have at least prevented the rebound effect by including constraints on utilization in its "best system." *See infra* Part III.B.2.c. Instead, EPA disavowed any authority to prevent such pollution increases, 84 Fed. Reg. at 32,531-32, and attempted to minimize the

---

[35] *Id.* at 4, tbl. 1 (showing greater nationwide emissions in 2023 and 2050 under the "ACE central Case" compared to "No policy").

[36] *See supra* note 33.

[37] Proposed ACE RIA 4-34, EPA-HQ-OAR-2017-0355-21182 (Aug. 2018), JA__ (comparing 4.5 percent efficiency scenario at $50/kW to "No CPP").

rebound effect by arbitrarily *excluding* from its modeling the effects of blade-path upgrades and economizer replacements. At proposal, EPA determined these two measures would be deployed by more than half of the sources if the agency eventually finalizes its proposed New Source Review amendments which would unlawfully exempt power plants from control requirements unless they make physical changes that increase hourly as well as annual emissions.[38] EPA's belief that it must relax New Source Review obligations in order for states to deploy these two measures, 84 Fed. Reg. at 32,555, underscores the likelihood that the measures would exacerbate the emissions rebound effect: increases in annual emissions of pollution are precisely what triggers New Source Review under current regulations, *see* 83 Fed. Reg. at 44,777-80.

EPA contended that it may ignore the rebound effect "because [ACE] is aimed at improving a source's emissions *rate*," 84 Fed. Reg. at 32,543. But Section 111 speaks of "emission reduction," not "emission *rate* reduction." If a technique that reduces emission rates increases overall emissions, it "undermine[s] the essential purposes of the Act," *Sierra Club*, 657 F.2d at 325, including "the reduction or elimination…of the *amount* of pollutants produced or created," 42 U.S.C. §7401(a)(3) (emphasis added). Further, it is the *accumulation* of greenhouse-gas emissions that endangers public health

[38] *See* Proposed ACE RIA 1-15 to 1-16 & tbl. 1-2, JA__; 84 Fed. Reg. at 32,521; *see also* Envtl. Pet. Abeyance Mot. 7-10, 14-17, ECF 1807492 (Sept. 20, 2019); Joint NSR Comments 4-10, EPA-HQ-OAR-2017-0355-24416, JA__.

and welfare. To focus on emission rates and ignore the Rule's ineffective and even counterproductive impact on overall pollution is arbitrary and unlawful.

2. EPA Arbitrarily Rejected Far More Effective Systems.

For EPA to adopt such a toothless system of emission reduction was unwarranted even under its incorrect statutory interpretation. Other available measures offer far greater reductions than ACE's "best system," including gas co-firing, carbon capture, and reduced utilization.

a. ACE Arbitrarily Rejected Natural Gas Co-firing and Carbon Capture When Determining the "Best System."

Coal plants can reduce CO_2 pollution by "co-firing" natural gas in combination with, or in lieu of, coal. Every 10 percent of heat input derived from gas instead of coal reduces a source's CO_2 pollution by approximately four percent, while also reducing other pollutants such as particulate matter and nitrogen oxides.[39] This technology is clearly adequately demonstrated and widely available: power companies have already converted approximately 170 former coal boilers to operate exclusively on gas, a nearly 30 percent increase since 2012. 84 Fed. Reg. at 32,546. Thirty-five percent of coal plants co-fired with natural gas to some degree in 2017, and many units with existing access to natural gas could increase co-firing without additional

[39] CPP Proposal, Greenhouse Gas Mitigation Measures ("GHG Mitigation Measures") 6-5 to 6-6, EPA-HQ-OAR-2017-0355-24423 (2014), JA__.

modifications.[40] The record further shows that more units could be feasibly connected to existing gas supply infrastructure, and that broad use of co-firing could achieve vastly greater CO_2 reductions than ACE at a reasonable cost.[41] Even minor increases in co-firing at power plants that currently co-fire could achieve overall reductions greater than those projected under ACE.[42]

Carbon capture reduces emissions by collecting CO_2 pollution at a plant's smokestack and injecting it permanently underground. Two existing coal plants in North America have successfully retrofitted with this technology.[43] Cost estimates for retrofits are dropping substantially,[44] and the record demonstrates that all existing coal plants are located within a reasonable distance of a geologic sequestration site.[45] In

---

[40] 84 Fed. Reg. at 32,544; CPP Recon. Denial, App. 3, 2, JA__; NRDC ACE Comments, App. H, JA__. *See also* Environmental Defense Fund's ("EDF") ACE Comments 23, EPA-HQ-OAR-2017-0355-24419, JA__; EDF ANPR Comments, Att. B (Andover Tech. Partners, *Natural Gas Conversion and Cofiring for Coal-Fired Utility Boilers* (2014)), EPA-HQ-OAR-2017-0355-24423, JA__.

[41] MJB&A Pipeline Analysis 11-12 (2018), Att. to EDF ACE Comments, JA__; NRDC ACE Comments 41, 46, JA__; Resources For the Future Comments 23, EPA-HQ-OAR-2017-0355-25898, JA__.

[42] *Compare* ACE 3-11 tbl. 3-3, JA__ *with* Resources For the Future Comments 23, JA__.

[43] CPP Recon. Denial, App. 3, 3-5, JA__; Clean Air Task Force ("CATF")/NRDC ACE Carbon Capture Comments 7-12, EPA-HQ-OAR-2017-0355-24266, JA__.

[44] CATF/NRDC ACE Carbon Capture Comments 16-17, JA__; *id.* Atts. C & D.

[45] *Id.* at 13-14 (discussing NETL analysis); *id.* App. B, 49-58 tbl. 3.

fact, EPA's own baseline modeling projects that eight coal plants will soon install carbon capture technology (contrasting starkly with its projection that *zero* coal plants will install blade-path upgrades and economizer replacements without New Source Review amendments).[46] Those eight carbon capture projects alone are projected to achieve twice the total *fleetwide* CO_2 reductions projected for ACE.[47]

EPA rejected both co-firing and carbon capture—to *any* degree, at *any* plant—claiming that these measures are either not widely available or too costly. 84 Fed. Reg. at 32,544-45 (co-firing); *id.* at 32,547-48 (carbon capture). Yet the agency failed to rebut the record evidence to the contrary.[48] EPA relied on vague and sparsely supported descriptions of the costs of co-firing at a unit level, *id.* at 32,545, but did not calculate additional sector-wide costs of co-firing, or discuss whether industry could absorb those costs. EPA also ignored record evidence that many coal units that already co-fire could do so more intensively at minimal capital cost.[49]

EPA asserted that carbon capture is too expensive because "[m]any…plants have a marginal profit margin." *Id.* at 32,548. This reasoning would foreclose pollution control measures of *any* expense, gutting Section 111 and directly contravening this

---

[46] ACE RIA 3-28, JA__.

[47] *Compare id.* at 3-28, JA__ *with id.* at 3-11, tbl. 3-3, JA__.

[48] *See supra* notes 40, 41, 44, 45.

[49] EDF ACE Comments 23, JA__; EDF ANPR Comments, Att. B, JA__.

Court's precedent. *See, e.g.*, *Sierra Club*, 657 F.2d at 314 (upholding a Section 111 standard imposing "substantial" costs totaling "tens of billions of dollars"). Protecting uncompetitive or marginal polluting sources is not among the Act's objectives. As with co-firing, EPA did not assess sector-wide costs of carbon capture, or the industry's ability to absorb those costs. Instead, it arbitrarily deemed carbon capture costs overly burdensome.

EPA misleadingly quoted the Clean Power Plan to argue that it had previously deemed co-firing too costly. 84 Fed. Reg. at 32,543. In fact, EPA never determined co-firing was unreasonably costly, only that the Plan's "best system" would be *more* cost-effective. 80 Fed. Reg. at 64,727-28 (adding that co-firing and carbon capture are "within price ranges that EPA has found to be cost-effective in the context of other [greenhouse-gas] rules").[50] EPA failed to acknowledge and justify its change of position. *Fox Television*, 556 U.S. at 515.

EPA also failed to evaluate additional climate and health benefits achievable by co-firing and carbon capture. EPA ignored record evidence that even modest deployment of co-firing and carbon capture would reduce sector-wide emissions of CO_2 and other health-harming pollution by far more than heat-rate measures. *See supra* notes 42, 47. This failure to consider "the amount of air pollution reductions, *Sierra*

[50] GHG Mitigation Measures 6-9, JA__.

Club 657 F.2d at 325-36, is particularly unreasonable in light of the urgent need for deep cuts in climate-disrupting CO_2 pollution.

Last, EPA arbitrarily rejected co-firing on the grounds that natural gas is more efficiently combusted in combined-cycle gas turbines. 84 Fed. Reg. at 32,544. But EPA explicitly declined to find that the gas supply is insufficient to support *both* increased co-firing and combined cycle generation, *id.* at 32,545. EPA provided no evidence that co-firing would deprive combined-cycle plants of an adequate gas supply or explain why it rejected contrary record evidence.[51]

b. EPA Arbitrarily Rejected Alternatives for Applying Co-Firing or Carbon Capture on a More Limited Basis.

In addition, EPA refused to include co-firing and carbon capture as "best system" elements that plant operators must consider on a source-specific basis, even though a unit-by-unit approach is precisely how ACE operates with respect to the seven candidate heat-rate technologies. Nor did EPA apply these measures to subcategories of sources at which they may be particularly available and cost-effective. EPA's rejection of these options was baseless and arbitrary, especially given the record evidence showing that their use at even a few sources could yield greater emission reduction than EPA estimated ACE would achieve nationwide.

[51] *See*, *e.g.*, EDF ACE Comments 31-32 (discussing M.J. Bradley & Associates analysis), JA__.

First, EPA arbitrarily rejected requiring states to evaluate the cost and availability of these two measures on a source-specific basis—even though ACE *already* requires states to evaluate the cost and availability of far more ineffective heat-rate measures for each source. 84 Fed. Reg. at 32,551. EPA provided no persuasive rationale for categorically excluding carbon capture and co-firing while providing for case-by-case evaluation of heat-rate measures. Attempting to justify this inconsistency, EPA inaccurately claimed that "all coal-fired utility boilers can apply (or have already applied) [heat-rate] measures" but that not all can implement co-firing or carbon capture technologies. 84 Fed. Reg. at 32,545, 32,547-48. Yet EPA admitted elsewhere in ACE that there are "unit-specific physical or cost considerations that will *limit or prevent* full implementation of the listed [heat-rate] technologies and equipment upgrades," 84 Fed. Reg. at 32,536 (emphasis added), and that two of the listed heat-rate measures will not be adopted by any source absent New Source Review amendments.[52] These "internal[] inconsisten[cies]" render ACE arbitrary and capricious. *ANR Storage Co. v. FERC*, 904 F.3d 1020, 1028 (D.C. Cir. 2018).

EPA further claimed that co-firing "cannot be applied in combination with the [heat-rate] measures" because it does not reduce heat input. 84 Fed. Reg. at 32,545. But the purpose of Section 111 standards is to reduce *emissions,* not heat-rate. To reject

[52] *See* ACE RIA 1-16 to 1-17, JA__.

co-firing because it does not reduce heat input while ignoring its "effect on air emissions" is a dereliction of EPA's statutory duty. *Sierra Club*, 657 F.2d at 326.

Second, EPA arbitrarily rejected the option of defining *subcategories* of coal-fired plants particularly well-suited to co-firing or carbon capture, such as those already connected to gas infrastructure or located close to sequestration sites. The agency misleadingly stated that it "has never established a subcategory under Section 111 based on potential compliance strategies of individual units."[53] But the purpose of subcategorizing authority under Section 111 is to distinguish groups of sources based on their ability to meet different pollution limits. 42 U.S.C. §7411(b)(2). EPA's proffered basis for rejecting subcategorization in ACE would preclude subcategorization in almost *any* Section 111 rule.

EPA also asserted that subcategorization "could affect…sources' competitiveness,"[54] but made no attempt to estimate any such effect. *See Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 531 (D.C. Cir. 1983) ("EPA cannot regulate on the basis of a guess about what the facts might be."). Nor did EPA explain why such competitiveness effects are an appropriate consideration under Section 111. *All* pollution standards can affect the competitiveness of regulated sources—particularly of high-polluting, economically marginal sources. EPA's failure to assess

[53] ACE RTC, ch. 2, 4, JA__.

[54] *Id.*

whether such impacts are reasonable in light of the potential pollution reductions to be achieved was arbitrary and unreasonable.

c. EPA Arbitrarily Rejected Reducing Utilization of High-Emitting Power Plants.

EPA also unlawfully rejected reducing the utilization of high-emitting sources as an element of the "best system," even though this measure would achieve far greater emission reduction than ACE, and at a lower cost-per-ton.[55] Reducing a source's utilization is a measure plainly "put into operation *at*" an individual source and "integrated into [its] design or operation." 84 Fed. Reg. at 32,524, 32,536. Indeed, limits on a source's utilization are frequently incorporated into permits for sources subject to New Source Review,[56] *see* 42 U.S.C. §7475, a program EPA claimed is consistent with its narrow interpretation of Section 111, 84 Fed. Reg. at 32,527 & n.72. Each of EPA's three arguments for excluding this measure lack merit.

First, EPA wrongly claimed that the Clean Power Plan rejected reducing utilization of individual power plants as a potential element of a "best system." 84 Fed. Reg. at 32,531. In fact, the Plan excluded only measures that would "reduce[] *overall* generation of electricity," such as end-use energy efficiency programs. 80 Fed.

---

[55] *Compare* ACE RIA ES-5 tbl. ES-3, ES-6 tbl. ES-4 (ACE would reduce 11 million tons in 2030 at $25/ton) *with* EDF ACE Comments 11-12, JA__ (reduced utilization approaches could reduce 305-398 million tons in 2030, at $18-23/ton assuming trading of emission reductions across sources).

[56] CPP Legal Memorandum 69, 72-81, EPA-HQ-OAR-2013-0602-36872, JA__, __ (citing examples of New Source Review permits requiring reduced utilization).

Reg. at 64,782 n.602 (emphasis added). Contrary to EPA's present contention, the Clean Power Plan affirmed that "reduc[ing] generation by individual higher-emitting [units]" could be a valid part of the best system. *Id.* Indeed, reducing the use of higher-emitting units is the single most widespread and cost-effective way for power companies to meet air pollution standards. *See* Power Co. Pet. Br. 14-17. EPA even admitted that, if permitted, "many [sources] would meet their [ACE] compliance obligation by reduced utilization." 84 Fed. Reg. at 32,555.

Remarkably, ACE allows sources to *escape the rule altogether* by limiting their utilization. A source that accepts a permit limiting its annual sales to 219,000 MWh or one-third of its potential net electric output to the grid is exempted from complying with a standard of performance. 40 C.F.R. §60.5780a(a)(2). EPA admitted that the exemption is "functionally the same as applying standards and complying via reduced utilization."[57] Such flagrant inconsistency is arbitrary.

Second, EPA wrongly asserted that reducing a plant's utilization does not deliver "continuous emission reduction" as required by CAA Section 302(l). The references to "continuous emission reduction" in Section 302(l) and 302(k) were intended to require the use of "constant or continuous means of reducing emissions." *Sierra Club v. EPA,* 551 F.3d 1019, 1027 (D.C. Cir. 2008) (quoting H.R. Rep. No. 95-294, at 92 (1977)). Congress was concerned that "intermittent" controls would

[57] ACE RTC, ch. 2, 9, JA__.

"merely disperse[]" pollution and "not reduce[]" it. H.R. Rep. No. 95-294 at 85. A standard based on an annual limit on utilization, however, would achieve real and absolute reductions in total CO_2 pollution and would not "merely disperse[]" pollution.

Third, EPA claimed that a standard based on reduced utilization would unlawfully be a standard of "non-performance." 84 Fed. Reg. at 32,532. "Performance" in Section 111(a)(1), however, plainly refers to a source's *emissions* performance, not its production. *See* 42 U.S.C. §7411(a)(1) ("standard of performance" means a "standard *for emissions*") (emphasis added). Sources may comply with "standards of performance" through any means that reduce emissions from the regulated sources. The agency provided no reason why Section 111 standards must preserve historical production levels. Indeed, pollution standards based on end-of-stack controls commonly affect how much plant operators choose to run their plants. *See, e.g.*, Trade Ass'n Pet. Br. 12.

Like co-firing and carbon capture, reduced utilization is an available measure that would achieve vastly greater emission reduction than ACE while still satisfying EPA's artificially narrow legal conception of the "best system." EPA's rejection of these measures was arbitrary and capricious.

C. EPA Unlawfully Deregulated Existing Gas- and Oil-Fired Plants.

EPA violated Section 111(d) by repealing without replacing the established CO_2 emission guidelines for the nation's large fleet of gas- and oil-fired power plants.

Section 111(d) mandates standards of performance for "*any* existing source" to which a standard would apply "if such existing source were a new source." 42 U.S.C. §7411(d)(1) (emphasis added). In 2015, the agency triggered that statutory duty by finalizing CO_2 standards for new coal-, oil-, and gas-fired plants. 80 Fed. Reg. 64,510, 64,532 (Oct. 23, 2015). The Clean Power Plan discharged EPA's mandatory duty by establishing emission limits for existing coal-, oil-, and gas-fired steam plants and combined-cycle gas plants. 80 Fed. Reg. at 64,715-16.

ACE, however, covers only coal-fired steam plants, unlawfully leaving existing gas- and oil-fired units entirely unregulated.[58] EPA's failure is especially egregious given that gas plants have surpassed coal plants as the United States' largest providers of power generation and account for more than a third of the power sector's CO_2 emissions, a share that is growing.[59] EPA offered no valid authority for repealing and not replacing standards for existing gas and oil plants in defiance of a clear statutory command. Because of Section 111's unambiguous mandate to regulate existing sources, EPA's decision to repeal these standards without replacing them is not "permissible under the statute." *Fox Television*, 556 U.S. at 515.

---

[58] 40 C.F.R. §60.5780a(a)(3). *See, e.g.*, Joint Best System Comments 61-65, JA__; Fond du Lac Band ACE Comments 5, EPA-HQ-OAR-2017-0355-24988, JA__.

[59] *See* EIA, *March 2020 Monthly Energy Review*, 130, tbl. 7.2b, 203 tbl. 11.6 (Mar. 26, 2020), https://www.eia.gov/totalenergy/data/monthly/pdf/mer.pdf. Based on the most recent EPA data available, in 2018, approximately one quarter of power sector emissions came from natural gas plants covered by the CPP.

Even if the statute did grant EPA discretion in this area—which it does not—the agency's action would still be unlawful because it did not provide "good reasons" for deregulating. *Id.* EPA's claim that it "currently does not have adequate information to determine a [best system] for these [sources]," 84 Fed. Reg. at 32,533, is simply false. With respect to combined-cycle gas plants, which produce nearly 90 percent of gas-fired generation,[60] the agency evaluated ten years of gross heat-rate data at the time of proposal to "calculate a 'benchmark' heat-rate for each [combined-cycle] unit" and found a national average heat-rate improvement potential of 3.4 percent. 83 Fed. Reg. at 44,761. EPA's findings were consistent with studies the agency cited earlier showing a four percent emission reduction at combined-cycle gas plants through technology upgrades.[61]

Commenters also supplied ample additional information on emission reduction opportunities at many of these plants.[62] For example, Environmental Defense Fund submitted an engineering report finding potential heat-rate improvements of six

---

[60] *See* EIA, *Today in Energy*, "U.S. natural gas-fired combined-cycle capacity surpasses coal-fired capacity" (Apr. 10, 2019), https://www.eia.gov/todayinenergy/detail.php?id=39012.

[61] *See* CPP Recon. Denial, App. 3, 10-11, JA__.

[62] *See e.g.*, Joint Best System Comments 61-65, JA__; EDF ACE Comments 40-43, 46-48, JA__, __; States/Cities ACE Comments 56-59, JA__. *See also id.* at 58 n.81 (citing General Electric CPP Comments 13-14, EPA-HQ-OAR-2013-0602-22971), JA__.

percent or more at combined-cycle gas plants and estimating the capital costs of related technologies.[63] Sierra Club also provided its study of 54 gas turbines demonstrating significant heat-rate improvement potential at such units.[64] These studies contradict EPA's assertion that it lacked efficiency-upgrade data "at the combustion turbine unit level."[65]

EPA inexplicably and illegally ignored its own data from the ACE proposal on combined-cycle gas plants and failed to provide "reasoned responses" for disregarding the substantial data cited by commenters.[66] *See Interstate Nat. Gas Ass'n of Am. v. FERC*, 494 F.3d 1092, 1096 (D.C. Cir. 2007); *see also State Farm*, 463 U.S. at 43. EPA similarly failed to explain why the abundant information on systems of emission reduction for coal plants, such as carbon capture, reduced utilization, or a combination of those measures with heat-rate improvements, cannot also be

[63] EDF ACE Comments, Att. C (Andover Tech. Partners, *Improving Heat Rate on Combined Cycle Power Plants* (2018)), JA__.

[64] Sierra Club ACE Comments 20-27, App. B and attached data files, EPA-HQ-OAR-2017-0355-24813, JA__.

[65] ACE RTC, ch. 2, 16, JA__.

[66] *Id.* at 12-22, 25-27, JA__, __.

implemented at oil and gas steam plants, which operate by similar physical principles.[67]

Additionally, EPA's claim that it required even more granular unit-level data for gas units diverges arbitrarily from its approach to coal plants, for which the agency did *not* undertake unit-level evaluations. 84 Fed. Reg at 32,536. EPA did not explain how the data relied on for ACE's "best system" for coal-plants, *id.* at 32,541 & n.183, differed from the data in EPA's gas-plant study or the studies submitted by commenters. By contrast, in its proposal, EPA noted the gas-plant study approach was "similar" to one used to calculate unit-specific standards for modified coal plants. 83 Fed. Reg. at 44,761. This "internal[] inconsisten[cy]…is arbitrary and capricious." *ANR Storage*, 904 F.3d at 1028.

Lastly, even if EPA's claim of insufficient data were true, it would be no excuse. "[I]n light of [an] unambiguous statutory command…EPA ha[s] no discretion to avoid regulating any such units.…The agency [is] obligated to collect the data it

[67] *See* Sierra Club ACE Comments, App. A, 1 n.1, JA__ (explaining that emission reduction techniques apart from coal pretreatment apply equally to coal-, oil-, and gas-fired steam plants).

need[s]" to fulfill that obligation. *U.S. Sugar Corp. v. EPA*, 830 F.3d 579, 644 (D.C. Cir. 2016).[68]

CONCLUSION AND REQUESTED RELIEF

ACE is unlawful in manifold ways and any benefits to public health and welfare are negligible. Accordingly, the Court should apply the "normal remedy," *Blue Water Navy Viet. Veterans Ass'n, Inc. v. McDonald*, 830 F.3d 570, 578 (D.C. Cir. 2016), and vacate it, along with the arbitrary new implementing regulation deadlines.

EPA's repeal of the Clean Power Plan is also unlawful, predicated as it is on erroneous claims of statutory compulsion and disregard of EPA's own findings and record. Simply reinstating the 2015 rule now, however, would not serve the Act's goals. Key implementation deadlines have long since passed, 80 Fed. Reg. at 64,669, and the same trends toward cleaner power generation that the Clean Power Plan was predicated upon have reduced emissions faster and deeper than was expected in 2015. *E.g.*, *supra* p. 3. In these circumstances, the "better course" is to vacate EPA's unlawful replacement rule "without reinstating the old rule," *Small Refiner Lead Phase-Down Task Force*, 705 F.2d at 545, and remand this proceeding to EPA so that the agency may meet its statutory duties based upon an up-to-date factual record and

[68] Unlike in *Portland Cement Ass'n v. EPA*, 665 F. 3d 177, 193-94 (D.C. Cir. 2011), EPA here has repealed statutorily required emission guidelines, already gathered the data that it needs, and made a determination not to issue standards for these units.

emissions baseline. Because of the dangers to the public and their time-sensitivity, and the delays that have already occurred, the Court should set a date by which EPA must take compliant action on remand.

Respectfully submitted,

Dated: April 17, 2020

/s/ Sean H. Donahue
Sean H. Donahue
Susannah L. Weaver
Donahue, Goldberg, Weaver,
& Littleton
1008 Pennsylvania Ave., SE
Washington, DC 20003
(202) 277-7085
sean@donahuegoldberg.com
susannah@donahuegoldberg.com

Vickie L. Patton
Tomás Carbonell
Benjamin Levitan
Lance Bowman*
Environmental Defense Fund
1875 Connecticut Ave., NW
Suite 600
Washington, DC 20009
(202) 387-3500
vpatton@edf.org
tcarbonell@edf.org
blevitan@edf.org
lbowman@edf.org

*D.C. Bar application pending

Counsel for Environmental Defense Fund

Ann Brewster Weeks
James P. Duffy
Clean Air Task Force
114 State Street, 6th Floor
Boston, MA 02109
(617) 359-4077
aweeks@catf.us
jduffy@catf.us

Counsel for American Lung Association, American Public Health Association, Appalachian Mountain Club, Clean Air Council, Clean Wisconsin, Conservation Law Foundation, and Minnesota Center for Environmental Advocacy

Joanne Spalding
Sierra Club
2101 Webster Street, Suite 1300
Oakland, CA 94612
(415) 977-5725
joanne.spalding@sierraclub.org

Andres Restrepo
Sierra Club
50 F Street NW, 8th Floor
Washington, DC 20001
(215) 298-0335
andres.restrepo@sierraclub.org

Vera Pardee
Law Office of Vera Pardee
726 Euclid Avenue
Berkeley, CA 94708
(858) 717-1448
pardeelaw@gmail.com

Counsel for Sierra Club

Clare Lakewood
Howard M. Crystal
Center for Biological Diversity
1212 Broadway, Suite 800
Oakland, CA 94612
(415) 844-7121
clakewood@biologicaldiversity.org
hcrystal@biologicaldiversity.org

Counsel for Center for Biological Diversity

Brittany E. Wright
Jon A. Mueller
Chesapeake Bay Foundation, Inc.
6 Herndon Avenue
Annapolis, MD 21403
(443) 482-2077
bwright@cbf.org
jmueller@cbf.org

Counsel for Chesapeake Bay Foundation Inc.

David Doniger
Benjamin Longstreth
Melissa J. Lynch
Lucas May
Natural Resource Defense Council
1152 15th Street, NW, Suite 300
Washington, DC 20005
(202) 289-2403
ddoniger@nrdc.org
blongstreth@nrdc.org
llynch@nrdc.org
lmay@nrdc.org

Counsel for Natural Resources Defense Council

Howard Learner
Scott Strand
Alda Yuan
Environmental Law & Policy Center
35 E Wacker Dr. Suite 1600
Chicago, IL 60601
(312) 673-6500
hlearner@elpc.org
sstrand@elpc.org
ayuan@elpc.org

Counsel for Environmental Law & Policy Center

CERTIFICATE OF COMPLIANCE

Pursuant to Fed. R. App. P. 32(g), I hereby certify that this brief complies with the type-volume limitation of Fed. R. App. P. 32(a)(7)(B) and the Court's order of January 31, 2020 (Doc. No. 1826621). According to the count of Microsoft Word, this brief contains 10,119 words, excluding the parts of the brief exempted by Fed. R. App. P. 32(f) and Circuit Rule 32(e)(1).

I further certify that this brief complies with the typeface and type-style requirements of Fed. R. App. P. 32(a)(5) and (6) because it has been prepared in 14-point Garamond, a proportionally spaced font.

Dated: April 17, 2020

/s/ Sean H. Donahue
Sean H. Donahue

CERTIFICATE OF SERVICE

I hereby certify that on this 17th day of April, 2020, the foregoing Initial Opening Brief of Petitioners Public Health and Environmental Organizations has been served on all registered counsel through the Court's electronic filing system.

/s/ Sean H. Donahue
Sean H. Donahue