

ORAL ARGUMENT SCHEDULED FOR JUNE 2, 2016

No. 15-1363
(and consolidated cases)

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

STATE OF WEST VIRGINIA, 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

**BRIEF OF *AMICUS CURIAE*, THE SERVICE EMPLOYEES
INTERNATIONAL UNION, IN SUPPORT OF RESPONDENTS**

Judith A. Scott
Nicole G. Berner
Renee M. Gerni
Service Employees International Union
1800 Massachusetts Ave., NW
Washington, DC 20036
(202) 730-7813
renee.gerni@seiu.org

Ned Miltenberg
National Legal Scholars Law
Firm, P.C.
5410 Mohican Road, Suite 200
Bethesda, MD 20816-2162
202-656-4490
NedMiltenberg@gmail.com

**CERTIFICATE AS TO PARTIES,
RULINGS, AND RELATED CASES**

Pursuant to Circuit Rule 28(a)(1), *amicus curiae* the Service Employees International Union (“SEIU”), hereby certifies that:

(A) Parties and Amici

All parties, intervenors, and amici appearing in this court are listed in the Brief for Respondents.

(B) Rulings Under Review

References to the rulings at issue appear in the Brief for Respondents

(C) Related Cases

References to the related cases appear in the Brief for Respondents.

DISCLOSURE STATEMENTS

Pursuant to Federal Rules of Appellate Procedure 26.1, counsel for *amicus curiae* make the following disclosure: SEIU has no parent company. No publicly held corporation has a 10% or greater ownership SEIU. The general nature and purpose of amicus is to advocate for, protect and advance workers' rights.

TABLE OF CONTENTS

CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES	i
DISCLOSURE STATEMENTS	ii
TABLE OF CONTENTS	iii
TABLE OF AUTHORITIES	v
STATUTES AND REGULATIONS	xi
GLOSSARY	xii
IDENTITY AND INTEREST OF AMICUS CURIAE.....	1
STATEMENT REGARDING SEPARATE BRIEFING	2
STATEMENT OF AUTHORSHIP AND FINANCIAL CONTRIBUTIONS	3
SUMMARY OF ARGUMENT	3
ARGUMENT	4
I. Airborne Pollutants from Fossil Fuel-Burning Power Plants Adversely Affect Human Health	4
A. Climate Change and Air Pollution Adversely Affect Human Health, and both are Caused by Pollution from Fossil Fuel-Burning Power Plants	4
B. Climate Change and Air Pollution Adversely Affect Public Health	6
C. Climate Change and Air Pollution are Particularly Dangerous to Low- Income Communities and Communities of Color	11
D. Anthropogenic Climate Change is Particularly Dangerous to Low-Income Communities and Communities of Color	13
II. The CPP Will Produce Substantial Climate and Health-Related Benefits, as well as Economic Benefits, to the Public in General, and to Low-income Communities and Communities of Color, in Particular	15
A. The CPP Will Produce Substantial Climate and Health-Related Benefits in Low-Income Communities and in Communities of Color	15
B. The CPP Will Produce Substantial Economic Benefits for the Public, Including for Low-Income Communities and Communities of Color	18
CONCLUSION	22

CERTIFICATE OF COMPLIANCE.....23
CERTIFICATE OF SERVICE24

TABLE OF AUTHORITIES*

Cases

<i>Massachusetts v. E.P.A.</i> , 415 F.3d 50, 79 (D.C. Cir. 2005), <i>rev'd</i> , 549 U.S. 497 (2007).....	7
<i>PPG Indus., Inc. v. Costle</i> , 659 F.2d 1239, 1242 (D.C. Cir. 1981).....	6, 7
<i>Vigil v. Leavitt</i> , 381 F.3d 826, 830 (9th Cir. 2004).....	7

Regulations

*Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,662, 64,686 (Oct. 23, 2015) (to be codified as 40 C.F.R. Part 60).....	8, 12, 15, 17, 19
--	-------------------

Other Authorities

American Lung Association, <i>Urban Air Pollution and Health Inequities: A Workshop Report</i> , 109 Environ Health Perspect (Supp. 3) 357 (2001)	11
Andrew Churg et al., <i>Chronic Exposure to High Levels of Particulate Air Pollution and Small Airway Remodeling</i> , 111 Environ. Health Persp. 714 (2003)	10
Andrew J. Ghio et al., <i>Concentrated Ambient Air Particles Induce Mild Pulmonary Inflammation in Healthy Human Volunteers</i> , 162 Am. J. Respir. & Crit. Care Med. 981 (2000).....	9
Antonella Zanobetti & Joel Schwartz, <i>Are Diabetics More Susceptible to the Health Effects of Airborne Particles?</i> , 164 Am. J. Respir. & Crit. Care Med. 831 (2001).....	10
Antonella Zanobetti & Joel Schwartz, <i>The Effect of Particulate Air Pollution on Emergency Admissions for Myocardial Infarction: A Multicity Case-Crossover Analysis</i> , 113 Environ. Health Persp. 978 (2005).....	9

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

Antonella Zanobetti et al., <i>The Temporal Pattern of Respiratory and Heart Disease Mortality in Response to Air Pollution</i> , 111 <i>Envtl. Health Persp.</i> 1188 (2003).....	9
C. Arden Pope III et al., <i>Lung Cancer, Cardiopulmonary Mortality, and Long-Term Exposure to Fine Particulate Air Pollution</i> , 287 <i>J. Am. Med. Ass'n</i> 9 (2002).....	10
C.T. Driscoll, J.J. Buonocore, J.I. Levy, K.F. Lambert, D.Burtraw, S.B. Reid, H. Fakhraei, & J. Joel Schwartz, <i>U.S. power plant carbon standards and clean air and health co-benefits</i> , 5 <i>Nature Climate Change</i> 535, 539 & Fig. 1 & Table 2 (2015).....	16
Deborah Behles, <i>From Dirty to Green: Increasing Energy Efficiency and Renewable Energy in Environmental Justice Communities</i> , 58 <i>Vill. L. Rev.</i> 25, 40-45 (2013).....	20
Environmental Protection Agency, <i>EPA's Clean Power Plan, Climate Change, and African Americans</i> (2015), available at https://www3.epa.gov/airquality/cppcommunity/afam-climate-change.pdf	4
EPA <i>Fact Sheet: Clean Power Plan Benefits</i> (2014), https://www.epa.gov/cleanpowerplan/fact-sheet-clean-power-plan-benefits	18
EPA, <i>America's Children and the Environment</i> 56 (3rd ed. 2013), available at http://www.epa.gov/ace/pdfs/ACE3_2013.pdf	12, 13
FRED® Economic Data, All Employees: Mining and Logging: Coal Mining. https://research.stlouisfed.org/fred2/series/CES1021210001	20
Gregory Wellenius et al., <i>Particulate Air Pollution and Hospital Admissions for Congestive Heart Failure in Seven U.S. Cities</i> , 97 <i>Am. J. Cardiology</i> 404 (2006)	9

- Gregory Wellenius et al., *Particulate Air Pollution and the Rate of Hospitalization for Congestive Heart Failure among Medicare Beneficiaries*, 161 *Am. J. Epidemiol* 1030 (2005)9
- Helen H. Kang, *Pursuing Environmental Justice: Obstacles and Opportunities - Lessons from the Field*, 31 *Wash. U. J.L. & Pol'y* 121, 126-27 (2009).11
- Industrial Economics, Inc., *Assessment of the Economy-Wide Employment Impacts of EPA's Clean Power Plan*, 2-7--2-9 (April 15, 2015) available at http://www.inforum.umd.edu/papers/otherstudies/2015/iec_inforum_report_041415.pdf 19, 20
- Institute of Medicine, *Toward Environmental Justice: Research, Education, and Health Policy Needs*. Washington, DC: National Academy Press, 1999.....11
- O'Neill MS, Jerrett M, Kawachi I, Levy JJ, Cohen AJ, Gouveia N, Wilkinson P, Fletcher T, Cifuentes L, Schwartz J et al. *Health, Wealth, and Air Pollution: Advancing Theory and Methods*, 111 *Environ Health Perspect.* 1861 (2003).....11
- IPCC, *Fourth Assessment Report: Observed Changes in Climate and Their Effects 1* (2007), available at http://www.ipcc.ch/publications_and_data/ar4/syr/en/spms1.html5, 13
- Josh Bivens, *A Comprehensive Analysis of the Employment Impacts of the EPA's Proposed Clean Power Plan*, Economic Policy Institute (June 9, 2015). <http://www.epi.org/publication/employment-analysis-epa-clean-power-plan/>20
- Kristi B. Metzger et al., *Ambient Air Pollution and Cardiovascular Emergency Department Visits in Atlanta, Georgia, 1993-2000*, 15 *Epidemiology* 46 (2004)9
- Miranda ML, Edwards SE, Keating MH, Paul CJ. *Making the Environmental Justice Grade: The Relative Burden of Air Pollution Exposure in the United States*. *Int J Environ Res Public Health*. 2011; 8: 1755-177112

- MJ Bradley and Associates, *EPA's Clean Power Plan, Summary of IPM Modeling Results*, January 13, 2016, available at http://www.mjbradley.com/sites/default/files/MJBA_CPP_IPM_Summary.pdf19
- NAACP, *Coal Blooded: Putting Profits before People*, available March 31, 2016, at <http://www.naacp.org/pages/coal-blooded> 14
- NAACP, *NAACP Statement on President Obama's Clean Power Plan* (Aug. 4, 2015), available at <http://www.naacp.org/press/entry/naacp-statement-on-president-obamas-clean-power-plan>4
- National Academies of Science, Engineering, and Medicine: Board on Atmospheric Sciences and Climate, *Advancing the Science of Climate Change 1* (2010), available at http://books.nap.edu/openbook.php?record_id=12782&page=1 5, 13, 14
- P. Knight et al., *Cutting Electric Bills With the Clean Power Plan. EPA's Greenhouse Gas Reduction Policy Lowers Household Bills: March 2016 Update*, Synapse Energy Economics, (March 17, 2016), available at <http://www.synapse-energy.com/sites/default/files/cutting-electric-bills-cpp-march2016.pdf>19
- Peter Phillips, *Environmental and Economic Benefits of Building Solar in California, Quality Careers-Cleaner Lives, Don Vial Center on Employment in the Green Economy: Inst. for Research on Labor & Employment, Univ. of California, Berkeley* (Nov. 10, 2014), <http://www.irlle.berkeley.edu/vial/publications/building-solar-ca14.pdf>20
- Pew Center on Global Climate Change, *Climate Change 101: Science and Impacts 6* (January 2011), available at <http://www.pewclimate.org/docUploads/climate101-science.pdf> (citations omitted).....14
- Pope CA, Muhlestein JB, May HT, Renlund DG, Anderson JL, Horne BD, *Ischemic heart disease events triggered by short-term exposure to fine particulate air pollution*, *Circulation* 2006;114:2443-2448.....8

Ritz B, Wilhelm M, Zhao Y, <i>Air pollution and infant death in Southern California, 1989–2000</i> , <i>Pediatrics</i> 2000;118:493-502; 2005;16:727-736	8
Robert Verchick, <i>FACING CATASTROPHE: ENVIRONMENTAL ACTION FOR A POST-KATRINA WORLD</i> 106 (2010)	13
Schwartz J, Slater D, Larson TV, Person WE, Koenig JQ, <i>Particulate air pollution and hospital emergency room visits for asthma in Seattle</i> , <i>American Review of Respiratory Disease</i> 11993;47:826-831	8
Seth B. Shonkoff et al., <i>The Climate Gap: Environmental Health and Equity Implications of Climate Change and Mitigation Policies in California – a Review of the Literature</i> , 109 <i>Climatic Change</i> S485 (2011)	15
Stephen Van Den Eeden, et al., <i>Final Report to the California Air Resources Board, Contract 97-303, Particulate Air Pollution and Morbidity in the California Central Valley: a high particulate pollution region</i> (2002), available at http://www.arb.ca.gov/research/apr/past/97-303.pdf	9
T.R. Knutson, et al., <i>Tropical cyclones and climate change</i> , 3 <i>Nature Geoscience</i> 157, 158 (2010)	14
<i>The Climate Gap: Environmental Health and Equity Implications of Climate Change and Mitigation Policies in California – a Review of the Literature</i> , 109 <i>Climatic Change</i> S485 (2011)	18
The U.S. Centers for Disease Control and Prevention, <i>Climate Change and Public Health</i> 1 (November 29, 2010), available at http://www.cdc.gov/climatechange/effects/default.htm	15
U.S. Army Corps of Engineers, <i>After Action Report: May 2010 Flood Event Cumberland River Basin</i> , (July 21, 2010), available at http://www.lrn.usace.army.mil/LRN_pdf/AAR_May_2010_Flood_Cumberland_Draft_V7_21.Pdf	14

- Union of Concerned Scientists, *How Much Will the Clean Power Plan Cost? The benefits of the EPA's Clean Power Plan far outweigh the costs* (Aug. 5, 2015), available at <http://www.ucsusa.org/global-warming/reduce-emissions/how-much-will-clean-power-plan-cost#.VvP5jOIrKUK>18
- W. James Gauderman et al., *Association between Air Pollution and Lung Function Growth in Southern California Children: results from a second cohort*, 166 *Am. J. Respir. & Crit. Care Med.* 76 (2002)10
- W. James Gauderman et al., *The effect of air pollution on lung development from 10 to 18 years of age*, 351 *New Engl. J. Med.* 1057 (2004).....10

STATUTES AND REGULATIONS

All applicable statutes, etc., are contained in the Brief for Respondents.

GLOSSARY

CAA Clean Air Act

CO₂ Carbon Dioxide

CPP Clean Power Plan

EPA Environmental Protection Agency

SEIU Service Employees International Union

IDENTITY AND INTEREST OF AMICUS CURIAE

The Service Employees International Union (“SEIU”) is a labor union of more than two million people in the United States (including Puerto Rico) and Canada, and the largest health care union in the United States. More than half of SEIU's two million members work in the health care industry, including as doctors, nurses, nursing assistants, therapists, technicians, home care providers, administrative staff, janitorial workers, and food service staff. SEIU also represents workers in the property service industries. Approximately 250,000 SEIU property services workers nationwide clean, maintain, and provide security for commercial office buildings, co-ops, and apartment buildings, as well as public facilities like theaters, stadiums, and airports. SEIU is also one of the largest unions of public service employees with more than one million local and state government workers, public school employees, bus drivers, and child care providers, including approximately 80,000 early learning and child care professionals.

Given the workers the SEIU represents, a significant portion of SEIU’s members live, work, and raise families in the communities currently bearing the disproportionate impacts of greenhouse gas emissions and climate change. SEIU’s members, as healthcare professionals in low-income communities and communities of color, and as low-income workers and people of color themselves,

know all too well about the disproportionate health impacts of greenhouse gas emissions and climate change the Clean Power Plan will help to remedy.

SEIU's strong support for the Clean Power Plan arises from two missions that underlie all of the Union's work. First, the Union's primary mission is to achieve social and economic justice for all workers and their families. SEIU is increasingly aware that social and economic justice will remain out of reach for working families unless the harms arising from air pollution and climate change are addressed. Second, as the largest union of health care workers in the United States, SEIU works every day to address issues of public health and access to quality healthcare. Its members, many of whom live, or are caregivers in, vulnerable communities, have experience with pollution-related health conditions that have become increasingly common consequences of climate change. The Union's members understand that climate change is one of the most significant threats to the fulfillment of both these goals. SEIU believes the Clean Power Plan will provide important health and economic benefits for the communities where our members live and work.

STATEMENT REGARDING SEPARATE BRIEFING

Pursuant to D.C. Circuit Rule 29(d), undersigned counsel for *amicus curiae* hereby certifies that a separate brief is necessary. *Amicus* has a particular interest and expertise in representing the interests of low-income communities and

communities of color. This brief addresses the disparate effects of climate change on these communities, as well as the benefits these communities stand to gain from the Clean Power Plan. *Amicus* has coordinated with the parties to prevent any unnecessary duplication.

STATEMENT OF AUTHORSHIP AND FINANCIAL CONTRIBUTIONS

Amicus hereby affirms that no counsel for a party authored this brief in whole or in part and that no person other than *amicus* and their counsel made a monetary contribution to its preparation or submission.

SUMMARY OF ARGUMENT

The scientific evidence is incontrovertible: airborne pollutants from fossil fuel-burning power plants are a leading cause of global climate change, which poses a substantial threat to human life and a grave and increasing threat to our planet's ability to sustain human life in the future. The time for temporizing is long past and the EPA's Clean Power Plan (hereinafter "CPP" or "rule") represents a necessary step to limiting these looming threats.

Leading scientific institutions in the United States and across the globe agree not only that global climate change is real and growing but also that it is caused by human actions, principally including burning fossil fuels to generate power. The scientific evidence also is unequivocal that burning fossil fuels causes or exacerbate many diseases and shortens the lifespan of many people. Scientists

further agree that the burden facing climate change and fossil fuel-generated air pollution falls most heavily on those least at fault and least able to bear it, including children, the elderly, communities of color, and the poor. These communities are often closest to polluting power plants and thus are the ones most likely to suffer from many severe and chronic maladies, chiefly including cardio-respiratory diseases. They likewise are least able to escape from the most extreme and often deadly forms of anthropogenic global climate change, such as worsening hurricanes and tornados, horrendous floods, record-setting droughts, melting glaciers, rising seas, and the spread of tropical plagues.

The CPP offers substantial promise to reduce these dangers and reverse their effects. It will diminish the incidence of pollutant- and climate-related diseases, especially in those communities and among those peoples most at risk, lead to reduced prices for electricity consumers, and create tens of thousands of new jobs in the “green energy” sector of the domestic economy.

ARGUMENT

I. Airborne Pollutants from Fossil Fuel-Burning Power Plants Adversely Affect Human Health

A. Climate Change and Air Pollution Adversely Affect Human Health, and both are Caused by Pollution from Fossil Fuel-Burning Power Plants

Leading scientific institutions in the United States—including the National Academy of Sciences, the National Academy of Engineering, the National

Academy of Medicine, and the National Research Council—joined by the prestigious Intergovernmental Panel on Climate Change (IPCC), have reached a consensus rare in science: they have concluded, on the basis of an overwhelming and unequivocal body of scientific evidence, that the earth’s climate is changing, rapidly and dramatically.

As summarized in IPCC’s landmark 2007 *Assessment Report* (and confirmed in the IPCC’s 2015 report) global climate change is “now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level.”¹

Equally important, the scientific consensus clearly points to human activity—primarily including greenhouse gasses caused by air pollution—as the major cause of climate change. Thus, the IPCC concluded that climate change is “unequivocal,” “accelerating,” and “very likely human induced.”² A 2010 report from The National Academies completely concurs, finding “a strong, credible body of evidence, based on multiple lines of research, documenting ... that these [climate] changes are in large part caused by human activities.”³

¹ IPCC, *Fourth Assessment Report: Observed Changes in Climate and Their Effects* 1 (2007), available at http://www.ipcc.ch/publications_and_data/ar4/syr/en/spms1.html.

² *Id.*

³ National Academies of Science, Engineering, and Medicine: Board on Atmospheric Sciences and Climate, *Advancing the Science of Climate Change* 1

B. Climate Change and Air Pollution Adversely Affect Public Health

Air pollution and anthropogenic-induced climate change are far more than a challenge to the non-human environment. Instead, they are profoundly human issues, ones with immediate and far-reaching implications for health, food, homes, and the lives of individual persons. They also are, collectively, social justice issues inasmuch as air pollution and climate change have asymmetrical impacts on communities of color, the poor, tribal nations, children, the elderly, and the most vulnerable amongst us.

This Court is well familiar with the human causes and consequences of air pollution and climate change. In 1981, this Court presciently recognized that the zeal of “public utility power plants [to] burn ... fossil fuels, especially coal” without regard of the environmental, social, or economic consequences, “contributes importantly to the scope and severity of the nation's air pollution problem.” *PPG Indus., Inc. v. Costle*, 659 F.2d 1239, 1242 (D.C. Cir. 1981). This pollution, “especially in connection with high levels of particulate matter, result in increased [human] mortality and morbidity.” *Id.* More prescient still, this Court observed that “[t]ypically the elderly and persons with preexisting pulmonary and cardiac disease are the most susceptible” to fossil fuel-related diseases, specifically that “[s]ignificant health effects are also produced by long-term exposure” to

(2010), available at http://books.nap.edu/openbook.php?record_id=12782&page=1.

particulate air pollution, including “[a]cute respiratory infections in children, chronic respiratory diseases in adults, and decreased levels of ventilatory lung function in both children and adults” *Id.*(citations omitted).

Since then numerous other courts around the country, together with dozens of federal and state agencies, and scores of world-renowned scientists, independent research organizations, and public interest organizations have come to the same conclusion. *See, e.g., Vigil v. Leavitt*, 381 F.3d 826, 830 (9th Cir. 2004) (“The elderly, children, and people with chronic lung disease, influenza, or asthma are especially sensitive to high levels” of particulate pollution and related airborne toxins (citation omitted)).

A member of this Court acknowledged a decade ago that although “children, the elderly, and the poor are considered to be the most vulnerable to adverse health outcomes” from air pollution and global climate change caused by fossil fuel-burning power plants, “[t]he understanding of the relationships between weather/climate and human health is in its infancy and therefore the health consequences of climate change are poorly understood.” *Massachusetts v. E.P.A.*, 415 F.3d 50, 79 (D.C. Cir. 2005) (Tatel, J., dissenting), *rev'd*, 549 U.S. 497 (2007).

That science is no longer in its “infancy,” *id.*, and “the health consequences of climate change” no longer are “poorly understood.” In addition to the widespread consensus regarding the baleful effects of air pollution caused by

burning fossil fuels on human health, research shows that these health effects are exacerbated by climate change.⁴ The CPP will significantly reduce these conventional pollutants along with carbon pollution, resulting in significant health benefits.⁵

Voluminous scientific evidence has linked exposure to particulate pollution and related airborne emissions from fossil fuel-burning power plants with health ailments including increased risk for cardiovascular disease such as atherosclerosis, increased heart attacks, increased emergency room visits for acute health events, birth defects, low birth weights, and premature births.⁶

Fossil fuel-generated pollutants cause (or increase the risk) of other serious health effects as well, including increased numbers of heart attacks (especially

⁴ See 80 Fed. Reg. 64686 (Oct. 23, 2015) (“Major consequences of further warming include significant increases in the number of hot days (95°F or above) and decreases in freezing events, as well as exacerbated ground-level ozone in urban areas.”)

⁵ 80 Fed. Reg. 64981 (“Similarly, the EPA believes that, like the Cross-State Air Pollution Rule, this rulemaking will result in significant health benefits because it will reduce co-pollutant emissions of SO₂ and NO_x on a regional and national basis.1027 Thus, localized increases in NO_x emissions may well be more than offset by NO_x decreases elsewhere in the region that produce a net improvement in ozone and particulate concentrations across the area.”)

⁶ Pope CA, Muhlestein JB, May HT, Renlund DG, Anderson JL, Horne BD, *Ischemic heart disease events triggered by short-term exposure to fine particulate air pollution*, 114 *Circulation* 2443 (2006); Schwartz J, Slater D, Larson TV, Person WE, Koenig JQ, *Particulate air pollution and hospital emergency room visits for asthma in Seattle*, 47 *American Review of Respiratory Disease* 826 (2003); Ritz B, Wilhelm M, Zhao Y, *Air pollution and infant death in Southern California, 1989–2000*, 118 *Pediatrics* 493 (2000).

among the elderly and people with cardiovascular disease),⁷ increased hospitalization for cardiovascular disease (including strokes and congestive heart failure),⁸ increased emergency room visits for patients suffering from acute respiratory ailments,⁹ asthma, and inflammation of lung tissue in otherwise healthy young adults.¹⁰

Most dramatically, such pollution has been causally linked to increased rates of premature deaths (i.e., deaths that would not have occurred until months or years later if the air were cleaner).¹¹ Thus, scientific evidence shows that chronic exposure to pollution can shorten life one to three years by increasing the risk of

⁷ Antonella Zanobetti & Joel Schwartz, *The Effect of Particulate Air Pollution on Emergency Admissions for Myocardial Infarction: A Multicity Case-Crossover Analysis*, 113 *Envtl. Health Persp.* 978 (2005).

⁸ Kristi B. Metzger et al., *Ambient Air Pollution and Cardiovascular Emergency Department Visits in Atlanta, Georgia, 1993-2000*, 15 *Epidemiology* 46 (2004); Gregory Wellenius et al., *Particulate Air Pollution and Hospital Admissions for Congestive Heart Failure in Seven U.S. Cities*, 97 *Am. J. Cardiology* 404 (2006); Gregory Wellenius et al., *Particulate Air Pollution and the Rate of Hospitalization for Congestive Heart Failure among Medicare Beneficiaries*, 161 *Am. J. Epidemiol.* 1030 (2005).

⁹ Stephen Van Den Eeden, et al., *Final Report to the California Air Resources Board, Contract 97-303, Particulate Air Pollution and Morbidity in the California Central Valley: a high particulate pollution region* (2002), available at <http://www.arb.ca.gov/research/apr/past/97-303.pdf>

¹⁰ Andrew J. Ghio et al., *Concentrated Ambient Air Particles Induce Mild Pulmonary Inflammation in Healthy Human Volunteers*, 162 *Am. J. Respir. & Crit. Care Med.* 981 (2000).

¹¹ Antonella Zanobetti et al., *The Temporal Pattern of Respiratory and Heart Disease Mortality in Response to Air Pollution*, 111 *Envtl. Health Persp.* 1188 (2003).

dying from lung cancer and cardiovascular diseases,¹² as well as by inflicting significant damage to the small airways of the lungs.¹³

Those at the greatest risk of adverse health effects from chronic exposure to particulate matter pollution include children (18 years and younger), the elderly (65 years and older), people with chronic lung diseases (such as asthma, chronic bronchitis, and emphysema), people with chronic cardiovascular disease, and people with diabetes.¹⁴

Chronic exposure to particulate matter has been linked to increased risk of premature birth and slowed lung function growth in children and teenagers; short-term increases in particulate matter levels are especially harmful to children, causing increased severity of asthma attacks and increased hospitalization for asthma.¹⁵

In sum, the scientific evidence is as alarming as it is indisputable: air pollution from fossil fuel-fired power plants sickens and kills human beings.

¹² C. Arden Pope III et al., *Lung Cancer, Cardiopulmonary Mortality, and Long-Term Exposure to Fine Particulate Air Pollution*, 287 J. Am. Med. Ass'n 9 (2002)

¹³ Andrew Churg et al., *Chronic Exposure to High Levels of Particulate Air Pollution and Small Airway Remodeling*, 111 *Env'tl. Health Persp.* 714 (2003).

¹⁴ Antonella Zanobetti & Joel Schwartz, *Are Diabetics More Susceptible to the Health Effects of Airborne Particles?*, 164 *Am. J. Respir. & Crit. Care Med.* 831 (2001).

¹⁵ W. James Gauderman et al., *Association between Air Pollution and Lung Function Growth in Southern California Children: results from a second cohort*, 166 *Am. J. Respir. & Crit. Care Med.* 76 (2002); W. James Gauderman et al., *The effect of air pollution on lung development from 10 to 18 years of age*, 351 *New Engl. J. Med.* 1057 (2004).

C. Climate Change and Air Pollution are Particularly Dangerous to Low-Income Communities and Communities of Color

Wealth is not equally distributed in America. Neither is air pollution. In fact, wealth and air pollution are inversely related: the wealthier the neighborhood, the cleaner the air; the poorer the community, the dirtier the air. Dirty air is more harmful in communities of color. This is neither hypothesis nor hyperbole. Instead, peer-reviewed scientific studies invariably document that the greatest sources (and residues) of air lie in or adjacent to communities of color.

Many studies have explored the differences in harm from air pollution to racial or ethnic groups and people who are in a low socioeconomic position, have less education, or live nearer to major sources of air pollution, such as fossil fuel-burning power plants.¹⁶

Socio-economic position has been more consistently associated with greater harm from air pollution. Researchers found greater risk for premature death for African Americans and greater risk for people living in areas with higher unemployment or higher use of public transportation.¹⁷

¹⁶ Institute of Medicine, *Toward Environmental Justice: Research, Education, and Health Policy Needs*. Washington, DC: National Academy Press, 1999; O'Neill MS, Jerrett M, Kawachi I, Levy JI, Cohen AJ, Gouveia N, Wilkinson P, Fletcher T, Cifuentes L, Schwartz J et al. *Health, Wealth, and Air Pollution: Advancing Theory and Methods*, 111 *Environ Health Perspect*. 1861 (2003).

¹⁷ American Lung Association, *Urban Air Pollution and Health Inequities: A Workshop Report*, 109 *Environ Health Perspect (Supp. 3)* 357 (2001). *See also*

Communities of color also may be more likely to live in counties with higher levels of pollution. In a follow-up analysis of the population and air quality reported in the American Lung Association's *State of the Air 2009* report, researchers found that African-Americans and Latinos were more likely to live in counties that had worse problems with particle pollution.¹⁸

The EPA's own proximity analysis, undertaken in connection with its promulgation of the CPP, similarly shows disproportionately high fractions of communities of color, and low-income communities, in the vicinity of power plants (i.e., within 3 miles of a plant).¹⁹ Hazardous air pollutants also present serious air quality risks, and tend to affect communities of color and low-income communities disproportionately. A 2013 EPA report indicated in general that "[i]n 2005, nearly all children (99.9%) lived in census tracts in which [hazardous air pollutant] concentrations combined to exceed the 1-in-100,000 cancer risk benchmark. Seven percent of children lived in census tracts in which [hazardous air pollutants] combined to exceed the 1-in-10,000 cancer risk benchmark."²⁰ That report also explained that "56% of U.S. children live in census tracts in which

Helen H. Kang, *Pursuing Environmental Justice: Obstacles and Opportunities - Lessons from the Field*, 31 Wash. U. J.L. & Pol'y 121, 126-27 (2009).

¹⁸ Miranda ML, Edwards SE, Keating MH, Paul CJ. *Making the Environmental Justice Grade: The Relative Burden of Air Pollution Exposure in the United States*, 8 Int J Environ Res Public Health 1755 (2011).

¹⁹ 80 Fed. Reg. at 64915.

²⁰ See EPA, *America's Children and the Environment* 56 (3rd ed. 2013), available at http://www.epa.gov/ace/pdfs/ACE3_2013.pdf.

concentrations of at least one hazardous air pollutant exceeded the benchmark for health effects other than cancer.”²¹

D. Anthropogenic Climate Change is Particularly Dangerous to Low-Income Communities and Communities of Color

The consequences of climate change are numerous, beyond cavil, and terrifying to all humanity. These consequences include:

- *Sea level increases.* “Global average sea level has risen since 1961 at an average rate of 1.8 mm/year and since 1993 at 3.1 mm/year, with contributions from thermal expansion, melting glaciers and ice caps, and the polar ice sheets.”²² Thus, “[s]atellite data since 1978 show that annual average Arctic sea ice extent has shrunk by 2.7% per decade, with larger decreases in summer of 7.4% per decade. Mountain glaciers and snow cover on average have declined in both hemispheres.”²³ Under a “business-as-usual” GHG emissions scenario, sea levels could rise two feet or more by 2100 compared to 1990 levels.²⁴
- *Diminished snowpack.* The ancient seasonal rhythms of streams and rivers have changed as winter precipitation falls increasingly as rain instead of snow, and as earlier spring temperatures cause snow in the mountains to melt earlier and faster. Consequently, some areas experience more days with very heavy rain, while others face more frequent, intense, and long-lasting droughts. Warmer temperatures also mean higher evaporation rates and thirstier plants and people, which increase demands for water.²⁵ In addition, diminished snowpack threatens the water supplies of people who depend on water from the seasonal melting of mountain ice and snow.
- *Extreme temperatures and wildfires.* Average temperatures are rising, but extreme temperatures are rising even more: in recent decades, cold days and nights have grown less frequent and hot days and nights more frequent, with

²¹ *Id.* at 57.

²² IPCC, Fourth Assessment Report, *supra*, at 1.

²³ *Id.*

²⁴ National Academies, *EICC supra* at 6.

²⁵ *Id.*

more frequent heat waves and hotter high temperature extremes²⁶. In the United States, “[m]any types of extreme weather events, such as heat waves and regional droughts, have become more frequent and intense during the past 40 to 50 years.”²⁷ More severe drought in some areas, combined with other factors, has contributed to larger and more frequent wildfires.²⁸

- *Storms / hurricanes*. Rising GHG emissions and the accompanying increases in the average temperatures of the earth have caused extreme weather events, such as hurricanes, to increase in frequency and intensity in recent years, and this trend will continue in the future, with serious impacts on human societies and the natural world.²⁹
- *Salinization of drinking water*. Global climate change will affect the quality of drinking water and impact public health. As sea level rises, saltwater will infiltrate coastal freshwater resources. Flooding and heavy rainfall may overwhelm local water infrastructure and increase the level of sediment and contaminants in the water supply.³⁰
- *Spread of disease*. Scientists expect climate change to affect human health in various other ways as well, both directly - from heat waves, floods, and storms—and indirectly—by increasing smog and ozone in cities, contributing to the spread of infectious diseases, and reducing the availability and quality of food and water. The U.S. Centers for Disease Control and Prevention (CDC) maintains that global climate change has “the

²⁶ *Id.* at 7.

²⁷ U.S. Army Corps of Engineers, *After Action Report: May 2010 Flood Event Cumberland River Basin*, (July 21, 2010), available at http://www.lrn.usace.army.mil/LRN_pdf/AAR_May_2010_Flood_Cumberland_Draft_V7_21.Pdf.

²⁸ National Academies, *EICC* at 7.

²⁹ T.R. Knutson, *et al.*, *Tropical cyclones and climate change*, 3 *Nature Geoscience* 157, 158 (2010).

³⁰ Pew Center on Global Climate Change, *Climate Change 101: Science and Impacts* 6 (January 2011), available at <http://www.pewclimate.org/docUploads/climate101-science.pdf> (citations omitted).

potential to affect human health in several direct and indirect ways, some of them severe.”³¹

Just as the negative health consequences of air pollution disproportionately affect individual people of color and members of the poor, so, too, harm from climate change falls heaviest on entire communities of color. These groups and communities often lack the resources to cope with the consequences of climate change, such as more powerful hurricanes and tornadoes, higher floods, and other episodic “natural” disasters, like greater heat waves and longer droughts, “natural disasters” that unquestionably are exacerbated by human environmental malfeasance.³²

II. The CPP Will Produce Substantial Climate and Health-Related Benefits, as well as Economic Benefits, to the Public in General, and to Low-income Communities and Communities of Color, in Particular

The CPP will result in substantial benefits. It will limit or reduce the baleful consequences of air pollution and climate change and it will lower the price of electricity while spurring higher employment.

A. The CPP Will Produce Substantial Climate and Health-Related Benefits in Low-Income Communities and in Communities of Color

³¹ The U.S. Centers for Disease Control and Prevention, *Climate Change and Public Health* 1 (November 29, 2010), available at <http://www.cdc.gov/climatechange/effects/default.htm>.

³² See, e.g., 80 Fed. Reg. at 64914, 64940; Seth B. Shonkoff et al., *The Climate Gap: Environmental Health and Equity Implications of Climate Change and Mitigation Policies in California – a Review of the Literature*, 109 *Climatic Change* S485 (2011).

The EPA estimates that the CPP will substantially lessen the production of several varieties of harmful pollutants into the atmosphere, reductions that will, in turn, diminish morbidity and mortality rates across the nation. Although predictions about how many lives will be saved never can be known to a certainty, eight of the nation's most prominent health care scientists—who teach at Harvard, Boston University, and Syracuse University—recently assessed the public health co-benefits of several options for regulation of carbon dioxide emissions from power plants. In analyzing one option substantially similar to the CPP, they “estimated a decrease of 3,200 premature deaths each year . . . , corresponding to 4.0 premature deaths avoided per million tonne decrease in CO2 emissions.”³³

These scholars further “estimate[] health co-benefits [stemming from CPP will] vary widely across the USA . . . , with all states experiencing some benefit,” and that “areas with the highest health benefits have the greatest air quality improvements and large exposed populations.”³⁴ Simply put, the communities with the greatest “exposure” to harmful pollutants generated by power plants would benefit from declines in pollution and would see a drop in mortality and morbidity rates.³⁵

³³ C.T. Driscoll, J.J. Buonocore, J.I. Levy, K.F. Lambert, D. Burtraw, S.B. Reid, H. Fakhraei, & J. Joel Schwartz, *U.S. power plant carbon standards and clean air and health co-benefits*, 5 *Nature Climate Change* 535, 539 & Fig. 1 & Table 2 (2015).

³⁴ *Id.*

³⁵ *Id.*

These benefits are most needed in those communities in closest proximity to power plants or those who are affected by plant pollution plumes. Because communities of color and low-income communities are disproportionately exposed to emissions from fossil fuel-burning power plants and because these communities suffer more acutely from pollution-related ailments, EPA's authority to broadly regulate greenhouse gasses is critical to the long-term well-being of affected communities. The CPP will lead to reductions at many plants, and those reductions will be accompanied by corresponding conventional pollutant reductions. As a general matter, those plants that emit the most greenhouse gasses also have the highest emissions of conventional pollutants, and because greenhouse gas regulation will result in the reduced utilization of higher greenhouse gas-emitting units, effective regulation of greenhouse gasses can also significantly reduce conventional pollutants in some locations.³⁶ And given the regional transport of many harmful pollutants, widespread reductions could lead to widespread health benefits.

³⁶ See 80 Fed. Reg. at 64914.

B. The CPP Will Produce Substantial Economic Benefits for the Public, Including for Low-Income Communities and Communities of Color

As described above, the public health benefits of the Clean Power Plan far outweigh costs.³⁷ *Amici* in support of Petitioners claim that the Clean Power Plan will harm low-income communities and people of color. But these *amici* completely ignore both the long-term costs these communities have endured from over-exposure to pollutants from the power generation sector and the health-care gains they will enjoy if the CPP is upheld and enforced. The emissions reductions resulting from implementing the CPP will lead to “climate and health benefits worth an estimated \$55 billion to \$93 billion per year in 2030....[that] includes avoiding 2,700 to 6,600 premature deaths and 140,000 to 150,000 asthma attacks in children.” These climate and health benefits dwarf—by a factor of five-to-ten—the estimated annual costs of up to \$8.8 billion in 2030.³⁸

But even putting human health and climate benefits to the side, researchers at the EPA and private think-tanks estimate that retail monthly electricity bills will drop between 5% and 20% as a result of implementing the Clean Power Plan, i.e.,

³⁷ EPA *Fact Sheet: Clean Power Plan Benefits* (2014), <https://www.epa.gov/cleanpowerplan/fact-sheet-clean-power-plan-benefits>; Union of Concerned Scientists, *How Much Will the Clean Power Plan Cost? The benefits of the EPA’s Clean Power Plan far outweigh the costs* (Aug. 5, 2015), available at <http://www.ucsusa.org/global-warming/reduce-emissions/how-much-will-clean-power-plan-cost#.VvP5jOIrKUK>

³⁸ *Id.*

retail consumers would pay 5% and 20% per month less for electricity than they would without the CPP.³⁹

As discussed above, EPA's approach to controlling power plant emissions is expected to generate economic benefits as well as environmental benefits. Although the Clean Power Plan leaves central planning decisions to the states, it recognizes that, without assistance, important investments in energy efficiency and distributed renewable energy might occur only in communities that can afford them. The Plan therefore includes several provisions intended to direct at least some of the CPP's developmental benefits to low-income communities. The Clean Energy Incentive Program (CEIP) creates direct incentives for energy efficiency, and explicitly directs these incentives to low-income communities.⁴⁰

Contrary to the claims of *amici* for Petitioners, the CPP will also result in net job gains. The Clean Power Plan follows, rather than leads, the long-observed

³⁹ P. Knight et al., *Cutting Electric Bills With the Clean Power Plan. EPA's Greenhouse Gas Reduction Policy Lowers Household Bills: March 2016 Update*, Synapse Energy Economics, (March 17, 2016), available at <http://www.synapse-energy.com/sites/default/files/cutting-electric-bills-cpp-march2016.pdf>. See MJ Bradley and Associates, *EPA's Clean Power Plan, Summary of IPM Modeling Results*, January 13, 2016, available at http://www.mjbradley.com/sites/default/files/MJBA_CPP_IPM_Summary.pdf; Industrial Economics, Inc., *Assessment of the Economy-Wide Employment Impacts of EPA's Clean Power Plan, 2-7--2-9* (April 15, 2015) available at http://www.inforum.umd.edu/papers/otherstudies/2015/iec_inforum_report_041415.pdf.

⁴⁰ 80 Fed. Reg. at 64,829-832.

trend of reduced employment in the coal mining sector.⁴¹ But the Clean Power Plan sets the stage for a just transition away from polluting sources of energy that harm the health of workers and disadvantaged communities. Independent studies of the proposed rule estimated a net job gain during the CPP compliance periods.⁴² The investments in renewable energy and energy efficiency spurred by the Clean Power Plan, as proposed, are anticipated to result in a net increase of 96,000 jobs by 2020 alone.⁴³

To address the loss of employment opportunities in coal-dependent industries, however, the Administration's FY17 budget has proposed a

⁴¹ Employment in the coal mining sector fell from a high of nearly 180,000 workers in 1985 to less than 60,000 at the beginning of 2016, a drop that cannot be attributed to the Clean Power Plan. FRED® Economic Data, All Employees: Mining and Logging: Coal Mining. <https://research.stlouisfed.org/fred2/series/CES1021210001>.

⁴² Josh Bivens, *A Comprehensive Analysis of the Employment Impacts of the EPA's Proposed Clean Power Plan*, Economic Policy Institute (June 9, 2015). <http://www.epi.org/publication/employment-analysis-epa-clean-power-plan/> [analysis of proposed rule]. See also Industrial Economics, Inc., *Assessment of the Economy-Wide Employment Impacts of EPA's Clean Power Plan*, available at http://www.inforum.umd.edu/papers/otherstudies/2015/iec_inforum_report_041415.pdf; Peter Phillips, *Environmental and Economic Benefits of Building Solar in California, Quality Careers-Cleaner Lives*, Don Vial Center on Employment in the Green Economy: Inst. for Research on Labor & Employment, Univ. of California, Berkeley (Nov. 10, 2014), <http://www.irl.berkeley.edu/vial/publications/building-solar-ca14.pdf>; Deborah Behles, *From Dirty to Green: Increasing Energy Efficiency and Renewable Energy in Environmental Justice Communities*, 58 Vill. L. Rev. 25, 40-45 (2013).

⁴³ Josh Bivens, *A Comprehensive Analysis of the Employment Impacts of the EPA's Proposed Clean Power Plan*, Economic Policy Institute (June 9, 2015). <http://www.epi.org/publication/employment-analysis-epa-clean-power-plan/> [analysis of proposed rule].

continuation of their “POWER+ Plan.” The POWER+ Initiative would fund a variety of federal grant programs aimed at both community economic development and workforce training in order to counter the local economic effects resulting from the closure of a coal-dependent facility or business, which would direct new investments for needed economic transition in central Appalachia’s coal country. In addition, the POWER+ Plan seeks to fully fund both the Health Benefit Plan and Pension Fund administered by the United Mineworkers of America (UMWA) to ensure these workers receive the benefits already promised to them. Further, through the accelerated use of existing Abandoned Mine Land (AML) reclamation funds, the Plan calls for an additional \$1 billion in funding over 5 years be used to pair community economic development plans with mine reclamation projects in order to maximize the impact of this spending. These and other just transition principles have also begun to be expressed legislatively, whether regarding mineworker benefits, AML spending, community and workforce development, or bridging impacted workers to new employment or to retirement.

Such investments, along with the Clean Power Plan’s incentives to create jobs in the clean energy sector in vulnerable communities, will go a long way towards spurring a just transition to a cleaner energy future with expanded work opportunities.

CONCLUSION

For the reasons set forth above, *Amicus Curiae* respectfully requests that the Court uphold the rule.

Dated: April 1, 2016

Respectfully submitted,

/s/ Renee M. Gerni

Judith A. Scott
Nicole G. Berner
Renee M. Gerni
Service Employees International Union
1800 Massachusetts Ave., NW
Washington, DC 20036
(202) 730-7813
renee.gerni@seiu.org

Ned Miltenberg
National Legal Scholars Law Firm, P.C.
5410 Mohican Road, Suite 200
Bethesda, MD 20816-2162
202-656-4490
NedMiltenberg@gmail.com

Counsel for *Amicus Curiae*

CERTIFICATE OF COMPLIANCE

Pursuant to Fed. R. App. P. 32(a)(7)(C), I certify the following:

This brief complies with the type-volume limitations of Fed. R. App. P. 29(d) because it contains 5,110 words, excluding the parts of the brief exempted by Fed. R. App. P. 32(a)(7)(B)(iii).

This Brief Complies with the typeface requirements of Fed. R. App. P. 32(a)(5) and the type style requirements of Fed. R. App. P. 32(a)(6) because it has been prepared in proportionally spaced typeface using Microsoft Word 2010 in Times New Roman 14-point font.

/s/ Renee Gerni

CERTIFICATE OF SERVICE

I hereby certify that on this 1st day of April, 2016, I electronically filed the foregoing with the Clerk of the Court for the United States Court of Appeals for the District of Columbia Circuit by using the appellate CM/ECF system. I certify that all participants in the case are registered CM/ECF users and that service will be accomplished by the appellate CM/ECF system.

/s/ Renee Gerni