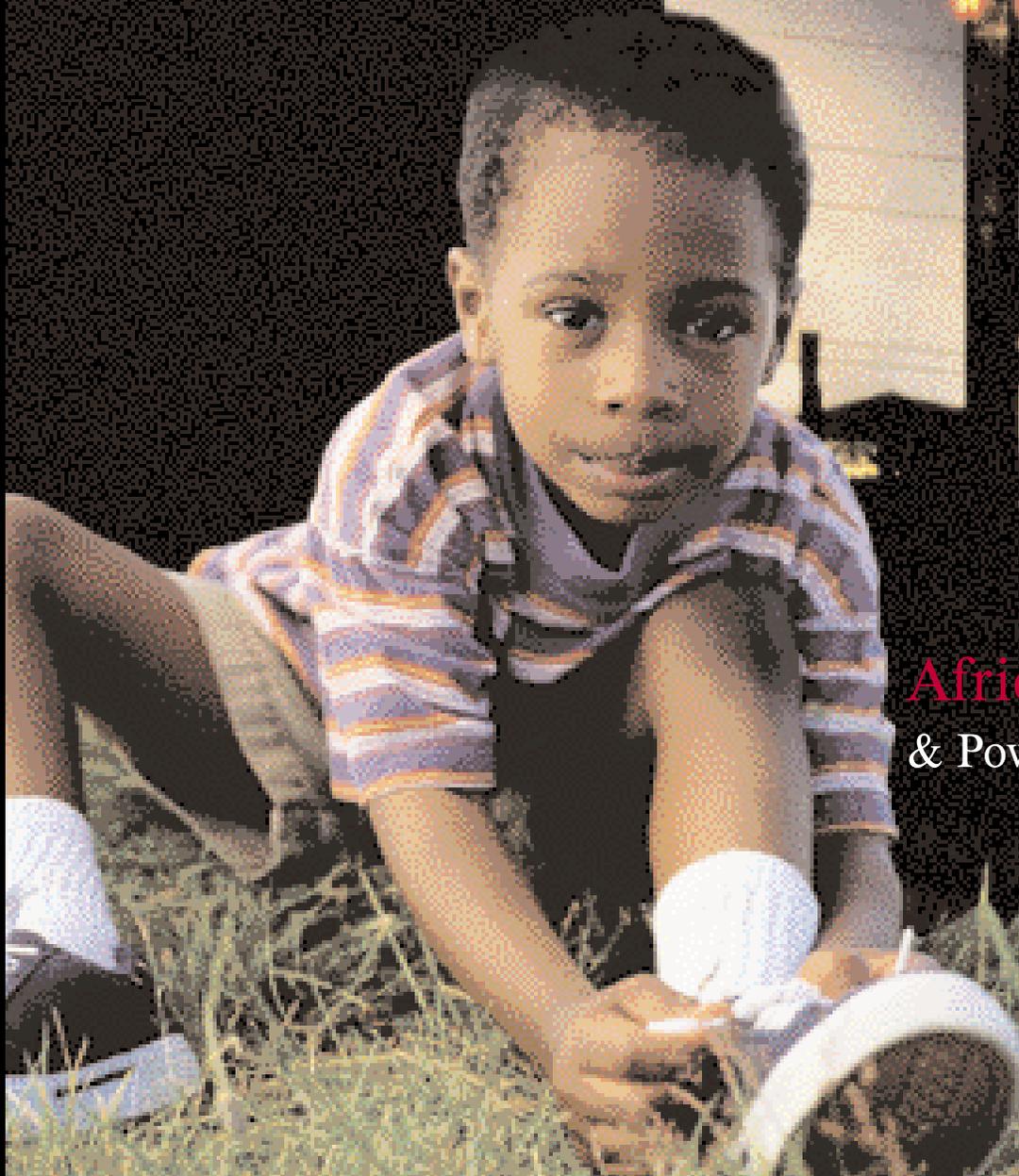


# Air<sup>of</sup> Injustice

October 2002



**African Americans  
& Power Plant Pollution**

# Who We Are

The diverse groups who have collaborated on this report are active in the areas of public health, air quality and environmental justice. It is the aim of this report to educate and inspire action.

**The Black Leadership Forum (BLF)** acts as a clearinghouse for national African American leaders. The BLF brings together Black leaders to grapple with issues of the deepest significance to African Americans, particularly civil rights and major public policy issues. Since the summer of 2000, BLF has included Climate Change as a significant policy issue of concern to the African American leadership. Last year, Dr. Yvonne Scruggs-Leftwich attended the Climate Justice Summit and UN Climate Conference at The Hague and organized a delegation to the UN World Conference on Racism. BLF sponsored two international forums in Durban, South Africa – one addressing persistent racism in the United States and the other addressing air quality issues impacting the African American community, including climate change.

**The Southern Organizing Committee for Economic and Social Justice (SOC)** has served as the anchor for the African American environmental justice network. SOC was in the vanguard promoting community empowerment, capacity building and grassroots organizing, particularly in the South. Under the leadership of Connie Tucker, SOC has evolved as a multi-issue, multi-racial network of people working in their communities against racism, war, economic injustice and environmental destruction. Issues include air pollution, water pollution, waste disposal, facility siting, lead exposure, worker safety, housing, community organizing and environmental justice.

**The Georgia Coalition for The Peoples' Agenda (GCPA)** is an advocacy organization that includes all of the major Civil Rights/Human Rights/Peace & Justice organizations around the state of Georgia. Dr. Joseph E. Lowery is the convenor of this coalition. These organizations have been brought together to carry out the mission of the GCPA, which is to improve the quality of governance in Georgia, have a more informed electorate and have participatory and accountable elected officials.

**Clear the Air** is a joint project of three leading air quality groups: the Clean Air Task Force, National Environmental Trust and U.S. PIRG Education Fund. The Clean Air Task Force is a non-profit organization dedicated to restoring clean air and healthy environments through scientific research, public education and legal advocacy. The National Environmental Trust was established in 1994 as a non-profit, non-partisan organization dedicated to applying modern communications and public education techniques to environmental education and advocacy. The U.S. PIRG Education Fund is a nonprofit, nonpartisan organization that conducts independent research, and educates and organizes the public about a wide variety of environmental, consumer and government reform problems.



# Foreword

At first glance, air pollution generally and power plant pollution specifically, would not seem to rank among the highest priorities for African Americans. However, African Americans

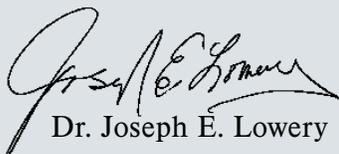
are disproportionately affected by power plant emissions because we are concentrated in large urban centers, suffer higher rates of asthma and share a historical bond with the developing world where climate change threatens already weak and overburdened economies. From this perspective, power plant cleanup is elevated on the long list of social justice imperatives.

The Georgia Coalition for the Peoples' Agenda has played a critical role in bringing together three powerful networks to examine the impact of air pollution from coal-fired power plants upon the African American community. The Black Leadership Forum, the Southern Organizing Committee for Economic and Social Justice and Clear the Air share a keen interest in promoting responsible public policies protective of human health and the environment. Toward this end, these three organizations have come together in a collaborative effort to inform, educate and involve the African American community in the quest for comprehensive national solutions limiting excessive air emissions from power plants.

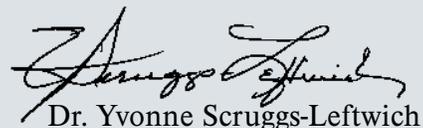
The African American community, including environmental justice advocates, is perceived as less influential when it comes to environmental issues. Mainstream organizations are often reluctant to collaborate, share, acknowledge and integrate the perspectives of People of Color. That all parties would benefit from such collaboration is clear. The current collaboration is unique and timely because it seeks to leverage the collective strength of three influential networks to build an equilateral triangle that includes traditional civil rights, environmental justice and mainstream environmental perspectives.

The environmental justice movement brings together all elements of the social justice movement, espousing a more holistic definition of environment that embraces public health, economic development, housing, energy and transportation as well as preservation of natural resources. Environment is defined as where we live, work, learn and play. As children of the larger civil rights movement, environmental justice advocates organize from the bottom up and seek to cultivate and empower community-based leadership. The African American community has a long history of struggle in pursuit of justice. Research, communication, technical expertise and strategic grassroots organizing fueled by moral imperative have resulted in the movement that transformed America.

With your support, we hope to demonstrate the efficacy of such collaboration in the effort to address air pollution from coal-fired power plants. Sincerely,



Dr. Joseph E. Lowery



Dr. Yvonne Scruggs-Leftwich



Ms. Connie Tucker



Ms. Angela Ledford

# Executive Summary

This report chronicles how African Americans are affected by the air pollution emitted by our nation's biggest polluters: coal-fired power plants. These plants release millions of pounds of a wide variety of chemicals to the air, water and landfills. This report describes the relationship between power plant pollutants like sulfur dioxide, particulate matter, mercury, nitrogen oxides and carbon dioxide and environmental health issues that have the most impact on African Americans: pediatric asthma, infant death rates, emergency room visits and hospitalizations, fish contamination and climate change.

## African Americans are at risk from power plant pollution.

- The air in our communities violates air quality standards. In 2002, 71% of African Americans live in counties that violate federal air pollution standards, compared to 58% of the white population.<sup>(1)</sup>
- Most African Americans live near a power plant. Sixty-eight percent of African Americans live within 30 miles of a coal-fired power plant – the distance within which the maximum effects of the smokestack plume are expected to occur. By comparison, about 56% of the white population live within 30 miles of a coal-fired power plant.<sup>(2)</sup>
- We are likely to live near a power plant waste site. African Americans account for 17% of the people living within five miles of a power plant waste site.
- Asthma attacks send African Americans to the emergency room at three times the rate (174.3 visits per 10,000 population) of whites (59.4 visits per 10,000 population).<sup>(3)</sup>
- African Americans are hospitalized for asthma at more than three times the rate of whites (35.6 admissions per 10,000 population vs. 10.6 admissions per 10,000 population).<sup>(3)</sup>
- The death rate from asthma for African Americans is twice that of whites (38.7 deaths per million population vs. 14.2 deaths per million population<sup>(3)</sup>). Studies in the U.S. have shown that emergency room visits increase when particulate matter and/or ozone levels are just slightly above national standards.<sup>(4,5)</sup>
- In a comparison of 86 cities in the U.S., researchers found that infants who lived in a highly polluted city during their first two months of life had a higher mortality rate than infants living in the city with the cleanest air.<sup>(6)</sup> High particulate matter levels markedly increased the risk of SIDS and respiratory mortality. As African Americans live in more polluted areas, this has a significant impact.
- One-third of African Americans are avid anglers, and we eat fish more often and in larger portions than whites. Consequently, we have higher exposure to mercury. In 1996, there were 1.8 million licensed African American anglers who spent over \$813 million dollars on fishing trips and equipment.<sup>(7)</sup>
- The potential health impacts of climate change include increased prevalence of infectious disease such as Dengue fever and West Nile virus.<sup>(8)</sup> Since many African Americans lack health insurance and regular medical access, our community is particularly at risk.<sup>(9)</sup>
- A study of the 15 largest U.S. cities found that climate change would increase heat-related deaths by at least 90%.<sup>(10)</sup> Most African Americans live in inner cities,<sup>(11)</sup> which tend to be about 10 degrees warmer than their surrounding areas. Studies have shown that People of Color are twice as likely to die in a heat wave,<sup>(12)</sup> and suffer from more heat-related stress and illness.

- Global warming could enhance ozone formation, which could, in turn, exacerbate ozone-related health problems such as asthma attacks.<sup>(13)</sup>

Power plants are major sources of some of the most common and harmful pollutants.<sup>(14)</sup> Power plants emit 67% of the sulfur dioxide (SO<sub>2</sub>) in the U.S., a noxious gas that irritates the lungs and worsens asthma, coughing, wheezing, shortness of breath and lung function in general. Power plants are also responsible for 23% of nitrogen oxides (NOx) emissions, which combine with other pollutants in the presence of sunlight to form ozone smog. Exposure to ozone can cause rapid, shallow breathing and related airway irritation, coughing, wheezing, shortness of breath and asthma attacks. Emergency room visits for asthmatic children are strongly linked to ozone levels. These pollutants also form tiny acidic particles (fine particulate matter) that are inhaled deep into the lungs, affecting both the respiratory and cardiovascular systems. Particulate matter levels in the air are strongly associated with asthma attacks.

Coal-fired power plants are the largest industrial emitters of mercury, producing over one-third of all mercury pollution in the U.S.<sup>(15)</sup> The problem is not inhalation of airborne mercury, but rather eating contaminated fish. When mercury-tainted fish are consumed by an expectant mother, the mercury passes through the placenta to the developing fetus. Infants appear normal during the first few months of life, but later display subtle health effects such as poor performance on neurobehavioral tests, particularly on tests of attention, fine motor function, language, visual-spatial abilities (e.g., drawing) and memory.<sup>(16)</sup>

Power plants account for 38% of the most prevalent greenhouse gas, carbon dioxide, emitted from fossil fuel use in the U.S.<sup>(17)</sup> Changes in the Earth's temperature and precipitation patterns are occurring due to the buildup of greenhouse gases in the atmosphere. Warming of the planet could induce crop failures, famines, flooding, and other environmental, economic and social problems.

## Recommendations

**New legislation must address emissions of the four key pollutants: nitrogen oxides, sulfur dioxide, mercury and carbon dioxide. Significant reductions of these pollutants, beyond cuts required by the existing Clean Air Act, are needed to minimize the environmental and public health impact of power plant emissions. Sulfur dioxide, nitrogen oxides and mercury emissions can all be reduced by 90% or more. Carbon dioxide emissions must be addressed as part of a comprehensive strategy given the threat posed by global warming.**

**We must also protect the existing New Source Review provision of the Clean Air Act. This provision requires industrial facilities to install modern pollution controls whenever a modification is made to their facility that substantially increases pollution. When Congress passed the Clean Air Act more than 30 years ago, it gave existing facilities a “grandfather” exemption. This loophole allowed old facilities to avoid modern pollution control standards on the theory that the old plants would “retire” and be replaced by new, cleaner technologies. If the plants did not retire but remained in operation, they would be required to install modern pollution equipment if they changed or upgraded the plant in any way that would significantly increase emissions. Consequently, the New Source Review program is the primary backstop against disaster for many communities that face an unrelenting increase in toxic emissions. Today, there are EPA enforcement actions pending against more than 50 power plants nationwide that impact major U.S. metropolitan areas.**

**We believe all coal-fired power plants, both new and old, must be made to comply with modern emission control standards. The Clean Air Act's 30-year loophole for old, dirty power plants must be finally closed.**

# Fighting Environmental Injustice

People of Color, including African Americans, approach environmental advocacy from a social justice framework. Unlike mainstream environmental groups that focus on public health, pollution abatement and wilderness and wildlife preservation, the environmental justice community is most concerned with human rights, issues of sovereignty and self-determination, access to natural resources and disproportionate impacts of environmental hazards. There is also a more pronounced concern with worker rights, health and safety issues.<sup>(18)</sup>

It is no coincidence that the term environmental justice was coined in the South, the birthplace of the Civil Rights Movement. Environmental racism emerged as a critical concern in Warren County, North Carolina in 1983 when protesters fought toxic dumping in this predominantly black and poor county. Dr. Joseph Lowery, then president of the Southern Christian Leadership Conference, was among those present to protest the dumping of PCBs in a local landfill.

A landmark environmental justice study conducted by the United Church of Christ titled *"Toxic Waste and Race"*<sup>(19)</sup> established that race was the most reliable predictor of proximity to hazardous waste sites in the United States – more reliable than poverty, land values and home ownership. Dr. Robert Bullard, director of Clark Atlanta University's Environmental Justice Resource Center, chronicles Environmental Justice in the 21st Century in his 2000 Directory of People of Color Groups. Bullard reminds us of the 1990 study *"Dumping in Dixie: Race, Class and Environmental Quality,"*<sup>(20)</sup> which chronicled the convergence of the social justice and environmental movements.

In 1991, the First National People of Color Environmental Leadership Summit galvanized Indigenous, Asian, Latin and African American activists around issues such as public health, worker safety, land use, transportation, housing, resource allocation and community empowerment. Dr. Bullard held a leadership role organizing the People of Color Summit II held in Washington, DC in October 2002. Air quality and power plant pollution specifically were significant topics for the Summit.

Other groups active in the struggle to protect public health and the environment by cleaning up power plant pollution are listed in the Appendix to this report. The list is by no means comprehensive, but is provided as a resource to enable groups and individuals to connect with others. A more comprehensive list can be found in the People of Color Environmental Groups Directory compiled by the Environmental Justice Resource Center ([www.ejrc.cau.edu](http://www.ejrc.cau.edu)).

# Power Plant Pollution: A Threat to African Americans

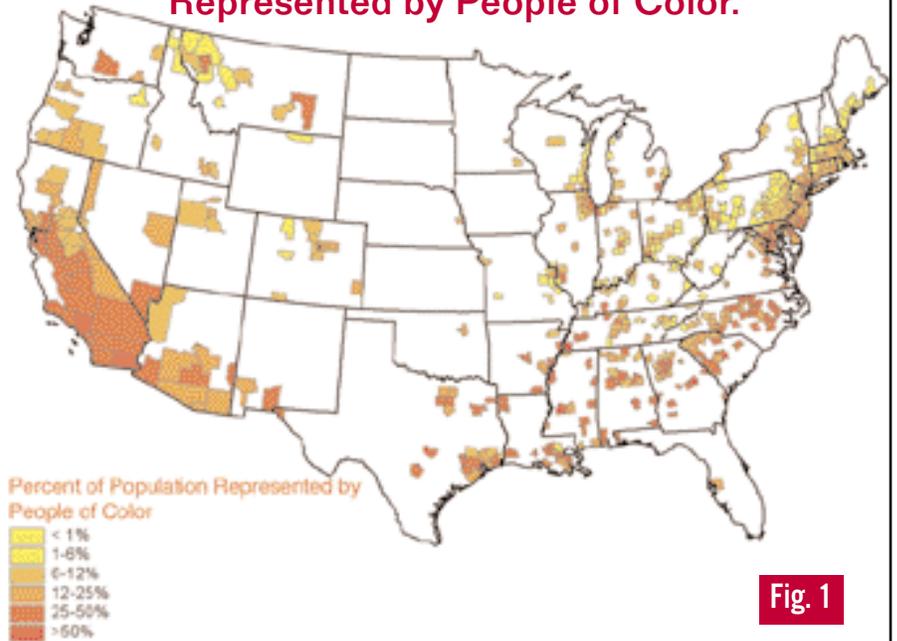
African Americans are more likely to suffer health effects from air pollution. The reason has much to do with where we live. African Americans are far more likely to live near power plants and power plant waste sites. Living near these sites increases our likelihood of exposure and health risk. Also, more than half of all African Americans live in areas with air quality that doesn't meet federal standards.

## The facts are:

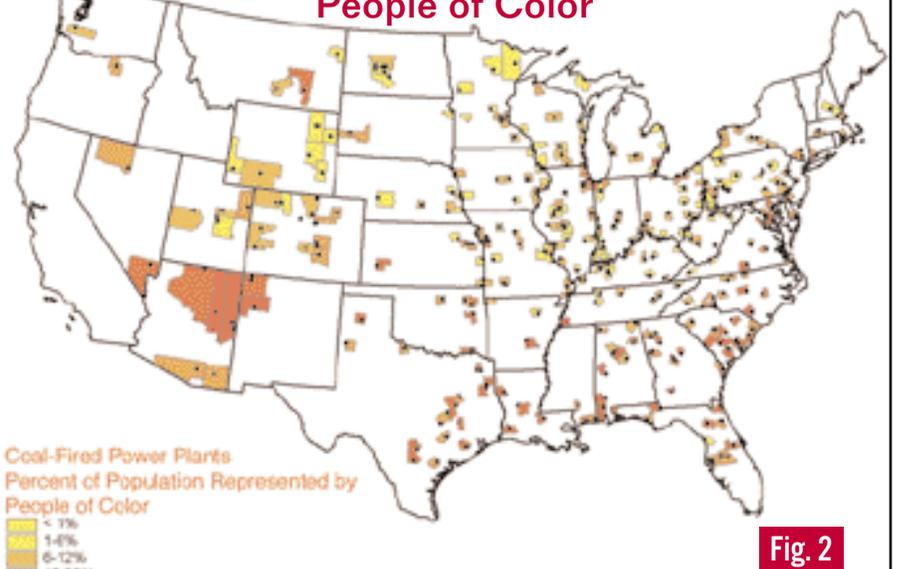
**The air in our communities violates air quality standards.** African Americans make up 13% of the U.S. population, yet are disproportionately represented in areas with poor air quality. In 2002, 71% of African Americans live in counties that violate federal air pollution standards, compared to 58% of the white population.<sup>(21)</sup> Figure 1 (right, above) presents the counties that are in “non-attainment” for federal air pollution standards and the percent of the county population represented by People of Color.

**Most African Americans live near a power plant.** Sixty-eight percent of African Americans live within 30 miles of a power plant – the distance within which the maximum effects of the smokestack plume are expected to occur. By comparison, about 56% of the white population live within 30 miles of a coal-fired power plant.<sup>(22)</sup> Figure 2 (right, below) shows the location of coal-fired power plants in the U.S. As shown, People of Color represent a significant portion of the people living in the county where the power plant is located.

### Percent of Population in Non-attainment Areas Represented by People of Color.



### Percent of Population in Counties with Coal-fired Utility Power Plants Represented by People of Color



Note: “People of Color” includes the U.S. Census groups: African Americans, American Indian/Alaska Native, Asian, Hawaiian/Pacific Islander and Other. Non-attainment means the area exceeds federal air pollution standards for one or more of the following pollutants: lead, carbon monoxide, sulfur dioxide, particulate matter (PM10), 1-hour ozone standard, 8-hour ozone standard and PM2.5. The 8-hour ozone and PM2.5 non-attainment areas are potential areas based on 1999-2000 monitoring data. Three years of monitoring data are needed to make a formal designation of non-attainment.

**We are likely to live near a power plant waste site.** We are disproportionately represented when it comes to living near a power plant waste site. African Americans account for 17% of the people living within 5 miles of a power plant waste site.

### Poverty and Uninsured Status by Race

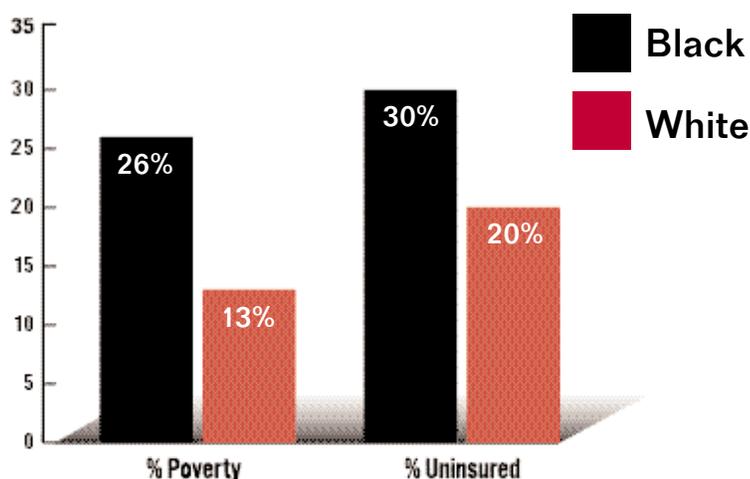


Figure 3 adapted from *The Commonwealth Fund, Publication 524, Collins, K.S., K. Tenney and D.L. Hughes, 2002, "Quality of Health Care for African Americans."*

**New power plants are likely to be sited in our communities.** For example, in Massachusetts, People of Color comprise 15% of the population but live in just 5% of the state's communities. These communities are home to a disproportionate 18% of all power plants. In addition, 23% of all proposed new power plants would be built in these communities. Likewise, while lower income communities (where half of all households earn less than \$40,000) comprise 51% of all towns in the state, they are home to 66% of all active power plants and 63% of all proposed power plants.<sup>(23)</sup>

**African Americans are more likely to live in poverty, which makes us even more vulnerable to the effects of air pollution.** High poverty rates restrict housing options, and lack of health insurance limits access to quality health care, resulting in a more devastating impact on African American communities from air pollution.

## Power Plants are the Biggest Industrial Source of Air Pollution in the United States

Exposure to pollution from power plants occurs from direct inhalation of air pollutants and from "indirect exposure." Indirect exposure is drinking water or eating meat, vegetables, dairy products or fish that have been contaminated by air emissions that have deposited to earth and accumulated in the food chain. Some power plant air toxics may be absorbed through the skin from direct contact with contaminated water or soil. Children can be exposed to power plant toxics by ingesting contaminated soil while playing.

### Power plants are major sources of some of the most common and harmful pollutants:

- **Sulfur dioxide (SO<sub>2</sub>).** On a national basis, power plants emit 67% of the SO<sub>2</sub>.<sup>(24)</sup> The SO<sub>2</sub> gas emitted from power plants is a strong respiratory irritant that is inhaled by people living near the plant. In addition, SO<sub>2</sub> forms sulfate particles that mix with other particles to form fine particulate matter downwind of the plant. As a result, people living downwind of the plant can be affected too. Power

plants are responsible for about half of the fine particulate matter in the eastern part of the U.S. and contribute a significant portion in the West.

- **Nitrogen oxides (NOx).** Power plants are responsible for 23% of the nation’s emissions of NOx.<sup>(25)</sup> NOx and hydrocarbons form ozone smog. While ozone in the upper levels of the atmosphere provides a layer of protection from ultraviolet radiation, ozone smog is a pollutant at ground level and is harmful to lungs. NOx also forms nitrate, which is a major constituent of fine particulate matter.
- **Mercury.** Power plants are the largest industrial source of mercury emissions, with 34% of the nation’s total mercury emissions.<sup>(26)</sup> When mercury enters a water body, it can be converted to a more toxic form that is concentrated in fish. Fish consumption advisories in 44 states warn against eating certain types or size of fish because they are contaminated with mercury. Mercury is most dangerous for the developing brain and nervous system of the fetus.
- **Air toxics.** Coal-fired power plants are the largest source of hazardous air toxics, including mercury.

## Health Effects of Power Plant Pollutants

Pollutant	What is it?	How is it Produced?	Health Effects	Most Vulnerable Populations
Ozone	Ozone is a highly corrosive, invisible gas.	Ozone is formed when NOx reacts with other pollutants in the presence of sunlight.	Rapid shallow breathing, airway irritation, coughing, wheezing, shortness of breath. Associated with asthma attacks and related emergency room visits and hospitalizations, and possible slowed lung growth in children.	Children, the elderly, people with asthma or other respiratory disease. People who exercise outdoors.
Sulfur Dioxide (SO <sub>2</sub> )	SO <sub>2</sub> is a highly corrosive, invisible gas that is formed in the gases when coal is burned. Sulfur occurs naturally in coal.	SO <sub>2</sub> is formed in the gases when coal is burned. SO <sub>2</sub> reacts in the air to form sulfuric acid and sulfates. Together with NOx, it forms acidic particles.	Coughing, wheezing, shortness of breath, nasal congestion and inflammation. Makes asthma worse. SO <sub>2</sub> gas can de-stabilize heart rhythms. Low birth weight, increased risk of infant death.	Children and adults with asthma or other respiratory disease.
Particulate Matter (PM)	A mixture of small solid particles (soot) and tiny acidic particles.	Formed by SO <sub>2</sub> and NOx in the atmosphere.	PM is inhaled deep into the lungs, affecting respiratory and cardiovascular systems. Linked to asthma attacks, premature birth, infant death and adverse birth outcomes..	Elderly, children, people with asthma. African American children have higher rates of asthma, making them more susceptible.
Nitrogen Oxides (NOx)	A family of chemical compounds including nitrogen oxide, nitrogen dioxide.	NOx is formed when coal is burned. In the atmosphere can convert to nitrates and form fine acidic particles. Reacts in the presence of sunlight to form ozone smog.	NOx changes lung function, increases respiratory disease in children. Helps form ozone and acidic PM particles which are linked to respiratory and cardiovascular disease, low birth weight and premature birth.	The elderly, children, people with asthma.
Mercury	A metal that occurs naturally in coal.	Mercury is released when coal is burned.	Developmental effects in babies that are born to mothers who ate contaminated fish while pregnant. Poor performance on tests of the nervous system and learning. In adults may affect blood pressure regulation and heart rate.	Fetuses and children are directly at risk. Pregnant women and women of child-bearing age need to avoid mercury exposure.
Carbon Dioxide	Coal has the highest carbon content of any fossil fuel.	Carbon dioxide is formed when coal is burned.	Health effects from the spread of infectious disease, higher ozone levels, increased heat-	All populations are vulnerable.

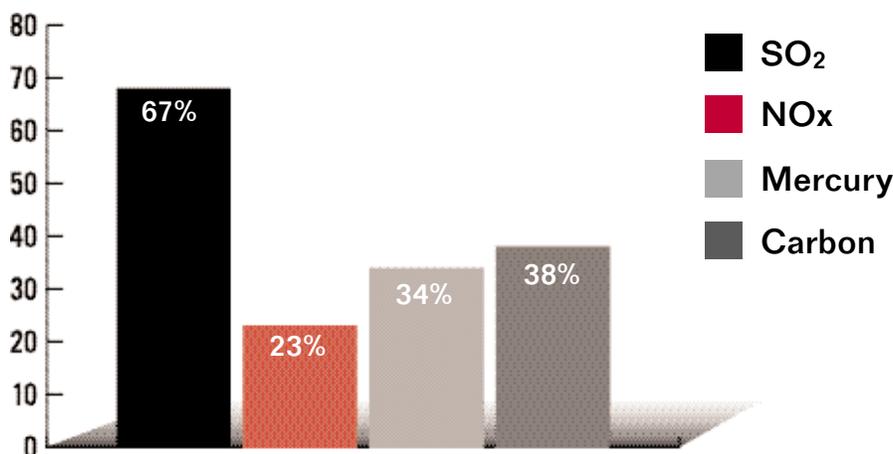
Emission tests at coal-fired power plants have detected 67 different air toxics.<sup>(27)</sup> Of these, 55 are known to be either neurotoxic (toxic to the nervous system) or developmental toxins (damaging to the human development process).<sup>(28)</sup> In addition, 24 have also been characterized as known, possible, or probable human carcinogens.<sup>(29)</sup> In just one year (1999), power plants released 78 million pounds of developmental and neurological toxins to the air and surface waters.

- **Greenhouse gases.** Power plants are at the center of the debate on climate change. When carbon dioxide and other greenhouse gases build up in the atmosphere, they trap heat, causing increased temperature and altered precipitation patterns (or climate change). Power plants release 38% of all of the carbon dioxide emitted from burning fossil fuels in the U.S.<sup>(30)</sup> As a result of human activities, global average surface temperatures may increase by 3 to 10 degrees (F) by the end of the century.<sup>(31)</sup> This increase in temperature is expected to spread infectious diseases, increase heat-related stress, and increase ozone smog (the formation of which is, in part, dependent on heat and sunlight).

- **Power plant wastes.** People living near power plants can also be exposed to contaminants in power plant wastes. Power plant waste is largely made up of ash and other unburned materials that are left after the coal is burned. Each year more than 100 million tons of waste are generated from burning

coal and oil.<sup>(32)</sup> These wastes contain high levels of metals like mercury, arsenic, lead, chromium, and cadmium. Disposal of power plant waste in unlined lagoons and landfills can contaminate groundwater (a source of drinking water) as can mine filling (dumping large volumes of combustion waste in abandoned mines). Power plant wastes are sometimes applied to agricultural fields, a practice that can directly contaminate the soil and can contaminate nearby areas with windblown dust.

### Percent Contribution of Coal-Fired Power Plants Emissions to National Total.



## Air Pollution Makes Us Sick

The scientific evidence is mounting that African Americans are disproportionately affected by air pollution. The following sections describe the latest scientific research on how African Americans are sickened by air pollution.

**Asthma.** Asthma prevalence and death rates are increasing in the U.S. — especially among African Americans.

- Asthma attacks send African Americans to the emergency room at three times the rate (174.3 visits per 10,000 population) of whites (59.4 visits per 10,000 population).

- African Americans are hospitalized for asthma at more than three times the rate of whites (35.6 admissions per 10,000 population vs. 10.6 admissions per 10,000 population).
- The death rate from asthma for African Americans is twice that of whites (38.7 deaths per million population vs. 14.2 deaths per million population).

Why are so many African Americans suffering from asthma? Exposure to air pollution, access to health care and poverty all play a role. Fine particulate matter, SO<sub>2</sub> and ozone are all major power plant pollutants that have been strongly linked to increases in emergency room visits and hospitalizations for asthma attacks. The following studies have linked pollution levels with health effects in African Americans.

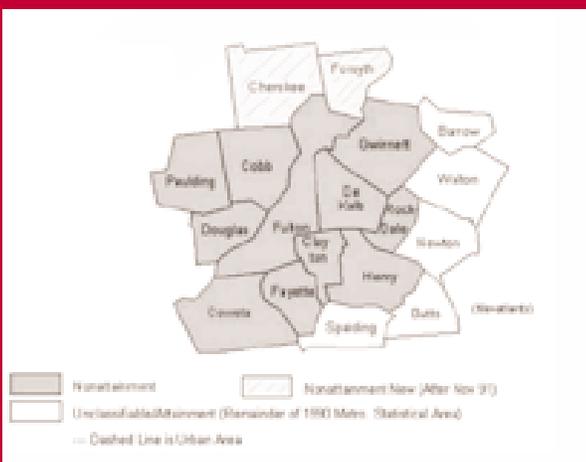
- In New York City, nonwhites were more adversely affected by air pollution as measured by the number of persons per day admitted to the hospital when ozone levels were high. The rate of hospitalization for nonwhites was twice that of whites. Those without health insurance were admitted to the hospital more than those with insurance, which may reflect the lack of access to preventative health care by the uninsured.<sup>(33)</sup>
- In an analysis of 5 power plants in the Washington, DC area, emissions of particulate matter and nitrate and sulfate fine particles were correlated with respiratory illnesses. These pollutants were estimated to trigger nearly 20,000 asthma attacks, almost 4,000 emergency room visits and nearly 300 hospitalizations. African Americans experience asthma at higher rates and are more likely to use the emergency room for primary health care needs than the population as a whole. Accordingly, the modeled result showed that while only 21% of the children in the studied population were African American, they accounted for 64% of the reduced pediatric asthma emergency room visits when the best available emissions controls were applied on the five power plants.<sup>(34)</sup>
- In Atlanta, Georgia, significantly more visits to the emergency room by asthmatic African American children were recorded following days that had higher ozone levels.<sup>(35)</sup> (see sidebar right)



### Childhood Asthma and Ozone Pollution in Atlanta

A study of emergency room visits and their relationship to ozone air pollution levels was conducted in an indigent, predominantly African American population in Atlanta. In the summer of 1990, 609 visits to the hospital were made by children aged 1 to 16 for treatment of asthma or reactive airway disease. The number of visits for asthma was 37% higher on days following elevated ozone levels. The results of the study suggest that among African American children from low-income families, asthma may be exacerbated following periods of high ozone pollution.<sup>(36)</sup>

### Atlanta, GA, Serious Ozone Non-attainment Area



- In the first study of its kind, researchers are evaluating how particulate matter exposure affects African American children with asthma. Results suggest even small increases in particulate matter may substantially increase asthma symptoms in these children. Results were examined relative to socioeconomic factors relating to access of medical care; relationships remained regardless of whether or not their families had contact with physician for asthma management, other than emergency room visits.<sup>(37)</sup>

## Health Effects of Mercury

Methylmercury interferes with the development and function of the central nervous system<sup>(52)</sup>. Prenatal exposure from maternal consumption of fish can cause later impairments in children. Infants appear normal during the first few months of life, but later display subtle health effects such as poor performance on neurobehavioral tests, particularly on tests of attention, fine motor function, language, visual-spatial abilities (e.g., drawing) and memory. These children will likely have to struggle to keep up in school and might require remedial classes or special education.<sup>(53)</sup>

Children and developing fetuses are most vulnerable to mercury exposure. Methylmercury in fish consumed by the mother passes through the placenta to the developing fetus. Mercury exposure prior to pregnancy is as critical as exposure during pregnancy because mercury is stored in tissues and is slowly excreted from the body. The first weeks of pregnancy also represent a critical time for fetal development.<sup>(54)</sup> Pregnant women and women of childbearing age (i.e., 15 to 44 years of age) are those who most need to avoid mercury exposure.<sup>(55)</sup>

## Air pollution puts African American infants at risk.

Respiratory Distress Syndrome (RDS) and Sudden Infant Death Syndrome (SIDS) are life-threatening conditions for newborns. RDS occurs when a baby is born prematurely and the lungs are not fully developed. Medical advances have reduced the mortality rate of babies born with RDS, but even so, the mortality rate for African American babies is markedly higher than that of white babies. In 1998, the RDS mortality rate was 70.2 per 100,000 for blacks compared to 26.7 per 100,00 for whites – a difference of more than 163%.<sup>(38)</sup>

SIDS, often called crib death, is the third-ranking cause of infant death. The cause of SIDS is unknown but may be linked to a defect in the infant's breathing mechanism.<sup>(39)</sup> African American babies have a higher incidence of SIDS than white babies. In 1998, the SIDS rate for white babies was 57.7 per 100,000, while the rate for African American babies was almost three times higher at 149.2 per 100,000. Reasons for the higher rate are unknown but there is a correlation with premature birth.

Is there a link between air pollution and SIDS or RDS? New studies point in this direction. In a comparison of 86 cities in the U.S., researchers found that infants who lived in a highly polluted city during their first two months of life had a mortality rate 10% higher than infants living in the city with the cleanest air.<sup>(40)</sup>

Investigators in this study found that high particulate matter levels were associated with a 26% increased risk of SIDS and a 40% increased risk of respiratory mortality.

In a preliminary study extending this work, researchers recently estimated that 11% of the infant mortality in the U.S. is attributable to particulate matter, even at low to moderate levels.<sup>(41)</sup> A study in Mexico City has linked infant death with particulate matter.<sup>(42)</sup>

## Mercury pollution affects African Americans.

Mercury contamination in fish across the United States is so pervasive that health departments in 44 states have issued fish consumption advisories.<sup>(43)</sup> Of these, 11 states have consumption advisories for every inland water body for at least one fish species; 6 states have consumption advisories for canned tuna, and 8 have

statewide coastal marine advisories for king mackerel. The U.S. Food and Drug Administration has also issued a consumer advisory for pregnant women, women of childbearing age, nursing mothers and young children. These groups are advised not to eat swordfish, tilefish, shark and king mackerel because of high mercury levels.<sup>(44)</sup> In July 2002, an independent committee of food safety advisors convened by the FDA recommended that consumption advisories also be issued for canned tuna, however the FDA has yet to act.<sup>(45)</sup>

African Americans are avid fishermen. In fact, in 1996, there were 1.8 million licensed African American anglers who spent over \$813 million dollars on fishing trips and equipment.<sup>(46)</sup> One-third of African Americans are active anglers and eat fish more often and eat larger portions of fish than whites<sup>(47,48)</sup>. Unfortunately, exposure to mercury is directly related to the amount and type of fish consumed, so all of these factors add up to higher mercury exposure and consequently higher risk of health effects.

Coal-fired power plants are the largest industrial emitters of mercury, producing over one third of all mercury pollution in the U.S.<sup>(49,50)</sup> The problem is not inhalation of airborne mercury, but rather eating contaminated fish. Airborne mercury eventually deposits in water bodies where it is converted to methylmercury and accumulates in fish tissue. As larger fish eat smaller ones, mercury concentrations increase in the bigger fish, a process known as bioaccumulation. Consequently, larger predator fish have higher mercury concentrations as a result of eating contaminated prey.<sup>(51)</sup>



The consumption of contaminated fish is a significant environmental justice issue. From the Great Lakes to the Southeast and California, the pattern is the same: African Americans are more likely to eat what they catch, eat more of it and be less aware of health advisories than their white counterparts.<sup>(56,57,58)</sup>

**Greenhouse gases and climate change.** Climate change disproportionately affects the health, economic and social well-being of African Americans.<sup>(59)</sup> Changes in the Earth's atmosphere are occurring due to the buildup of greenhouse gases in the atmosphere. Power plants account for 38% of the most prevalent greenhouse gas, carbon dioxide, emitted from fossil fuel use in the U.S. Warming of the planet, together with more drought conditions in some regions and flooding in other regions, could induce crop failures, famines, flooding and other environmental, economic and social problems.<sup>(60)</sup> The potential health impacts of climate change include increased prevalence of infectious disease such as Dengue fever and West Nile virus, more heat-related stress and illness, and higher levels of ozone smog.<sup>(61,62)</sup> Like other power plant-related health problems, the African American community is particularly vulnerable.

- **Infectious disease.** A warmer climate means that more areas of the U.S. will be hospitable to insects and the diseases they spread (like malaria, St. Louis encephalitis, Lyme disease and Dengue fever) and rodents (carriers of the hanta virus). Many of these disease cause flu-like symptoms and can be treated when caught early. However, these diseases can be fatal when not treated, and even with treatment, can be fatal in seniors and people with compromised immune systems. Since many African Americans lack health insurance and regular medical access, our community is particularly at risk.

• **Heat-related stress and illness.** A study of the 15 largest U.S. cities found that climate change would increase heat-related deaths by at least 90%.<sup>(63)</sup> Most African Americans live in inner cities,<sup>(64)</sup> which tend to be about 10 degrees warmer than surrounding areas. In fact, studies have shown that People of Color are twice as likely to die in a heat wave.<sup>(65)</sup>

## Global Climate Change and Africa

The average surface temperature of the earth is projected to rise significantly due to human energy consumption, and it is further projected that the negative impacts of such warming will be most severe in Africa. The economies of Africa and other developing regions are highly dependent on farming and natural resources — the very sectors that are most at risk from global warming. This is despite the fact that Africa has among the lowest per capita energy consumption and emissions of greenhouse gases.

The resulting increased global temperatures will impact agricultural systems, leading to reduced agricultural productivity, especially in the tropics and sub-tropics where food insecurity and hunger are already prevalent. Sea level rise, another possible impact, will affect various coastal areas. These areas are often densely populated centers of economic activity magnifying the threat of serious disaster. More frequent dry periods are predicted for Southern and Eastern Africa, with significant climactic variations in other parts of the continent. Water shortages are expected in arid areas, while other regions are expected to experience an increase in extreme events such as flooding. The continued droughts in some areas such as East Africa and floods in Mozambique are a few examples. The economic and human cost of these recent events has proven to be very costly.<sup>(68)</sup>

• **Higher levels of ozone smog.** Global warming could enhance ozone formation, which could, in turn, exacerbate ozone-related health problems such as asthma attacks.<sup>(66)</sup>

In addition to health impacts, global warming will also hit our wallets and lifestyle. It will increase natural disasters such as hurricanes, flooding, landslides and wildfires that threaten our homes and lives. The uninsured will be hit the hardest, and the uninsured rate for African Americans is twice that of whites.<sup>(67)</sup> Climate change is expected to raise the price of necessities like energy. Also, African Americans suffer from the last-hired, first-fired syndrome. As global warming changes our economy (recent estimates show that it will cost the United States \$30 billion per year), we will experience it first.

In January 2002, the Environmental Justice and Climate Change (EJCC) Initiative released a statement of solidarity and announced the creation of the EJCC Initiative. Twenty-eight U.S. environmental justice, climate justice, religious, policy and advocacy groups have unified behind this initiative that calls for the Bush Administration and Congress to act on climate change. This initiative marks the first time such groups have united to advance one agenda on climate change. The EJCC Initiative supports energy efficiency, renewable energy and conservation policies while seeking equitable measures to protect and assist the communities most affected by climate change. Appendix A, “*The Principles of a Just Climate Policy*,” is a list of actions the EJCC Initiative is calling on our government to take.

# What Should Be Done About Power Plants?

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As this report has shown, air pollution from power plants imposes a serious public health and environmental burden on society. New, comprehensive federal legislation is needed to adequately address power plant pollution and ensure that U.S. energy policy better accounts for the public health and environmental costs associated with electricity production. New, tougher legislation will put us on track toward a more sustainable energy future. We must also enforce the law and clean up old, dirty power plants that have exploited a loophole in the existing Clean Air Act.

New legislation must address emissions of the four key pollutants: nitrogen oxides, sulfur dioxide, mercury and carbon dioxide. Significant reductions of these pollutants, beyond cuts required by the existing Clean Air Act, are needed to minimize the environmental and public health impact of power plant emissions. Sulfur dioxide, nitrogen oxides and mercury emissions can all be reduced by 90% or more. Carbon dioxide emissions must be addressed as part of a comprehensive strategy given the threat posed by global warming.

## **New legislation must:**

- Be implemented by the end of the decade.
- Leave intact safeguards from power plant pollution guaranteed by the current Clean Air Act and remove exemptions for older power plants.
- Be stringent enough to protect human health and the environment.
- Include reductions in mercury to protect fetuses and newborns, and carbon dioxide emissions to combat climate change.

Early in 2002, President Bush announced his version of a power plant clean-up plan called the “Clear Skies Initiative”. This proposal, unfortunately, offers too little, too late. The “streamlining” of the existing Clean Air Act under this plan would actually result in more pollution being emitted than currently allowed. This is because weakening or eliminating existing portions of the Clean Air Act is integral to the Administration plan. In addition, the President’s plan would delay pollution reductions by up to a decade from when they would occur if the Clean Air Act were simply enforced as written. Unlike the other leading plans to clean up power plants, the Bush plan also doesn’t do anything to deal with emissions of carbon dioxide.

The Bush Administration has also announced far-reaching proposals to weaken the key “New Source Review” program, which applies to nearly 17,000 air-polluting industrial facilities throughout the country. These provisions kick in whenever industrial facilities make major modifications that substantially increase pollution, requiring installation of modern pollution controls.

However, when Congress passed the Clean Air Act more than 30 years ago, it gave existing facilities a “grandfather” exemption. This loophole allows older facilities to avoid modern pollution control

standards on the theory that the old plants will “retire” and be replaced by new cleaner technologies. If the plants do not retire but remain in operation, they are required to install modern pollution equipment if they change or upgrade the plant in any way that significantly increases emissions. Consequently, the New Source Review program is the primary backstop against disaster for many communities that face an unrelenting increase in toxic emissions.

### **If these proposals are adopted, it would have devastating public health and environmental impacts:**

- Many facilities currently covered by New Source Review requirements are concentrated in heavily populated urban areas and disproportionately impact low-income and minority neighborhoods.
- Power plant pollution is linked to asthma, lung disease and premature death. Even where power plants are located in rural areas, prevailing winds can carry the pollution to populated areas and jeopardize public health. According to the American Lung Association, “big cities on both coasts are among the 25 most ozone-polluted cities, including Los Angeles, Washington, and New York. But many big, medium and smaller-sized cities in between are also subjected to very dirty air. Many suffer from pollution blown in from other communities or large power plants outside their region.”<sup>(69)</sup>

Since the 1970s, industry has relentlessly litigated and lobbied to avoid compliance with New Source Review, while Congress, the courts, and EPA have held firm. While lobbyists and lawyers have been working to gut the provision, the facilities they represent have been flagrantly breaking the law. In the 1990s, an EPA investigation found that hundreds of industrial facilities were illegally spewing excessive amounts of pollution into the air. Today, there are EPA enforcement actions pending against more than 50 power plants that impact major U.S. metropolitan areas. Not only would these existing cases be jeopardized by the Bush Administration’s current proposals to dismantle the New Source Review program, but future cases against polluters would be harder to bring. That means more pollution and sickness in our communities.

**We believe all coal-fired power plants, both new and old, must be made to comply with modern emission control standards. The Clean Air Act’s 30-year loophole for old, dirty power plants must be finally closed.**



## Appendix A

The Environmental Justice Climate Change Initiative is a diverse group of 28 U.S. environmental justice, climate justice, religious, policy and advocacy groups that have unified in a call to action to the Bush Administration and Congress on climate change.

### **EJCC Principles of Just Climate Policy:**

Climate change threatens to destroy our right to a mutually nurturing relationship with the earth. People of Color, Indigenous Peoples, and poor communities are the first to experience negative impacts such as heat death and illness, respiratory illness, infectious disease, and economic and cultural displacement. Climate policy must protect our most vulnerable communities. Here are ten actions that must be taken to protect us:

- 1. Stop Cooking the Planet.** Global warming will accelerate unless we can slow the release of greenhouse gases into the atmosphere. To protect vulnerable Americans, alternatives must be found for human activities that cause global warming.
- 2. Protect and Empower Vulnerable Individuals and Communities.** Low-income workers, People of Color and Indigenous Peoples will suffer the most from the effects of climate change. Opportunities must be provided for these people to adapt and thrive in a changing world.
- 3. Ensure a Just Transition for Workers and Communities.** No group should have to shoulder the burden alone of transitioning from a fossil fuel-based economy to a renewable energy-based economy. A just transition would create opportunities for displaced workers and communities to participate in the new economic order through worker retraining, greater access to healthcare, and other means.
- 4. Demand Community Participation.** At all levels and in all realms people must have a say in the decisions that affect their lives. Decision-makers must include communities in the policy process. Democracy and justice demand it.
- 5. Work Together: Global Problems Need Global Solutions.** The causes and effects of climate change occur around the world. Individuals, communities, and nations must work together cooperatively to stop global warming.
- 6. Solve the Problem: The U.S. Must Lead.** Countries that contribute the most to global warming should take the lead in solving the problem. The U.S. is 4% of the world's population but emits 25% of the world's greenhouse gases. All people are entitled to their fair share of the atmosphere.
- 7. Stop Exploring for Fossil Fuels.** There are enough known fossil fuel reserves to last far into the future. Stop destroying unique cultures and valuable ecosystems: halt the exploration for fossil fuels and invest in renewable energy sources.
- 8. Monitor Domestic and International Carbon Markets.** Ensure that carbon emissions and sinks markets are transparent and accountable, do not concentrate pollution in vulnerable communities, and avoid activities that harm the environment.
- 9. Take Action Today.** No amount of action later can make up for lack of action today. Take precautionary measures to minimize harm to the global climate before it occurs.
- 10. Protect Future Generations.** The greatest impacts of climate change will come in the future. Take into account the impacts on future generations in deciding policy today. Our children should have the opportunity for success through the sustainable use of resources.

The 28 organizations or individuals that have joined the EJCC Initiative include: Black Leadership Forum, Bunyan Bryant, Church Federation of Greater Indianapolis, The Church of the Brethren, Communities for a Better Environment, CorpWatch, Corporation for Enterprise Development, Council of Athabascan Tribal Government, Deep South Center for Environmental Justice at Xavier University, Eco Equity, Environmental Justice Resource Center at Clark Atlanta University, Georgia Coalition for a Peoples'

Agenda, Indigenous Environmental Network, Intertribal Council on Utility policy, Just Transition Alliance, National Black Environmental Justice Network, Kids Against Pollution, Native Village of Unalakleet, New York PIRG, North Baton Rouge Environmental Association, Redefining Progress, Southern Organizing Committee, Southwest Network for Economic and Environmental Justice, Southwest Public Worker's Union, United Church of Christ Justice and Witness Ministries, United Methodist Church, West County Toxics Coalition, West Harlem Environmental Action (WE ACT).

## Appendix B

The following groups are active on air quality issues. The list is by no means comprehensive, instead it is provided as a resource to enable groups and individuals to connect with others active in the struggle to protect public health and the environment by cleaning up power plant pollution. A more comprehensive list can be found in the People of Color Environmental Groups Directory compiled by the Environmental Justice Resource Center.

**Georgia Coalition for the Peoples' Agenda**  
100 Auburn Avenue, Suite 102, Atlanta, GA 30303  
(404) 653-1199  
*Felicia Davis*

**Black Leadership Forum, Inc.'s Task Force on Environmental and Climate Justice**  
1025 Vermont Ave., NW, Ste. 1066  
Washington, DC 20005-4961  
(202) 783-5599  
*Yvonne Scruggs Leftwich*

**The Southern Organizing Committee for Economic and Social Justice (SOC)**  
P.O. Box 10518  
Atlanta, GA 30310  
(404) 755-2855  
*Connie Tucker, Executive Director*

**Clear The Air**  
1200 18th Street, NW  
Washington, DC 20036  
(202) 887-1715  
*Dan Howells*

**African American Environmental Justice Action Network**  
P.O. Box 10518  
Atlanta, GA 30310  
*Tanisa Foxworth*

**National Black Environmental Justice Network (NBEJN)**  
1400 16th Street, NW  
Washington, DC 20036  
(202) 265-5422  
*Damu Smith*

**Citizens for Environmental Justice**  
P.O. Box 1841  
Savannah, GA 31401  
(912) 233-0907  
*Dr. Mildred McClain*

**Morehouse School of Medicine Prevention Research Center**  
720 Westview Drive, SW  
Atlanta, GA 30310-1495  
(404) 752-1500  
*Rev. Richard Bright*

**Environmental Justice Resource Center, Clark Atlanta University**  
223 James P. Brawley Dr. at Fair Street  
Atlanta, GA 30314  
(404) 880-6911  
*Dr. Robert Bullard*

**Deep South Center for Environmental Justice**  
7325 Palmetto Street  
P.O. Box 45-B  
New Orleans, LA 70125  
(504) 483-0734  
*Dr. Beverly Wright*

**Benjamin E. Mays National Educational Resource Center & Georgia Kids Against Pollution**

8307 Creek Street  
Jonesboro, GA 30236  
(404) 361-3978

*Illai Kenney (Middle School)*  
*Anthony Dorsey (High School)*  
*John Taylor, Advisor*

**West Harlem Environmental Action (WE ACT)**

271 West 125th Street, Suite 211  
New York, NY 10027  
(212) 961-1000

*Cecil Corbin-Mark*

**Indigenous Environmental Network**

P.O. Box 485  
Bemidji, MN 56619-0485  
(218) 751-4967

*Tom Goldtooth*

**Southwest Network for Environmental and Economic Justice (SNEEJ)**

P.O. Box 7399  
Albuquerque, NM 87105  
(505) 242-0416

*Richard Moore*

**People Organized in Defense of Earth and its Resources (PODER)**

55 N IH #205B  
Austin, TX 78702  
(512) 472-9921

*Susana Almanza*

## Notes

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