BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

In the Matter of:	)	
STANDARD FOR THE DISPOSAL OF COAL COMBUSTION RESIDUALS IN SURFACE IMPOUNDMENTS: PROPOSED NEW 35 ILL. ADMIN. CODE 845	)	PCB 2020-019 (Rulemaking - Water)

NOTICE OF ELECTRONIC FILING

To: Attached Service List

PLEASE TAKE NOTICE that on August 27, 2020, I electronically filed with the Clerk of the Illinois Pollution Control Board ("Board") the **PRE-FILED TESTIMONY OF DULCE ORTIZ**, a copy of which is served on you along with this notice.

Dated: August 27, 2020

Respectfully Submitted,

/s/Jeffrey T. Hammons

Jeffrey T. Hammons, (IL Bar No. #6324007)
Environmental Law & Policy Center
1440 G Street NW
Washington DC, 20005
T: (785) 217-5722
JHammons@elpc.org

/s/Kiana Courtney
Kiana Courtney (ARDC No. #6334333)
Environmental Law & Policy Center
35 E. Wacker Drive, Suite 1600
Chicago, Illinois 60601
KCourtney@elpc.org

Attorneys for Environmental Law & Policy Center

/s/Jennifer Cassel
Jennifer Cassel (IL Bar No. 6296047)
Earthjustice
311 S. Wacker Dr., Suite 1400
Chicago, IL 60606
(312) 500-2198 (phone)
jcassel@earthjustice.org

/s/Thomas Cmar
Thomas Cmar (IL Bar No. 6298307)
Earthjustice
3ll S. Wacker Dr., Suite 1400
Chicago, IL 60606
T: (312) 500-2191
tcmar@earthjustice.org

/s/Mychal Ozaeta
Mychal Ozaeta (ARDC No. #6331185)
Earthjustice
707 Wilshire Blvd., Suite 4300
Los Angeles, CA 90017
T: 213-766-1069
mozaeta@earthjustice.org

/s/Melissa Legge
Melissa Legge (ARDC No. #6334808)
Earthjustice
48 Wall Street, 15th Floor
New York, NY 10005
T: 212 823-4978
mlegge@earthjustice.org

Attorneys for Prairie Rivers Network

/s/Faith E. Bugel
Faith E. Bugel
1004 Mohawk
Wilmette, IL 60091
(312) 282-9119
fbugel@gmail.com

Attorney for Sierra Club

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)
	)
STANDARDS FOR THE DISPOSAL OF	) R 20-19
COAL COMBUSTION RESIDUALS IN	) (Rulemaking – Land)
SURFACE IMPOUNDMENTS: PROPOSED	)
NEW 35 ILL. ADM. CODE 845	)
	)

PRE-FILED TESTIMONY OF DULCE ORTIZ

I'm very honored and blessed to be here and have the opportunity to represent and be the voice of 48,000 Latinos from the City of Waukegan. My name is Dulce Ortiz, and I have been a volunteer with the Clean Power Lake County since its inception in 2013. Clean Power Lake County is a community-driven coalition committed to local action to secure environmental, economic, and racial justice. It is supported by several partners, including environmental, faith, and public health organizations. Members of the Clean Power Lake County Campaign advocate for a long-term retirement plan for the coal-fired power plant in Waukegan, including a just transition for the workforce, the tax base, and the lakefront site. Members also work to promote clean energy projects that can create new local jobs and tax revenue for Waukegan and Lake County.

I have been a resident of Waukegan for over 25 years and have dedicated my life to serving my community. I've volunteered my time and efforts in various organizations, such as the Waukegan Youth Football Association, the Waukegan Youth Wrestling Club, and Relay for Life Greater Waukegan/Far North Shore. I've been actively involved and have served as a Board Member of different social, environmental, business, health, and government organizations. I currently serve on the Black Chamber of Commerce of Lake County Board, the Waukegan Park District Recreational Advisory Board, the Illinois Department of Human Services' Social Services Advisory Council, the Illinois Coalition for Immigrant and Refugee Rights Board, and the National Alliance on Mental Illness (NAMI) Lake County Board of Directors, just to name a few.

I've invested so much in my community because I love where I live. Waukegan has a beautiful lakefront that sits on the shore of Lake Michigan. Our community has much to offer from the great cultural diversity of our residents, many small businesses and local restaurants, as well as a vibrant arts community. Our harbor is home to hundreds of sailboats and our municipal swimming beach attracts hundreds of families throughout the summer. My son and I live in downtown Waukegan and I honestly can't imagine living anywhere else. I am incredibly invested in my community and I work extremely hard to promote all of the amazing things that our city has to offer. However, Waukegan faces many challenges.

My community has a painful history of industrial pollution and contamination. Industrial corporations made their profits for many years on our lakefront and then abruptly left our community along with a long legacy of contamination, which we are currently still spending our

tax dollars trying to clean up. The lack of transition planning as these companies exited the community resulted in massive job and tax base loss which economically depressed our community. The extensive contamination has left sites in years of remediation efforts and now with limited options for reuse. The City of Waukegan is now made up of 54% Hispanics and 18% African Americans, with a total population of 89,000. Families in our community are low to moderate-income, who don't always have access to quality healthcare nor preventative care. Minority and economically disadvantaged communities are disproportionately burdened by pollution, and the Waukegan community is no different.

On top of all of the other sources of pollution my community is exposed to, we also have the largest source of air and water pollution in the county in our backyard: the NRG Energy coal plant. After its previous owner Midwest Generation went into bankruptcy, NRG Energy purchased Midwest Generation as a subsidiary along with its Illinois coal plant fleet which included the Waukegan plant. The plant was built in the 1920s and currently operates boilers that are over 50 years old. The coal power plant hurts the health of all communities in Lake County, but particularly Waukegan. As a mother, I feel very blessed because my children are healthy, love to run around, and are very active. Unfortunately, as many as 1 in 3 children in Waukegan are not as blessed and are living with asthma or symptoms of asthma according to a pediatric asthma assessment conducted by the Mobile C.A.R.E. Foundation (Attachment 1).

My mother and I also suffer from asthma, and although I am grateful for my job, which provides health benefits, I constantly worry about my mother because she does not have health insurance or any state or federal assistance for prescription medications. Not only is our public health being impacted by the pollution from the coal plant, but so are our budgets. The rising medical costs are an everyday struggle for our low to middle income families.

In 2012, the NAACP released its Coal Blooded report, which looked at how low-income and minority communities are disproportionately affected by health-threatening pollution from coal-fired plants (Attachment 2). Based on a national analysis, the report ranked the Waukegan power plant as the twelfth worst violator of environmental justice in the country. Many of the plants listed in the top 10 in the report have since closed, putting Waukegan even higher now on the list. I live just over 1 mile from the plant. Needless to say, I don't let my children go swimming or fishing on the Lake due to my fear of them getting sick just by doing things that normal kids do because of the exposure to so many sources of pollution.

The Waukegan plant has two active coal ash ponds that sit just over 300 yards from the shore of Lake Michigan. While the ponds have plastic liners, monitoring reports from groundwater monitoring wells at the plant have revealed groundwater contamination from common pollutants found in coal ash, such as arsenic, boron, manganese, sulfates, pH, chloride, iron, selenium, and total dissolved solids.

Additionally, we have learned that coal ash had been stored elsewhere on the site in the past and was never cleaned up. This coal ash is also contributing to groundwater contamination. This follows the terrible pattern of companies who go into bankruptcy and abruptly leave our community and lakefront behind with a devastating legacy of pollution that our community and taxpayers have to clean up. How does this happen? How are companies allowed to do this in my community time and time again? Not only is it a tremendous amount of toxic pollution that our predominantly low-income, Latino residents are exposed to, but it is also devastating for our

community economically. Waukegan has dreamed for years, and still dreams, of revitalizing our lakefront. We have aspirational lakefront plans that have seen little success in coming to fruition in part because of the amount of contamination that remains at many of these sites and the limited re-use options they offer due to the levels of contamination. When we allow companies to pollute our communities and do not force them to clean up, we deter future investment in these sites and in our communities at large. This is devastating for economically disadvantaged communities like Waukegan who desperately need new investments and economic renewal.

In addition to groundwater contamination associated with the NRG coal ash ponds and the legacy coal ash landfill, our community has great concerns about the water discharge from the plant going into Lake Michigan, some of which comes in direct contact with the coal ash water. The Waukegan coal plant was allowed to operate for years with an expired water permit, missing 3 five-year renewal deadlines. According to NRG's latest water permit, the Waukegan plant discharges millions of gallons of water into Lake Michigan every day, including over 8 million gallons of water from its "wastewater treatment system." Included in this water is over a million gallons of water that transports ash to one of the on-site ponds along with 1 million gallons of coal pile run-off water. One of the other things I worry about is if some of these ponds could overflow during heavy rainfall and the risks that would pose to Lake Michigan and the municipal swimming beach, which is less than a mile down shore from the plant.

Companies that operate wet, leaching coal ash ponds in communities, especially ones considered environmental justice communities, should be required to handle their ash dry and store the waste in a properly managed, well-engineered landfill. All companies must be required to thoroughly clean up their legacy ponds and other coal ash contamination at their sites, which continue to threaten our environmental and public health, and must be forced to set aside money to ensure there are funds available for cleanup. This is critical, as we saw the last operator of the Waukegan coal plant go into bankruptcy. This is not required in the federal coal ash rule or in Illinois law. The existing regulations and engagement practices in place must be improved if our communities are truly going to achieve environmental justice. Communities like Waukegan deserve better and we cannot continue to be left behind.

For years we have fought hard for our community to be protected, for our community to be respected, and for our community to be seen. This board has the power to change years of systematic environmental violations done to environmental justice communities and give us the opportunity to have what other more affluent communities currently enjoy, a clean environment and good health. In other words, basic human rights. And this can be done by making sure the rulemaking process allows for extensive public participation, ensuring the rules prevent companies from hiding information but rather making the information easy and accessible to the public and community, addressing the coal ash landfill, and ensuring the removal of the coal ash ponds instead of capped in place. This rulemaking process has the potential of being an agent of change, it's an opportunity to provide my community and other environmental justice communities with a vision of a brighter future.

The vision I have for my family and for my community does not include thousands of tons of air, water, and coal ash pollution. My vision for my family and community is a lakefront where I can take my children swimming in the waters of Lake Michigan without worrying about toxic water pollution; where we can go fishing without worry about mercury and PCB contamination of the fish we catch. My vision for my family and community is a lakefront with open space that

respects our environment, where corporate profit does not override the health needs of our families; where I can go running along the shore of Lake Michigan without worrying about my asthma. I want to see a clean energy future for Waukegan and all communities that have borne the burden of air, water, and coal ash pollution for decades.

Thank you again for the opportunity to provide testimony, and I hope my comments can lead to stronger efforts together to make my vision a reality.

By: _____
Dulce Ortiz

Dated: August 27, 2020

CERTIFICATE OF SERVICE

The undersigned, Jeffrey T. Hammons, an attorney, certifies that I have served by email the Clerk and by email the individuals with email addresses named on the Service List provided on the Board's website, available at https://pcb.illinois.gov/Cases/GetCaseDetailsById?caseId=16858, a true and correct copy of the **PRE-FILED TESTIMONY OF DULCE ORTIZ** before 5 p.m. Central Time on August 27, 2020. The number of pages in the email transmission is 158 pages.

Respectfully Submitted,

/s/Jeffrey T. Hammons
Jeffrey T. Hammons, (IL Bar No. #6324007)
Environmental Law & Policy Center
1440 G Street NW
Washington DC, 20005
T: (785) 217-5722
JHammons@elpc.org

SERVICE LIST	
Don Brown Clerk of the Board Don.brown@illinois.gov Illinois Pollution Control Board James R. Thompson Center Suite 11-500 100 West Randolph Chicago, Illinois 60601	Christine M. Zeivel Christine.Zeivel@illinois.gov Stefanie Diers Stefanie.Diers@illinois.gov Illinois Environmental Protection Agency 1021 North Grand Avenue East P.O. Box 19276 Springfield, IL 62794-9276
Virginia I. Yang - Deputy Counsel virginia.yang@illinois.gov Nick San Diego - Staff Attorney nick.sandiego@illinois.gov Robert G. Mool bob.mool@illinois.gov Paul Mauer - Senior Dam Safety Eng. Paul.Mauer@illinois.gov Renee Snow - General Counsel renee.snow@illinois.gov Illinois Department of Natural Resources One Natural Resources Way Springfield, IL 62702-1271	Matthew J. Dunn, Chief mdunn@atg.state.il.us Stephen Sylvester Sr. Asst. Attorney General ssylvester@atg.state.il.us Andrew Armstrong, Chief aarmstrong@atg.state.il.us Kathryn A. Pamenter KPamenter@atg.state.il.us 69 West Washington Street, Suite 1800 Chicago, IL 60602
Deborah Williams Regulatory Affairs Director Deborah.Williams@cwlp.com City of Springfield Office of Utilities 800 E. Monroe, 4th Floor Municipal Building East Springfield, IL 62757-0001	Kim Knowles Kknowles@prairierivers.org Andrew Rehn Arehn@prairierivers.org 1902 Fox Dr., Ste. 6 Champaign, IL 61820
Faith Bugel fbugel@gmail.com 1004 Mohawk Wilmette, IL 60091	Jeffrey Hammons Jhammons@elpc.org Kiana Courtney KCourtney@elpc.org Environmental Law & Policy Center 35 E. Wacker Dr., Ste. 1600 Chicago, IL 60601

Keith Harley kharley@kentlaw.edu Daryl Grable dgrable@clclaw.org Chicago Legal Clinic, Inc. 211 W. Wacker, Suite 750 Chicago, IL 60606	Michael Smallwood Msmallwood@ameren.com 1901 Choteau Ave. St. Louis, MO 63103
Mark A. Bilut Mbilut@mwe.com McDermott, Will & Emery 227 W. Monroe Street Chicago, IL 60606-5096	Abel Russ, Attorney aruss@environmentalintegrity.org Environmental Integrity Project 1000 Vermont, Ave NW, Ste. 1100 Washington, DC 20005
Susan M. Franzetti Sf@nijmanfranzetti.com Kristen Laughridge Gale kg@nijmanfranzetti.com Vincent R. Angermeier va@nijmanfranzetti.com Nijman Franzetti LLP 10 S. Lasalle St., Ste. 3600 Chicago, IL 60603	Alec M Davis, Executive Director adavis@ierg.org Kelly Thompson kthompson@ierg.org IERG 215 E. Adams St. Springfield, IL 62701
Walter Stone, Vice President Walter.stone@nrg.com NRG Energy, Inc. 8301 Professional Place, Suite 230 Landover, MD 20785	Cynthia Skrukrud Cynthia.Skrukrud@sierraclub.org Jack Darin Jack.Darin@sierraclub.org Christine Nannicelli christine.nannicelli@sierraclub.org Sierra Club 70 E. Lake Street, Ste. 1500 Chicago, IL 60601-7447

Stephen J. Bonebrake sbonebrake@schiffhardin.com Joshua R. More jmore@schiffhardin.com Ryan C. Granholm rgranholm@schiffhardin.com Schiff Hardin, LLP 233 S. Wacker Dr., Ste. 7100 Chicago, IL 60606-6473	Jennifer M. Martin Jennifer.Martin@heplerbroom.com Melissa Brown Melissa.Brown@heplerbroom.com HeplerBroom LLC 4340 Acer Grove Drive Springfield, IL 62711
Alisha Anker, Vice President, Regulatory & Market Affairs aanker@ppi.coop Prairie Power Inc. 3130 Pleasant Runn Springfield, IL 62711	Chris Newman newman.christopherm@epa.gov Jessica Schumaker Schumacher.Jessica@epa.gov U.S. EPA, Region 5 77 West Jackson Blvd. Chicago, IL 60604-3590
Gibson, Dunn, & Crutcher, LLP Michael L. Raiff mraiff@gibsondunn.com 2001 Ross Avenue Suite 2100 Dallas, TX 75201	Earthjustice Jennifer Cassel jcassel@earthjustice.org Thomas Cmar tcmar@earthjustice.org Melissa Legge mlegge@earthjustice.org Mychal Ozaeta mozaeta@earthjustice.org 311 S. Wacker Drive Suite 1400 Chicago, IL 60606
BROWN, HAY, & STEPHENS, LLP Claire A. Manning cmanning@bhslaw.com Anthony D. Schuering aschuering@bhslaw.com 205 S. Fifth Street, Suite 700 Springfield, IL 62705	

ATTACHMENT 1

AN ASSESSMENT OF PEDIATRIC ASTHMA IN NORTHERN LAKE COUNTY, ILLINOIS

Prepared January 2012

MOBILE C.A.R.E FOUNDATION
3247 W. 26TH STREET, SUITE 2
CHICAGO, ILLINOIS 60623
(773) 254-4030
ASTHMA@MOBILECAREFOUNDATION.ORG

ACKNOWLEDGEMENTS

Mobile C.A.R.E. Foundation gratefully acknowledges the contributions of the numerous individuals and organizations that assisted in the analysis of the asthma care and health education needs of children in northern Lake County. In particular, we would like to thank the Healthcare Foundation of Northern Lake County for funding the assessment, the Lake County Health Department for their guidance and preliminary data, school nurses in Waukegan, Zion, and North Chicago for their time and feedback, and the many children affected by this condition who spurred our inquiry.

In addition, Mobile C.A.R.E. Foundation would like to acknowledge the work of its staff, in particular, Development and Marketing Director Katrese L. Minor, who provided day-to-day guidance of the needs assessment, with the assistance of Tanisha Sellers, Community Relations Coordinator and Asthma Van Nurse. Further, the assessment was assisted by Northwestern University staff and students. Particularly, Suet Yi was integral in the development of the school nurses' survey used to gather data about the state of asthma within the school districts and possible interventions.

ABSTRACT

In May 2011, the Healthcare Foundation of Northern Lake County awarded Mobile C.A.R.E. Foundation—a Chicago-based not-for-profit—grant funding to assess the needs of asthmatic children residing in northern Lake County. Mobile C.A.R.E. Foundation, assisted by Lake County Health Department, Northwestern University staff and students and area school nurses and healthcare professionals, conducted an asthma needs assessment utilizing preliminary data collected by the health department, relevant literature, records and report studies, interviews with persons with specific knowledge and data from a Mobile C.A.R.E. Foundation-constructed survey completed by school-based nurses.

While pediatric asthma morbidity and mortality levels in Lake County do not rival those of neighboring Cook County, a significant number of children remain symptomatic and not in control of their asthma. Mobile C.A.R.E. Foundation's Comprehensive Asthma Management Program, which provides asthma screening, no-cost asthma care, family health education, medications, and other ancillary services, has provided relief to thousands of families in Chicago – significantly decreasing patients' asthma-related school absences, hospitalizations, and emergency room visits. A similar program does not exist in Lake County.

The needs assessment results will serve to prioritize asthma issues in the county, in particular the northeastern region of the county. Further, it will help ascertain whether a need for a program similar to the Comprehensive Asthma Management Program, as it is currently employed in Chicago or with modifications, exists.

INTRODUCTION

Asthma, a potentially life-threatening inflammatory disease which causes the airways to narrow and disrupt breathing, remains one of the most common chronic and poorly managed diseases afflicting children today. In the past 20 years, the number of Americans with asthma has more than doubled. Tragically, asthma disproportionately affects, children, and Hispanic and African-American populations.

According the CDC National Center for Health Statistics, asthma affects approximately 6.2 million children. The 2009-2014 Illinois Asthma State Plan, Addressing Asthma in Illinois, 3rd ed., notes that children under 5 years of age experienced the greatest increase in asthma prevalence during the last 20-year period. For youth, asthma is one of the leading causes of school absenteeism, accounting for more than 14 million missed school days annually. Asthma symptoms may also impair overall quality of life for a child by restricting recreational and social activities.

Further, the 2009-2014 Illinois Asthma State Plan, Addressing Asthma in Illinois, 3rd ed., shows that the burden of asthma in Illinois outpaces national trends. Over the past 20 years, Illinois has had one of the highest asthma mortality rates in the nation and increasing prevalence, morbidity and mortality rates.

Mobile C.A.R.E. Foundation, formed in 1998, provides no-cost and comprehensive asthma care and education to children and families in Chicagoland's underserved communities via mobile medical units, the Asthma Vans. Mobile C.A.R.E. launched its mainstay initiative, the Comprehensive Asthma Management Program (CAMP), in 1999. Modeled after the Breathmobile program, a Los Angeles community asthma program, CAMP began with service to two Chicago Public Schools (CPS) elementary schools on Chicago's West and South sides. Today, CAMP reaches students in 30 Chicagoland communities through locations within CPS, parochial schools and Head Start centers.

Continuing its efforts to identify areas most in need, Mobile C.A.R.E.'s strategic plan includes broadening its reach to collar counties. **This report is intended to provide an assessment of the specific needs among asthmatic children residing in northern Lake County, specifically North Chicago, Waukegan and Zion.** The supporting data in this report comes largely from the Illinois Behavioral Risk Factor Surveillance System; the Lake County Health Department report entitled *Asthma Intervention Project*, the 2009-2014 Illinois Asthma State Plan, Addressing Asthma in Illinois, 3rd ed., and survey responses provided by nurses providing care in area schools.

PEDIATRIC ASTHMA IN NORTHERN LAKE COUNTY

Prevalence

Prevalence provides a reliable gauge by which to assess and track the burden of disease among population groups. According to the Behavioral Risk Factor Surveillance Survey (BRFSS), approximately 8.5**%** of children residing in the United States reported having asthma in 2009. Comparatively, in the same year, the BRFSS survey estimated that 294,587 Illinois children had asthma (9.2**%** of the child population) as reported by their caretakers.

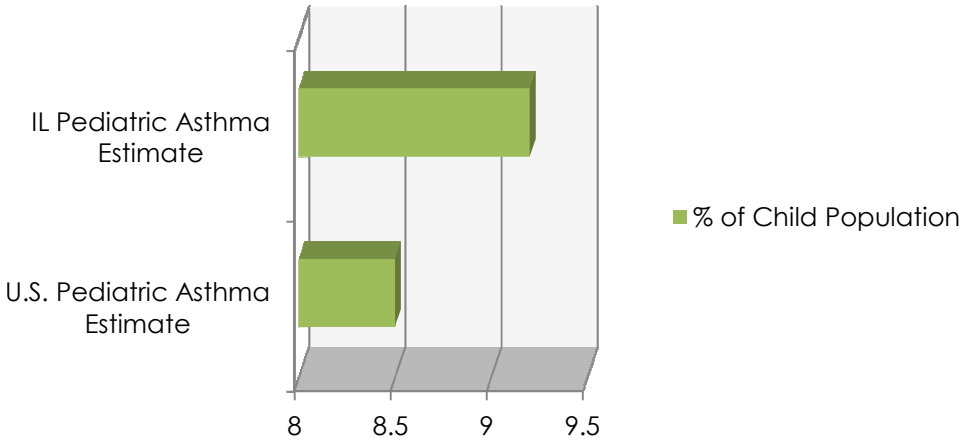


Figure 1 - United States v. Illinois Pediatric Asthma Prevalence

Narrowing the focus to Lake County, in the 2007-2009, 4th Round Behavioral Risk Factor Surveillance Survey Lake County, **12.1%** of county households had a child with asthma.

Table 1 – Current Pediatric Asthma Prevalence – Lake County

Geographic Area	Any Child In Household Has Asthma (Count)	Any Child In Household Has Asthma (%)	Confidence Interval
Lake County	31,711	12.1%	± 6.7%
IDPH, ICHS, 4th Round County BRFS (2007-2009)			

Research suggests that prevalence figures reporting physician-diagnosed asthma underestimate prevalence among children by 5-8%. Through its Asthma Intervention Project, 2010, the Lake County Health Department distributed over 8,000 Brief Pediatric Asthma Surveys (BPAS) to parents of children up to 5th grade, of which nearly 5,000 (approx. 61.5%) were returned. In Waukegan, North Chicago and Zion, **32.8%, 32%,** and **27.4%** of respondents, respectively, had a diagnosis of asthma or presented symptoms of asthma through responses to the validated assessment tool.

Table 2 – Lake County Health Department Survey Results – Diagnosis

Geographic Area	Parents reporting children diagnosed with asthma (%)	Non-diagnosed children, presenting symptoms of asthma (%)	Total
North Chicago	16	16	32%
Waukegan	16.4	16.4	32.8%
Zion	14.8	12.6	27.4%
Lake County Health Department report, *Asthma Intervention Project, 2010*			

To understand better the prevalence of pediatric asthma in the target area, Mobile C.A.R.E. surveyed nurses caring for students in area school districts. When asked how often in their job as a school nurse they came across an asthma-related case, the responses were:

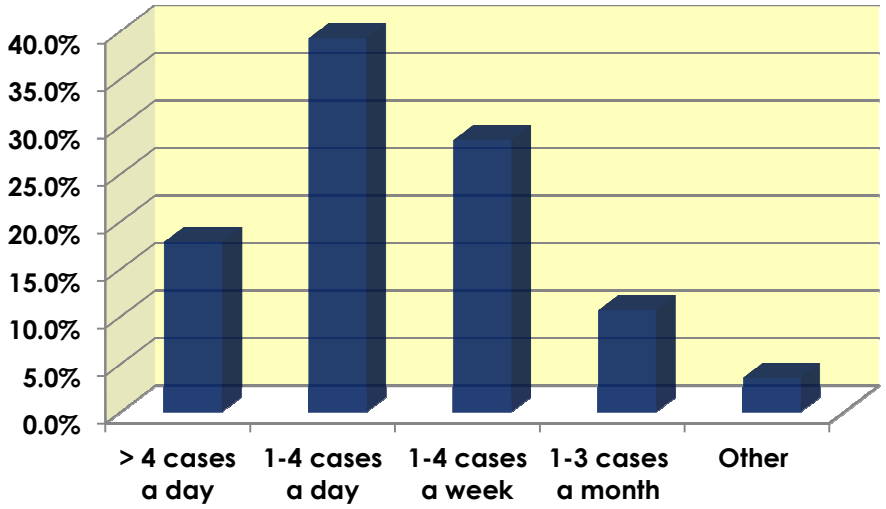


Figure 2 - Estimated Number of Asthma Cases per Nurse

Estimated number of students served per nurse, as reported by nurses surveyed:

Mode	601-800
Median	601-800
Average	≈715

Morbidity and Mortality

Frequency and severity of asthma symptoms and quality of life often indicate one's management of asthma. Common morbidity measures for asthma include frequency and severity of symptoms, asthma-induced hospitalizations, emergency department visitations and school absenteeism.

Frequency and Severity of Symptoms

Asthma symptoms range from minor to severe and vary from person to person. The BRFSS Call-Back (2009) revealed that a little less than 2% of Illinois children experiencing asthma symptoms in the past year had symptoms every day of the 30 days prior; another nearly 20% experienced symptoms 5-29 out of the 30 days. Frequent symptoms of wheezing, coughing, pains in the chest and the like can trigger an asthma attack - a sudden severity of symptoms. As per the BRFSS Call-Back (2009), for Illinoisans who have had asthma symptoms in the past 12 months, 71% of children had an asthma attack or episode in the same period; 62% of children have had an asthma attack within three months.

% Experiencing Asthma Episodes or Attacks Among Those Reporting Symptoms in the Last 12 Months

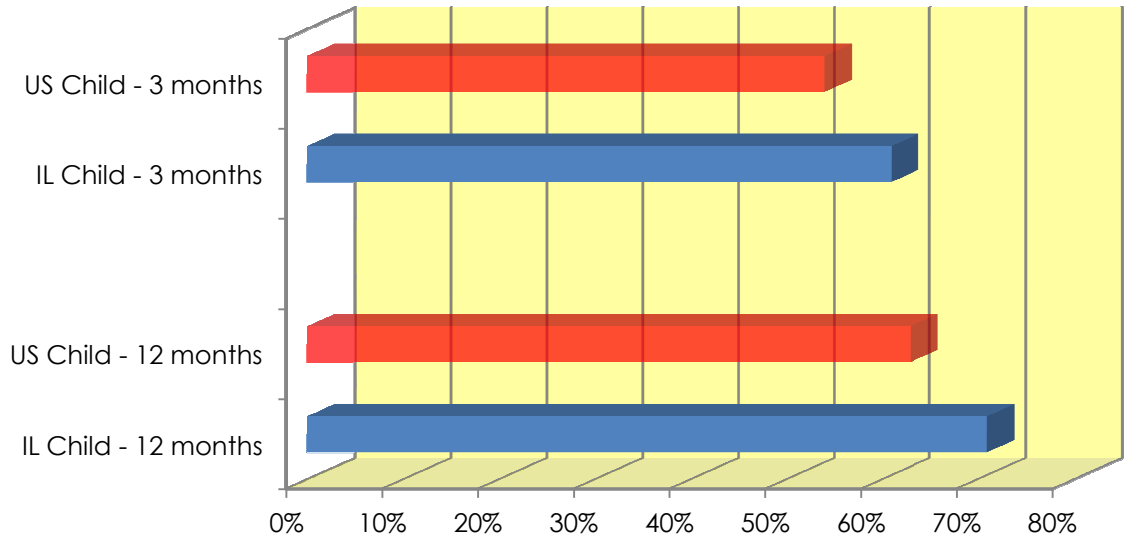


Figure 3 - Asthma Attacks Among Symptomatic Children

As demonstrated in Figure 3, the percentage of asthma episodes or attacks in the past 12 months among Illinois children was higher than the percentage of asthma attacks reported in the past 3 and 12 months, nationwide. Data from the Lake County Health Department report, *Asthma Intervention Project, 2010* and survey of school nurses reveal high percentages of uncontrolled asthma, symptomatic days and recurring cases among school-aged children.

Table 3 – Lake County Health Department Survey Results – Symptomatic

Geographic Area	Child diagnosed; continuing to experience symptoms of asthma (count)	Child diagnosed, continuing to experience symptoms of asthma (%)
North Chicago	143/166	86.1%
Waukegan	292/326	89.6%
Zion	89/113	78.8%
Lake County Health Department report *Asthma Intervention Project, 2010*		

When school nurses were asked, "Are your asthma cases recurrent, do you often see the same children coming in continuously?", they responded:

1. Yes, a high percentage of cases (>70%) are recurrent 42.9%
2. Yes, a reasonable percentage of cases (30 - 70%) are recurrent 39.3%
3. No, only a small percentage of cases (0 - 30%) are recurrent 17.9%

Ongoing, recurrent symptoms often lead to respiratory trauma and increased usage of acute medical care. The National Heart, Lung, and Blood Institute guidelines for the clinical management of asthma recommend periodic preventive visits for asthma monitoring, whereas a proportion of visits in non-emergent ambulatory settings may reflect appropriate disease management.

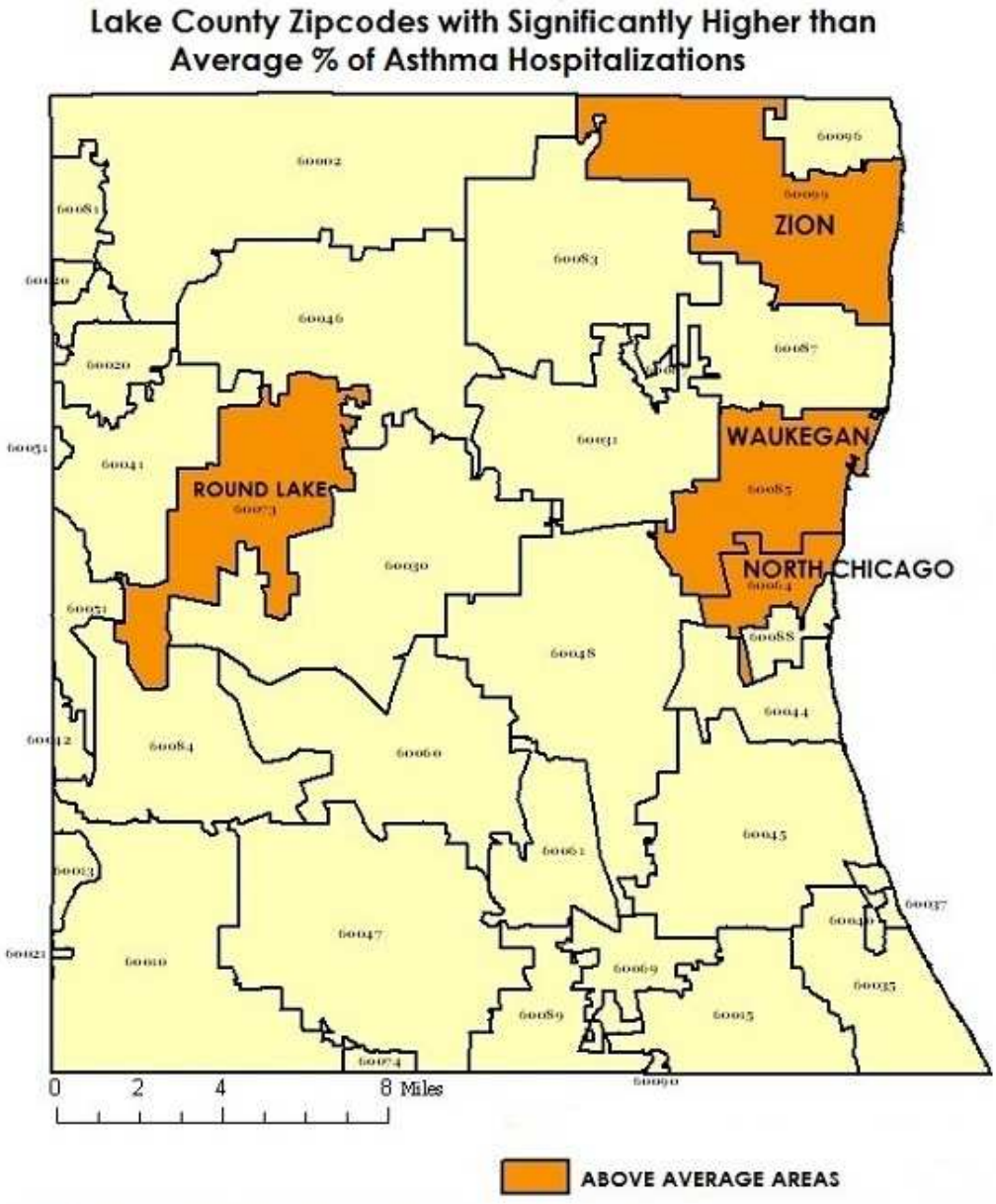
Hospitalizations and Emergency Department Visits

Children and Asthma in America, a landmark survey of the current state of asthma and asthma management among children in the United States and parallel survey of children with asthma and without asthma in the Chicago area, revealed that many respondents were uninformed about asthma causes, treatments and symptom prevention. According to the survey, asthma is also a burden on the healthcare system with 8% of asthmatic children hospitalized in the past year for asthma as compared to 3% of children without asthma hospitalized for any reason.

Per the Illinois Department of Public Health EMS Reporting System, between 1998 and 2008, 2,568 children, aged 0-19, were hospitalized in Lake County for asthma-related issues – a yearly average of slightly more than 233 children. Comparatively, in 2009, 343 children in Lake County were hospitalized with asthma-induced concerns.

Four Communities Feeling the Brunt of Hospitalizations and ER Visits
According to the Lake County Health Department 2009 *Asthma in Lake County* report, from 2001 through 2006, there were 4,300 Lake County residents hospitalized due to asthma. Of the 4,300 reported, four zip code areas

accounted for a significantly higher than average proportion of total asthma hospitalizations during the period. Specifically, those areas were 60064 (North Chicago), 60073 (Round Lake, Round Lake Heights, Round Lake Park and Round Lake Beach), 60085 (Waukegan) and 60099 (Zion). Similarly, in its 2010 *Asthma Intervention Project,* the health department found that the four areas continued to have the highest incidence of hospitalizations for asthma in 2009-2010.



Adopted from Community Health Assessment Program, Product: # Asthma Hospitalization by Zip code #1
Figure 4 - Areas with Above Average Asthma Hospitalizations

According to the aforementioned *Children and Asthma in America* survey, 17% of asthmatic children had an emergency room visit in the past year for their asthma, while only 13% of children without asthma required an emergency

room visit for any reason. Of the more than 5,000 emergency room visits in Lake County during 2009-2010, Waukegan, Zion, Round Lake and North Chicago had the highest incidence of visits for asthma at 22.4%, 10.1%, 8.3%, and 6.3%, respectively.

Asthma Mortality

Although preventable, a number of deaths have been caused by asthma, including 1,363 in Chicagoland (as defined by the Chicagoland Chamber of Commerce) from 1999-2007, with 56 occurring in Lake County, according to data from the Illinois Department of Public Health EMS Reporting System.

Table 4 - Chicagoland County Asthma Mortality Rates

County of Residence	Number of Deaths	Percent Among 6 Counties
COOK	1,152	84.5
LAKE	56	4.1
DU PAGE	48	3.5
KANE	45	3.3
WILL	44	3.2
MCHENRY	18	1.3
Total	**1,363**	**100**

Chicagoland's trend in asthma-related deaths mirrors national trends. In its 2011 Trends *in Asthma Morbidity and Mortality* report, the American Lung Association noted that asthma deaths are rare among children and increase with age. In 2007, 152 children under 15 died from asthma (0.2 per 100,000 population) compared to 659 adults over 85. The death rate in those 85 and over was 173% greater than the second highest mortality rate, seen among those 75-84 years of age (12.0 per 100,000 versus 4.4 per 100,000)

Available Clinics and Resources for Asthmatic Youth

School Resources

The more than 40 schools within the target cities (North Chicago, Waukegan, and Zion) are served by approximately three dozen school nurses. As mentioned above, the average number of students served per nurse is roughly 715.

- The North Chicago School District 187 is located in North Chicago, IL and includes 10 schools that serve 4,141 students in grades PK through 12.

- The Waukegan CUSD 60 is located in Waukegan, IL and includes 24 schools that serve 17,049 students in grades PK through 12.
- The Zion ESD 6 is located in Zion, IL and includes seven schools that serve 2,766 students in grades PK through 8.

Source: NCES, 2008

Clinical Resources

In its Asthma Intervention Project year-end report, the Lake County Health Department postulates that access to a physician was not a root cause of undiagnosed or poorly controlled asthma.

Sample of Area Clinics and Physicians

Advocate Good Shepherd Hospital	Barrington
Belvidere Medical Building	Waukegan
Condell Medical Center	Libertyville
Dr. Anthony Daddono, MD	Waukegan
Dr. Barry Goldman, MD	Waukegan
Dr. Bernardo Tan Jr, MD	Waukegan
Dr. Dante Gabriel, MD	Waukegan
Dr. Faye Samonte, MD	Waukegan
Dr. Fernando M. Striedinger, MD	Waukegan
Dr. Gerald T. Havey, MD	Waukegan
Dr. Jessie Groothuis, MD	North Chicago
Dr. Robert Suskind, MD	North Chicago
Dr. Sara Parvinian, MD	Waukegan
Dr. Ujjvala Nadkarni, MD	Zion
Dr. Xavier W. Parreno, MD	Waukegan
Evanston Northwestern Health Care Highland Park Hospital	Highland Park
Grand Avenue Health Center	Waukegan
Lake Forest Hospital	Lake Forest
Midlakes Medical and Dental Building	Round Lake Beach
North Chicago Health Center	North Chicago
North Shore Health Center	Highland Park
Northeast Satellite	Zion
Northshore Allergy & Asthma	Waukegan
Vista Medical Center East Campus	Waukegan
Vista Medical Center West Campus	Waukegan

DISCUSSION

Lake County has a low asthma mortality rate among children. However, mortality usually affects older persons. Although morbidity rates for the county are at or below Illinois and national averages, four areas within in the county (North Chicago, Round Lake, Waukegan, and Zion) account for a disproportionate number of emergency room visits and hospitalizations due to asthma. Further, parents and school nurses report children experiencing continuous symptoms of asthma. More than 82% of school nurses reported high to reasonable percentages (30+%) of recurring cases of asthma. Similarly, among the parents surveyed in North Chicago, Waukegan, and Zion, an average of 84.8% of parents of children with confirmed diagnoses of asthma reported ongoing asthma symptoms among their children.

When asked, "what do you think are the most relevant root causes of poorly controlled asthma in children, not just in your school but Lake County in general?", area school-based nurses responded:

	Highly relevant	Somewhat relevant	Occasionally relevant	Not relevant	N/A	Ratings Average
Poor medical management and knowledge on physicians' part	14.30%	25.00%	**39.30%**	17.90%	3.60%	2.63
Poor follow up on the physicians' part	25.00%	**32.10%**	**32.10%**	10.70%	0.00%	2.29
Poor follow up on the parents' part	**60.70%**	28.60%	10.70%	0.00%	0.00%	1.5
Lack of accessibility to medical care and medications like inhalers	28.60%	**32.10%**	25.00%	14.30%	0.00%	2.25
Incorrect use of medications like inhalers	**50.00%**	35.70%	10.70%	0.00%	3.60%	1.59
Inadequate understanding of asthma triggers	35.70%	**39.30%**	17.90%	3.60%	3.60%	1.89

When asked to suggest other pressing causes, or elaborate on any one of them in further detail, the nurses had the following to offer:

- Too many students use rescue inhalers as their only asthma treatments
- I feel that the expense of doctor visits and the cost inhalers are a major reason why some students are poorly controlled. There are clinics available, but the parents need to work during the hours to support their

families, and the Saturday and evening hours are not enough to service all the clients waiting to be seen.
- Communication barriers with the parents; time and communication issues with getting doctor's orders for the Inhalers
- Parents need to go to "asthma school" and learn as much as possible about asthma
- The students and their parents are often confused about their inhalers and which ones to use when. I cannot say for sure if this is the physician's fault or a lack of understanding on the part of the family. In addition, the inhaler technique that the students use is often wrong. Finally, many students do not have spacers and have trouble using their inhaler correctly.
- Most of my students have access to short-acting inhalers only

The top three root causes of poorly controlled asthma learned through the formal poll and generalized across recurring concerns in the survey responses are:

1. Poor follow up on parents' part
2. Incorrect use of medications
3. Cost/lack of accessibility to care

Although little is known about preventing the onset of asthma, guidelines to manage and control the disease are well established. Per the national guidelines of the Expert Panel Report 3 (EPR—3) Summary Report 2007: Guidelines for the Diagnosis and Management of Asthma, the four components of asthma care include:

Component 1: Assessing and Monitoring Asthma Severity and Asthma Control
Component 2: Education for a Partnership in Care
Component 3: Control of Environmental Factors and Co-morbid Conditions That Affect Asthma Allergens and Irritants Co-morbid Conditions
Component 4: Medications

The aforementioned components align with the elements of Mobile C.A.R.E. Foundation's Comprehensive Asthma Management Program. A similar program does not exist in Lake County.

Before the survey, 32% of nurses surveyed had heard of Mobile C.A.R.E Foundation; 68% had not. When asked their thoughts about the Comprehensive Asthma Management Program being brought to their school, the responses were:

ASTHMA NEEDS ASSESSMENT

1. There is a pressing need for this service in my school.
   39.3%
2. The asthma problem is not severe in my school, but we can definitely benefit from having this service.
   53.6%
3. The situation is manageable in my school; there are other schools that need the service and can benefit more from it.
   3.6%
4. Other *(please specify)*
   3.6%
   a. *Undecided*

Further, the nurses' commented that the top areas of need, should Mobile C.A.R.E. Foundation start providing asthma care services at their school, were:

1. Diagnosis
   0.0%
2. Education for patients and their parents
   35.7%
3. Providing follow-up care and ongoing appointments
   25.0%
4. Providing medical supplies and distribution of medications, spacers, nebulizers
   25.0%
5. Other *(please specify)*
   14.3%
   a. *Both supplies and ongoing care*
   b. *Undecided*
   c. *All of the above*
   d. *Proper diagnosis, proper education and proper medication for kids who really do have asthma*

Direct Quotes

"Parents need to go to 'asthma school'."

"Too many students use rescue inhalers as their only asthma treatments."

"The students and their parents are often confused about their inhalers and which ones to use when. … also the inhaler technique that students use is often wrong. Finally, many students do not have spacers and have trouble using their inhaler correctly."

"My students need education, and medical asthma supplies. Some don't have physicians and use the ER as their doctor."

"The Waukegan School district has a tremendous need for this service."

"Parents are reluctant to provide an additional inhaler for school because of cost. Also, the spacers used are also expensive. Most parents cannot afford to see an asthma specialist who can provide better medical management for their child. It would be nice to have an asthma clinic come to school."

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ATTACHMENT 2

Coal Blooded

Putting Profits Before People

National Association for the Advancement of Colored People
4805 Mt. Hope Drive
Baltimore, MD 21215
(410) 580-5777
ecjp@naacpnet.org
www.naacp.org

Indigenous Environmental Network
P.O. Box 485
Bemidji, MN 56619
(218) 751-4967
ien@igc.org
www.ienearth.org

Little Village Environmental Justice Organization
2856 South Millard Ave
Chicago, IL 60623
(773) 762.6991
info@lvejo.org
www.lvejo.org

Lead Researcher-Author:
Adrian Wilson
Doctoral Student, Dept. of Economics
University of Massachusetts at Amherst
atwilson@econs.umass.edu

Contributing Researchers-Authors:
Jacqui Patterson, NAACP
Kimberly Wasserman, LVEJO
Amanda Starbuck and Annie Sartor, Rainforest Action Network
Judy Hatcher
John Fleming
Katie Fink, NAACP

Edited by Monique W. Morris
Layout-Design by Larissa Johnson

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FOREWORD:

The Movement for Environmental and Climate Justice

Environmental issues are not isolated instances. They are a broad national concern with civil rights implications. Historically, people of color have disproportionately experienced negative outcomes associated with their physical environment.

Communities of colorhave been forced to contend with land appropriation, toxic working conditions, polluted neighborhoods and other conditions that have a detrimental effect on their environments and socioeconomic opportunities. It was in the 1960s and 1970s, mainstream audiences who were galvanized into action by the publication of *Silent Spring,* and who responded with "not in my backyard" when faced with environmental hazards that would impact public health and private property. While white middle-class communities were often successful in combating these threats, "the path of least resistance became an expressway leading to the one remaining toxic frontier--people of color communities."[1]However, in 1982, a community battle against a controversial polychlorinated biphenyl (PCB) disposal landfill, in rural Warren County, North Carolina, mobilized hundreds of African Americans in civil disobedience and led to over 500 arrests.[2] The fight was widely cited as the spark which ignited the Environmental Justice (EJ) Movement.

Pioneering work by Bunyan Bryant, PauMohai, Robert Bullard and others, along with groundbreaking reports, most notably in 1983, by the U.S.GovernmentAccounting Office and in 1987, by theCommission for Racial Justice of the United Church of Christ, confirmed that there was a direct correlation between race and toxic waste sites: "Although socioeconomic status appeared to play an important role in the location of commercial hazardous waste facilities, race still proved to be more significant."[3]

In September 1991, over 600 grassroots leaders from every state in the U.S. attended the First National People of Color Environmental Leadership Summit in Washington, D.C. This summit broadened the scope of the growing EJ movement to include issues of public health, land use, transportation, housing, resource allocation, and community empowerment.[4]One legacy of the event was a statement called the "Principles of Environmental Justice," which outlined the following key demands:[5]

- The "cessation of the production of all toxins, hazardous wastes, and radioactive materials, and that all past and current producers be held strictly accountable to the people for detoxification and containment"
- The "right to participate as equal partners at every level of decision making, including needs assessment, planning, implementation, enforcement and evaluation"
- The strict enforcement of processes of informed consent
- The right to reparations for victims of environmental injustice
- The right to self-determination for all peoples
- The freedom from bias in public policy relating to environmental issues
- The right of workers not to be "forced to choose between an unsafe livelihood and unemployment"
- Recognition of Indigenous peoples' special "legal and natural" relationship of sovereignty and self-determination with the U.S. government
- Opposition to military occupation and exploitation of lands and peoples
- The protection of all peoples from nuclear testing and waste disposal

From its beginnings in the early 1980s, the EJ movement has expanded significantly throughout the United States, and has gradually forged a path for government agencies and mainstream environmental advocacy organizations to confront issues of the environment and communities of color. There are now hundreds of grassroots environmental groups based in communities of low-income and of color, along with scores of academic programs offering training and support of EJ issues.[6] In 1990, leaders of the Southwest Organizing Project, in Albuquerque, NM, spearheaded an initiative to prod the country's largest and most influential conservation organizations (dubbed "the Group of Ten") to establish more equitable working relationships with environmental justice groups. The majority of the national environmental groups, after considerable prodding, have responded in some way, ranging from attempts to diversify their staffs to, in the case of the Sierra Club, establishing a national environmental justice program to work in partnership with community-based organizations.

The urgency for response has also extended to the climate justice community. Since 1988, when James Hansen and SergejLebedeff published the first definitive proof that the planet was warming, "climate change" has been transformed from an academic theory into a global political struggle, with unprecedentedly massive amounts of resources at stake.[7]In 1992, the United Nations Conference on Environment and Development in Rio de Janeiro resulted in the creation of the United Nations Framework Convention on Climate Change (UNFCCC), a negotiating framework that has since governed intergovernmental negotiations on fighting climate change. In 1997, the third UNFCCC intergovernmental climate conference in Kyoto (COP-3) resulted in the Kyoto Protocol, an international environmental treaty that produced an initial pathway for market-based emissions reductions, and in 2009, the COP-15 meeting in Copenhagen saw the negotiation of the "Copenhagen Accord," an agreement for modest CO_2 emissions reductions that was negotiated

by five top-polluting countries. The Accord has since been signed by over 130 additional governments.

As part of this transformation, many mainstream environmental organizations have gone from being voices for change on the margins of the political process, to allying themselves with powerful political and economic actors — politicians, regulatory agencies, and eco-reformist corporations — in building campaigns for carbon reductions in which ecological principles are often sacrificed to political expediency.[8]In order to defend their polluting industries from radical overhaul, reformist corporations have spent a massive amount of resources promoting "false solutions": initiatives such as carbon trading, carbon capture and storage/sequestration (CCS) and natural gas, biofuels, and other "alternate" fuel stock, that seek to "manage the climate crisis without compromising profits, the power structures or the economic system that got us here, even if that means exacerbating the problem."[9]

In the United States, the promotion of "clean coal" and CCS has allowed the coal power industry to continue polluting communities by holding up the false hope of eventual reductions in carbon emissions. By "greening" the image of coal through heavy advertisement and political promotion of the supposed promise of "clean coal," the energy industry has managed to take the political heat off of coal-fired power generation, and prolong the period in which these plants are allowed to continue operating.At the EPA, there has been recent progress in the development of new rules under the Clean Air Act to regulate air toxics, such as the Mercury and Air Toxics Rule, which has already spurred announcements of intended closure of multiple plants, according to multiple plant owners. However, unfortunately, EPA proposes to exempt existing coal power plants from its new rule regulating greenhouse gasses, the New Source Performance Standard for Power Plants. The new proposed rule is limited to new plants.

In recent years, many climate activists have criticized the increasingly cozy relationship between large environmental organizations and government/corporate actors, arguing that some mainstream environmental organizations are ignoring principles of environmental justice while they appear to defer to government and corporate partners more than they do to activists at the forefront of local climate, environmental, and social justice struggles. These activists have formed what they call the "climate justice movement," arguing that stopping climate change is impossible without radically transforming the economic and political system that caused climate catastrophe in the first place.

In the past decade, advocates for climate justice have grown from a small network of individuals — often with roots in the global justice or environmental justice movements — to become a full-fledged social movement. The Bali Principles (inspired by the 1991 Principles of Environmental Justice), which were authored by the Indigenous Environmental Network, Third World Network, Oil Watch, CorpWatch, Friends of the Earth, the National Alliance of People's Movements, and other groups from both Global North and South – outline the following central principles of climate justice:[10]

- A demand for a moratorium on all new fossil fuel exploration & exploitation, nuclear power plant construction, and large hydroelectric dam construction;
- Opposition to the role of corporations both in shaping unsustainable practices, and in unfairly influencing policy;
- The subordination of "market-based or technological solutions to climate change" to principles of democracy, sustainability, and social justice;
- The principles of "common but differentiated responsibilities" and democratic accountability that governments must hold to in responding to the climate crisis;
- The principle of the "ecological debt" owed by the Global North to the rest of the world for its disproportionate share of historical CO_2 emissions;
- The right of workers in fossil-fuel industries to a safe, healthy work environment, and the need for a "just transition" to a clean energy economy;
- The rights of women, youth, the poor, and rural peoples to have an equal voice in decision-making processes, without facing discrimination; and
- The right of Indigenous peoples and affected communities "to represent and speak for themselves," to control all their traditional lands, to protect themselves from any threat to their territories or their "cultural way of life," and to exercise "free, prior, and informed consent" over project decision-making.

While the climate justice movement has been at its most visible while protesting and agitating at international climate summits and negotiations (such as the protests at the COP-15 UN climate negotiations in Copenhagen in December 2009, at which 1,800 climate justice activists were arrested), those who comprise the "movement" are actually a coalition of local groups campaigning for real solutions to climate change in their communities. In the U.S., this movement includes groups like the Environmental Justice and Climate Change Initiative, the Deep South Center for Environmental Justice, We Act for Environmental Justice, Southwest Workers Union, the Asian Pacific Environmental Network, Black Mesa Water Coalition, and many others. Through this transnationalclimate justice movement, local groups are given an important platform to demonstrate the integral connection between their local campaigns on a wide variety of issues, and the climate justice goals outlined above. As Indigenous activist Clayton Thomas-Muller has stated, the agenda of the climate justice movement is about:

"Not simplydemanding *action on climate*, but demanding *rights-based and justice-based action on climate* that… amplifies the voices of those least responsible and most directly impacted. Not only are we the frontline of impacts, we are the frontline of survival."[11]

In building this movement, climate justice activists are guided by an overriding principle: communities most affected by climate change should be at the forefront of the struggle. This report, ***Coal Blooded: Putting Profits Before People,*** demonstrates both the urgency and opportunity for community action with respect to coal fired power plants—an issue at the intersection between climate justice and environmental justice.

INTRODUCTION

This report focuses on the role that coal-fired power plants have in the inequitable health outcomes of low income communities and communities of color in the U.S. and in the contribution of greenhouse gasses that drive climate change, the consequences of which also disproportionately impact people of color and low income communities globally.

Coal plants have differing effects on low-income communities and communities of color - some are measurably worse than others. This report provides an empirical discussion of the effects of burning coal in power plants. Researchers focus on the coal plants in the U.S. with the worst records on environmental justice, and on the companies that own them.

Overall, a small number of coal power plants have a disproportionately large and destructive effect on the public's health, especially on the health of low-income people and people of color. It is the argument of this report that the worst offending coal plants described and analyzed in this report must be closed – it is the only viable option.

Coal Blooded: Putting Profits Before People is a systematic study of 378 coal-fired power plants in the United States, in which each plant is evaluated in terms of its environmental justice performance (EJP), i.e., how it affects low-income communities and communities of color. The same methodology is used to evaluate Corporate Environmental Justice Performance (CEJP), based on the effects of those companies' coal-fired power plants on low-income communities and communities of color. The score assigned to each plant, and each company, is based on five factors: SO_2 and NO_X emissions; the total population living within three miles of the plant(s); and the median income and percentage of people of color among the total population living within three miles of the plant(s).

This report has been written for multiple audiences. First, the report is for grassroots community activists and community organizations, to make them aware of the issue and its impact, to provide tools for organizing and advocacy, and to highlight what a winning strategy looks like. Second, it is written for environmental activists and organizations to dialogue about the environmental justice and climate justice dimensions of the anti-coal movement, to raise awareness of the existence and struggle of grassroots environmental justice organizations in communities across the county, and to suggest models of partnership that are the basis of a winning strategy. Lastly, it is written for philanthropy to offer opportunities for investing

resources that will both support local communities' struggling to better their living conditions while also advancing environmental grant makers' most important goals of protecting human health and the environment and reducing greenhouse gas emissions.

- Part I provides an introduction to coal and its impact on our communities.
- Part II presents the performance ranking of coal power plants in the U.S.
- Part III provides a ranking of the coal power companies through a Corporate Environmental Justice Performance measure.
- Part IV discusses how the industry has been financially profitable for the companies engaged in the business of coal power.
- Part V provides a framework for responding to this overall situation.
- Part VI looks at the recent community victory inChicago and describes the elements of a winning strategy to close the worst offending coal plants – especially the grassroots leadership required.
- Lastly, Part VII offers a series of recommendations on what can be done to reduce harm—both immediately and in the future.

N.B. This report was researched and written using the last available 3-year average data from the EPA, from 2007-2010 and the latest census data available (2000) at the time of the completion of the report. Though some plants have closed and demographics have shifted, the intention is to illustrate the impact our dependence of coal has had on communities over time and to provide a cautionary tale if we continue on our present course of coal dependence.

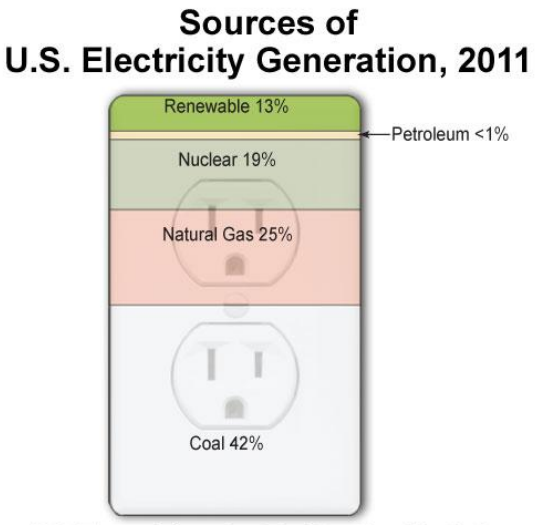
PART I:

Coal Dependence in the United States

America is hooked on coal—
and that addiction has remained constant for at least four decades. While many other countries are moving toward cleaner energy sources, 44.6 percent of the U.S.'s electricity comes from coal-fired power plants, which is still relatively unchanged from an historic low of approximately 44 percent in 1972.[12,13]

Coal burning is—and has always been—deadly. However, as journalist Jeff Goodell argues, coal's effects on public health are now less apparent than they were when the industry was just developing.

Fifty years ago, in industrial states such as Pennsylvania and Ohio, people were still dropping dead in the streets on days when air pollution was particularly bad. In China and India, they still are. But… the fact that most Americans no longer fear that pollution from a coal-fired power plants will kill them is… a dangerous illusion. Now it happens in slow motion, and in ways that don't translate easily to death certificates.[14]



Source: U.S. Energy Information Administration, *Electric Power Monthly* (February 2012). Percentages based on Table 1.1, preliminary 2011 data.

Figure 1: U.S. Electricity Generation Fuel Shares, 2011[15]

As there is no proven technology that can "clean" coal, the entire coal energy cycle — from mining, to combustion, to the disposal of coal ash — is harmful to communities:

Underground mining: Though safer than it has been historically, underground mining still results in a number of negative side effects: significant health disorders and displacement among communities; destruction of natural habitats; disruption of sacred sites, water depletion from surface, subsurface and aquifers; and diversion of water away from community needs. For example, each year, underground mining results in an average of 4,000 cases of occupational lung disease ("black lung") and scores of associated accidental deaths.[16]Also, coal mining in the *Hopi* and *Navajo* territories has forced Indigenous

peoples to be relocated, and to leave homelands that have sustained them for generations. Finally, underground coal mining releases methane, the greenhouse gas that is the second-leading cause of climate change.

Mountaintop removal coal mining: Hidden in the poorest and most economically vulnerable parts of West Virginia, Kentucky, Virginia, and Tennessee—mountaintop removal coal mining has permanently destroyed 500 mountains in Appalachia, and threatens hundreds more. The byproduct of toxic rubble has buried over 700 miles of rivers and streams, poisoning local water supplies.[17]

Coal Combustion Residuals (CCRs): Otherwise known as “coal ash,” CCR are the debris produced from burning coal for the generation of electricity. CCRs represent one of the largest waste streams in the United States. The U.S. Environmental Protection Agency (EPA) show that as of 2008, approximately 136 million tons of CCRs—which contain a range of metals such as arsenic, selenium, cadmium, lead, and mercury—are produced each year. According to the EPA, without proper protections, these agents contaminate ground water and migrate to drinking water sources, posing significant public health concerns.

Coal-Fired Power Plants: Dirty In, Dirty Out

In 2010, there were 378 coal-fired power plants larger than 100 Megawatts (MW) in the United States (one megawatt is enough electricity to power about 800 average American homes).[1819] U.S. coal power plants produced 2.1 gigawatt-hours of electricity in 2007 — which amounts to nearly 26 percent of the world's total coal-fired electricity production, second in the world only to China (32%).[20]

Coal power plants, and their negative effects on public health, are highly regionally concentrated. In other words, only a handful of states are responsible for the majority of U.S. coal energy production. These states also experience disproportionately high rates of lung cancer and other respiratory diseases. Just ten states produce more than half the coal-fired electricity in the U.S. in 2005 (see figure below)—Texas (7%), Ohio (7%), Indiana (6%), Pennsylvania (6%), Illinois (5%), Kentucky (5%), West Virginia (5%), Georgia (4%), North Carolina (4%), and Missouri (4%). By contrast, the ten smallest coal energy-producing states — Connecticut, Oregon, California, South Dakota, Hawaii, Maine, Alaska, Idaho, Rhode Island, and Vermont — produced a combined total of less than 1 percent of the nation's coal-fired electricity.[21]

The top ten coal-energy-producing states have an average lung cancer rate of 98.3 per 100,000 (or 19% *higher* than the U.S. average); while the bottom ten states have an average lung cancer rate of 77.2 per 100,000 (or nearly 7% *lower* than the U.S. average).[22]

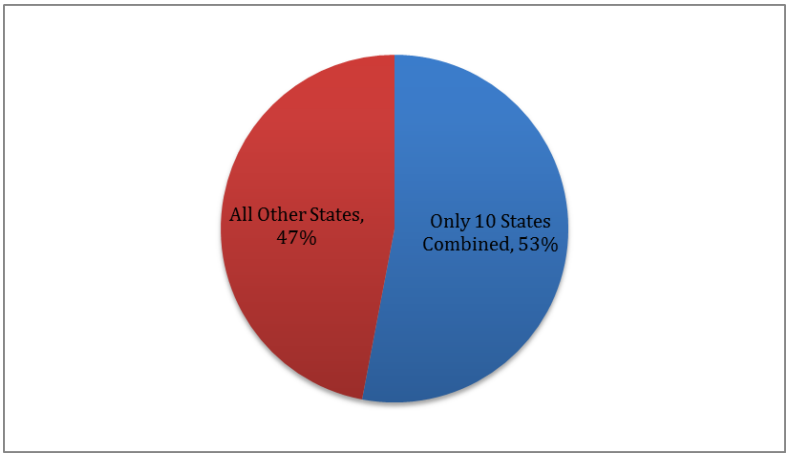


Figure 2: Percent of Coal-Fired Electricity in the U.S, 2005[23]

An analysis of the physical effects of the coal industry reveal that it is important to consider not only climate change, but also environmental justice, or the disproportionate location and impact of coal-fired power plant activity on low-income communities and people of color.

Nearly six million Americans live within three miles of a coal power plant. As noted below, coal power plants tend to be disproportionately located in low-income communities and communities of color:[24]

- People who live within three miles of a coal power plant have an average per capita income of $18,400, which is lower than the U.S. average of $21,587.
- Among those living within three miles of a coal power plant, 39 percent are people of color — a figure that is higher than the 36 percent proportion of people of color in the total U.S. population. Moreover, the coal plants that have been built within urban areas in the U.S. tend overwhelmingly to be located in communities of color.

Living in such close proximity to coal plants has serious consequences for those communities. Coal plants are single-handedly responsible for a large proportion of toxic emissions that directly poison local communities in the United States. Below is a summary of pollutants associated with coal power plants that disproportionately cause negative health effects in low-income communities and communities of color:

***Sulfur dioxide*,** or SO_2, is one of the primary pollutants produced by burning coal. In fact, *coal power plants alone produce 74 percent of all SO_2 pollution in the United States*.[2526]Immediately, SO_2 causes coughing, wheezing, and nasal inflammation. Longer-term, it can cause or increase the severity of asthma, which is widespread in communities of color. African-Americans are hospitalized for asthma at three times the rate of whites, and the death rate from asthma is 172 percent higher for African-Americans than for whites.[27]

***Nitrogen oxides*,** collectively referred to as NO_X, comprise a key category of pollutants produced by coal power plants, as these plants produce 18 percent of all NO_X pollution in the U.S.[2829]Not only do NO_X increase the risk of respiratory disease in children. They also reacts with sunlight to produce *ozone* (O_3), which, like SO_2, increases the risk and severity of asthma, and causes coughing, wheezing, and shortness of breath. Again, communities of color are disproportionately impacted by asthma in comparison with white communities, and therefore are disproportionately negatively impacted by the presence of these additional pollutants.[30]

Fine particle pollution **($PM_{2.5}$),** which is emitted directly by coal power plants, is created when SO_2 and NO_X particles react in the atmosphere. This form of pollution may be among the deadliest: fine particulate pollution can cause premature death in people with heart or lung disease, as well as cause chronic bronchitis, irregular heart conditions, and aggravated asthma.[31] In addition to producing 74 percent of SO_2 pollution and 18 percent of NO_X pollution in the U.S. (which react to produce $PM_{2.5}$), coal is responsible for 85 percent of direct $PM_{2.5}$ emissions from U.S. power plants.[3233]

Other pollutants. While this report focuses on SO_2 and NO_X (which in turn produce $PM_{2.5}$), coal power plants release a wide variety of other toxins into the air and water — including mercury, uranium, arsenic, lead, and other heavy metals. When pregnant women are exposed to mercury, it can cause a wide variety of developmental disorders in their fetuses, including impaired brain functions, blindness, and other forms of developmental delay. The EPA estimates that power plants in general are responsible for 50 percent of the mercury, 60 percent of the arsenic, and over 50 percent of many acidic gases emitted in the U.S. in 2009 — and coal power plants comprise a large proportion of this total.[34]Coal plants are responsible for far more mercury pollution than the next ten largest sources of mercury pollution combined.[35]In 1999 (the last year for which reliable data are available), coal-fired power plants were responsible for nearly 42 percent of the mercury emitted from industrial sources in the U.S.

Coal plants kill — and low-income communities and communities of color experience the highest mortality burden.

The full extent to which coal-fired power plants are associated with fatalities is difficult to precisely quantify; however, a conservative estimate is offered by a 2010 report by the National Research Council (NRC), which calculates that approximately 1,530 excess deaths per year are caused solely by particulate matter pollution from U.S. coal-fired power plants, and that "aggregate damages associated with emissions of SO_2, NO_X, and PM from [the 402 largest U.S.] coal-fired facilities in 2005 were approximately $62 billion."[36] The authors of this NRC report also note that other analyses calculated figures for total costs and mortality caused by U.S. coal plants that were as much as six times higher.[37]

In March 2011, the EPA proposed a rule change in air toxic emissions standards for coal- and oil-fired power plants that would have prevented between 6,800 and 17,000 premature deaths and 120,000 cases of aggravated asthma per year. Given that oil power plants represent only 1 percent of U.S. power production, the vast majority of this total is generated by coal power plants.[38] Out of all power plants in the U.S., coal power plants are responsible for 88 percent of SO_2 emissions and 85 percent of direct fine particulate matter ($PM_{2.5}$) emissions; thus, if the EPA's assessments are correct, then *coal power plants alone are responsible for thousands, if not tens of thousands, of premature deaths each year*. Further, a 2010 report on power plant pollution by the Clean Air Task Force found that coal power plant pollution in the U.S. is responsible for 13,200 premature deaths and 9,700 hospitalizations each year, as well as over $100 billion in monetary damages.[39]

Coal-Fired Power Plants: Perpetrators of Climate Injustice

Carbon dioxide, or CO_2, is a major cause of global warming.[40]Pertinent to this discussion, coal is the world's most carbon-intensive fuel, which means that coal power plants produce more CO_2 per unit of energy than any other energy source.[41]*In 2006, coal-fired power plants in the United States alone produced 1.94 billion tons of CO_2 — 32 percent of the U.S.'s totalCO_2 emissions, and almost 7 percent of the world's total CO_2 emissions.* To put this in perspective, *coal power plants in the U.S. emitted more CO_2 in 2006 than the total amount that was emitted by all sources in all countries in Latin America and the Caribbean that year*.[4243]

Climate change is already devastating the Global South — and that devastation will only accelerate as the 21st century continues. The public narrative

has focused to a large extent on global warming causing rising sea levels, which will inundate low-lying countries such as Bangladesh and island-states in the Pacific Ocean.

Maldivian President Mohammed Nasheed dons scuba gear as he signs a document that calls on all countries to cut down their carbon dioxide emissions ahead of a U.N. climate change conference.

Another very threatening impact of global warming is the transformation that it will cause in global weather patterns — generating increasingly severe weather and rising drought levels — which will disproportionately affect people throughout the world who rely on subsistence agriculture for their survival.[44]In November 2011, a report by the Intergovernmental Panel on Climate Change linked increases in extreme weather events to human-caused climate change:

There is evidence that some [weather] extremes have [already] changed as a result of anthropogenic influences, including increases in atmospheric concentrations of greenhouse gases. It is likely that anthropogenic influences have led to warming of extreme daily minimum and maximum temperatures on the global scale. There is medium confidence that anthropogenic influences have contributed to intensification of extreme precipitation on the global scale. It is likely that there has been an anthropogenic influence on increasing extreme coastal high water due to increase in mean sea level.[45]

The Fourth Assessment Report of the Intergovernmental Panel on Climate Change states that global warming will cause the most dramatic impacts in Africa, in Asian and African mega deltas, and on small, low-lying islands (such as those in the Pacific Ocean); experts agree that people in Africa and South Asia will be more dramatically affected by these changes in weather patterns than people in the North America and Europe.[46]

However, global climate change is not only a threat to communities in the Global South. In recent years, politicians and regulatory agencies in the U.S. have begun to address the threat that global warming poses to communities here in the U.S. In 2007, the Supreme Court ruled that CO_2 and other greenhouse gases are pollutants under the Clean Air Act, and directed the EPA to follow the requirements of the Act and determine whether greenhouse gases endangered public health or welfare.[47] In 2009, the EPA responded to the Supreme Court, and found that the increased concentrations of greenhouse gases threaten the public health and welfare of current and future generations of U.S. citizens. The impacts of climate change cited by the EPA include, but are not limited to: increased drought; an increased number of heavy downpours and flooding; more frequent and intense heat waves and wildfires; greater sea level rise; more intense storms; and harm to water resources, agriculture, wildlife, and ecosystems.[48]

In reaching its finding, EPA noted that certain populations may be especially vulnerable to climate impacts, including people living in poverty, people who are elderly, people already in poor health, people with disabilities, people living alone, and/or Indigenous populations dependent on one or a few natural resources. In developed areas, environmental justice issues are also raised by climate change — for example, warmer temperatures in urban areas will have

a more severe impact on people who cannot afford air-conditioning.

Indeed, Hurricane Katrina and the tornadoes in Pratt City, AL have already vividly demonstrated that the shifts in weather patterns caused by climate change disproportionately affect African Americans and other communities of color in the United States — which is a particularly bitter irony, given that the average African-American household emits 20 percent less CO_2 per year than the average white American household.[49] The six states with the largest proportion of African-Americans are all in the Atlantic hurricane zone, and all are expected to experience more severe storms as a consequence of global warming. Adverse weather events will cause more severe impacts for communities of color, due to their more marginal economic situation: the median wealth of African-American households is one-tenth that of the white households, leaving African-Americans with fewer resources when disaster strikes. African-Americans and Latinos are also far less likely than their white counterparts to own health or homeowners' insurance, and are consequently more vulnerable to their entire wealth being drained by a hurricane or other natural disaster.[50]The direct and indirect costs of failure to act are clear. Already communities are suffering the impacts worldwide. Without aggressive mitigation efforts global warming, low agricultural yields, sea level rise, and disaster will unfortunately continue to produce disastrous displacement, hunger, illness, and death.

United States	19.0
Australia	18.1
Canada	16.7
Saudi Arabia	15.8
Russia	10.9
Japan	10.1
South Korea	9.9
Germany	9.7
United Kingdom	9.4
South Africa	8.6
Italy	8.1
France	6.2

Per Capita Emissions

Proponents of **climate justice** argue that, in order to limit the severe effects of climate change — both in the United States and globally —CO_2 emissions must be reduced dramatically. However, in deciding which countries should cut their emissions the most, proponents of climate justice argue that we must consider both *per-capita emissions* and *cumulative emissions*.

China	4.6
Argentina	4.4
Mexico	4.1
Turkey	3.6
Brazil	1.9
Indonesia	1.6
India	1.3
Angola	0.6
Bangladesh	0.3
Sudan	0.3
Ethiopia	0.1

Table 1: 2006 per Person CO_2 Emissions of Selected Countries[55], in Tons[56]

Increasingly, commentators are attempting to blame China for rising CO_2 emissions,[51] as a strategy to divert blame from the United States. While China and India must reduce their emissions given their considerable contribution to global emission totals, *the per capita CO_2 emissions of the United States are higher than any other industrialized country in the world*. In 2006, the U.S. was responsible for *four times more CO_2 emissions per person* than China, and doubles the emissions of Germany or Britain.[52] This is what complicates the demand for all countries reduce their CO_2 emissions by a similar percentage: it ignores the fact that, in a world where Luxembourg (with 500,000 people) emits *more total CO_2 each year* than Ethiopia (with 88 million people), the countries of the Global North have a moral imperative to reduce their CO_2 emissions by a greater amount than the countries of the Global South.[53,54]This, of course, does not absolve any country from the global obligation to reduce emissions.

Figure 3: Per Capita CO_2 emissions, in 2005 and projected for 2030

Cumulative Emissions

However, for the Global North the responsibility of causing climate change is even more pronounced than per capita emissions statistics suggest. The above graph shows only the *current rate* of CO_2 emissions; which is limited by the fact that climate change is caused by the *total amount* of CO_2 in the atmosphere, including the *cumulative* total of CO_2 produced by humans— not just the rate of emissions as it stands today. Because countries in the Global North began industrializing earlier than countries in the Global South, their historical share and cumulative production of total CO_2 is dramatically unequal.

While CO_2 emissions prior to the 20th century are very difficult to calculate, due to a lack of adequate and reliable records, researchers from the World Resources Institute have used U.S. Department of Energy historical data to calculate each country's total CO_2 emissions since 1900 — and the results are clear. While the U.S.'s CO_2 emissions in 2006 were 5.75 billion tons (or 20% of the world total), U.S. emissions between 1900 and 2005 totaled 318 billion tons — or *30 percent of the world total* for that period.[57]

When calculating cumulative emissions since 1900 for the Global North as a whole, the inequality is even greater than when considering per capita current emissions alone. The countries defined as high-income by the World Bank, plus the former Soviet region of Eastern Europe, are responsible for emitting *850 billion tons of CO_2 since 1900, or 79 percent of the world total* — despite the fact that, in 2008, these countries held only 21 percent of the world's population. Conversely, the Global South — an area which contains nearly 79 percent of the world's population, including China, India, South and Southeast Asia, Africa, and Latin America — is collectively responsible for only 21 percent of CO_2 emissions since 1900.[58,59,60]

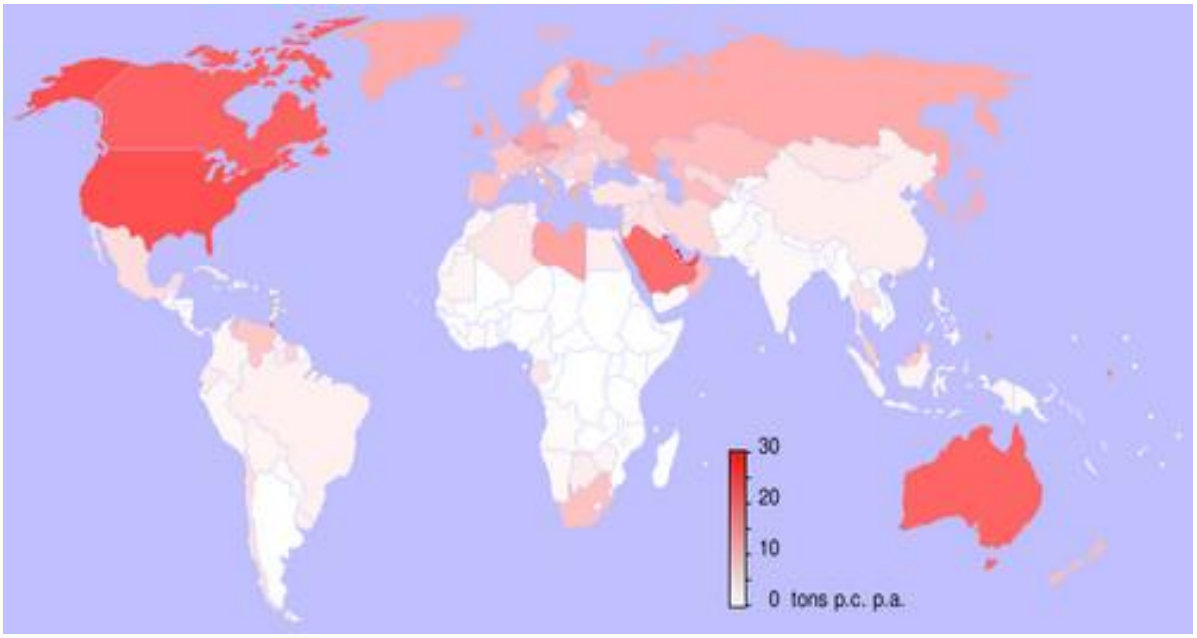


Figure 4: Carbon dioxide emissions per capita by country, calculated from data at the US Department of Energy's Carbon Dioxide Information Analysis Center (CDIAC)

Country	1900-2005 Emissions (% of world total)	2008 Pop. (millions)
United States	30%	304.1
Former Soviet Union	13%	276.3
China	9%	1,324.7
Germany	7%	82.1
United Kingdom	5%	61.4
Japan	4%	127.7
France	3%	62.3
India	2%	1,140.0
Canada	2%	33.3
Italy	2%	59.8
Australia	1%	21.4
Mexico	1%	106.4
Belgium	0.87%	10.7
South Korea	0.86%	48.6
Brazil	0.85%	192.0
Indonesia	0.58%	227.3
Finland	0.22%	5.3
Pakistan	0.22%	166.1
Nigeria	0.20%	151.2
New Zealand	0.12%	4.3
Luxembourg	0.06%	0.5
Bangladesh	0.05%	160.0
Ethiopia	0.009%	80.7

Table 2: Total CO_2 Emissions in 1900-2005 and 2008 Population[61]

Climate justice activists refer to this historic inequality among carbon emissions as "ecological debt" or "emissions debt"—a debt of increased economic capacity and wealth that "industrialized nations… owe the rest of the world as a result of their appropriation of the planet's capacity to absorb greenhouse gases."[62] This term is defined by Jubilee South as follows: 'Emissions debt'is the debt incurred by Northern countries to the countries and peoples of the South through the overuse and substantial diminishing of the Earth's capacity to absorb greenhouse gases. It rests on the principle that all people have an equal right and equal share to the planet's 'atmospheric space,' or 'carbon space,' referring to the earth's capacity to absorb greenhouse gases. In an initial assessment, the fair share of each country is determined in per capita terms. ***Reparations for this debt, in order to reflect the North's historic and present excessive contributions to climate change, should be in the form of deep domestic emission cuts, so as to return to the South its fair share of atmospheric space,***as well as providing the South with the necessary technology and financing for adaptation and mitigation. [Italics added][63]

PART II:

An Environmental Justice Performance Ranking of Coal Power Plants in the U.S.

Not all coal plants are created equal; therefore, the effects of some plants on low-income communities and communities of color are measurably worse than others. This report provides an empirical discussion of the effects of burning coal in power plants. Researchers focus on the coal plants in the U.S. with the worst records on environmental justice, and on the companies that own them.

Ranking Environmental Injustice: A Summary of the Methodology

Burning any kilogram of coal produces a roughly equal amount of CO_2, and thus has a roughly equal effect on climate change. Nevertheless, the local environmental impacts of coal combustion depend on *where* that coal is being burned. For example, NRG's Limestone plant burned 7.29 million tons of coal in 2005, producing 13.5 million tons of CO_2 — while Wisconsin Energy's Valley plant burned 863,000 tons of coal, producing only 2.13 million tons of CO_2. However, Limestone is located in a sparsely populated area of Texas 50 miles northwest of Huntsville, where only about 300 people live within three miles of the plant — while Valley is located near downtown Milwaukee, where 209,000 people live within three miles of the plant, of whom two-thirds are people of color.[64] Thus, while Valley has a smaller effect of climate change than Limestone, the fact that it has a vastly larger effect on local public health, and especially on the health of low-income people of color, implies that Valley should be prioritized for decommissioning.

Overall, a small number of coal power plants have a disproportionately large and destructive effect on the public's health, especially on the health of low-income people and people of color.

Coal Blooded: Putting Profits Before People is a systematic study of 378 coal-fired power plants in the United States, in which each plant is assigned an environmental justice performance (EJP) 'score,' a relative 'rank,' and a 'grade' based on how it affects low-income communities and communities of color. (For the complete ranking of all 378 plants, see Appendix 1). The same methodology is used to assign a Corporate Environmental Justice Performance (CEJP) 'score,' a relative 'rank,' and a 'grade' to 59 leading U.S. power companies, based on the effects of those companies' coal-fired power plants on low-income communities and communities of color. (For the complete ranking of these 59 companies, see Appendix 2). The score assigned to each plant, and each company, is based on five factors: SO_2 and NO_X emissions; the total population living within three miles of the plant(s); and the median income and percentage of people of color among the total population living within three miles of the plant(s).
(For a complete description of the report's methodology, see Appendix 3).

It is important to note that this report is *not* a ranking of coal power plants based on the overall toxicity of their emissions — in other words, ***the fact that a particular plant receives a grade of "F" does not mean that it is necessarily one of the 'dirtiest' coal plants in the United States.*** Numerous existing reports and studies (most notably, the Environmental Integrity Project's "Dirty Kilowatts" reports[65]) score coal power plants based purely on the toxicity of each plant's emissions. This report is an "environmental justice performance" ranking—it uses a complex algorithm (See Appendix III), combining levels of SO_2 and NO_X emissions together with demographic factors, in order to calculate each plant's score, ranking, and grade.

Also, CO_2 emissions were not included as a factor in the rankings. This is for two reasons: (1) unlike pollutants like SO_2 or NO_X, there is no viable way of limiting the amount of CO_2 that is emitted when coal is burned, and thus each coal power plant's CO_2 emissions are simply a function of the plant's size;[66] and (2) while CO_2 affects the planet as a whole, SO_2 and NO_X primarily affect communities in the area surrounding the power plant, making SO_2 and NO_X more relevant pollutants than CO_2 for the purpose of environmental justice calculations.

Finally, the fact that researchers assigned a particular plant a 'passing' environmental justice performance grade does not suggest that this plant has no detrimental effect on public health, or on low-income communities or communities of color. These grades are relative, and only score individual plants in relation to one another.

All coal-fired power plants in the United States are detrimental to public health.

Thus, a grade of 'incomplete' is assigned to plants scoring above C —as it would be unconscionable to assign a grade of A or B to a plant that, while not located in an area that is densely populated by low-income communities or communities of color, is nonetheless responsible for causing considerable environmental and public health effects.

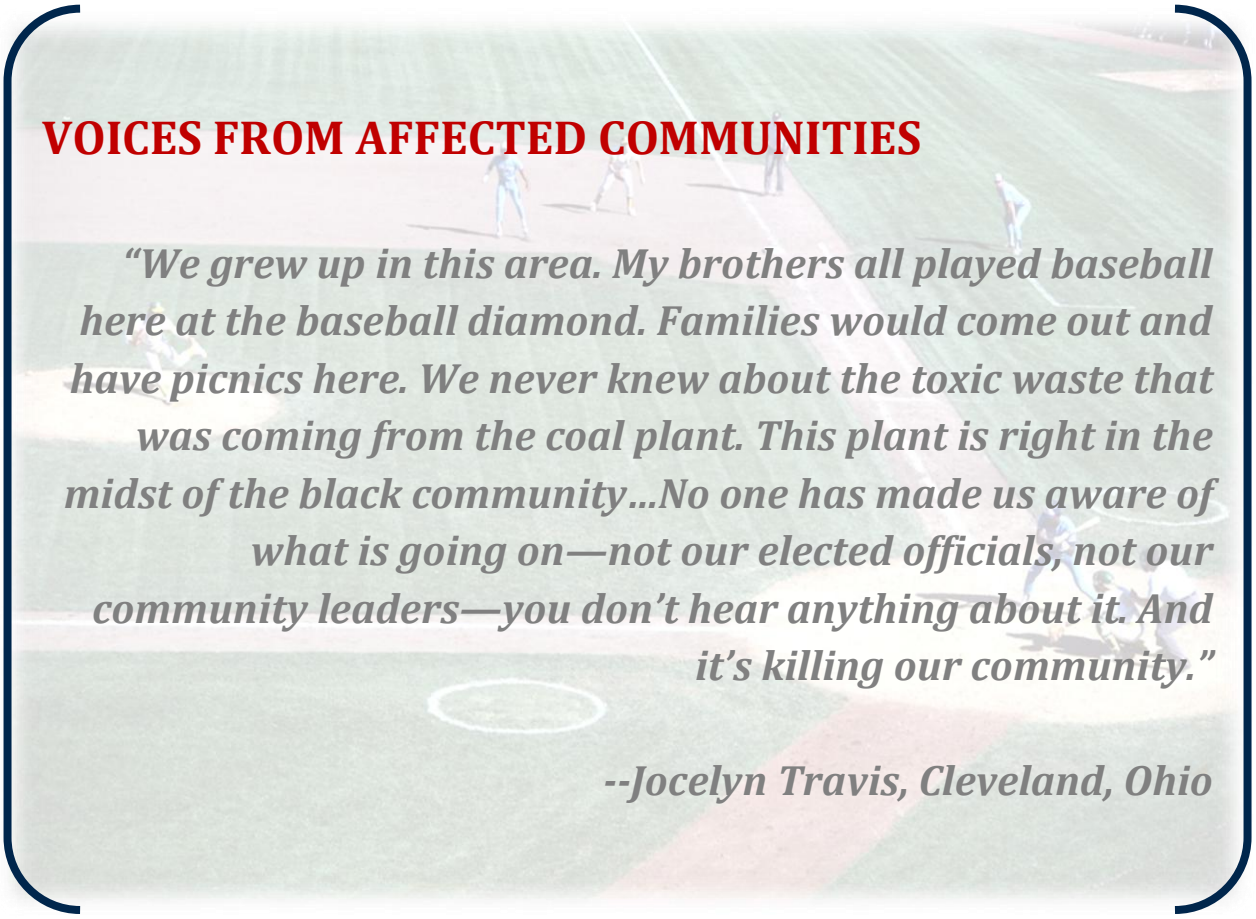
Coal Blooded builds on the information first presented in *Air of Injustice* a 2002 report authored by the Black Leadership Forum and several other organizations.[67] However, this report differs from *Air of Injustice* in four ways. First, this report provides a detailed ranking of individual coal plants, including commentary from affected populations which are often communities of color and low income communities that are frequently the voices less seen or heard. Second, this report includes income as well as race as a ranking factor. Third, this report ranks the companies that own these plants, rather than just the plants themselves; and fourth, this report analyzes census-block-level data, which is a smaller-scale than the county-level data used in *Air of Injustice.* Census-block-level data consist of the smallest geographic area for which the Bureau of the Census collects and tabulates decennial census data, which are formed by streets, roads, railroads, streams and other bodies of water, other visible physical and cultural features, and the legal boundaries shown on Census Bureau maps.[68]Using block-level-

data can give a more detailed insight to individual community/neighborhood circumstances. Census-block-level data is a valuable source for small-area geographic studies. County-level data collects a broad range of data that is focused on the population itself rather than the detailed landscape of the city.[69] The differences in the data concentration allows for other components of the community to be brought to the surface. What follows is a presentation of the research findings.

The following is a summary of the key findings from analyses on and ranking of coal fired power plants. Detailed 'profiles' of the nation's most egregious performances are provided.

Voices from Affected Communities

To provide a window into the communities that are directly impacted by these power plants, the researchers/authors visited each community that hosts a plant in the top 12 worst ranked plants. Interviews with residents reveal that most did not connect the illnesses they witness and experience each day with the pollution from the nearby coal-fired power plants. Most of the interviewees expressed a desire to learn more about how they could take action to safeguard their communities from harm. Videos of these interviews can be viewed at: www.youtube.com/katrina2copenhagen



Finding #1:
The U.S. is home to 75'Failing Plants' by Environmental Justice Standards

In this ranking (see Appendix 1 for the complete ranking), 75 plants earned an environmental justice performance grade of "F." These 75 'failing plants' produced only 8 percent of U.S. electricity in 2005, but they were responsible for 14 percent of SO_2 emissions and 13 percent of all NO_X emissions from all U.S. power plants.[70,71]

These 75 failing plants have a considerable and disproportionate impact on people of color and low-income people. *A total of four million people live within three miles of these 75 failing plants. The average per capita income of these four million people is just $17,500 (or 25%lower than state average), and out of these four million people, nearly 53 percent are people of color.*

REPORT CARD

STATE NAME	# OF PLANTS
ILLINOIS	9
INDIANA	5
MICHIGAN	5
VIRGINIA	5
COLORADO	4
NEW JERSEY	4
NEW YORK	4
PENNSYLVANIA	4
NORTH CAROLINA	4
SOUTH CAROLINA	4
FLORIDA	3
NEW MEXICO	3
WISCONSIN	3
ALABAMA	2
KANSAS	2
MASSACHUSETTS	2
OHIO	2
ARIZONA	1
CONNECTICUT	1
GEORGIA	1
HAWAII	1
LOUISIANA	1
MARYLAND	1
MISSOURI	1
NEBRASKA	1
TENNESSEE	1
TEXAS	1

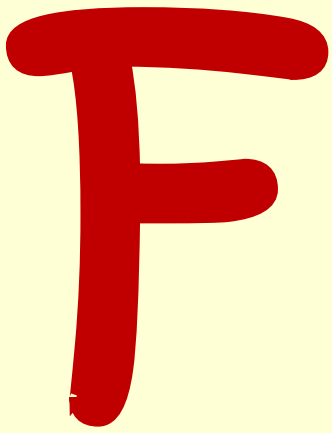


Table 3: List of states with failing power plants, created for this report

The report card, above, shows the absolute worst 75 environmental justice offending plants in the country, all of which received a letter grade of an F. It is important to also examine plants that fall within an expanded definition of the word "failing" to encompass all of the plants that are causing the most harm. The expanded definition of "failing" refers to plants with a grade of a D+ or worse on their environmental justice performance scores. Like in school settings, a grade of a D+ or worse requires urgent remediation. The map below uses the expanded definition of the word "failing," D+ or below, to color codes states by the number of failing plants within the state's borders to show where the most attention is needed.

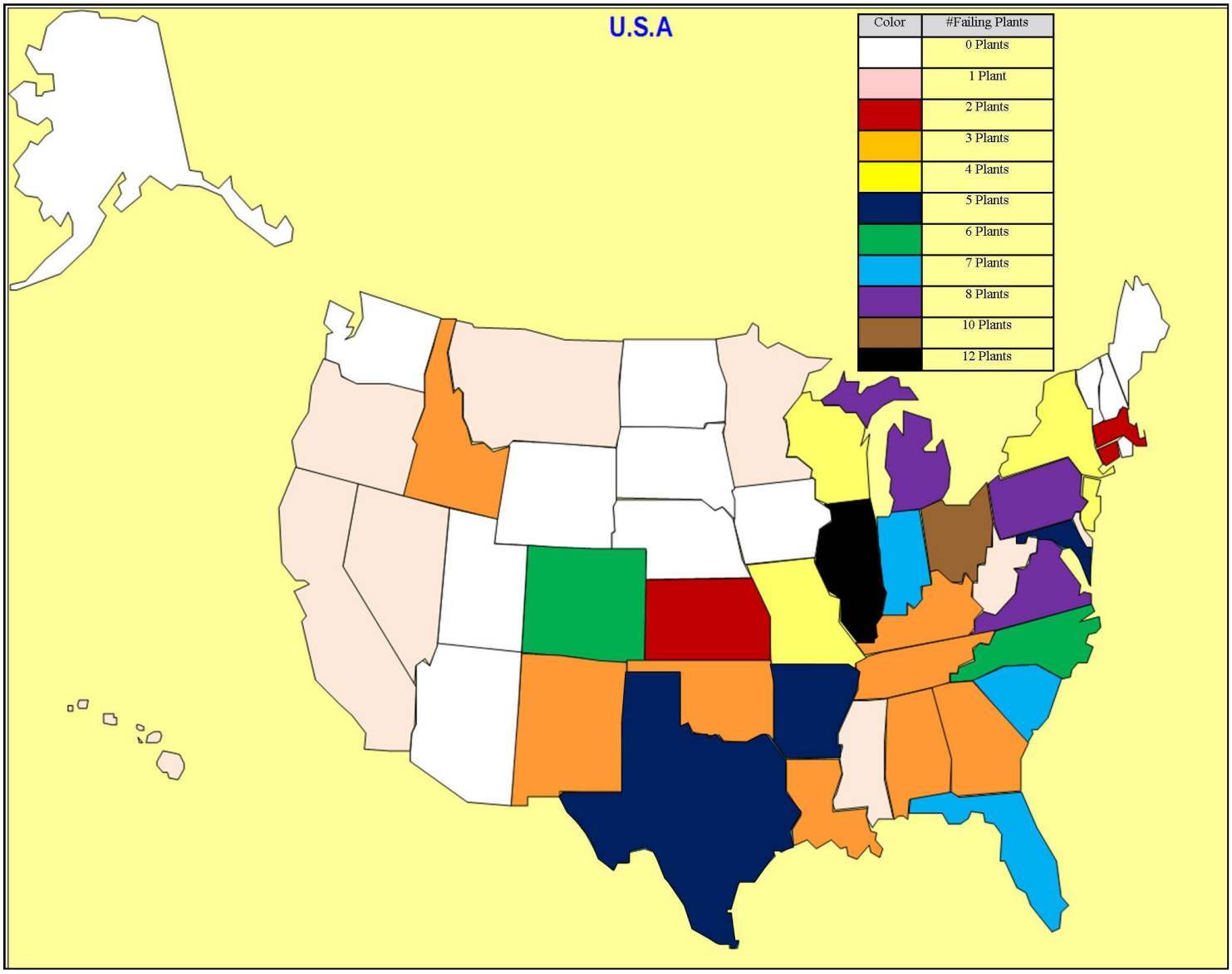


Figure 5. Map of the states with their corresponding failing power plants (plants given a grade between D+ and F), created for this report.

Finding #2: The '12 Top Environmental Justice Offenders' Disproportionately Affect LowIncome People of Color

Out of the 378 coal-fired power plants examined for this study, the following 12 had the worst environmental justice performance scores:

1. Crawford Gen. Station, Chicago, IL (Edison International)
2. Fisk Gen. Station, Chicago, IL (Edison International)
3. Hudson Gen. Station, Jersey City, NJ (PSEG)
4. Valley Power Plant, Milwaukee, WI (Wisconsin Energy)
5. State Line Plant, Hammond, IN (Dominion)
6. Lake Shore Plant, Cleveland, OH (FirstEnergy)
7. River Rouge Plant, River Rouge, MI (DTE Energy)
8. R. Gallagher Gen. Station, New Albany, IN (Duke Energy)
9. Cherokee Station, Commerce City, CO (Xcel Energy)
10. Bridgeport Station, Bridgeport, CT (PSEG)
11. Four Corners Plant, Niinahnízaad, NM (Arizona Public Service Co.)
12. Waukegan Gen. Station, Waukegan, IL (Edison International)

Collectively, these 12 plants produced a total of 48,582 gigawatt-hours (Gown) of electricity in 2005 — only 1.2 percent of total U.S. electricity production[7273]Yet, between 2007 and 2010, these "worst offending" plants emitted an annual average total of 117,743 tons of sulfur dioxide and 81,376 tons of nitrogen oxide. Consequently, from 2007-2010, of the 1437 operational units[74], the 12 "worst offending plants" alone accounted for1.8% of total emissions from power plant sources, while being only.8% of the total power plant fleet[75]. In short, closing these 12 plants would dramatically improve the health of local communities and impacts to the climate, with barely negligible impacts on U.S. electricity production.

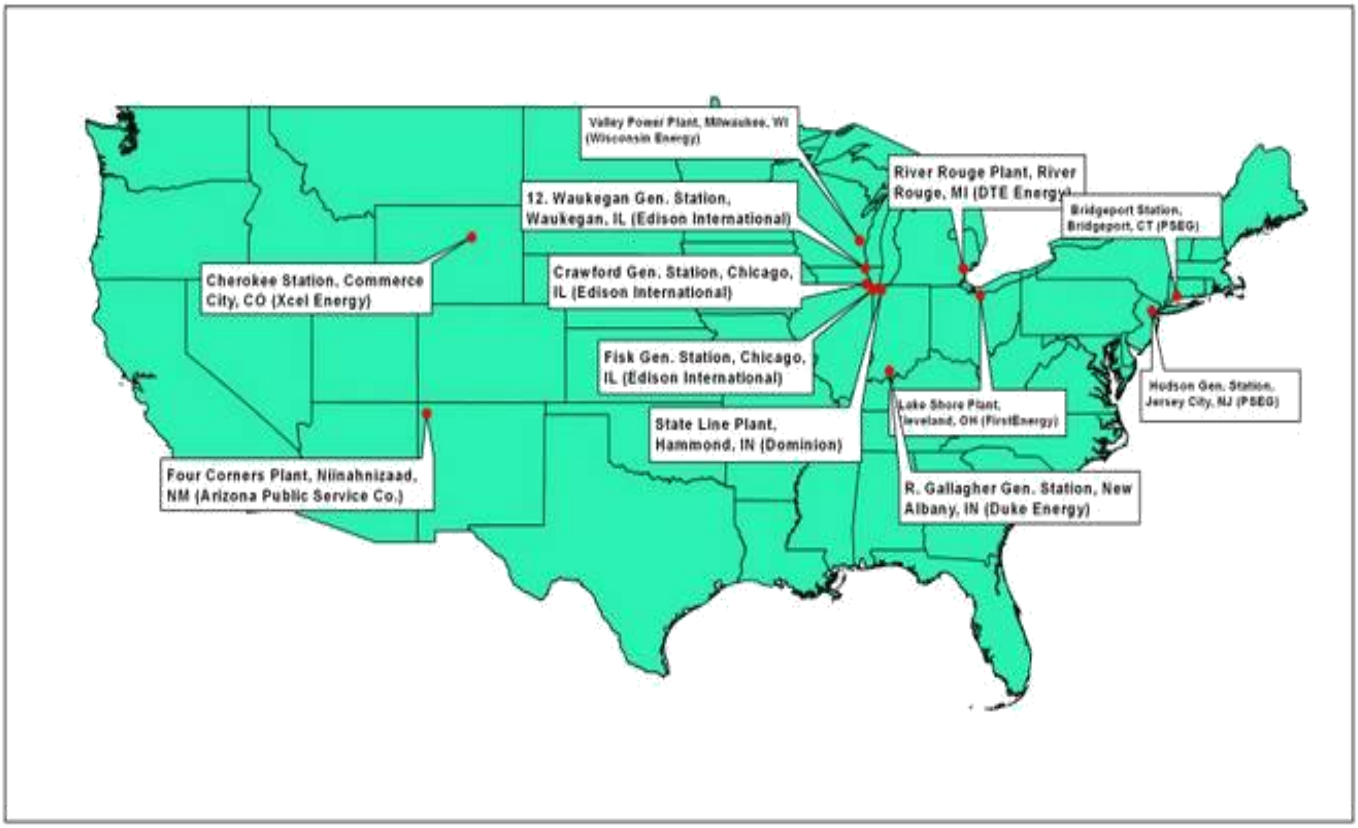


Figure 6: Map of Plant Locations[76]

Approximately two million Americans live within three miles of one of these 12 plants and the average per capita income of these nearby residents is $14,626 (compared with the U.S. average of $21,587). Approximately 76 percent of these nearby residents are people of color.

Finding #3:
The impact of these failing plants disproportionally impacts communities from five states: Illinois, Indiana, Michigan, Wisconsin and Ohio.

As the table and accompanying map in Figure 3 above shows, five states of the Midwest – Illinois, Indiana, Michigan, Wisconsin and Ohio - are home to 32% of the failing coal-fired power plants in the U.S. In addition, 8 of the 12 worst offending coal plants are located in communities in these states.

As we will discuss in Part III, the concentration of power plants in these states creates a disproportionate impact on low income communities and communities of color. This concentration of plants also has political consequences – it leads to a disproportionate concentration of political power that makes change difficult. These themes will be discussed more below.

VOICES FROM AFFECTED COMMUNITIES

"We're in front of a power plant owned by DTE while conducting the interview. The plant is located right in the middle of the community. About a block and a half down [from the plant], you can see actual homes where there's a full community of people living in this environment. This is a park that we're standing in. In the park you'll see children playing and there's actually the Rouge River which comes through here and we have a number of people who are fishing in this area. This is a mixed community but mostly minorities you'll find a lot of Latinos, a lot of African-Americans in this area. And I believe less than a block or so away is an elementary school. And so, this area is very critical when it comes to environmental issues"

– Yvonne White, River Rouge Michigan

PART III:

A Corporate Environmental Justice Performance Ranking of Coal Power Companies

The previous section of this report, along with the accompanying ranking of 378 U.S. coal plants in Appendix 1, focuses on the environmental justice performance of individual power plants. While the owners of these plants are listed in Appendix 1 — and while it is apparent from this listing that some companies own multiple coal power plants that perform poorly by environmental justice standards, it is critical to perform a more comprehensive ranking of corporate environmental justice performance, in which scores are assigned to each company based on the environmental justice performance of all coal-fired power plants owned by that company.

As Ash and Boyce (2009) point out, there has historically existed a gap between *environmental justice* (EJ) and *corporate environmental performance* (CEP) research:

> The difference between CEP and EJ studies is, in part, methodological: in CEP the unit of analysis is the source of pollution, the firm or an individual facility; in EJ the unit of analysis is the receptor, the community or households on the receiving end. The two strands of research also differ in their audiences and aims. The main audience for CEP research is socially responsible managers, investors, and consumers, with the main aim being to improve firm behavior. The main audience for EJ research is the impacted communities and responsible government officials, the main aim being to protect communities from disproportionate hazards.[77]

By combining EJ and CEP analysis into a study of *corporate environmental justice performance* (CEJP), it is possible to measure the extent to which particular company's polluting facilities specifically impact low-income people and people of color. As Ash and Boyce argue, "regular measurement of CEJP can provide stakeholders — investors, managers, regulators, consumers, and residents of affected communities — with a report card for assessing levels and changes in performance."[78] Furthermore, it can provide environmental justice advocates with a powerful tool that enables them to shift from campaigning against an entire sector or industry and toward especially irresponsible companies within that industry.

In this report, corporate environmental justice performance 'scores' have been assigned to 59 leading U.S. power companies and agencies, based on the environmental justice performance of the coal-fired power plants owned by each company. (For the complete ranking of these 59 companies, see Appendix 2). This ranking is not an average of the environmental justice performance scores of each company's coal plants; rather, it is based on the cumulative effects of all of each company's coal plants on low-income people and people of color. (For a complete description of our methodology, see Appendix 3).

Similar to the ranking of individual plants, it is important to emphasize that this is *not* a ranking of the total toxicity of the coal power plants owned by a particular company — in other words, ***the fact that a particular company receives a grade of F does not necessarily mean that it is among the biggest coal power producers in the United States.***

Like the environmental justice performance ranking of individual plants, this corporate environmental justice performance ranking uses a complex algorithm (See Appendix III), combining total SO_2 and NO_X emissions together with demographic factors, in order to calculate each company's score, ranking, and grade. For example, many companies with a CEJP grade of "F" own relatively few coal plants, and thus the total emissions of their plants is relatively low, but the plants that they own are sited disproportionately in densely populated areas with high proportions of low-income people and people of color; conversely, many companies with higher CEJP grades own a fairly large number of coal plants, and thus the total emissions of

their plants is relatively high, but the plants that they own are sited in sparsely populated areas with low proportions of low-income people and people of color.

It is important to acknowledge that higher grades have been assigned to some companies that grassroots activists have long been campaigning against. This evaluation by no means is meant to undermine the merit of criticisms raised by those campaigns; rather, this is specifically a *corporate environmental justice performance* (CEJP) ranking, which exists as a separate and equally important tool alongside overall *corporate environmental performance* (CEP) rankings. As Ash and Boyce argue, "the joint measurement of total impact (CEP) and disparate impacts (CEJP) provides the most robust picture of corporate environmental performance. Although correlated, neither measure adequately conveys information about the other. Both dimensions are relevant, and both should — and can — be incorporated into the assessment of corporate social responsibility."[79]

Key Finding: Corporations that Receive an "F" on their CEJP Score Own a Majority of the Worst Offending Coal-Fired Plants in the U.S.

The 12 companies that received a grade of "F" as their CEJP score own 39 of the 75 failing plants — including *all* of the twelve worst plants. Out of the 5.9 million Americans who live within three miles of a coal-fired power plant, 3.6 million live within three miles of a coal plant owned by one of these 12 companies. Listed below are the 12 U.S. coal power companies that received failing CEJP grades. (For the complete ranking, see Appendix 2).

	Company	Grade
1.	**Edison International**	**F**
2.	**FirstEnergy**	**F**
3.	**Unisource Energy**	**F**
4.	**Public Service Enterprise Group (PSEG)**	**F**
5.	**GenOn Energy**	**F**
6.	**Dominion Resources**	**F**
7.	**Duke Energy**	**F**
8.	**Wisconsin Energy**	**F**
9.	**Cogentrix/Goldman Sachs**	**F**
10.	**Xcel Energy**	**F**
11.	**Southern Company**	**F**
12.	**DTE Energy**	**F**

Discussion of Select Company Performance

Among the 12 worst performing companies, according to EJ standards are several that warrant a more detailed review. Below is a discussion of the policies and practices that resulted in companies being listed as "worst offenders" on environmental justice issues.

EDISON INTERNATIONAL

Edison has the worst CEJP score out of all 59 companies examined in this report. Edison's subsidiary, Midwest Generation, owns seven coal-fired power plants, six of which are located in Illinois (five of which are located within Greater Chicago), and one in Pennsylvania. The six Illinois plants all earned environmental justice performance grades of F; the Pennsylvania plant, Homer City, earned a grade of D. Three of Edison's plants are included in the Top 12 EJ Offenders — including Crawford and Fisk, which earned the worst and second-worst environmental justice performance scores out of all 378 major coal plants in the country.

Edison's principal subsidiary, Southern California Edison, is the largest electric utility in California, a state that has long been among the most progressive in the country on environmental issues. On its website, Edison states that "environmental issues are at the top of our business concerns" and that "we understand [that] our success as a corporation is directly linked to the vitality of our communities." Kimberley Wasserman, LVEJO's Executive Director and a longtime resident of Little Village, offers a different perspective, arguing that since Midwest Generation does not "have a contract with the city or the state to provide electricity to us, all of [the] electricity [from Crawford and Fisk] is sold on the open market. And so that's a huge problem for us, because these [plants] are basically cash cows for Midwest Generation. … So we suffer the brunt in order for this company to make money."[80]

Concerns over Edison plants have been so extensive a wave of community responses has arisen. See Part VI for a detailed case study.

PSEG

PSEG has the fourth-worst CEJP score of all 59 companies examined in this report. The company owns three coal-fired power plants, all three of which earned environmental justice performance grades of F, and all three of which are located within 50 miles of Manhattan; two of these three plants, Hudson and Bridgeport, are among the Top 12 EJ Offenders. The Bridgeport plant, located in downtown Bridgeport, Connecticut, is one of only eight coal-fired power plants still currently operating in New England, where coal has largely been phased out.

In 2002, the U.S. EPA charged PSEG with failing to provide adequate pollution controls at its Hudson and Mercer plants in New Jersey. The EPA, the U.S. Department of Justice, and the State of New Jersey then sued PSEG to force the company to comply with regulations. In November 2006, PSEG settled the suit by agreeing to introduce pollution controls at the Mercer plant earlier than required; in exchange, PSEG was allowed to delay installation of pollution controls at the Hudson plant until the end of 2010. (Hudson is currently the third-worst coal plant in the country on our environmental justice performance ranking.)[81]

At the same time, PSEG's CEO, Ralph Izzo, has been a leading proponent of Congressional action on climate change: in July 2010, Izzo publicly castigated Congress for having failed to pass national energy legislation, arguing that the Senate's failure "means… that we're going to see energy regulation by the courts."[82] In its 100-page 2010 Sustainability Report, PSEG states that its "vision is about excellence in providing energy in an environmentally responsible way." The company's Environmental Health and Safety Policy states that PSEG strives to "assess and manage the environmental, health, and safety risks and hazards associated with all aspects of our business, to protect our employees, our customers, [and] the communities in which we operate."[83]

However, residents of the communities in which PSEG operates its three coal-fired power plants offer a different view on the company's attitude toward environmental responsibility. Robert Harper, a resident of Jersey City (where Hudson is located), stated in an interview for this report that he believes that, "residents are deliberately being kept in the dark as to the toxic exposures" resulting from the presence of the plant in their community.

Craig Kelly, a resident of Bridgeport, stated in an interview that he believes that PSEG runs their Bridgeport plant at night in order to hide its true impact:

"For the most part, they don't do it during the day, because it would be too obvious. So they choose to let fumes into the atmosphere at night — this way no one really sees anything, and no one's the wiser."[84]

In April 2010, PSEG hosted its annual Global Green Expo in Jersey City — just a few miles from its Hudson coal-fired power plant. The Sierra Club, Environment New Jersey, and the New Jersey Environmental Federation used the occasion to write a letter to PSEG CEO Ralph Izzocalling on the company to clean up the plant, and stating that "as long as PSEG allows its coal plants to continue to add to our air pollution and global warming, they will never be really green."[85] As of this report's publication date, these organizations have not yet received a response from PSEG.

DOMINION

Dominion, the company with the sixth-worst CEJP score in this report, owns eleven coal power plants in Virginia, West Virginia, Massachusetts, Illinois, and Indiana — of which four earned environmental justice performance grades of F, and three more earned a "D." Dominion's State Line plant in Hammond, Indiana (located immediately across the state border from Chicago's South Side) received the fifth-worst environmental justice performance score of all 378 plants in this report, earning it a spot on the Top 12 EJ Offenders. Dominion recently announced that the State Line Plant will be closing this year.

Like other energy companies, Dominion promotes its image as an environmentally responsible company. The company's corporate environmental policy states that Dominion will "minimize, mitigate or restore any adverse environmental impacts caused by our operations," and its annual report highlights "dramatic" reductions in SO_2 and NO_X emissions from its power plants and $3.7 billion that Dominion has allocated to spend on "environmental improvements" between 2010-15 (both of which are largely the result of Clean Air Act mandates).[86]

However, Dominion is also one of the *only* major power companies in the United States that is currently moving ahead with construction of a new coal-fired power plant: the 585-MW Wise County plant in western Virginia. This project has been met with intense opposition since its beginning: several environmental groups filed an unsuccessful legal challenge to the proposal in 2007; activists delivered a petition with over 42,000 signatures opposing the plant at Dominion's shareholder meeting in 2008; and a total of 24 people were arrested at two separate protests for blockading the plant's construction site and Dominion's headquarters in the summer of 2008.[87][88][89][90] Despite these protests, Dominion is moving ahead with construction, and expects to make the new coal plant active in 2012.

DUKE ENERGY

Duke Energy, which has the seventh-worst CEJP score of all major coal energy companies, owns 17 coal plants in Indiana, Ohio, North Carolina, South Carolina, and Kentucky. Duke is planning to merge with Progress Energy; the merger would make the company the biggest electric utility — and the biggest coal energy producer — in the country.

As of July 2011, Duke is still building two new coal-fired power plants—one in Edwardsport, Indiana, and another in Forest City, North Carolina. Duke's lobbying heft was apparent in its fightt against common-sense coal ash standards that would ensure water quality monitoring and liners to protect communities living around coal plants. Furthermore, Duke is firmly committed to re-licensing old nuclear plants while building new nuclear plants — a threat made even clearer by the Fukushima meltdown.[91]

Duke is the owner of the Gallagher Generating Station, which earned the eighth-worst environmental justice performance score of all 378 plants in this report. Duke's operation at Gallagher best illustrates its environmental justice record. The 50-year old coal plant is located in the town of New Albany, Indiana and is directly across the river from Louisville, Kentucky. Though a medium sized 600-megawatt coal plant, it is among the top producers of toxic coal ash waste in the country. In its 2007 "Dirty Kilowatts" report, the Environmental Integrity Project revealed that Gallagher had the highest SO_2 emissions per megawatt of power produced of any major coal plant in the U.S.[92]

Duke Energy estimates that it will need to spend $60 million ($53 million in Ohio and $7 million Indiana) in order to comply with Clean Interstate Air Rule (CAIR) rules, implemented by the EPA in 2005 to reduce NOx and SO_2 emissions. The company estimates that it will spend $369 million from 2011-2015 ($131 at Duke Energy Carolinas, $70 million at Duke Energy Ohio and $168 at Duke Energy Indiana) to install caps and liners at existing coal ash sites.[93]

Xcel ENERGY

Xcel Energy has the tenth-worst corporate environmental justice performance score of the 59 companies in this report, earning it a CEJP grade of F. The company runs 11 major coal plants, four of which earned environmental justice performance grades of F (including Cherokee, one of the 12 EJ Offenders), and three more earned EJP grades of D. The company is taking steps that should marginally increase its grade – but it is also planning to leave many of its worst scoring plants in service, ensuring that the company's overall grade will continue to be very low.

In August 2008, Xcel announced its plans to decommission two coal-fired plants, and replace them with new solar capacity. The first plant, Arapahoe in Denver, which will be closed and converted to natural gas by 2013, was the 20th-worst plant in this report's ranking, earning it a grade of F. The second plant, Cameo, which will be closed by 2012, was not ranked due to its small size. Xcel voluntarily closed the two plants in order to decrease the company's CO_2 emissions — a first in the U.S.[94] However, Xcel's Cherokee plant in Denver — the ninth-worst in this report's ranking — will stay in service under this plan.

The closure of Arapahoe and Cameo did not go far enough for the Colorado State Legislature. In March 2010, a bipartisan bill was introduced to force Xcel to decrease its coal-fired generating capacity by 900 MW by 2017. Xcel has agreed to comply with the bill.[95]

PART IV:

Boom for Some, Bust for Others: Corporate Profits from Coal

While toxic to the communities in which they reside, old and dirty plants produce big profits for the companies that own them. As described by journalist Jeff Goodell:

The real obstacle to change is what some people in the industry affectionately call 'the big dirties.' Simply put, these older coal plants — most of them built in the 1960s and 1970s, before pollution controls were mandated — produce electricity so cheaply that it is virtually impossible for other power plants to compete with them. When I visited Plant Scherer in the 2003 and 2004, for example, it was generating electricity for about $20 per megawatt-hour — about half the price of competing natural gas plants. … And Scherer is nowhere near the cheapest (or the dirtiest) plant. Some old coal burners in the Midwest generate power for as little as $8 per megawatt-hour. In regulated markets, these cheap prices are passed on to ratepayers. But in restructured or partly restructured markets, these plants can sell their excess power to regional wholesale markets, often making whopping profits of $25 per megawatt-hour or more, while other, cleaner power plants are counting their profits in nickels and dimes.[96]

This pattern of profitability holds true for the coal plant companies identified in this report as failing in terms of corporate environmental justice performance. Here is how some of them are doing:

- Edison International, which owns three of the Top 12 EJ Offender plants, earned $2.12 billion in profits from its seven coal-fired plants in the years 2010.[97]
- Dominion, owner of the State Line Plant in Hammond, Indiana, which ranks fifth-worst on the list of Top 12 EJ Offenders, earned $1.2billion in profits from their fossil fuel power stations in 2010.[98]
- First Energy, owner of Lake Shore Plant in Cleveland, Ohio, the sixth-worst EJ Offender plant, earned $9.82 billion in profits in 2010.[99]
- DTE Energy, the owner of Detroit's River Rouge Power Plant, the seventh-worst EJ Offender in the country, and earned $4.99billion in operating revenues from their electric utility operations in 2010.[100]
- Duke Energy, which owns the eighth-worst EJ Offender, the R. Gallagher Power Plant in Albany, Indiana, earned $13.8 billion in operating revenues from their electric and gas operations in 2010.[101]
- The owner of the ninth-worst EJ offender Cherokee Station, Xcel Energy, earned $7.11billion in electric revenues from residential and commercial customers in 2010.[102]
- Southern Company earned $17.4 billion in electric operating revenues in 2010.[103]

In addition to generating large corporate operating revenues and profits, the operation of older dirty coal plants is a boon to corporate executives with decision-making responsibilities. The CEOs of these companies are compensated at extremely high rates, creating a strong self-interest to maintain the status quo. The average CEO compensation for these companies in 2010 was $9,782,889 while the average worker in these companies made $33,840. ***On average***

the CEOs at these companies were compensated at 289 times the rate of compensation for their average U.S. employee.[104]

CEO Compensation for 2010 at Companies Owning the Top EJ Offenders[105]		
Company	**CEO Name**	**CEO Compensation**
Dominion	Thomas F. Farrell II	$16,924,385
First Energy	Anthony J. Alexander	$11,627,657
Xcel Energy	Richard C. Kelly	$9,956,433
Edison International	Theodore F. Craver Jr.	$9,536,038
Duke Energy	James E. Rogers	$8,815,181
Southern Company	Thomas A. Fanning	$6,019,151
DTE Energy	Gerald M. Anderson	$5,601,383

Table 4: CEO Compensation for Top EJ Offenders, 2010

In order to protect this highly profitable business — and, more broadly, to protect their industry from environmental regulations —many coal energy companies dedicate substantial resources for lobbying and public relations.

Coal is currently the backbone of the power industry in the U.S., and that industry has fought hard for decades to maintain coal's place in the nation's energy supply — regardless of the environmental and health-related damages caused to local communities.

Here are some examples of how some prominent coal companies have made use of lobbying to protect their interests:

- The two largest coal energy producers, Southern Company and American Electric Power — both of which get more than two-thirds of their power from coal — spent a combined $43.7 million on lobbyists in 2008-09 alone.[106,107,108]

- Massey Energy, the country's biggest mountaintop removal coal mining company, gave $3 million in campaign contributions to a judge who later overturned a $50 million court ruling against Massey.[109]

- American Coalition for Clean Coal Electricity (ACCCE), a lobbying front of 38 leading coal industry companies, spent $40 million on advertising in 2009 –after spending $10.6 million on lobbyists during 2008.[110,111]

- Southern Company successfully opposed a plan to create a national electricity market in 2004 and has dedicated significant money and effort to fighting the Renewable Portfolio Standard (RPS), which would require utilities to purchase 15 percent of their power

from renewable sources by 2020. Southern Company argues that the RPS would raise costs for its customers and that the Southeast region of the U.S. does not have sufficient renewable sources of power.[112]

Company	Total Spent on Lobbying in 2010
Southern Company	$13,220,000
Edison International	$13,080,000
American Electric Power	$10,313,196
Duke Energy	$4,800,000
Dominion	$2,050,000
First Energy	$1,865,000
Xcel Energy	$1,720,000
DTE Energy	$1,500,000

Table 4: A Snapshot of Utility Company Spending on Lobby Efforts, 2010
This sets out the 2010 total spending on lobbying by some of the coal companies that operate the worst EJ Offending power plants.[113]

PART V:

Framing a Response

It is often argued, from a regulatory perspective, that SO_2 and NO_X emissions controls can substantially mitigate public health damage from coal power plants. There is clearly a large amount of truth to this. Simply put, the less SO_2 and NO_X that are churned out into these low-income communities of color, the better the quality of life for these residents and communities. A coal plant with SO_2 and NO_X emissions controls is certainly less destructive than a coal plant without such controls.

Emissions Controls or Decommissioning?

However, while outside of the scope of this report, an additional consideration should be whether a given plant has controls against the emission of mercury and other toxins. While SO_2 and NO_X are the focus in this report, it should be apparent that churning out mercury into waterways in a densely-populated urban environment is extremely harmful, particularly given high rates of subsistence fishing that occurs in some areas. Thus, it is somewhat astounding that until recently, ***there has been no federal limit for toxins such as mercury, arsenic, chromium, and acid gases from coal-fired power plants in the*** **U.S.**While there are mercury regulations now in place to target municipal and medical waste incinerators, coal plants have not yet been subjected to these regulations. Fortunately, in March 2011, the U.S. EPA proposed new standards for the regulation of these toxins from coal- and oil-fired power plants, which will reduce mercury emissions from these plants by 91 percent. [114] The Mercury and Air Toxics Rule for Power Plants were finalized in February 2012 (See Appendix 4 for a Review of the Policy Landscape).

While emissions controls certainly make a coal plant less hazardous, they do not make it "clean." Because SO_2 and NO_X emissions are two of the five factors by which plants are ranked in the report, one might assume that plants with lower environmental justice performance grades tend not to have SO_2 and NO_X emissions controls, and that plants with higher grades do tend to have SO_2 and NO_X emissions controls. However, comparisons between plants'

environmental justice performance grades and whether or not they have emissions controls installed refute this assumption.[115]

- There are 132 plants with a grade of D or F that are listed in the EPA's 2008 Clean Air Markets Program database. Out of these 132 plants, 42 (or 32%) had both SO_2 and NO_X emissions controls, 86 (or 65%) had either SO_2 or NO_X controls only, and 4 (or 3%) had neither SO_2 nor NO_X emissions controls.

- There are 148 plants with a grade of 'incomplete' that are listed in the EPA's 2008 Clean Air Markets Program database. Out of these 148 plants, 66 (or 45%) had either SO2 and NOX emissions controls, 68 (or 46%) had either SO_2 or NO_X controls only, and 14 (or 10%) had neither SO_2 nor NO_X emissions controls.

In summary, if a coal power plant is built in the middle of a large city, that plant is going to poison a lot of people, whether it has emission controls or not—and while adding emissions controls will make some improvement, a plant with emissions controls continues to pump out a significant amount of toxins into that same densely populated environment.

There is no silver bullet that will make these plants clean—the only truly effective way to stop coal fired power plants from polluting the communities in which they are located, is to close them.

Furthermore, the investments required to retrofit aging power plants to comply with new emissions standards are significant, with estimates running to billions of dollars.

> *"Midwest Generation (operator of Fisk and Crawford Power Plants) estimates the cost of retrofitting all units, using dry scrubbing with sodium-based sorbents to comply with CPS requirements for* SO_2 *emissions, and the associated upgrading of existing particulate removal systems, would be approximately $1.2 billion in 2010 dollars."*[116]
>
> *"Additional new EPA regulations … could add $2 billion or more in additional environmental spending in the next five years for Dominion."*[117]

These scales of investment would be of better use if applied to truly clean energy generation, rather than life extensions for an aging fleet which will continue polluting—albeit at reduced levels—communities after these investments in pollution mitigation have been made.

Combining Environmental Justice and Climate Justice: The Battle to End Coal Pollution

While the principles of climate justice mandate that U.S. coal power plants must be closed, the principles of environmental justice should determine which coal plants should be closed *first*.

Climate and environmental advocates in the United States — ***especially youth climate activists*** — have focused in recent years on cutting emissions from the U.S. coal power industry. As mentioned earlier, coal power plants are responsible for 32 percent of U.S. CO_2 emissions, so this is a highly strategic place to begin.[118] This fact has not been lost on high-profile advocates of climate action. James Hansen has called coal "the single greatest threat to civilization and all life on our planet," while Former Vice President Al Gore has called for "rings of young people blocking bulldozers and preventing them from constructing coal-fired power plants."[119][120]

Of course, in recent years, there *have* been rings of young people blocking bulldozers to prevent coal plants from being built, as part of a powerful, strategic, and highly sophisticated national campaign against coal. This movement has focused on four sub-strategies: (1) stopping proposed new coal plants from being built; (2) closing existing coal plants; (3) stopping mountaintop removal mining (MTR); and (4) targeting banks responsible for financing the coal energy sector.

A surge in new plant proposals under George W. Bush's Administration caused environmental advocates to initially focus on the first strategy, especially after a May 2007 report stated that 151 new coal-fired generating units were in various stages of development in the U.S. However, by April 2010, 99 of those 151 plants had been cancelled or put on hold, while 24 had already been built — leaving only 16 plants that were under construction, and only 12 that were in various stages of proposal and development.[121]

In November 2007, after fighting for years with grassroots campaigners over its new Comanche 3 coal-fired generating station, Xcel Energy acknowledged that protests and public opinion would probably force the company to never build another coal power plant.[122]

While the battles against MTR and against coal financing remain important, the mass civil disobedience of over 4,000 protestors against the coal-fired Capitol Power Plant in Washington,

D.C., on March 2, 2009, marked a strategic shift away from stopping new plants from being built, and toward closing existing plants.[123] In September 2009, the Sierra Club launched a high-profile campaign targeting coal plants on university and college campuses.[124]

Whether due to campaign pressure or not, many companies are in fact deciding to decommission coal plants. In the past three years, coal power plant operators have announced the closure of at least 44 major coal generating units at 21 plants — including the total closure of Progress Energy's Crystal River, Lee, Sutton, and Weather spoon plants in Florida and North Carolina; Xcel Energy's Cherokee, Arapahoe, and Cameo plants in Colorado; Edison's Mohave plant in Nevada; Southern Company's McDonough plant in Georgia; and Exelon's Eddystone plant in Pennsylvania.[125,126,127]

The fact that the anti-coal campaign is proceeding so successfully is a testament to the work of grassroots activists and organizations. However, these activists, who are part of the broader U.S. grassroots climate movement, have often run their campaigns without meaningful input from local environmental justice campaigners — many of whom live in communities that have been poisoned by these coal plants for decades. This problem reflects a shortcoming of many mainstream environmental advocates: while denouncing the fact that the climate change will disproportionately impact poor people and people of color in the Global South, many climate advocates have often failed to highlight the ongoing, disproportionate impact of carbon-intensive industries on poor people and people of color in the United States. Campaign energy tends to be focused on coal plants that are geographically proximate to (mostly white, middle-class) climate campaigners — such as coal plants on college campuses — rather than targeting those coal-fired power plants that most heavily impact poor people and people of color.

It is critically important that bridges be built between the two communities of anti-coal climate campaigners and environmental justice advocates in the United States. While this will involve listening, accommodating, and rethinking on both sides, the environmental justice community is more frequently composed of people who are being personally impacted by these plants As such, climate campaigners and the communities most affected by the U.S. coal industry's impact (namely, low-income communities and communities of color, as our report demonstrates) should engage in a collective leadership strategy against the U.S. coal industry. Anti-coal climate campaigners should assume responsibility for this bridge-building, to take direction and leadership from members of the environmental justice community, and to be willing to modify their goals, strategies, and messaging to better reflect those of the communities most effected by U.S. coal power plants. As Nia Robinson (below) and Andrew Hoerner state:

"Ultimately, accomplishing climate justice will require that new alliances are forged and traditional movements are transformed…special interests are represented by powerful lobbies, while traditional environmentalists often fail to engage people of color, Indigenous peoples, and low-income communities until after the political playing field has been defined and limited to conventional environmental goals…"

The time is now for those disproportionately affected to assume leadership in the climate change debate, to speak truth to power, and to assert rights to social, environmental and economic justice.[128]

PART VI:

What Progress Looks Like: Eliminating Coal Pollution in Chicago

Chicago Tribune

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Chicago's 2 coal-fired plants to shut down sooner than expected

February 29, 2012 | By Michael Hawthorne and Kristen Mack | Tribune reporters

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Chicago's two coal-fired power plants will shut down sooner than expected under a deal to be announced today by Mayor Rahm Emanuel and environmental groups.

Midwest Generation will close the Fisk plant in the Pilsen neighborhood by December and the Crawford plant in Little Village by the end of 2014, according to a copy of the agreement obtained by the Tribune. Companies have mothballed nearly 100 other coal plants across the nation in recent years amid competition from abundant and relatively cheap natural gas and more stringent federal air pollution limits.

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So begins the City of Chicago press release announcing the decision to close the country's 2 worst offending coal-fired power plants. Negotiation results in a more rapid timeline for closing of two Chicago power plants , as the result of an agreement forged with Mayor Emanuel and the City of Chicago in consultation with community groups and aldermen. The Fisk Station at 1111 W. Cermak Road will be closed no later than the end of 2012, and the Crawford Station at 3601 S. Pulaski Road will be closed by the end of 2014.Thus achieving the goals of proposed Clean Power Ordinance

How Did it Happen?

The decision by Midwest Generation to retire or close the Fisk and Crawford power plants is the result of many factors. Many different actors played a part in this historic victory. Grassroots organizations, like the Little Village Environmental Justice Organization (LVEJO),Pilsen Environmental Rights and Reform Organization (PERRO) and the Pilsen Alliance, national environmental organizations, local legislators and city officials, state and federal regulators all played a part. Sustained multi-level action was required over many years: grassroots community action; legal advocacy and litigation; legislative action; regulatory action. It must be emphasized again and again that the root and energizing pulse of this multi-year effort were the frontline communities directly impacted by the Fisk and Crawford plants, led by grassroots organizations such as LVEJO, PERRO and the Pilsen Alliance.

Grassroots Youth and Community Organizing- Leading and Sustaining

Grassroots youth and community organizing is the foundation upon which the wider campaign to shut to the Fisk and Crawford plants was built. Groups like LVEJO, Pilsen Alliance and PERRO struggled for over 10 years against the plants, creating the sustained pressure necessary for the other actors – such as legislators and regulators – to move in effective ways. LVEJO youth leaders and organizers use multiple tactics to raise awareness in their community and across Chicago about the dangers of the 2 plants, including street theater, protests, petitions, letter campaigns, social media advocacy and direct action. For example, on Oct. 24, 2009, hundreds of people protested outside the Fisk plant, calling for it to be closed; eight people blocked the entrance to the plant, and were arrested.[129]

The leadership provided by the mobilized communities of Little Village and Pilsen created an opportunity for partnership and collaborative action for national environmental groups, public health activists, legal advocates and a wide range of other stakeholders. LVEJO, other grassroots organizations and other important stakeholders initiated in 2009 the Chicago Clean Power Coalition to campaign for a coal free Chicago. This coalition was the force behind the proposed Chicago Clean Power Ordinance which created additional pressure on Midwest Generation to comply or close down.

See**www.lvejo.org**for more information about LVEJO, its mission and its many community campaigns.

See also**www.pilsenperro.org**and**www.thepilsenalliance.org**to learn about these important grassroots organizations.

Environmental Organizations Standing with Frontline Community Leaders

A number of green and environmental groups including Greenpeace, Sierra Club and Rainforest Action Network among others have worked in partnership with local grassroots organizations. They have supported and joined the Chicago Clean Power Coalition which has been the force pushing for the Chicago Clean Power Ordinance which would set limits on particulate matter and carbon dioxide in Chicago. In addition, coalition members engaged in numerous consciousness-raising actions. On April 21, 2011, six activists with LVEJO, Rainforest Action Network, and Rising Tide entered the Crawford facility, climbed on top of the plant's coal pile, and unfurled a banner reading "Close Chicago's Toxic Coal Plants."[130]On May 24, 2011, in a Greenpeace protest, one group of eight activists scaled the Fisk plant's smokestack, and unfurled a banner reading "Quit Coal;" a second group rappelled off of the Pulaski Bridge, blocking three coal barges from reaching the two plants by holding a banner reading "We Can Stop Coal/NosotrosPodemosParar el Carbón."[131]

Legal Action – Taking it to the Courts

In July 2009, Citizens Against Ruining the Environment, the Natural Resources Defense Council, the Sierra Club, and two other organizations filed a lawsuit against Midwest Generation, arguing that the company had failed to bring its Crawford, Fisk, and Powerton plants up to Clean Air Act standards.[132]In August 2009, the U.S. EPA, the U.S. Department of Justice, and the State of Illinois filed a separate lawsuit against the company, for illegally emitting large amounts of sulfur dioxide, nitrogen oxide and particulate matter.[133] On January 11, 2011, the U.S. Department of Justice filed a lawsuit on behalf of the U.S. EPA and the states of Pennsylvania, New York, and New Jersey, arguing that since 1990, Edison had violated the Clean Air Act New Source Review requirements by making major modifications to its Homer City plant without first obtaining appropriate permits, and without installing and operating the best available pollution controls. The suit called on Edison to close the plant until it is able to meet Clear Air Act standards.[134]

Local Legislative Action

In the summer of 2011 local Chicago legislators Alderman Joe Moore (Ward 49) and Alderman Danny Solis (Ward 25) re-introduced to Chicago's City Council an ordinance to regulate particulate and carbon dioxide emissions, called the Chicago Clean Power Ordinance. The ordinance relies on Chicago's home rule authority to take action to protect the health, safety and welfare of its residents. The re-introduction of this ordinance sparked renewed public debate over the impact and status of the 2 plants, with the Mayor of Chicago, state legislative leaders engaging in wide ranging public dialogue with each other and Midwest Gen on alternative courses of action. This intensified debate provided the immediate context in which Midwest Generation made its decision to close the 2 plants in February 2012.

See the website of the Chicago Clean Power Coalition for links to the ordinance and helpful fact sheets - **www.cleanpowerchicago.org.**

Regulatory Action

Invigorated regulatory oversight, in response to sustained community pressure and calls for action, provided the larger context for Midwest Generation's February 2012 decision to close the Fisk and Crawford plants. In 2006 Midwest Generation and its parent company entered into an agreement with the state of Illinois requiring substantial reductions in mercury, nitrogen oxide and sulfur dioxide. The agreement also required additional reductions at Fisk and Crawford by 2015 and 2018, respectively, or the plants would be closed.

At the federal level, U.S. EPA rule-making has finally brought older coal plants under regulatory oversight. In the 1970's these plants were exempted from the Clean Air Act requirements under a grandfather clause. Recent rules impacting coal plants include the Mercury and Air Toxics Rule, the Greenhouse Gases Rule, the Cross-State Air Pollution Rule. EPA is set to publish its Carbon Rule in April 2012.

PART VII:

What Should be Done: Recommendations for Action

Communities should educate themselves, engage in organizing and advocacy efforts to close the worst offending plants and enforce accountability and social responsibility in energy production.

The central foci of this effort are to advance energy efficiency and clean energy while ensuring that measures are in place to reduce community exposure to pollutants as the nation makes the shift to a clean energy future. Below is a summary of recommendations to advance solutions that safeguard communities against coal-fired power plant pollution.

While all of the recommendations below can help impacted communities, the surest way to improve the health and well-being of environmental justice communities on the frontline it to close old dirty coal plants that cannot be feasibly upgraded.

Specific actions should include the following:

- *Communities should educate themselves on the impact of coal-fired power plants on public health and the local environment.* Public health, environmental, civic and other organizations should ensure that communities are educated about the impact of coal fired power plants on community wellbeing. The NAACP, LVEJO, and IEN already prioritize education of its members and communities; however, in each conversation that is held with their constituencies, they consistently hear that people do not know about the impact of the coal-fired power plants in their communities. Communities must be further educated in order to ensure that they are informed enough to be able to make independent choices about whether and/or how to take action to defend their right to breathe clean air.
- *Communities should link up in city-wide and regional networks to build broader power.* Finding #3 of Part II of the report showed the heavy concentration of failing coal plants in 5 states in the mid-west. Greater coordination and communication among communities, grassroots organizers and environmental justice organizations in these states would increase pressure on plants and owners to dramatically reduce toxic emissions, or close. The work of grassroots organizations in Chicago forming the Chicago Clean Power Coalition should be a lesson for us all (see Part VI above).
- *Communities should increase organizing to reduce and eradicate harm caused by energy-related policies and practices.* Communities should engage in the process of finalizing related EPA rules by voicing their opinions, providing comments, and engaging in awareness-raising as well as advocacy to support and guide the development of strong rules with stringent standards.

- *Communities should advocate for improved corporate social responsibility in energy production.* Community organizations should engage directly with plant owners to advocate for their rights to clean air, and negotiate regarding plant closure and development of energy efficiency initiatives as well as alternative electricity and revenue generating industries, which preserve the health of communities, protect the planet, and create economic opportunities for the communities hosting transitional enterprises. Community organizations and others should also ensure that shareholders recognize the impact of the actions of the industries they fund on communities. Finally, community organizations and others should engage in nonviolent civil disobedience and/or other tactics of nonviolent protest where warranted, if all other measures are not effective in ending the polluting practices that are impacting the wellbeing of communities.

Philanthropic Organizations Should Support Grassroots Community Organizing to Reduce Pollution and Increase Clean Alternatives

Communities will require support as they seek to become informed and take action to advance policies and practices that ensure the U.S. shifts to energy efficiency and clean energy, while strengthening regulations to safeguard communities and the environment from polluting facilities. Philanthropy is in a position to effectively support grassroots organizing and environmental justice organizations to achieve the results demonstrated in Chicago, but it will require some shifts in grant making strategies.

A February 2012 report released by the National Committee for Responsive Philanthropy articulates a new funding strategy for environmental and climate funders to increase their effectiveness by investing in grassroots organizing. Called ***Cultivating the Grassroots – A Winning Approach for Environment and Climate Funders***, documents the disparity between marginalized communities/grassroots organizing and the other recipients of environmental grant maker funds. Environmental grant makers invested over $10B in environmental causes from 2000-2009, including $1.4B in 2009 alone.[135] However, only 12% of environmental funders gave 20% or more of their environmental funding to marginalized communities.[136] Further, only 4% of environmental funders gave 25% or more of their funding to social justice – community organizing and civic engagement.[137]

Policymakers Must Advance Just Energy Policies and Other Specific Legislative Interventions to Reduce the Harm Produces by Coal-Fired Power Plants

- GLOBAL: At the United Nations Framework Convention on Climate Change, the United States must exert strong leadership in advancing aggressive U.S. and global targets for emission reductions, fair and effective climate finance, and support for the Green Climate Fund, with an emphasis on ensuring that most affected countries and communities control decision-making regarding resource allocation.
- FEDERAL/NATIONAL: The Clean Air Act must be preserved, but strengthened. This bedrock environmental and public health policy is the cornerstone of measures to regulate pollution caused by a wide variety of economic factors. Communities should ensure that their elected officials recognize the critical significance of this policy for their wellbeing, and ensure that this policy maintain full authority, with the EPA as its steward. Communities will be better protected by the Clean Air Act if loopholes for polluters are closed, such as the grandfather clause for non-compliant facilities, if the EPA begins to exercise its discretionary authorities under the Clean Air Act to advance environmental justice goals and if the EPA begins to vigorously apply civil rights law to prevent and remedy racially disproportionate patterns of exposure to pollution.
- Congress must enact policies to shift from subsidizing harmful fossil fuel industries to significantly increasing subsidies for clean energy to ensure that clean energy is an affordable and accessible alternative.

- REGULATORY Rules being proposed by EPA in 2011-2012 including the Mercury and Air Toxics Rule, the Cross-State Air Pollution Rule, and the recently introduced Carbon Pollution Standard, , etc., that target the emissions of mercury, arsenic, lead fine particles, methane, carbon dioxide, sulfur dioxide, nitrogen oxide, etc., must be expeditiously finalized and must include the most stringent standards.
- STATE: State and federal energy efficiency and clean energy grant programs must be increased to incentivize a significant scale-up of initiatives to reduce energy use and advance clean alternatives to energy production.
- LOCAL: Local elected officials must support the development of ordinances at the city/metropolitan/local level to regulate emissions, such as the ordinance being considered in Chicago.

Corporations and Plant Owners Must Act Responsibly to Safeguard Communities Against Pollution from Coal

Acting responsibly includes taking the following action:

- Companies that are polluting communities nationwide must cease financing anti-regulatory lobbying.
- Corporations must adhere to existing and emerging standards regarding emissions.
- Corporations must immediately transition from polluting processes that poison communities.
- Corporations must engage with communities in good faith discussions regarding equitable and safe transition plans that incorporate local concerns.
- Corporations must create partnerships with communities to execute joint economic ventures around energy efficiency and clean energy, to ensure that there is no loss of jobs, revenue, or needed energy for the communities where coal plants are closing.

Research Entities Must Increase Research on the Impact of Energy Choices on Communities

Research institutions should deepen their focus on examining the myriad connections between energy production, air pollution, public health and wellbeing, and climate change. Extensive data already exist, as referenced throughout this report, on the connections between public health and coal fired power plants. Existing data also demonstrate the racial disparities in the location of these polluting facilities and the resulting disproportionate exposure. However, despite the availability of data, detailed studies of point-level environmental justice effects of energy facilities have not been conducted. These data present a compelling call to action.

CONCLUSION

Affirmative changes can be made to our energy practices that will ensure that we have the power we need, the jobs that sustain our livelihoods, and the preservation of health and wellbeing in all communities.

Closing the 75“failing plants“highlighted in this report would reduce U.S. power production by only 8 percent. This amount could easily be substituted by increased energy conservation and renewable energy production. The measures taken to increase energy conservation and renewable energy production include tax credits and financing for weatherization and supporting low income housing and homeowners to invest in renewable energy for their homes, water heating systems heated through geothermal, energy assessments on schools and homes, communities and instituting renewable portfolio standards to support scaling up utilization of renewable energy sources like solar, wind, and geothermal, etc. The key point is that shifting from harmful energy production through burning coal would *reduce the number of Americans living within three miles of a coal plant by 67 percent*, and therefore reduce thousands of hospitalizations, deaths, and incidents of illness in communities affected by these plants.

The message arising from this report is simple: *these polluting life-compromising coal plants must be closed,* and the path to doing so involves engagement from all to ensure policies and systems protect public health and maintain the economic wellbeing of communities, while providing the energy we all require to function.

APPENDIX

GLOSSARY OF KEY TERMS

CARBON DIOXIDE (CO_2):By far the most important greenhouse gas, and the most important driver of global warming. It is produced whenever carbon-based fuels (such as coal, oil, or natural gas) are burned. While carbon dioxide is present in the atmosphere naturally, and while there have historically been gradual natural fluctuations in the concentration of CO_2, its concentration in the atmosphere has increased at a dramatic and unprecedented rate since the beginning of the Industrial Revolution, from about 280 parts per million (ppm) in 1800 to 394 ppm in 2011. Many climate scientists argue that 350 ppm is the highest concentration of CO_2 that the Earth can maintain long-term without suffering "irreversible catastrophic effects."[138] In 2006, coal power plants worldwide were responsible for 28% of global CO_2 emissions; U.S. coal power plants alone were responsible for almost 7% of global CO_2 emissions. Coal is the world's most **carbon-intensive** energy source — meaning that coal power plants produce more CO_2 per unit of energy than any other energy source.

CARBON STORAGE AND SEQUESTRATION (CCS): An industry- and government-led initiative — supported by some large, mainstream "Big Green" environmental groups — to develop technologies by which carbon dioxide (CO_2) would be captured at the locations where it is currently being emitted (such as coal-fired power plants), then pumped through a network of pipelines to locations (such as depleted underground oil and gas reservoirs) where it can then be permanently sealed underground. The term **"clean coal"** is used by coal industry advocates to refer to the use of CCS technology to capture and store the CO_2 from coal-fired power plants. Critics argue that there are huge potential problems with CCS — including shortcomings in knowledge about the process by which CO_2 would be injected underground, unpredictable problems with CO_2 leakage, and potentially massive costs — which would likely make the technology unworkable. Furthermore, critics point out that so-called "clean coal" only involves removing the CO_2 from coal power plant pollution, and fails to address the continued effects of SO_2, NO_X, mercury, and other pollutants on the local communities where coal plants are located. Critics argue that, even in the best-case scenario, constructing a vast network of CO_2 pipelines and reservoirs would be a massively expensive enterprise, and that it would be smarter from both a cost-management and a harm-reduction perspective to simply shut down coal plants, and replace them with proven alternatives such as wind and solar power generation.

CARBON TRADING: A regulatory arrangement — already well underway in Europe — under which governments create a multi-trillion dollar market in carbon dioxide (CO_2) pollution permits (or "**carbon offsets**"), which would be bought and sold by polluting companies. One big problem with this plan is that the decisions about which projects qualify as carbon offsets — and how much carbon they qualify as offsetting — would be made by government and/or corporate bureaucracies, which often take a quick and irresponsible look at the carbon balance of individual investments (for example, giving credits to a palm oil plantation built on destroyed rainforest land, because the palm trees take CO_2 out of the air). Most frighteningly, carbon offsets would be traded by banks on open markets — subjecting the future of planetary carbon regulation to the same international financial markets that collapsed so catastrophically in 2008.

CLIMATE JUSTICE: The argument that climate change is not merely a scientific or technical issue, but should also is viewed through the perspective of social justice. Climate justice activists argue that

vulnerable poor communities — both in the Global South and in the Global North — are least responsible for causing climate change, but will be most severely impacted by its effects. Climate justice activists thus argue that countries of the Global North hold an **emissions debt** to the Global South, and thus have a responsibility to cut their carbon dioxide (CO_2) emissions far more deeply; these activists also argue that vulnerable communities, especially Indigenous communities, should have an equal voice in processes by which global and national responses to climate change are decided upon. Finally, climate justice activists argue that, since free-market capitalism is responsible for causing the climate crisis, we should not rely on corporate and market-based initiatives to "solve" the problem of climate change.

CORPORATE ENVIRONMENTAL JUSTICE PERFORMANCE:A measure of the extent to which the pollution sources owned by a particular company impact low-income communities and communities of color. As Ash & Boyce argue, "community-based [environmental justice] activists generally have focused on impacts from specific facilities… but whether the exposure patterns at individual facilities can be generalized to overall corporate behavior is seldom evident." However, corporate environmental justice performance analysis shows that "the extent to which firms even in the same industrial sector impose disparate pollution burdens on different groups can and does vary substantially."[139]

DECOMMISSIONING: A process by which an industrial facility is permanently closed down, and the site is, in principle, restored to the conditions existing before the construction of the facility. In reality, full restoration is typically not feasible; however, this process of environmental **remediation** is subject to a wide array of regulatory requirements, in order to ensure that the decommissioned property is restored to the extent that the site can be safely used for other economic purposes.

ENVIRONMENTAL JUSTICE: An environmental injustice exists when members of disadvantaged, ethnic, minority or other groups suffer disproportionately at the local, regional (sub-national), or national levels from environmental risks or hazards, and/or suffer disproportionately from violations of fundamental human rights as a result of environmental factors, and/or denied access to environmental investments, benefits, and/or natural resources, and/or are denied access to information; and/or participation in decision making; and/or access to justice in environment-related matters.[140]Environmental justice is achieved when everyone, regardless of race, culture, or income, enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.[141]

ENVIRONMENTAL JUSTICE PERFORMANCE:A measure of the extent to which a pollution source impacts low-income communities and communities of color.

GLOBAL SOUTH-GLOBAL NORTH: These terms refer to geographical, economic and political differences between nations. While many of the countries considered to be in the category of "global south" are below the equator, not all countries below the equator are referred to as "global south" and not all countries referred to as "global south" are below the equator. Formerly colonized nations, countries considered to be "less developed" and countries that are "less industrialized" are typically referred to as "global south" nations. While "industrialized nations" and nations that are considered to be "developed" are referred to as "global north" nations.

MEGAWATT/GIGAWATT:A measure of electricity output, or **energy**. A megawatt is 1,000,000 watts; a gigawatt is 1,000 megawatts, or 1,000,000,000 watts. One megawatt is enough electricity to power 800

average American homes; one gigawatt is enough electricity to power 800,000 average American homes.

MEGAWATT-HOUR/GIGAWATT-HOUR: A measure of electricity output per unit of time, or **power**. (The difference between a megawatt and a megawatt-hour can be understood by thinking of a water faucet: a megawatt is similar to the flow rate at which the water is coming out of the faucet at any given time, whereas a megawatt-hour is similar to the total amount of water that would come out of the faucet in one hour.)

MOUNTAINTOP REMOVAL MINING (MTR): A coal mining process, primarily used in Appalachia, by which coal mining companies first cut down all forests on a mountain, then blast off up to 400 feet of rock and soil using explosives, scoop out the coal from the exposed seam, and push the rubble from the destroyed mountain into a nearby valley. This incredibly destructive mining practice has permanently destroyed 500 mountains in Appalachia, and threatens hundreds more. The "valley fills" of toxic rubble have also buried over 700 miles of rivers and streams, poisoning local water supplies with heavy metals found in coal seams (in an area where, due to widespread rural poverty and poor infrastructure, a large proportion of residents rely on well water for their water supply).

NITROGEN OXIDES (NO_X): A category of air pollutants, which is produced by a variety of different industrial processes. NO_X increases the risk of respiratory disease in children; it also reacts with sunlight to produce *ozone* (O_3), which, like SO_2, increases the risk and severity of asthma, as well as causing coughing, wheezing, and shortness of breath. Coal power plants produce 18% of all NO_X pollution in the U.S.

SULFUR DIOXIDE (SO_2): One of the main industrial air pollutants, and one that is predominantly produced by burning coal or petroleum. Sulfur dioxide is one of the main causes of acid rain, and it combines with other pollutants to form **particulate ($PM_{2.5}$) pollution**. Immediately, SO_2 pollution (and the particulate pollution that it produces) causes coughing, wheezing, and nasal inflammation. Longer-term, it can cause or increase the severity of asthma. Coal power plants produce 74% of all SO_2 pollution in the U.S.

APPENDIX I:

Complete Plant-Level Environmental Justice Performance Ranking

Below is a listing of all 378 coal fired power plants that were ranked based for the purpose of this study.

State	City	Parent Company/Entity	Plant Name	Capacity (MW)	Electricity Production (MWh, av. 2005-08)	SO_2 Emissions (tons, av. 2007-10)	NO_X Emissions (tons, av. 2007-10)	Pop. Within 3 Miles	3-Mile Average Income	% of State Average Income	3-Mile POC Pop.	Overall Rank	Grade
IL	Chicago	Edison International	Crawford	597	2,968,888	7,276	1,978	373,690	$11,097	48.0%	83.9%	1	F
IL	Chicago	Edison International	Fisk Street	374	1,805,725	4,464	1,125	314,632	$15,076	65.3%	83.1%	2	F
NJ	Jersey City	Public Service Electric & Gas	Hudson	660	2,807,633	2,452	2,565	309,478	$21,596	80.0%	74.0%	3	F
WI	Milwaukee	Wisconsin Energy	Valley	272	*1,462,832*	5,999	2,407	209,421	$12,852	60.4%	66.0%	4	F
IN	Hammond	Dominion	State Line Energy	614	3,338,043	10,326	7,885	77,931	$14,408	70.6%	78.9%	5	F
OH	Cleveland	FirstEnergy	Lake Shore	256	1,117,463	3,492	1,326	103,333	$10,866	51.7%	90.6%	6	F
MI	River Rouge	DTE Energy	River Rouge	651	*2,949,460*	14,614	4,861	68,262	$13,037	58.8%	65.3%	7	F
IN	New Albany	Duke Energy	R Gallagher	600	3,044,369	37,604	4,332	60,333	$12,868	63.1%	60.8%	8	F
CO	Commerce City	Xcel Energy	Cherokee	801	5,208,081	6,750	9,482	61,559	$13,682	56.9%	64.4%	9	F
CT	Bridgeport	Public Service Electric & Gas	Bridgeport Station	400	2,803,500	2,044	1,404	145,133	$16,817	58.5%	67.0%	10	F
NM	Fruitland	Pinnacle West Capital	Four Corners	2270	16,378,361	11,032	40,685	*488*	*$6,762*	*39.2%*	*94.9%*	11	F
IL	Waukegan	Edison International	Waukegan	682	4,697,553	11,690	3,326	67,776	$16,197	70.1%	72.1%	12	F
AZ	Tucson	UniSource Energy	H. Wilson Sundt	173	808,407	2,040	1,428	56,609	$10,258	50.6%	74.7%	13	F

State	City	Parent Company/Entity	Plant Name	Capacity (MW)	Electricity Production (MWh, av. 2005-08)	SO2 Emissions (tons, av. 2007-10)	NOX Emissions (tons, av. 2007-10)	Pop. Within 3 Miles	3-Mile Average Income	% of State Average Income	3-Mile POC Pop.	Overall Rank	Grade
MA	Somerset	Dominion	Brayton Point	1125	8,321,916	28,802	5,016	77,676	$16,461	63.4%	9.4%	14	F
VA	Chesapeake	Dominion	Chesapeake	650	3,934,895	18,161	4,583	53,955	$16,751	69.9%	43.3%	15	F
TN	Memphis	U.S. Government	Allen	990	5,743,971	12,156	6,434	2,589	$9,412	48.5%	99.2%	16	F
NE	Omaha	City of Omaha, NE	North Omaha	645	3,728,722	13,358	6,272	43,133	$13,858	70.7%	56.7%	17	F
NM	Prewitt	Tri-State Generation & Transmission Association (cooperative)	Escalante	257	1,859,191	1,211	3,332	*372*	*$6,701*	*38.8%*	*90.2%*	18	F
CO	Denver	Xcel Energy	Arapahoe	160	1,010,656	2,556	2,608	137,267	$21,990	91.4%	41.6%	19	F
PA	Birdsboro	GenOn Energy	Titus	225	1,352,967	11,204	1,860	82,086	$16,699	80.0%	39.0%	20	F
IL	Joliet	Edison International	Joliet 9/Joliet 29	1680	7,688,413	18,407	6,813	43,392	$18,810	81.4%	41.7%	21	F
NJ	Hamilton	Public Service Electric & Gas	Mercer	653	3,116,778	10,796	1,000	81,676	$19,365	71.7%	42.0%	22	F
KS	Kansas City	City of Kansas City, KS	Quindaro	239	1,192,071	4,003	3,424	42,539	$15,561	75.9%	69.9%	23	F
MI	Lansing	City of Lansing, MI	Eckert	375	1,766,547	5,212	2,011	96,255	$17,959	81.0%	39.2%	24	F
PA	Eddystone	Exelon	Eddystone	707	3,033,299	5,322	4,124	93,912	$19,181	91.9%	26.2%	25	F
CO	Colorado Springs	City of Colorado Springs, CO	Martin Drake	257	2,047,603	7,758	4,192	78,101	$20,905	86.9%	26.6%	26	F
MI	Muskegon	CMS Energy	B C Cobb	313	2,182,116	10,753	2,771	43,990	$15,161	68.4%	37.6%	27	F
VA	Richmond	Goldman Sachs (Cogentrix)	Spruance Genco	230	*1,531,379*	*5,776*	*4,045*	31,903	$17,627	73.5%	59.4%	28	F
SC	Pineville	Santee Cooper	Cross	1738	11,513,871	8,563	5,965	*1,068*	*$10,626*	*56.5%*	*76.3%*	29	F
SC	Beech Island	SCANA	Urquhart	100	717,757	5,588	790	7,464	$12,623	67.2%	77.2%	30	F
NC	Battleboro	Goldman Sachs (Cogentrix)	Edgecombe Genco	115	*902,847*	*4,864*	*2,964*	4,370	$11,735	57.8%	67.2%	31	F
WI	Green Bay	Integrys	Pulliam	350	2,494,016	7,198	5,210	52,071	$16,275	76.5%	22.5%	32	F
OH	Willoughby	FirstEnergy	Eastlake	1257	8,810,886	52,315	8,478	39,044	$20,947	99.7%	3.3%	33	F

State	City	Parent Company/Entity	Plant Name	Capacity (MW)	Electricity Production (MWh, av. 2005-08)	SO2 Emissions (tons, av. 2007-10)	NOX Emissions (tons, av. 2007-10)	Pop. Within 3 Miles	3-Mile Average Income	% of State Average Income	3-Mile POC Pop.	Overall Rank	Grade
FL	Indiantown	Goldman Sachs (Cogentrix)	Indiantown	395	*2,322,170*	*12,682*	*8,873*	3,403	$13,107	60.8%	68.2%	34	F
CO	Pueblo	Xcel Energy	Comanche	779	4,944,487	7,150	5,139	10,355	$14,584	60.6%	57.7%	35	F
FL	Lakeland	City of Lakeland, FL	C D McIntosh Jr	364	2,699,208	5,722	3,518	29,782	$15,386	71.4%	38.7%	36	F
AL	Gadsden	Southern Company	Gadsden	138	*429,828*	7,257	1,577	24,955	$13,600	74.8%	49.9%	37	F
SC	Eastover	SCANA	Wateree	772	4,957,624	28,160	3,716	*367*	*$12,422*	*66.1%*	*82.8%*	38	F
TX	Amarillo	Xcel Energy	Harrington	1080	8,040,270	20,197	8,525	*4,724*	*$9,134*	*46.6%*	*46.3%*	39	F
NC	Lumberton	Progress Energy	W.H. Weatherspoon	166	847,634	6,600	2,575	*10,450*	*$11,867*	*58.4%*	*50.3%*	40	F
NY	Tonawanda	NRG Energy	C R Huntley	436	2,752,167	7,381	1,939	*55,349*	*$17,306*	*74.0%*	*12.0%*	41	F
IN	Michigan City	NiSource	Michigan City	540	2,547,056	10,941	2,881	*29,568*	*$16,523*	*81.0%*	*29.7%*	42	F
IL	Pekin	Edison International	Powerton	1786	9,265,378	21,694	21,673	*16,131*	*$16,614*	*71.9%*	*8.2%*	43	F
IL	Baldwin	Dynegy	Baldwin	1894	13,720,906	24,716	4,452	*4,121*	*$13,419*	*58.1%*	*51.7%*	44	F
NM	Waterflow	PNM Resources	San Juan	1848	12,826,273	8,928	20,093	*937*	*$11,982*	*69.4%*	*74.9%*	45	F
FL	Orlando	City of Orlando, FL	Stanton	929	6,636,861	5,392	7,706	*6,581*	*$14,035*	*65.1%*	*48.1%*	46	F
IL	Springfield	City of Springfield, IL	Dallman/Lakeside	463	3,123,218	8,739	3,531	*28,821*	*$19,288*	*83.5%*	*29.1%*	47	F
VA	Portsmouth	Goldman Sachs (Cogentrix)	Cogentrix Portsmouth	115	710,463	1,313	676	*53,186*	*$19,424*	*81.0%*	*40.4%*	48	F
NY	Dunkirk	NRG Energy	Dunkirk	627	3,628,244	9,057	2,656	*16,916*	*$14,578*	*62.3%*	*23.2%*	49	F
KS	Kansas City	City of Kansas City, KS	Nearman Creek	261	1,625,474	6,344	3,832	*25,710*	*$19,661*	*95.9%*	*43.7%*	50	F
NJ	Swedesboro	Goldman Sachs (Cogentrix)	Logan	242	1,642,435	12,145	1,019	*17,446*	*$16,924*	*62.7%*	*27.8%*	51	F
NC	Weldon	Westmoreland Coal Company	Roanoke Valley	240	1,600,880	8,707	1,620	*15,693*	*$15,339*	*75.5%*	*42.1%*	52	F
IN	Indianapolis	AES	Harding Street	698	3,863,590	25,259	3,525	*35,209*	*$17,092*	*83.8%*	*8.3%*	53	F
VA	Alexandria	GenOn Energy	Potomac River	514	1,304,808	1,988	1,515	*138,380*	*$34,352*	*143.3%*	*54.9%*	54	F

State	City	Parent Company/Entity	Plant Name	Capacity (MW)	Electricity Production (MWh, av. 2005-08)	SO2 Emissions (tons, av. 2007-10)	NOX Emissions (tons, av. 2007-10)	Pop. Within 3 Miles	3-Mile Average Income	% of State Average Income	3-Mile POC Pop.	Overall Rank	Grade
PA	Masontown	FirstEnergy	Hatfields Ferry	1728	10,405,940	99,918	22,912	*8,398*	*$15,126*	*72.4%*	*5.6%*	55	F
IL	Alton	Dynegy	Wood River	500	3,244,354	8,047	2,561	*29,889*	*$16,381*	*70.9%*	*12.4%*	56	F
HI	Kapolei	AES	AES Hawaii	203	1,547,814	23,971	7,193	*2,497*	*$20,931*	*97.2%*	*87.0%*	57	F
LA	Lena	Cleco	Rodemacher	558	3,419,394	9,340	4,222	*1,237*	*$11,154*	*66.0%*	*66.7%*	58	F
AL	Forkland	Southern Company	Greene County	568	3,873,062	30,007	5,213	*480*	*$13,821*	*76.0%*	*78.8%*	59	F
SC	Goose Creek	SCANA	Williams	633	4,605,303	15,821	3,698	*4,496*	*$9,653*	*51.4%*	*32.6%*	60	F
MI	Trenton	DTE Energy	Trenton Channel	776	4,226,915	26,277	5,318	*43,301*	*$29,078*	*131.2%*	*5.9%*	61	F
MO	Kansas City	Great Plains Energy	Hawthorn	594	3,892,129	1,902	1,488	*31,335*	*$14,647*	*73.5%*	*32.3%*	62	F
VA	Hopewell	Goldman Sachs (Cogentrix)	James River Cogeneration	115	642,619	2,448	1,728	*22,623*	*$17,981*	*75.0%*	*37.4%*	63	F
WI	Sheboygan	Alliant Energy	Edgewater	770	4,769,205	14,929	3,857	*29,814*	*$18,812*	*88.4%*	*15.7%*	64	F
MI	Monroe	DTE Energy	Monroe	3280	20,279,954	94,568	27,098	*7,999*	*$19,202*	*86.6%*	*15.8%*	65	F
PA	Springdale	GenOn Energy	Cheswick	637	2,924,260	27,161	3,521	*35,690*	*$19,266*	*92.3%*	*8.2%*	66	F
IN	Madison	Ohio Valley Electric Corp. (AEP [43.4%], FirstEnergy [20.5%], Buckeye [12.5%], and four other corporations)	Clifty Creek	1303	9,415,079	63,807	14,535	*14,216*	*$17,546*	*86.0%*	*5.6%*	67	F
IL	Romeoville	Edison International	Will County	1269	6,045,575	15,332	6,355	*27,062*	*$20,997*	*90.9%*	*15.3%*	68	F
NY	Johnson City	AES	AES Westover	119	799,783	4,183	513	*62,201*	*$18,747*	*80.2%*	*15.6%*	69	F
MD	Curtis Bay	Constellation Energy	Brandon Shores	1370	8,833,833	29,011	7,921	*25,441*	*$23,050*	*90.0%*	*7.8%*	70	F
NJ	Carneys Point	Goldman Sachs (Cogentrix)	Chambers (Carneys Point)	285	1,941,304	15,388	1,231	*14,158*	*$18,900*	*70.0%*	*28.0%*	71	F
GA	Smyrna	Southern Company	Jack McDonough	598	3,870,476	21,473	3,435	*43,319*	*$32,515*	*153.7%*	*54.1%*	72	F

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MA	Salem	Dominion	Salem Harbor	330	1,982,957	5,299	1,094	100,051	$27,500	106.0%	11.8%	73	**F**
NC	Wilmington	Progress Energy	L.V. Sutton	672	3,121,196	19,156	4,872	3,116	$14,052	69.2%	44.5%	74	**F**
NY	Syracuse	GDF SUEZ	Trigen Syracuse	101	*124,284*	*2,018*	*229*	69,755	$17,481	74.7%	19.7%	75	**F**
VA	Clover	Dominion	Clover	848	6,938,641	1,910	9,455	*837*	*$12,916*	*53.9%*	*48.4%*	76	**D-**
MO	Sikeston	City of Sikeston, MO	Sikeston	261	2,057,589	6,396	2,284	15,312	$15,111	75.8%	27.1%	77	**D-**
MI	Marquette	Wisconsin Energy	Presque Isle	562	3,672,757	11,414	6,719	18,807	$16,374	73.9%	5.6%	78	**D-**
OH	Niles	GenOn Energy	Niles	266	*1,015,015*	11,565	2,956	41,028	$18,490	88.0%	4.0%	79	**D-**
OH	Aberdeen	DPL	J.M. Stuart	2441	15,470,457	54,009	16,332	3,781	$13,094	62.3%	13.7%	80	**D-**
IN	Terre Haute	Duke Energy	Wabash River	1165	4,824,696	58,158	6,617	12,815	$15,989	78.4%	5.1%	81	**D-**
WI	Madison	MGE Energy	Blount Street	178	286,584	1,601	313	93,294	$18,281	85.9%	18.0%	82	**D-**
KY	Louisville	PPL	Cane Run	645	3,879,616	10,816	6,033	25,907	$17,104	94.5%	16.9%	83	**D-**
MN	Burnsville	Xcel Energy	Black Dog	294	1,670,744	3,165	6,076	63,615	$26,854	115.8%	15.6%	84	**D-**
DE	Millsboro	NRG Energy	Indian River	782	3,956,837	19,072	5,090	6,645	$18,052	77.5%	30.1%	85	**D-**
IL	Bartonville	Ameren	E.D. Edwards	780	4,723,776	12,376	4,453	25,094	$18,493	80.0%	2.6%	86	**D-**
IA	Marshalltown	Alliant Energy	Sutherland	157	*873,996*	6,145	1,897	14,143	$14,817	75.3%	24.9%	87	**D-**
PA	York Haven	PPL	Brunner Island	1559	10,463,654	70,512	15,181	10,937	$18,722	89.7%	3.1%	88	**D-**

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MD	Cumberland	AES	AES Warrior Run	229	*1,557,998*	*12,079*	*535*	10,914	$12,982	50.7%	10.7%	89	**D-**
GA	Cartersville	Southern Company	Bowen	3499	23,617,230	101,855	14,188	6,715	$17,882	84.5%	9.7%	90	**D-**
SC	Canadys	SCANA	Canadys	490	2,449,322	14,538	3,203	*943*	*$12,127*	*64.5%*	*45.2%*	91	**D-**
NV	Moapa	NV Energy	Reid Gardner	637	4,058,013	1,144	5,435	*414*	*$14,392*	*65.5%*	*52.8%*	92	**D-**
SC	Conway	Santee Cooper	Dolphus M Grainger	163	1,013,922	6,830	1,283	14,855	$16,680	88.7%	37.3%	93	**D-**
FL	Pensacola	Southern Company	Crist	1135	6,115,894	28,339	5,768	19,722	$22,226	103.1%	16.0%	94	**D-**
MS	Gulfport	Southern Company	Jack Watson	877	4,919,179	21,929	9,644	22,921	$20,760	131.0%	24.9%	95	**D-**
IL	Hennepin	Dynegy	Hennepin	306	2,079,926	5,251	1,370	*2,467*	*$15,635*	*67.7%*	*42.2%*	96	D-
MT	Billings	PPL	J E Corette Plant	173	1,172,098	2,911	1,672	*36,411*	*$15,325*	*89.4%*	*16.5%*	97	D-
LA	New Roads	NRG Energy	Big Cajun 2	1871	13,207,304	36,816	12,081	*3,328*	*$16,983*	*100.4%*	*49.5%*	98	D-
OR	Boardman	Portland General Electric	Boardman	601	3,812,569	13,013	8,726	*233*	*$13,982*	*66.8%*	*48.6%*	99	D-
IL	Decatur	Archer Daniels Midland	Archer Daniels Midland Decatur	335	1,591,666	3,674	85	*31,997*	*$17,112*	*74.1%*	*24.3%*	100	D-
CO	Brush	Xcel Energy	Pawnee	552	3,746,956	12,257	3,925	*1,200*	*$12,964*	*53.9%*	*25.9%*	101	D
GA	Port Wentworth	Southern Company	Kraft	208	1,235,284	7,347	3,819	*6,444*	*$16,348*	*77.3%*	*28.7%*	102	D
MD	Baltimore	Constellation Energy	C P Crane	400	2,083,070	18,262	3,856	*14,067*	*$22,693*	*88.6%*	*14.9%*	103	D

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TX	San Antonio	City of San Antonio, TX	Spruce/Deely	1498	10,186,265	23,265	7,103	*2,994*	*$17,703*	*90.2%*	*42.6%*	104	D
TX	Sudan	Xcel Energy	Tolk	1136	7,744,536	21,541	7,593	*274*	*$14,050*	*71.6%*	*49.7%*	105	D
MD	Curtis Bay	Constellation Energy	Herbert A Wagner	495	2,693,299	14,846	2,696	*25,672*	*$23,403*	*91.4%*	*6.5%*	106	D
PA	Shamokin Dam	AMCI Group	Sunbury	438	1,627,644	27,869	3,239	*16,580*	*$17,409*	*83.4%*	*4.2%*	107	D
PA	Homer City	Edison International	Homer City	2012	13,559,086	109,384	13,566	*5,376*	*$16,199*	*77.6%*	*1.4%*	108	D
PA	Shippingport	FirstEnergy	Bruce Mansfield	2741	19,901,570	17,780	17,455	*7,293*	*$17,729*	*84.9%*	*13.2%*	109	D
CT	Uncasville	AES	AES Thames	214	1,258,706	7,867	431	*18,320*	*$20,677*	*71.9%*	*14.0%*	110	D
KY	Louisville	PPL	Mill Creek	1717	11,207,145	26,962	11,059	*8,394*	*$14,766*	*81.6%*	*5.9%*	111	D
IN	Princeton	Duke Energy	Gibson	3340	23,992,984	34,073	20,290	*4,557*	*$14,604*	*71.6%*	*3.1%*	112	D
FL	Mulberry	TECO Energy	Polk	326	1,902,298	1,090	639	*244*	*$14,253*	*66.1%*	*42.7%*	113	D
SC	Cope	SCANA	Cope	417	3,240,315	1,876	2,315	*1,705*	*$14,252*	*75.8%*	*47.7%*	114	D
NC	Eden	Duke Energy	Dan River	290	1,018,069	5,011	1,000	*12,324*	*$15,772*	*77.7%*	*23.9%*	115	D
MO	St. Louis	Ameren	Meramec	923	6,173,411	19,381	5,095	*24,139*	*$23,368*	*117.2%*	*2.7%*	116	D
AZ	Saint Johns	State of Arizona	Coronado	822	6,727,640	13,937	13,463	*313*	*$12,470*	*61.5%*	*33.4%*	117	D
NC	Goldsboro	Progress Energy	Lee	402	2,129,373	13,788	3,561	*4,758*	*$14,983*	*73.8%*	*22.4%*	**118**	**D**
AL	Leroy	PowerSouth Energy Cooperative	Charles R. Lowman	538	4,074,602	8,558	6,997	*3,716*	*$17,514*	*96.3%*	*46.2%*	**119**	**D**
AZ	Joseph City	Pinnacle West Capital	Cholla	1129	8,377,004	13,599	11,079	*1,076*	*$13,096*	*64.6%*	*27.3%*	**120**	**D**
CO	Colorado Springs	City of Colorado Springs, CO	Ray D. Nixon	207	1,713,483	4,125	2,187	*2,487*	*$15,845*	*65.9%*	*28.9%*	**121**	**D**
VA	Bremo Bluff	Dominion	Bremo Bluff	254	1,502,216	8,463	2,543	*1,069*	*$17,662*	*73.7%*	*41.2%*	**122**	**D**
OH	Shadyside	FirstEnergy	R E Burger	416	1,994,639	14,085	2,210	*14,474*	*$15,910*	*75.8%*	*2.3%*	**123**	**D**
LA	Mansfield	Cleco	Dolet Hills	721	4,926,059	14,611	4,994	*412*	*$13,767*	*81.4%*	*50.3%*	**124**	**D**
MI	Essexville	CMS Energy	Karn/Weadock	857	5,571,115	21,229	4,517	*16,171*	*$20,962*	*94.6%*	*6.7%*	**125**	**D**

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OH	Avon Lake	GenOn Energy	Avon Lake	766	3,541,512	33,504	5,399	*17,456*	*$25,839*	*123.0%*	*4.5%*	**126**	**D+**
OH	Brilliant	American Electric Power	Cardinal	1880	11,550,996	45,264	9,197	*6,312*	*$16,512*	*78.6%*	*2.1%*	**127**	**D+**
OK	Chouteau	State of Oklahoma	Chouteau	1010	7,164,309	17,720	14,229	*2,277*	*$14,026*	*79.5%*	*26.2%*	**128**	**D+**
OH	Oregon	FirstEnergy	Bay Shore	499	3,481,678	9,044	5,433	*14,132*	*$19,595*	*93.3%*	*13.2%*	**129**	**D+**
KY	West Paducah	U.S. Government	Shawnee	1750	10,147,075	32,131	17,112	*5,759*	*$15,618*	*86.3%*	*9.2%*	**130**	**D+**
TN	Kingston	U.S. Government	Kingston	1700	10,777,927	31,223	5,655	*11,574*	*$18,077*	*93.2%*	*5.5%*	**131**	**D+**
IA	Muscatine	City of Muskatine, IA	Muscatine Plant #1	294	1,684,542	2,386	3,520	*16,132*	*$17,305*	*88.0%*	*18.0%*	**132**	**D+**
MD	Newburg	GenOn Energy	Morgantown	1252	7,291,745	59,608	3,978	*1,398*	*$19,047*	*74.4%*	*26.2%*	**133**	**D+**
TX	Tatum	Energy Future Holdings (Luminant)	Martin Lake	2380	19,390,415	76,031	15,873	*595*	*$14,863*	*75.8%*	*33.8%*	**134**	**D+**
TX	Christina	San Miguel Electric Cooperative	San Miguel	410	3,137,811	10,075	3,127	*65*	*$15,583*	*79.4%*	*49.4%*	**135**	**D+**
FL	Brooksville	JPMorgan Chase (Arroyo Energy)	Central Power & Lime	125	609,429	5,185	3,617	*5,377*	*$14,592*	*67.7%*	*13.9%*	**136**	**D+**
AZ	Page	State of Arizona	Navajo	2409	18,932,159	4,487	31,246	*2,551*	*$18,294*	*90.2%*	*38.4%*	**137**	**D+**
FL	Jacksonville	Goldman Sachs (Cogentrix)	Cedar Bay	292	1,811,071	9,057	6,333	*9,415*	*$19,307*	*89.6%*	*17.3%*	138	D+
OK	Red Rock	OGE Energy	Sooner	1138	7,308,038	18,338	11,228	130	$13,555	76.8%	44.8%	139	D+
OH	Ashtabula	FirstEnergy	Ashtabula	256	1,548,226	5,122	1,382	14,111	$16,493	78.5%	11.5%	140	D+
OK	Panama	AES	AES Shady Point	350	3,623,736	35,677	10,583	2,422	$13,636	77.3%	19.0%	141	D+
WV	Winfield	American Electric Power	John Amos	2933	19,591,125	66,380	13,499	9,429	$19,473	118.2%	2.3%	142	D+
OH	Stratton	FirstEnergy	W.H. Sammis	2456	16,021,838	72,695	15,475	3,936	$16,649	79.3%	2.1%	143	D+
IA	Cedar Rapids	Alliant Energy	Prairie Creek	245	870,574	2,357	1,546	35,324	$19,766	100.5%	13.7%	144	D+

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TN	Kingsport	Eastman Chemical	Tennessee Eastman	194	907,608	4,215	2,909	26,913	$19,230	99.2%	8.1%	145	D+
AZ	Springerville	UniSource Energy	Springerville	850	8,378,982	6,641	6,478	142	$13,255	65.4%	31.0%	146	D+
MO	Marston	Associated Electric Cooperative	New Madrid	1200	7,705,370	14,700	10,520	500	$14,039	70.4%	29.8%	147	D+
MI	Lansing	City of Lansing, MI	Erickson	155	1,116,552	3,131	1,164	16,366	$22,757	102.7%	34.0%	148	D+
VA	Chester	Dominion	Chesterfield	1353	8,228,821	42,182	4,845	8,621	$25,206	105.1%	19.3%	149	D+
CA	Trona	Constellation Energy	ACE Cogeneration	108	764,480	3,322	3,212	1,932	$16,347	72.0%	24.1%	150	D+
TX	Mount Pleasant	American Electric Power	Welsh	1674	10,573,163	26,829	10,298	1,110	$15,854	80.8%	29.9%	151	C-
NH	Bow	Northeast Utilities	Merrimack	459	3,273,753	32,469	3,023	11,526	$22,045	92.5%	2.9%	152	C-
TX	Thompsons	NRG Energy	W.A. Parish	2697	20,156,022	51,069	4,365	12,278	$30,333	154.6%	46.3%	153	C-
IN	Lawrenceburg	American Electric Power	Tanners Creek	1100	5,755,401	25,213	6,094	10,253	$19,404	95.1%	3.7%	154	C-
TX	Vernon	American Electric Power	Oklaunion	720	4,426,197	3,735	6,832	193	$14,004	71.4%	32.8%	155	C-
SC	Moncks Corner	Santee Cooper	Jefferies	346	1,885,771	13,167	2,785	3,308	$18,042	96.0%	40.6%	156	C-
OK	Fort Gibson	OGE Energy	Muskogee	1716	10,312,620	24,961	15,224	7,651	$20,938	118.7%	25.6%	157	C-
PA	Shawville	GenOn Energy	Shawville	626	3,673,159	43,504	6,221	3,165	$14,652	70.2%	2.1%	158	C-
NY	Newburgh	Dynegy	Danskammer	387	2,563,975	10,588	3,004	16,224	$25,019	107.0%	16.0%	159	C-
NC	Roxboro	Progress Energy	Mayo	736	4,954,320	13,545	1,702	793	$15,810	77.9%	31.6%	160	C-
TN	Rogersville	U.S. Government	John Sevier	800	5,281,520	24,578	6,730	4,881	$14,844	76.5%	4.2%	161	C-
PA	Phoenixville	Exelon	Cromby	188	757,165	2,649	1,457	44,302	$25,557	122.4%	9.1%	162	C-
CO	Craig	Tri-State Generation & Transmission	Craig	1339	10,842,378	3,750	15,788	3,259	$17,785	74.0%	13.6%	163	C-

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IA	Cedar Rapids	Archer Daniels Midland	Archer Daniels Midland Cedar Rapids	256	840,771	8,896	2,338	18,285	$19,747	100.4%	7.9%	164	C-
PA	New Florence	GenOn Energy	Conemaugh	1872	13,715,831	6,835	19,025	2,729	$13,800	66.1%	1.3%	165	C-
SC	Columbia	SCANA	McMeekin	294	1,837,268	9,932	2,198	22,690	$28,092	149.5%	14.7%	166	C-
PA	Shelocta	GenOn Energy	Keystone	1872	13,929,716	128,331	9,334	2,113	$15,440	73.9%	1.2%	167	C-
GA	Albany	Southern Company	Mitchell	163	602,438	2,699	1,097	2,993	$18,237	86.2%	32.5%	168	C-
KS	Lawrence	Westar Energy	Lawrence	566	3,788,907	2,801	4,313	20,882	$22,383	109.2%	15.8%	169	C-
OH	Cheshire	American Electric Power	Gavin	2600	20,365,692	27,674	22,581	1,916	$15,195	72.3%	2.4%	170	C-
SC	Pelzer	Duke Energy	W.S. Lee	355	1,487,394	8,245	1,366	5,816	$15,463	82.3%	17.1%	171	C-
VA	Cleveland	American Electric Power	Clinch River	713	4,137,838	15,394	4,535	1,271	$13,472	56.2%	1.8%	172	C-
IA	Bettendorf	Berkshire Hathaway	Riverside	141	702,229	2,536	820	39,186	$22,466	114.2%	17.3%	173	C-
WA	Centralia	TransAlta	Centralia	1460	9,020,065	2,648	11,179	2,352	$16,879	73.5%	13.9%	174	C-
IN	Rockport	American Electric Power	Rockport	2600	19,587,609	54,481	20,640	1,842	$15,480	75.9%	3.9%	175	C-
GA	Milledgeville	Southern Company	Harllee Branch	1746	10,648,393	76,429	16,359	3,935	$22,702	107.3%	14.8%	176	C
TN	Oak Ridge	U.S. Government	Bull Run	950	5,709,329	17,412	5,760	8,638	$18,514	95.5%	4.6%	177	C
PA	Elrama	GenOn Energy	Elrama	510	1,936,079	2,308	3,087	13,123	$18,042	86.4%	9.1%	178	C
KY	Central City	PPL	Green River	189	879,070	19,747	1,978	2,462	$12,921	71.4%	9.8%	179	C
CO	Boulder	Xcel Energy	Valmont	192	1,395,952	1,110	2,183	34,181	$28,069	116.7%	18.8%	180	C
KY	Owensboro	City of Owensboro, KY	Elmer Smith	445	2,402,671	5,780	4,517	12,073	$17,133	94.7%	7.5%	181	C
IL	Joppa	Ameren	Joppa	1100	8,682,249	26,072	5,032	1,046	$15,076	65.3%	6.1%	182	C

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OH	Gallipolis	Ohio Valley Electric Corp. (AEP [43.4%], FirstEnergy [20.5%], Buckeye [12.5%], and four other corporations)	Kyger Creek	1087	7,726,997	70,782	8,897	3,685	$18,009	85.7%	2.8%	183	C
KY	Central City	PPL	Green River	189	879,070	19,747	1,978	2,462	$12,921	71.4%	9.8%	179	C
MD	Williamsport	FirstEnergy	R Paul Smith	110	549,394	3,065	780	10,578	$18,596	72.6%	2.2%	184	C
NV	Valmy	NV Energy	North Valmy	567	3,837,153	7,037	6,083	91	$17,223	78.3%	28.1%	185	C
KY	Burnside	East Kentucky Power Cooperative	Cooper	344	2,139,994	18,250	4,069	6,089	$14,904	82.4%	2.6%	186	C
PA	Colver	Constellation Energy	Colver	118	806,743	7,725	817	1,980	$12,523	60.0%	2.1%	187	C
IN	Petersburg	AES	AES Petersburg	1873	12,594,955	28,727	13,298	3,172	$16,077	78.8%	0.9%	188	C
GA	Newnan	Southern Company	Yates	1487	7,580,811	61,292	10,536	2,676	$18,720	88.5%	10.1%	189	C
MA	Holyoke	GDF SUEZ	Mount Tom	136	1,108,662	2,980	474	15,165	$22,034	84.9%	11.4%	190	C
AL	Bucks	Southern Company	Barry	1771	11,342,798	36,345	11,089	496	$16,301	89.6%	31.4%	191	C
WV	Maidsville	FirstEnergy	Fort Martin	1152	7,558,117	55,055	8,879	5,600	$17,872	108.5%	6.0%	192	C
GA	Juliette	Southern Company	Scherer	3564	25,543,271	73,381	17,790	786	$19,263	91.1%	24.4%	193	C
OH	New Richmond	Duke Energy	Walter Beckjord	1221	5,863,617	48,107	9,873	5,403	$21,972	104.6%	2.8%	194	C
UT	Magna	Rio Tinto Group	Utah Smelter	182	736,829	2,961	5,200	752	$14,013	77.1%	22.8%	195	C
MN	Fergus Falls	Otter Tail Power	Hoot Lake	129	934,871	3,043	1,109	14,624	$19,036	82.1%	3.4%	196	C
IA	Clinton	Alliant Energy	Milton L Kapp	218	1,077,859	3,303	576	18,309	$16,893	85.9%	6.3%	197	C
FL	Apollo Beach	TECO Energy	Big Bend	1823	9,395,960	9,531	14,208	8,691	$26,310	122.0%	14.1%	198	C

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NC	Salisbury	Duke Energy	Buck	370	1,680,066	6,626	1,086	3,995	$17,562	86.5%	20.2%	199	C
PA	Monaca	AES	AES Beaver Valley	149	963,293	12,824	3,214	10,933	$21,294	102.0%	3.6%	200	C
OK	Oologah	American Electric Power	Northeastern	946	6,875,077	24,354	12,475	2,290	$17,160	97.2%	23.4%	201	C+
AL	Stevenson	U.S. Government	Widows Creek	1969	10,374,911	21,118	9,811	1,926	$14,230	78.2%	7.9%	202	C+
LA	Westlake	Entergy	Roy S. Nelson	615	3,803,626	14,724	4,273	7,807	$17,468	103.3%	15.3%	203	C+
NY	Barker	AES	AES Somerset	655	5,641,632	5,221	4,481	4,326	$17,899	76.5%	4.8%	204	C+
PA	Washingtonville	PPL	Montour	1625	10,649,067	51,746	9,672	1,956	$16,156	77.4%	2.2%	205	C+
IN	Petersburg	Hoosier Energy Rural Electric Cooperative	Frank E. Ratts	233	1,678,572	23,469	3,149	3,919	$15,813	77.5%	1.0%	206	C+
TX	Fannin	International Power plc	Coleto Creek	600	5,095,652	17,690	3,608	715	$17,331	88.3%	28.7%	207	C+
NC	Moncure	Progress Energy	Cape Fear	329	2,069,876	12,291	2,283	1,169	$18,415	90.7%	29.4%	208	C+
VA	Clarksville	Dominion	Mecklenburg	140	817,970	374	892	2,225	$21,392	89.2%	33.7%	209	C+
TX	Mount Pleasant	Energy Future Holdings (Luminant)	Monticello	1980	16,015,342	64,747	12,472	995	$19,277	98.3%	28.1%	210	C+
PA	Monaca	Horsehead Industries	G F Weaton	120	528,419	2,511	1,761	21,345	$20,628	98.8%	3.7%	211	C+
PA	Seward	GenOn Energy	Seward	585	2,808,282	8,020	2,070	2,858	$14,577	69.8%	1.3%	212	C+
PA	New Castle	GenOn Energy	New Castle	348	1,383,736	12,203	2,190	6,620	$17,133	82.1%	2.0%	213	C+
KY	Drakesboro	U.S. Government	Paradise	2558	13,974,044	34,466	24,336	593	$13,427	74.2%	6.6%	214	C+
NH	Portsmouth	Northeast Utilities	Schiller	100	786,334	3,883	842	24,509	$25,560	107.2%	5.9%	215	C+
OH	Manchester	DPL	Killen	661	4,409,830	4,424	5,700	441	$12,788	60.9%	2.9%	216	C+
WI	Rothschild	Integrys	Weston	1087	3,831,612	9,878	4,642	10,349	$22,963	108.0%	3.2%	217	C+
MN	Bayport	Xcel Energy	Allen S King	598	2,252,408	1,931	2,136	22,141	$24,281	104.7%	6.2%	218	C+
OH	North Bend	Duke Energy	Miami Fort	1278	7,947,022	30,480	8,071	4,455	$19,913	94.8%	4.6%	219	C+

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IL	Coffeen	Ameren	Coffeen	1005	5,780,720	12,779	6,009	1,155	$15,744	68.1%	1.8%	220	C+
OH	Miamisburg	DPL	O.H. Hutchings	414	571,706	2,451	776	25,370	$20,296	96.6%	4.1%	221	C+
NC	Belews Creek	Duke Energy	Belews Creek	2160	16,352,441	27,870	3,154	1,474	$19,738	97.2%	28.4%	222	C+
NE	Fremont	City of Fremont, NE	Lon Wright	130	486,173	1,530	482	24,132	$17,828	90.9%	6.7%	223	C+
FL	Crystal River	Progress Energy	Crystal River	2443	15,801,372	71,197	24,557	1,671	$19,259	89.3%	8.0%	224	C+
TX	Fairfield	Energy Future Holdings (Luminant)	Big Brown	1187	9,154,983	64,340	6,387	379	$16,573	84.5%	21.2%	225	C+
OH	Conesville	American Electric Power	Conesville	1891	10,391,546	62,545	15,443	1,424	$16,350	77.8%	1.5%	226	INC
WV	Haywood	FirstEnergy	Harrison	2052	14,360,620	7,684	13,820	6,427	$15,491	94.0%	2.1%	227	INC
MO	Springfield	City of Springfield, MO	James River	253	1,460,182	3,692	1,545	21,237	$28,976	145.3%	5.2%	228	INC
OK	Hugo	Western Farmers Electric Cooperative	Hugo	446	3,230,153	9,781	3,206	712	$13,980	79.2%	17.7%	229	INC
OH	Beverly	American Electric Power	Muskingum River	1529	8,527,207	113,282	13,467	1,052	$15,961	76.0%	2.2%	230	INC
MI	China	DTE Energy	Belle River	1395	8,683,362	25,082	9,254	6,004	$25,010	112.8%	2.7%	231	INC
VA	Glen Lyn	American Electric Power	Glen Lyn	338	1,652,793	6,646	1,995	1,360	$16,460	68.7%	3.7%	232	INC
MS	Ackerman	GDF SUEZ	Red Hills	514	3,244,974	1,818	2,485	830	$13,665	86.2%	26.1%	233	INC
IN	Mount Vernon	Vectren	A.B. Brown	530	3,663,227	7,454	3,375	7,955	$19,095	93.6%	4.2%	234	INC
NJ	Marmora	Rockland Capital	B L England	299	1,321,614	4,960	2,349	13,975	$28,765	106.5%	7.5%	235	INC
WV	New Haven	American Electric Power	Mountaineer/Philip Sporn	2406	15,500,717	30,357	11,889	4,287	$15,772	95.7%	1.5%	236	INC
AR	Redfield	Entergy	White Bluff	1700	10,444,091	33,438	15,176	1,732	$15,611	92.4%	15.2%	237	INC
IL	Havana	Dynegy	Havana	488	3,137,072	6,605	593	4,385	$16,756	72.5%	1.7%	238	INC
NC	Belmont	Duke Energy	G.G. Allen	1155	7,008,249	27,757	5,264	6,652	$24,749	121.9%	12.8%	239	INC
TX	Hallsville	American Electric Power	Pirkey	721	5,089,734	3,039	3,931	478	$16,091	82.0%	21.6%	240	INC

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WI	Oak Creek	Wisconsin Energy	South Oak Creek	1192	6,265,223	12,703	4,268	8,350	$23,005	108.2%	7.5%	241	INC
VA	Yorktown	Dominion	Yorktown	375	2,117,505	18,618	2,909	9,018	$27,912	116.4%	11.0%	242	INC
PA	Kittanning	FirstEnergy	Armstrong	326	1,993,562	22,077	2,505	1,396	$14,881	71.3%	1.1%	243	INC
IA	Sergeant Bluff	Berkshire Hathaway	George Neal	1686	11,416,151	37,125	14,402	1,692	$19,286	98.0%	20.5%	244	INC
KS	St. Marys	Westar Energy	Jeffrey	2160	15,788,962	30,238	20,558	593	$15,966	77.9%	7.8%	245	INC
WI	Pleasant Prairie	Wisconsin Energy	Pleasant Prairie	1233	8,545,213	1,375	2,677	21,894	$24,878	117.0%	10.2%	246	INC
PA	Northampton	Goldman Sachs (Cogentrix)	Northampton	114	809,629	2,417	136	33,723	$19,965	95.6%	4.3%	247	INC
MO	Brookline Station	City of Springfield, MO	Southwest	194	1,323,214	3,721	1,509	15,381	$20,219	101.4%	5.9%	248	INC
MN	Cohasset	ALLETE	Clay Boswell	1073	7,654,245	15,800	11,973	2,009	$18,507	79.8%	3.1%	249	INC
MN	Becker	Xcel Energy	Sherburne County	2129	16,232,489	23,668	17,391	3,627	$22,611	97.5%	2.2%	250	INC
UT	Helper	Berkshire Hathaway (MidAmerican Energy Co)	Carbon	189	1,394,820	6,131	3,593	1,654	$15,457	85.0%	14.7%	251	INC
IN	Wheatfield	NiSource	R.M. Schahfer	1943	11,017,752	34,516	13,336	1,713	$17,021	83.4%	4.6%	252	INC
UT	Huntington	Berkshire Hathaway (MidAmerican Energy Holdings)	Huntington	996	7,109,325	3,534	9,646	249	$13,855	76.2%	12.5%	253	INC
GA	Franklin	Southern Company	Wansley	1904	13,290,256	44,480	8,084	1,034	$17,085	80.8%	7.4%	254	INC
KY	Ghent	PPL	Ghent	2226	13,335,557	24,731	11,398	2,897	$16,269	89.9%	3.1%	255	INC
IL	Newton	Ameren	Newton	1235	8,299,388	23,785	4,033	618	$16,022	69.3%	1.1%	256	INC
WV	Glasgow	American Electric Power	Kanawha River	439	2,346,565	11,665	3,030	6,276	$15,430	93.6%	3.8%	257	INC
KY	Hawesville	Big Rivers Electric Corporation	Kenneth Coleman	521	2,990,144	3,935	5,338	8,846	$17,478	96.6%	2.0%	258	INC

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CO	Nucla	Tri-State Generation & Transmission	Nucla	114	799,521	1,149	1,585	1,193	$17,099	71.1%	6.1%	259	INC
TX	Bremond	PNM Resources	Twin Oaks	349	2,700,128	4,782	1,667	328	$16,810	85.7%	21.5%	260	INC
WV	Moundsville	American Electric Power	Kammer/Mitchell	2345	12,862,804	30,694	15,082	2,845	$15,533	94.3%	1.9%	261	INC
OH	Marietta	American Municipal Power - Ohio	Richard Gorsuch	200	945,825	23,934	2,503	8,074	$25,445	121.1%	3.3%	262	INC
IN	Cayuga	Duke Energy	Cayuga	1062	6,913,963	36,335	8,679	1,746	$16,478	80.8%	2.1%	263	INC
AZ	Cochise	Arizona Electric Power Cooperative	Apache Station	408	3,123,106	3,473	6,126	224	$16,291	80.4%	15.8%	264	INC
IN	Edwardsport	Duke Energy	Edwardsport	109	178,617	4,680	753	2,019	$14,672	71.9%	2.3%	265	INC
NY	Dresden	AES	AES Greenidge	163	889,378	1,193	599	1,115	$16,035	68.6%	3.6%	266	INC
AR	Gentry	American Electric Power	Flint Creek	558	3,820,751	8,136	4,732	4,794	$16,644	98.5%	12.2%	267	INC
FL	Palatka	Seminole Electric Cooperative	Seminole	1429	10,052,857	19,289	10,556	1,514	$18,512	85.9%	9.0%	268	INC
SC	Georgetown	Santee Cooper	Winyah	1260	8,244,936	7,811	3,894	1,224	$20,019	106.5%	35.4%	269	INC
MI	East China	DTE Energy	St Clair	1547	8,213,694	35,259	10,160	4,172	$25,766	116.2%	2.3%	270	INC
IL	Kincaid	Dominion	Kincaid	1319	6,844,432	17,110	14,099	1,946	$19,225	83.2%	1.7%	271	INC
MN	Silver Bay	Cleveland Cliffs Inc	Silver Bay	132	742,280	1,725	2,195	2,320	$17,396	75.0%	3.1%	272	INC
MD	Aquasco	GenOn Energy	Chalk Point	728	4,303,118	32,714	5,912	2,603	$28,210	110.1%	22.8%	273	INC
IL	Hutsonville	Ameren	Hutsonville	150	881,737	3,438	1,012	1,158	$16,515	71.5%	1.9%	274	INC
KY	Louisa	American Electric Power	Big Sandy	1097	7,351,298	41,933	9,379	1,383	$14,767	81.6%	1.4%	275	INC
NC	Semora	Progress Energy	Roxboro	2558	19,041,958	27,856	7,135	1,440	$22,115	108.9%	31.0%	276	INC
AR	Newark	Entergy	Independence	1700	11,578,960	28,022	15,358	1,195	$14,060	83.2%	4.2%	277	INC
WI	Cassville	Alliant Energy	Nelson Dewey	200	1,373,743	13,671	2,747	1,399	$15,941	74.9%	1.1%	278	INC

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GA	Coosa	Southern Company	Hammond	953	4,582,069	15,899	5,051	2,070	$17,961	84.9%	5.5%	279	INC
AL	Tuscumbia	U.S. Government	Colbert	1350	8,265,626	26,393	10,208	897	$16,430	90.3%	13.7%	280	INC
NE	Nebraska City	City of Omaha, NE	Nebraska City	652	4,859,105	16,260	10,930	1,703	$16,933	86.3%	5.9%	281	INC
AL	Parrish	Southern Company	Gorgas	1417	8,336,802	26,110	10,497	1,239	$14,877	81.8%	3.8%	282	INC
PA	Courtney	FirstEnergy	Mitchell	299	1,540,702	710	1,815	12,109	$18,669	89.4%	3.4%	283	INC
TN	Cumberland City	U.S. Government	Cumberland	2600	18,256,496	13,919	18,429	761	$16,069	82.9%	7.3%	284	INC
KS	La Cygne	Great Plains Energy	La Cygne	1578	10,372,680	22,064	12,137	597	$16,037	78.2%	4.5%	285	INC
TN	New Johnsonville	U.S. Government	Johnsonville	1485	8,680,516	47,099	13,156	2,478	$20,424	105.3%	2.9%	286	INC
KS	Topeka	Westar Energy	Tecumseh	232	1,519,962	4,577	2,483	4,302	$20,217	98.6%	16.5%	287	INC
MI	Harbor Beach	DTE Energy	Harbor Beach	121	236,360	1,155	569	2,670	$16,858	76.0%	3.7%	288	INC
AL	Quinton	Southern Company	James H. Miller	2822	22,578,544	51,466	13,822	1,706	$17,999	99.0%	6.6%	289	INC
AL	Wilsonville	Southern Company	E.C. Gaston	2013	12,226,292	114,398	16,123	1,820	$22,531	123.9%	12.1%	290	INC
FL	Jacksonville	City of Jacksonville, FL	St. Johns River	1358	9,661,063	10,098	13,855	2,713	$20,800	96.5%	5.8%	291	INC
PA	Portland	GenOn Energy	Portland	427	2,314,638	29,066	3,321	4,487	$22,654	108.5%	4.0%	292	INC
CO	Hayden	Xcel Energy	Hayden	465	3,853,199	2,580	7,241	708	$19,160	79.7%	7.6%	293	INC
ME	Rumford	Cerberus Capital Management	Rumford Cogeneration	103	753,839	1,598	747	7,977	$16,263	83.3%	2.1%	294	INC
VA	King George	J-POWER/General Electric	Birchwood	258	1,672,808	7,434	533	2,141	$21,274	88.7%	13.8%	295	INC
TX	Carlos	Cities of Bryan, Denton, Garland, and Greenville, TX	Gibbons Creek	454	4,239,931	12,007	2,203	365	$16,751	85.4%	14.5%	296	INC
NC	Mooresboro	Duke Energy	Cliffside	781	4,311,704	23,045	1,668	2,752	$18,299	90.1%	5.8%	297	INC

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KY	Maysville	East Kentucky Power Cooperative	H.L. Spurlock	1279	6,769,736	20,104	3,914	2,230	$16,234	89.7%	4.6%	298	INC
MT	Colstrip	PPL	Colstrip	2272	17,113,633	15,996	23,382	2,353	$20,185	117.7%	18.7%	299	INC
GA	Rincon	Southern Company	McIntosh	178	915,331	2,649	1,245	1,046	$19,177	90.7%	18.3%	300	INC
FL	Southport	Southern Company	Lansing Smith	340	2,583,688	13,770	4,320	2,104	$19,253	89.3%	6.9%	301	INC
NC	Arden	Progress Energy	Asheville	414	2,479,156	1,126	984	18,838	$23,533	115.9%	10.3%	302	INC
MO	Independence	City of Independence, MO	Blue Valley	115	329,318	2,092	171	20,386	$20,736	104.0%	9.0%	303	INC
MO	Sibley	Great Plains Energy	Sibley	524	3,037,688	11,455	5,790	1,920	$17,680	88.7%	4.5%	304	INC
UT	Vernal	Deseret Power Electric Cooperative	Bonanza	500	3,896,080	1,179	6,859	21	$14,596	80.3%	8.7%	305	INC
SC	Hartsville	Progress Energy	H.B. Robinson	207	1,216,132	9,979	2,240	4,096	$19,033	101.3%	10.4%	306	INC
NC	Terrell	Duke Energy	Marshall	1996	14,670,534	9,789	11,954	4,163	$31,244	153.9%	5.0%	307	INC
IL	Canton	Ameren	Duck Creek	441	1,790,298	2,248	1,696	577	$17,259	74.7%	1.5%	308	INC
ND	Mandan	MDU Resources Group	R.M. Heskett	115	494,124	2,335	981	11,613	$18,909	106.4%	4.3%	309	INC
IL	Meredosia	Ameren	Meredosia	354	1,276,348	5,996	1,827	1,372	$18,018	78.0%	0.7%	310	INC
MI	West Olive	CMS Energy	J.H. Campbell	1586	9,664,760	32,767	9,708	2,688	$27,688	124.9%	6.7%	311	INC
MI	Erie	CMS Energy	J.R. Whiting	345	2,501,358	8,437	2,819	3,306	$21,301	96.1%	6.4%	312	INC
WY	Gillette	Berkshire Hathaway (MidAmerican Energy Co)	Wyodak	362	2,977,859	7,559	4,620	1,959	$17,751	92.8%	7.9%	313	INC
WV	Rivesville	FirstEnergy	Rivesville	110	187,298	1,024	382	6,976	$14,707	89.3%	6.9%	314	INC

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OH	Moscow	Duke Energy	W.H. Zimmer	1426	10,176,039	16,602	10,459	1,626	$19,402	92.4%	2.0%	315	INC
UT	Castle Dale	Berkshire Hathaway (MidAmerican Energy Co)	Hunter	1472	10,591,701	5,605	18,149	1,177	$16,499	90.7%	5.5%	316	INC
MS	Escatawpa	Southern Company	Victor Daniel	1097	7,336,448	24,958	9,539	2,257	$17,427	109.9%	7.8%	317	INC
MO	Clinton	Great Plains Energy	Montrose	564	3,447,018	12,700	6,222	230	$15,515	77.8%	2.3%	318	INC
MO	West Alton	Ameren	Sioux	1099	6,761,834	45,472	6,979	2,319	$27,267	136.8%	4.7%	319	INC
KY	Centertown	Big Rivers Electric Corporation	D.B. Wilson	440	3,430,157	8,712	3,473	1,200	$15,169	83.8%	2.0%	320	INC
WV	Albright	FirstEnergy	Albright	278	1,165,443	11,576	1,811	3,093	$15,271	92.7%	1.7%	321	INC
TX	La Grange	State of Texas	Sam Seymour	1690	11,946,522	29,416	6,592	541	$17,887	91.2%	10.3%	322	INC
WY	Glenrock	Berkshire Hathaway (MidAmerican Energy Co)	Dave Johnston	817	6,192,066	17,997	11,011	669	$17,296	90.4%	7.8%	323	INC
NC	Southport	EPCOR Power	Southport	135	304,261	2,464	1,380	3,923	$22,252	109.6%	20.3%	324	INC
TN	Gallatin	U.S. Government	Gallatin	1255	8,024,162	21,604	5,509	2,871	$24,248	125.0%	7.1%	325	INC
WV	Willow Island	FirstEnergy	Pleasants/Willow Island	1581	9,902,902	20,452	7,251	1,918	$16,079	97.6%	1.6%	326	INC
KY	Harrodsburg	PPL	E.W. Brown	739	3,973,194	38,811	5,962	2,000	$19,243	106.4%	3.4%	327	INC
WI	Pardeeville	Alliant Energy	Columbia	1023	7,476,702	26,059	5,128	1,962	$21,272	100.0%	3.3%	328	INC
WY	Wheatland	Basin Electric Power Cooperative	Laramie River	1710	13,534,734	9,951	17,982	450	$16,920	88.4%	7.4%	329	INC
MN	Aurora	ALLETE	Syl Laskin	116	695,500	1,148	782	2,117	$19,015	82.0%	1.0%	330	INC
IN	Martinsville	AES	Eagle Valley	302	1,477,445	13,136	2,112	4,398	$24,778	121.5%	1.9%	331	INC

State	City	Parent Company/Entity	Plant Name	Capacity (MW)	Electricity Production (MWh, av. 2005-08)	SO2 Emissions (tons, av. 2007-10)	NOX Emissions (tons, av. 2007-10)	Pop. Within 3 Miles	3-Mile Average Income	% of State Average Income	3-Mile POC Pop.	Overall Rank	Grade
TX	Rockdale	Energy Future Holdings (Luminant)	Sandow	954	4,458,858	21,525	3,766	971	$21,345	108.8%	21.4%	332	INC
IA	Council Bluffs	Berkshire Hathaway	Walter Scott	1778	8,740,153	17,501	7,652	2,094	$22,048	112.1%	9.2%	333	INC
IN	Newburgh	Alcoa	Warrick	755	5,472,344	37,330	9,565	1,557	$22,026	108.0%	3.0%	334	INC
ND	Beulah	Otter Tail Power	Coyote	450	3,158,460	12,802	12,214	1,224	$17,350	97.6%	4.6%	335	INC
NC	Mount Holly	Duke Energy	Riverbend	466	2,125,519	11,603	1,595	4,481	$24,238	119.4%	9.5%	336	INC
IA	Muscatine	Berkshire Hathaway	Louisa	812	4,496,643	5,876	4,261	1,066	$18,188	92.4%	6.5%	337	INC
FL	Gainesville	City of Gainesville, FL	Deerhaven	251	1,525,743	6,089	2,191	5,102	$28,647	132.9%	15.6%	338	INC
SD	Big Stone	Otter Tail Power	Big Stone	456	3,164,666	11,704	12,018	1,291	$16,956	96.5%	2.2%	339	INC
WY	Gillette	Black Hills Corporation	Neil Simpson	102	764,687	1,711	1,460	1,959	$17,751	92.8%	7.9%	340	INC
MO	Festus	Ameren	Rush Island	1242	8,835,364	26,612	3,680	973	$18,392	92.3%	1.6%	341	INC
IA	Ottumwa	Alliant Energy	Ottumwa	726	4,135,596	14,101	3,794	417	$16,627	84.5%	2.5%	342	INC
WY	Point of Rocks	Berkshire Hathaway (MidAmerican Energy Holdings)	Jim Bridger	2318	16,018,703	17,425	21,086	58	$17,961	93.9%	13.9%	343	INC
UT	Delta	Intermountain Power Agency	Intermountain	1640	10,187,160	5,242	26,728	104	$15,652	86.1%	5.8%	344	INC
KY	Robards	Big Rivers Electric Corporation	R.D. Green	528	3,924,294	2,954	4,832	1,152	$16,606	91.8%	4.1%	345	INC
KY	Henderson	Big Rivers Electric Corporation	Henderson	365	2,413,694	4,669	2,290	1,401	$17,149	94.8%	5.3%	346	INC
IN	Chesterton	NiSource	Bailly	604	2,730,775	6,770	6,268	2,980	$27,677	135.7%	7.8%	347	INC
WY	Kemmerer	Berkshire Hathaway (MidAmerican Energy Co)	Naughton	707	5,503,186	21,066	13,732	1,254	$21,066	110.1%	5.6%	348	INC

State	City	Parent Company/Entity	Plant Name	Capacity (MW)	Electricity Production (MWh, av. 2005-08)	SO2 Emissions (tons, av. 2007-10)	NOX Emissions (tons, av. 2007-10)	Pop. Within 3 Miles	3-Mile Average Income	% of State Average Income	3-Mile POC Pop.	Overall Rank	Grade
IL	Marion	Southern Illinois Power Cooperative	Marion	272	1,899,848	4,037	2,260	3,003	$24,397	105.6%	5.7%	349	INC
NY	Lansing	AES	AES Cayuga	323	2,505,413	4,942	2,433	1,183	$21,982	94.0%	4.4%	350	INC
WI	Alma	Dairyland Power Cooperative	Alma/Madgett	568	3,774,037	13,349	5,506	1,196	$21,092	99.2%	3.3%	351	INC
MO	Asbury	Empire District Electric Co	Asbury	232	1,406,927	10,259	2,686	432	$18,200	91.3%	5.4%	352	INC
KY	Bedford	PPL	Trimble County	566	4,209,324	1,327	2,338	845	$15,869	87.7%	2.4%	353	INC
MS	Purvis	South Mississippi Electric Power Assoc	R.D. Morrow	400	2,828,955	7,961	6,583	1,615	$17,073	107.7%	5.6%	354	INC
NE	Sutherland	State of Nebraska	Gerald Gentleman	1363	9,998,174	30,462	14,302	284	$18,474	94.2%	5.4%	355	INC
IN	Sullivan	Hoosier Energy Rural Electric Cooperative	Merom	1080	6,999,226	12,603	5,667	693	$18,744	91.9%	1.0%	356	INC
IA	Burlington	Alliant Energy	Burlington	212	1,258,042	4,168	1,025	3,255	$20,688	105.2%	5.2%	357	INC
MO	Clifton Hill	Associated Electric Cooperative	Thomas Hill	1135	7,775,819	15,998	9,864	232	$18,006	90.3%	3.3%	358	INC
MO	Labadie	Ameren	Labadie	2389	19,332,583	61,182	9,541	1,012	$28,900	145.0%	2.7%	359	INC
ND	Beulah	Basin Electric Power Cooperative	Antelope Valley	870	7,101,634	14,314	13,471	443	$17,421	98.0%	4.3%	362	INC
TX	Jewett	NRG Energy	Limestone	1850	14,050,463	19,558	13,078	308	$20,497	104.5%	11.5%	363	INC
MD	Dickerson	GenOn Energy	Dickerson	588	3,266,204	22,976	4,095	1,223	$39,896	155.8%	10.9%	364	INC
OH	Lockbourne	American Electric Power	Picway	106	319,842	4,265	682	2,814	$23,375	111.3%	2.6%	365	INC
WI	Genoa	Dairyland Power Cooperative	Genoa	346	2,489,927	9,943	2,350	537	$20,307	95.5%	1.6%	366	INC
WV	Mount Storm	Dominion	Mount Storm	1662	11,390,134	3,130	7,441	282	$15,373	93.3%	1.9%	367	INC

State	City	Parent Company/Entity	Plant Name	Capacity (MW)	Electricity Production (MWh, av. 2005-08)	SO2 Emissions (tons, av. 2007-10)	NOX Emissions (tons, av. 2007-10)	Pop. Within 3 Miles	3-Mile Average Income	% of State Average Income	3-Mile POC Pop.	Overall Rank	Grade
NE	Grand Island	City of Grand Island, NE	Platte	110	716,318	2,692	1,333	2,871	$26,925	137.3%	5.5%	368	INC
KY	Ford	East Kentucky Power Cooperative	Dale	216	1,092,592	7,944	2,271	1,494	$22,162	122.5%	3.1%	369	INC
KY	Rabbit Hash	Duke Energy	East Bend	669	4,570,140	2,150	3,764	1,638	$20,775	114.8%	2.5%	370	INC
ND	Underwood	Great River Energy	Coal Creek	1210	9,366,558	24,550	9,809	*264*	*$18,110*	*101.9%*	*1.9%*	371	INC
ND	Center	Minnkota Power Cooperative	Milton Young	734	5,427,215	27,484	15,829	*142*	*$17,886*	*100.7%*	*4.0%*	372	INC
MO	Weston	Great Plains Energy	Iatan	726	4,828,056	7,427	4,498	*768*	*$21,955*	*110.1%*	*2.9%*	373	INC
ND	Stanton	Basin Electric Power Cooperative	Leland Olds	656	4,763,529	46,523	9,334	*92*	*$17,458*	*98.2%*	*3.1%*	374	INC
CO	Wellington	State of Colorado	Rawhide	294	2,274,464	934	1,877	*157*	*$25,048*	*104.2%*	*10.1%*	375	INC
ND	Stanton	Great River Energy	Stanton	190	*1,427,547*	2,562	1,869	*91*	*$17,402*	*97.9%*	*3.1%*	376	INC
MN	Schroeder	ALLETE	Taconite Harbor	252	1,542,691	4,317	2,185	*30*	*$22,671*	*97.7%*	*2.6%*	377	INC
NE	Hallan	State of Nebraska	Sheldon	229	1,670,081	4,582	7,405	*369*	*$20,785*	*106.0%*	*3.3%*	378	INC

APPENDIX II:

Complete Corporate Environmental Justice Performance Ranking

Company	Utilities Owned	2010 Revenues (millions USD)	2010 Profits (millions USD)	# Plants	Coal-Fired Capacity (MW)	Total SO2	Total NOX	Total Pop. Within 3 Miles	Percent of State Average Income	Percent POC	Rank	Grade
Edison International	Southern California Edison (CA)	12,409	1,251	7	8,400	188,247	54,836	848,059	59.9%	76.3%	1	F
FirstEnergy	Allegheny Power (WV, VA, MD, PA), Ohio Edison (OH), T	12,911	784	16	15,517	396,094	111,914	252,818	73.4%	40.3%	2	F
UniSource Energy	UniSource Energy Services (AZ)	1,341	112	2	1,023	8,681	7,906	56,751	50.6%	74.6%	3	F
Public Service Enterprise Group	Public Service Electric & Gas (NJ)	11,793	1,564	3	1,713	15,292	4,969	536,287	72.9%	67.2%	4	F
GenOn Energy	Non-utility; power producer/distributor in TX, PA, NJ, G	2,270	-50	15	11,216	430,987	74,484	354,959	109.7%	32.7%	5	F
Dominion Resources	Dominion (NC, VA)	15,197	2,808	11	8,670	154,375	60,762	333,611	81.7%	32.4%	6	F
Duke Energy	Duke Energy (NC, SC, IN, OH, KY)	13,972	1,318	17	18,443	388,135	99,925	136,249	80.1%	32.9%	7	F
Wisconsin Energy	We Energies (WI, MI)	4,203	457	4	3,259	31,491	16,071	258,472	67.7%	55.0%	8	F
Cogentrix/Goldman Sachs	Non-utility; power producer/distributor in FL, NJ, NC, P	N/A	N/A	9	1,903	66,090	27,005	190,227	78.7%	34.7%	9	F
Xcel Energy	Xcel Energy (CO, MN, WI, TX, NM, MI, ND, SD)	10,234	752	11	8,186	102,905	72,299	339,651	91.5%	36.3%	10	F
Southern Company	Alabama Power (AL), Georgia Power (GA), Gulf Power (	17,374	1,975	20	26,478	762,083	169,196	148,718	114.2%	34.2%	11	F
DTE Energy	Detroit Edison (MI)	8,557	630	6	7,770	196,955	57,260	132,408	88.8%	36.8%	12	F
Cleco	Cleco Power (LA)	1,148	255	2	1,279	23,951	9,216	1,649	69.8%	62.6%	13	D-
Omaha Public Power District (City o	Omaha Public Power District (NE)	*986	*40	2	1,297	31,249	16,058	44,836	71.3%	54.8%	14	D-
Pinnacle West Capital	Arizona Public Service Co. (AZ)	3,181	350	2	3,399	24,631	51,764	1,564	56.7%	48.4%	15	D-
AES	Indianapolis Power & Light Co. (IN)	16,647	9	12	5,278	175,079	48,917	156,690	80.8%	12.6%	16	D-
Great Plains Energy	Kansas City Power & Light (KS, MO)	2,256	210	5	3,986	55,548	30,135	34,850	75.2%	29.4%	17	D
PNM Resources	PNM (NM), TNMP (TX), First Choice Power (TX)	1,674	-45	2	2,197	13,710	21,760	1,265	73.6%	61.1%	18	D
PPL	PPL (PA), Louisville Gas & Electric Co. (KY), Kentucky Uti	8,521	938	10	11,711	263,559	88,675	94,162	90.5%	12.9%	19	D
NRG Energy	Reliant Energy (TX)	8,849	468	6	8,263	142,953	39,209	94,824	82.6%	21.0%	20	D
CMS Energy	Consumers Energy (MI)	6,432	324	4	3,101	73,186	19,815	66,155	78.5%	27.2%	21	D+
American Electric Power	AEP Ohio (OH, WV), AEP Texas (TX), Appalachian Power	14,427	1,211	19	26,596	601,886	185,781	61,329	93.8%	4.9%	22	D+
NV Energy	Sierra Pacific Power (NV), Nevada Power (NV)	3,280	227	2	1,204	8,181	11,518	505	67.8%	48.3%	23	D+
Santee Cooper	Santee Cooper (SC); owned by State of SC	*1895	*97	4	3,507	36,371	13,927	20,455	89.3%	39.8%	24	D+
Tennessee Valley Authority	Non-utility; power producer/distributor in TN, AL, MS, I	*10874	*972	11	17,407	282,099	123,140	42,967	89.8%	11.6%	25	C-
Alliant Energy	Alliant Energy (IA, MN, WI)	3,416	288	9	3,875	90,547	24,230	105,331	90.8%	13.7%	26	C-
Progress Energy	Progress Energy (NC, SC, FL)	10,190	856	9	7,927	175,538	49,909	46,331	91.7%	24.3%	27	C-
NiSource	NIPSCO (IN)	6,422	292	3	3,087	52,227	22,485	34,261	85.9%	26.5%	28	C-
CPS Energy (City of San Antonio, TX)	CPS Energy (TX)	*2115	*79	1	1,498	23,265	7,103	2,994	90.2%	42.6%	29	C
Dynegy	Non-utility; power producer/distributor in CA, NV, IL, T	2,323	-234	5	3,575	55,207	11,980	57,086	80.2%	16.7%	30	C
Salt River Project (State of Arizona)	Salt River Project (AZ); owned by State of AZ	*2702	*371	2	3,231	18,424	44,709	2,864	87.1%	37.9%	31	C
Integrys	Integrys Energy Services (CT, DE, DC, IL, ME, MD, MA, M	5,203	221	3	1,437	17,076	9,852	62,420	81.7%	19.3%	32	C
Constellation Energy	Baltimore Gas & Electric (MD)	14,340	-983	5	2,491	73,166	18,502	69,092	88.9%	9.1%	33	C+
Tri-State Generation Cooperative	Non-utility; owned by 44 electric cooperatives in CO, N	*1212	*77	3	1,710	6,110	20,705	4,824	70.5%	17.7%	34	C+
Grand River Dam Authority (State o	Grand River Dam Authority (OK)	*398	*63	1	1,010	17,720	14,229	2,277	79.5%	26.2%	35	C+
Ameren	Ameren Illinois (IL), AmerenUE (MO)	7,449	139	11	10,718	239,341	49,357	59,463	97.8%	2.7%	36	C+
MidAmerican Energy (PacifiCorp)	MidAmerican Energy (IA, IL, SD), Pacific Power (OR, WA	*11127	*1310	11	11,278	142,355	108,972	51,058	110.2%	15.7%	37	INC
SCANA	South Carolina Electric & Gas (SC)	4,601	376	6	2,706	75,915	15,920	37,665	115.2%	32.1%	38	INC
Energy Future Holdings (Luminant)	TXU Energy (TX)	*8235	*2812	4	6,501	226,643	38,498	2,940	95.4%	26.2%	39	INC
Associated Electric Cooperative	Non-utility; power producer/distributor in MO, IA, OK	*1055	*46	2	2,335	30,698	20,384	732	76.7%	21.4%	40	INC
Ohio Valley Electric Corporation	Non-utility; power producer/distributor in IN, OH	0	0	2	2,390	134,589	23,432	17,901	86.0%	5.0%	41	INC
TransAlta	Non-utility; power producer/distributor in Canada	2,887	224	1	1,460	2,648	11,179	2,352	73.5%	13.9%	42	INC
DPL	Dayton Power & Light Co. (OH)	1,831	290	3	3,516	60,884	22,808	29,592	91.7%	5.3%	43	INC
Otter Tail Power	Otter Tail Power (MN, ND, SD)	1,119	-1.3	3	1,035	27,549	25,341	17,139	84.3%	3.4%	44	INC
Hoosier Energy Rural Electric Coope	Non-utility; owned by 18 electric cooperatives in IN, IL	*653	*32	2	1,313	36,072	8,816	4,612	79.7%	1.0%	45	INC
ALLETE	Minnesota Power (MN), Superior Water Light & Power	907	75	3	1,441	21,265	14,940	4,156	81.0%	2.0%	46	INC
Entergy	Entergy (AR, LA, MS, TX)	11,488	1,250	3	4,015	76,184	34,807	10,734	99.3%	14.0%	47	INC
Westar Energy	Westar Energy (KS)	2,056	204	3	2,958	37,616	27,354	25,777	106.7%	15.7%	48	INC
Seminole Electric Cooperative	Non-utility; owned by 10 electric cooperatives in FL	*1459	*60	1	1,429	19,289	10,556	1,514	85.9%	9.0%	49	INC
East Kentucky Power Cooperative	Non-utility; owned by 16 electric cooperatives in KY	*827	*33	3	1,839	46,298	10,254	9,813	90.2%	3.1%	50	INC
Big Rivers Electric Corporation	Non-utility; owned by 3 electric cooperatives in KY	*527	*4	4	1,854	20,270	15,933	12,599	94.7%	2.6%	51	INC
OGE Energy	Oklahoma Gas & Electric (OK, AR)	3,717	295	2	2,854	43,299	26,452	7,781	118.0%	25.9%	52	INC
TECO Energy	Tampa Electric (FL)	3,488	239	2	2,149	10,621	14,847	8,935	120.5%	14.9%	53	INC
Basin Electric Power Cooperative	Non-utility; power producer/distributor in MT, ND, SD,	*1541	*9	3	3,236	70,788	40,787	985	93.7%	5.6%	54	INC
Lower Colorado River Authority (Sta	Non-utility; power producer/distributor in TX	*1244	*111	1	1,690	29,416	6,592	541	91.2%	10.3%	55	INC
Intermountain Power Agency	Non-utility	n/a	n/a	1	1,640	5,242	26,728	104	86.1%	5.8%	56	INC
JEA (City of Jacksonville, FL)	JEA (FL)	*1910	*126	1	1,358	10,098	13,855	2,713	96.5%	5.8%	57	INC
Nebraska Public Power District (Stat	Nebraska Public Power District (NE)	*925	*61	2	1,592	35,044	21,707	653	100.8%	4.2%	58	INC
Great River Energy	Non-utility; owned by 28 electric cooperatives in MN	*847	*27	2	1,400	27,112	11,678	355	100.9%	2.2%	59	INC

APPENDIX III:
Methodology

Plant-Level Environmental Justice Performance Ranking

Our initial data source for the list of coal-fired power plants that we compared in this ranking was the U.S. Energy Information Administration (EIA)'s 2008 "Existing Electric Generating Units in the United States" database.[142] We first filtered out all generating units for which the primary energy source was listed as "Anthracite/Bituminous Coal," "Lignite Coal," "Subbituminous Coal," "Waste/Other Coal," and "Coal Synfuel," leaving us with 601 coal-fired or partially coal-fired power plants (containing a total of 1,458 coal-fired generating units).

For the purposes of this ranking, we included the 378 currently-operating coal-fired power plants from this database that have a capacity greater than 100 megawatts (MW). We cut from this ranking several plants which, as of July 1, 2011, have been fully decommissioned; have been converted to fuel stocks other than coal; or were fully non-operational between 2007 and 2010 (thus leaving us without relevant SO_2 and NO_X emissions data for the relevant time period).

Data Sets

We then compiled the five relevant data sets for each of these 378 coal-fired power plants:

SO_2 and NO_X emissions

For 350 out of the 378 plants in this ranking, the data listed for each plant's SO_2 and NO_X emissions is an average of that plant's annual emissions between 2007 and 2010; our data source was the U.S. Environmental Protection Agency (EPA)'s Clean Air Markets Program database of unit-level emissions, collected under the Agency's Acid Rain Program. These data are collected on a quarterly basis as part of EPA's emissions trading programs, and are based on self-reporting.[143] This data source, unlike others at the EPA, has data more recent than 2007, allowing us to account for the fact that many of these plants added SO_2 emissions controls between 2007 and 2010 (thus reducing those plants' emissions, and improving their scores).

For the 28 plants for which data was not reported under the Clean Air Markets Program, the data listed for each plant's SO_2 and NO_X emissions is from 2007 only, from the EPA's Emissions & Generation Resource Integrated Database. This data source "integrates many different federal data sources on power plants and power companies, from three different federal agencies: EPA, the Energy

Information Administration (EIA), and the Federal Energy Regulatory Commission (FERC)."[144] (In Appendix 1, the SO_2 and NO_X data for these 28 plants is italicized.)

Population within 3 miles

For the three categories of demographic data — population within 3 miles, per capita income of population within 3 miles, and percentage people of color of population within 3 miles — data was accessed using Free Demographics, an online geographic information tool designed by Alteryx LLC, a geographic business intelligence company.[145]Free Demographics uses census block-level data from the 2000 U.S. Census; census block-level data is the smallest scale on which demographic data is collected by the U.S. Census, with the average census block containing roughly 600-3,000 residents in 2000.[146]

Prior to the writing of this report, precise geographic coordinates for each plant had already been researched by the lead author, in his capacity as a researcher for CoalSwarm/Center for Media and Democracy. Coal-fired power plants listed on the EIA's "Existing Electric Generating Units" database were first plugged into the EPA's Envirofacts Air Facility System search engine to obtain geographic coordinates and street addresses for each plant. However, many of these geographic coordinates (which have been the basis for most previous studies on coal power plant pollution) were inaccurate, with disparities from the actual plant's pollution source stack ranging from several hundred feet to, in some cases, several hundred miles. We then mapped the EPA's geographic locations using Google Earth, and used a combination of cross-checking addresses, accessing company information, and general internet searching and phone calls to secure the precise geographic coordinates for each plant's pollution source stack; these coordinates were then plugged into the FreeDemographics, in order to ensure that the geographic data in this report would be as accurate as possible.

The three-mile range that we used in calculating demographic data was selected based on Anderton et al's (1994) definition of "surrounding area" as "any tract for which at least 50% of the surrounding area fell within a 2.5 mile radius."[147] (Distances used for demographic calculations by the FreeDemographic tool must be integer values; thus, we rounded up to three miles.) Thus, the three-mile range that we chose is based on precedent, but is nonetheless, as Anderton et al (1994) point out, "somewhat arbitrary," as are all geographical radii used in demographic calculations of environmental justice; as Boyce (2003) puts it, "there is no obvious *a priori* basis for judging the 'right' spatial unit of analysis — how close people must live to an environmental hazard for it to be judged relevant to their well-being, and hence relevant to analyses of environmental justice."[148]

We were also concerned that demographic data in sparsely populated areas would not be representative if the population sample was too low. For this reason, in cases where fewer than 1,000 people lived within 3 miles of the plant, we increased the radius (by 2

miles at a time) until the population living within the modified radius was greater than 1,000, and used the data on per capita income and percentage people of color from this modified radius; for the population within 3 miles figure, we then divided the modified population by the ratio between the areas of the modified radius and the 3-mile radius:

$$POP_{MOD} = POP_{XMILES} \times \left(\frac{X^2}{3^2} \right)$$

Average per capita income of population living within 3 miles, as a percentage of state average per capita income

In order to obtain data on average per capita income of population living within 3 miles, we used the FreeDemographics tool with CoalSwarm-calculated geographic coordinates, as described above. However, we decided to use "within-region" data for average income, as described by Ash & Boyce (2009):

> Alternative benchmarks for assessing disproportionality include the share of the group in the population of the specific regions — for example, states or metropolitan areas — in which the firm's facilities are located…. A region- specific benchmark would be consistent with the view that the facility siting decisions of firms are often "within-region" choices, constrained by the desire to locate within a certain part of the country for ease of access to input or output markets.[149]

Following this logic, we divided each plant's average per capita income of population living within 3 miles by average per capita income of the state within which that plant was sited, in order to obtain the average per capita income of population living within 3 miles as a percentage of state average per capita income; 1999 state per capita income data was obtained from the U.S. Census Bureau.[150]

Percentage people of color of population living within 3 miles

In order to obtain data on percentage people of color of population living within 3 miles, we used the FreeDemographics tool with CoalSwarm-calculated geographic coordinates, as described above. The FreeDemographics tool lists "race" and "Hispanic origin" separately, as does the U.S. Census; it does not, however, include the "White Non-Hispanic" category, as the census does. Following Ash & Boyce (2009), we defined "percentage people of color" as the sum of the percentages of people who identified as "American Indian and Alaska Native Alone," "Asian Alone," "Black Alone," "Native Hawaiian and Other Pacific Islander Alone," and "Hispanic or Latino" in the census.

In this case, we did not adjust race data on a "within-region" basis, as race & ethnicity — unlike income — shows much greater and smaller-scale geographic variability, making use of state- or MSA-level data less useful in regionally contextualizing race & ethnicity data.

Calculating the Plant-Level Environmental Justice Performance Ranking and Grade

The plant-level environmental justice performance ranking was based on two scores: an *exposure score* and a *demographic score*.

The exposure score (EXP) was calculated by multiplying the plant's SO_2 emissions in tons (SO_2), its NO_X emissions in tons (NO_X), and the cube of the population living within 3 miles of the plant (POP):

$$\mathrm{EXP} = \mathrm{SO}_2 \times \mathrm{NO}_X \times (\mathrm{POP})^3$$

The demographic score (DEM) was calculated by multiplying the percentage of people of color living within 3 miles (POC) by the average per capita income of population living within 3 miles (INC_3) as a percentage of state average per capita income (INC_{STATE}):

$$\mathrm{DEM} = \mathrm{POC} \times \left(\frac{\mathrm{INC}_3}{\mathrm{INC}_{\mathrm{STATE}}} \right)$$

We then ranked the exposure scores (EXP) of all 378 plants to generate the exposure ranking (EXP_R), and ranked the demographic scores (DEM) of all 378 plants to generate the demographic ranking (DEM_R).

Finally, each plant's overall score (SCORE) was generated by multiplying the exposure ranking (EXP_R) by the demographic ranking (DEM_R):

$$\mathrm{SCORE} = \mathrm{EXP}_R \times \mathrm{DEM}_R$$

The 378 plants were then ranked by this final score in order to generate each plant's overall environmental justice performance ranking.

Environmental justice performance "grades" were then assigned to each plant by dividing the 378 plants into 15 roughly equal-size grade groups (F, D-, D, D+, etc.)All grades below D- were listed simply as F, rather than creating separate grades for F+ and F-; thus, 75 plants earned a grade of F. The grades in the 'A' and 'B' ranges were not used because we believe that any plant that is causing harm by polluting any person should not receive a positive grade. Instead these plants received an "INC" for Incomplete, as the aim is to ensure that no plant is polluting communities.

Corporate Environmental Justice Performance Ranking

Prior to the writing of this report, ultimate parent company/entity ownership of all 601 coal-fired or partially coal-fired power plants in the U.S. had already been researched by CoalSwarm (primarily by the lead author).[151] In a similar process to the Political Economy Research Institute's Corporate Toxics Information Project, the parent company of each of the plant owners for all coal-fired or partially coal-fired power plants listed in the EIA's "Existing Electric Generating Units in the United States" was exhaustively researched.[152] This research was conducted using a combination of sources, including the EPA's TRI reports, the Bloomberg Terminal, the BusinessWeek Company Insight Center, Hoover's, reports to the Securities and Exchange Commission, annual reports, company websites, and telephone calls. In instances in which ownership of a plant was shared between multiple parent companies, the company with the controlling ownership share was listed as the sole parent company.

This information was updated in March 2010, and again in June 2011, to account for mergers, acquisitions, transfers of facilities to new owners, and addition of new facilities. The "Parent Company" column in this ranking is based on this extensive research.[153]

The 59 parent companies or entities which owned coal-fired power plants with a total of 1,000 Megawatts or more of generating capacity were included in the corporate environmental justice performance ranking; the 49 parent companies or entities owning less than 1,000 Megawatts of coal-fired generating capacity were excluded.

Data Sets

We then compiled the five relevant data sets for each of these 59 parent companies:

SO_2 and NO_X emissions

For each of these two figures (SO_{2COM} and NO_{XCOM}), we totaled SO_2 and NO_X emissions (separately, of course) for all plants owned by each parent company or entity, e.g.:

$$SO_{2COM} = \sum SO_2$$

Population within 3 miles

For this figure (POP_{COM}), we totaled the population living within 3 miles for all plants owned by each parent company or entity:

$$POP_{COM} = \sum POP$$

Average per capita income of population living within 3 miles, as a percentage of state average per capita income

For this figure (INC_{COM}), we used the following formula:

$$INC_{COM} = \frac{\sum\left(\frac{INC_3 \times POP}{INC_{STATE}}\right)}{POP_{COM}}$$

Percentage people of color of population living within 3 miles

For this figure (POC_{COM}), we used the following formula:

$$POC_{COM} = \frac{\sum(POC \times POP)}{POP_{COM}}$$

Calculating the Corporate Environmental Justice Performance Ranking and Grade

The procedure for calculating the corporate environmental justice performance was identical to that for calculating the plant-level environmental justice performance ranking. We will reiterate that procedure below for the sake of clarity.

The corporate environmental justice performance ranking was based on two scores: an *exposure score* and a *demographic score*.

The exposure score (EXP_{COM}) was calculated by multiplying the plant's SO_2 emissions in tons (SO_{2COM}), its NO_X emissions in tons (NO_{XCOM}), and the cube of the population living within 3 miles of the plant (POP_{COM}):

$$EXP_{COM} = SO_{2COM} \times NO_{XCOM} \times (POP_{COM})^3$$

The demographic score (DEM_{COM}) was calculated by multiplying the percentage of people of color living within 3 miles (POC_{COM}) by the average per capita income of population living within 3 miles as a percentage of state average per capita income (INC_{COM}):

$$DEM_{COM} = POC_{COM} \times INC_{COM}$$

We then ranked the exposure scores (EXP_{COM}) of all 59 ranked companies to generate the exposure ranking (EXP_{RCOM}), and ranked the demographic scores (DEM_{COM}) of all 59 ranked companies to generate the demographic ranking (DEM_{RCOM}).

Finally, each company's overall score ($SCORE_{COM}$) was generated by multiplying the exposure ranking (EXP_{RCOM}) by the demographic ranking (DEM_{RCOM}):

$$SCORE_{COM} = EXP_{RCOM} \times DEM_{RCOM}$$

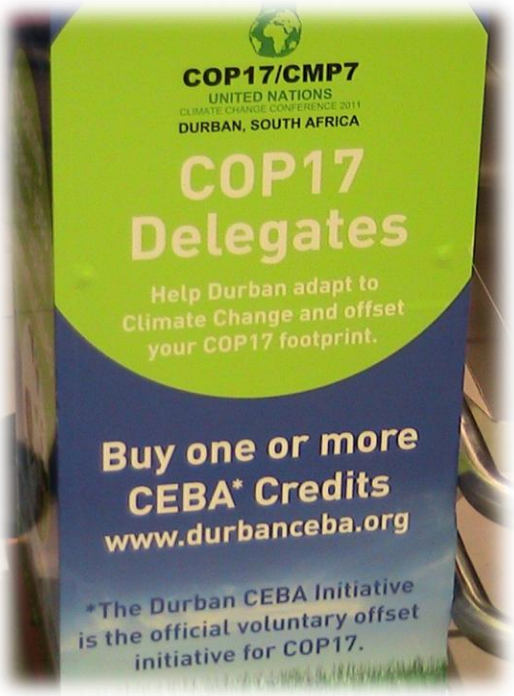
The 59 companies were then ranked by this score in order to generate each company's overall corporate environmental justice performance ranking.

Corporate environmental justice performance "grades" were then assigned to each company by dividing the 59 companies into 15 equal-size grade groups (F, D-, D, etc.), . Again, all grades below D- were listed simply as F, rather than creating separate grades for F+ and F- . As with the plant scoring, the grades in the 'A' and 'B' ranges were not used because any company that is causing harm by polluting any person should not receive a positive grade. Instead these companies received an "INC" for Incomplete, as there is still work to do by all to ensure that no one is breathing polluted air.

APPENDIX IV:
Review of the Policy Landscape

Global

The Kyoto Protocol is an international agreement that commits countries to reducing their greenhouse gas emissions by 5.2% against 1990 levels during a five year period (2008-2012). The Protocol was adopted in 1997 in Kyoto, Japan. This Protocol was seen as being an important first step toward a truly global emissions reduction strategy, and was viewed as providing the essential framework for any future international agreements on climate change. As of November 2009, 187 countries had signed and ratified the Kyoto Protocol, but the U.S. shows no sign of intent to ratify. The fact that the fastest growing countries in the world, China and India, were not included in countries which needed to decrease emissions has been seen by some as a flaw in the Kyoto Protocol; the Protocol only called for developed countries to reduce emissions, and in 1997 neither country was designated as "developed" or demonstrated the tremendous growth seen today.



The Copenhagen Accord is a non-binding treaty that is currently considered to be the successor to the Kyoto Protocol, as it expires in 2012. Through the Copenhagen Accord each state is able to submit individual emissions targets to be achieved by 2020. Thus, there is no uniform emissions target. A goal of the Copenhagen Accord is to limit global warming to below 2 degrees Celsius (3.6 degrees Fahrenheit), which is considered by climate scientists to be insufficient, as it leaves the planet in significant peril.[154] Also, the Accord is perceived as a failed attempt because it is not binding, unlike its predecessor the Kyoto Protocol. The Copenhagen Accord boasts many tactics to combat international climate change, but there aren't mechanisms to ensure implementation.

National

Aimed at regulating emissions, the Clean Air Act (CAA) was first passed in 1970 and then revised in 1990. The CAA allows the U.S. Environmental Protection Agency (EPA) to set limits on certain air pollutants that cause environmental and human health concerns. Under the Clean Air Act, the EPA also has the authority to limit the emissions coming from industries such as chemical plants, utilities, and steel mills. Congress amended the Clean Air Act in 1977, creating the system known as New Source Review, essentially requiring the installation of state-of-the-art pollution control devices to limit pollution from coal plants.[155]However, the National

Ambient Air Quality Standards (NAAQs) developed by the EPA allow significant criteria pollutants to be emitted in communities and the New Source Review permitting program is based on extant technology (the equipment, devices, and processes in common use that are determined by the EPA to reduce emissions of criteria pollutants), rather than on the health of people routinely exposed to coal power plant emissions. While EPA has authority to enforce Title VI of the Civil Rights Act, it is in need of significant improvement.[156]

Pollution from coal-fired power plants was then supposed to be significantly decreased, but as a result of "grandfathering" that was not the case: coal-fired plants built *before* the passing of the CAA were not subject to install modern pollution control devices to limit pollution from coal plants, under the assumption that eventually the older plants would be closed. However, many owners of older plants have upgraded them bit by bit, thus allowing them to stay competitive while continuing to dodge the EPA's New Source Review regulations.

A newer part of the Clean Air Act is the Clean Air Mercury Rule, which the EPA issued in March 2005 to permanently cap and reduce mercury emissions from coal-fired power plants. Coal-fired power plants are the largest remaining sources of mercury emissions in the US. The goal of the Clean Air Mercury Rule is to reduce utility emissions of mercury from 48 tons annually to 15 tons (a reduction of almost 70%). Under the rule, new coal-fired power plants would have to meet strict new source performance standards in addition to being subject to the emission caps. The Clean Air Mercury Rule is expected to reduce emissions that are transported regionally and deposited domestically, and that contribute to atmospheric mercury worldwide. Each of the states and two tribal nations have been assigned an emissions "budget" for mercury and must submit a plan detailing how they will meet their budget for reducing mercury from coal-fired power plants.[157]More recent rules, introduced in 2011, that apply to coal plants include the Mercury and Air Toxics Rule, Cross-State Air Pollution Rule, and the forthcoming Ozone Rule.

Regional

Three prominent regional initiatives regulate emissions from coal-fired power plants. The Regional Greenhouse Gas Initiative (RGGI), created in 2005, is a collection of ten Northeastern and Mid-Atlantic States that have united to fight emissions. The RGGI developed a cap-and-trade program to reduce carbon dioxide emissions from power plants in the region. The Western Climate Initiative (WCI) created in 2007, is a group of seven U.S. states and four Canadian provinces. The WCI has set a regional GHG emissions target of 16 percent below 2005 level by 2020. The Midwestern Greenhouse Gas Reduction Accord (MGGRA) created in 2007. MGGRA members have agreed to establish regional GHG reduction targets (including a long term target of 60%-80% of current emission levels) and to develop a multi sector cap-and-trade program to help meet the emission targets. MGGRA was created in conjunction with the Midwestern Governors Association's Energy Security and Climate Stewardship Platform.[158]

State

State-level efforts include, for example, California's initiative to ban the construction of new coal-fired power plants. On February 1, 2007, California state electric utilities were prohibited from investing in traditional coal-fired power plants and/or signing new long-term contracts with traditional plants. The purpose of this ban is to avoid an increase in greenhouse gas emissions during the time period in which the state of California develops a broader greenhouse gas limiting law or the federal government makes a move to cap emissions nationwide.[159] Along with this ban on coal-fired power plants, in 2006 California passed the California Global Warming Solutions Act. This Act establishes "the first comprehensive program for regulatory and market mechanisms to achieve realistic, quantifiable, cost-effective reductions of greenhouse gases."[160]Along with this program, the Act made the Air Resources Board (ARB) responsible for monitoring and reducing GHG emissions statewide.

Local

As an example of local level emissions policies, the city of Chicago has proposed the Chicago Clean Power Ordinance; this proposal is being spearheaded by Alderman Joe Moore (49th Ward). The Chicago Clean Power Ordinance requires the Crawford power plants — which received the worst second-worst and environmental justice performance scores out of all 378 plants examined in this report — to clean up their emissions, which are responsible for 41 deaths, 500 emergency room visits, and 2,800 asthma attacks each year, according to a Harvard University study. This ordinance was drafted in response to the failure of state and federal laws to stop the negative effects of these two power plants. The restrictions placed on emission of particulates and carbon would be phased in to allow time for adaptation in case the mandated improvements would require the reduction, retraining, or reassignment of personnel. Chicago Clean Power Ordinance falls in line with the Climate Action Plan that was released by the city in 2008 and outlines strategies to achieve 26 actions which have been identified to help the city, residents, and businesses not only reduce

greenhouse gases by 25 percent below 1990 levels by 2020, but also save money, create jobs, and improve the quality of life for all who work and live in Chicago.[161]

APPENDIX V:
Profiles of 12 Top EJ Offenders

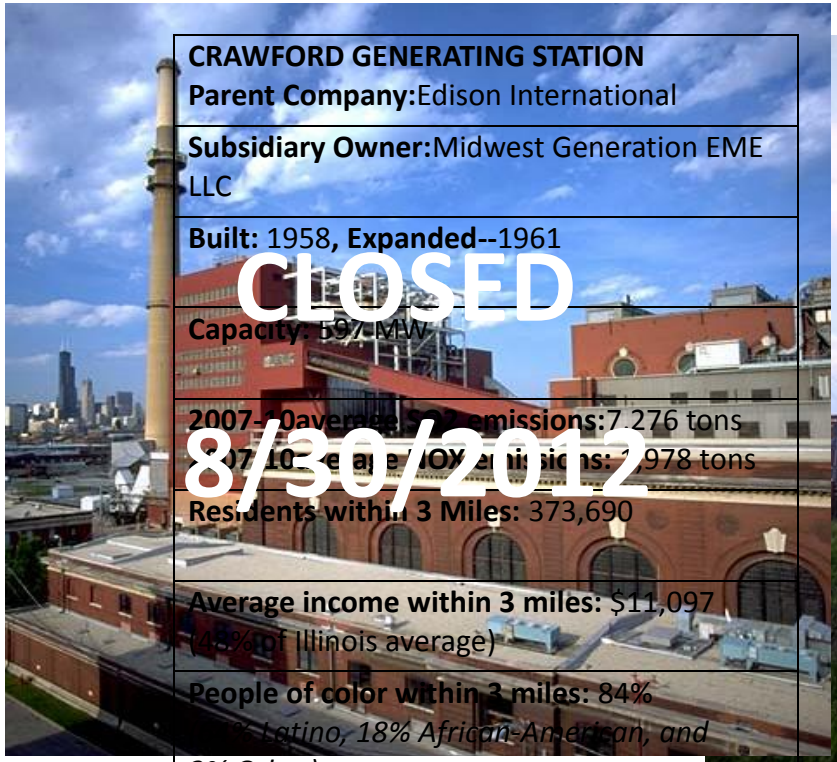
In the next few pages, the top 12 environmental justice offenders have been profiled along with updates about their status. Through extensive research and community interviews, the information has been synthesized for better understanding and guidance. As one community member, Adrienne Farrar Houel, resident of Bridgeport, stated in her interview:

"The citizens have complained for years about that power plant — even though people will say now, when you talk to [the power company], that it's been cleaned up, it's a clean power plant. Well, you can't tell that to the families that live in the South End, because they can't open their windows in the summer without having soot coming through the windows, their cars are constantly covered with it"

#1 and #2Crawford and Fisk
Chicago, IL

FISK GENERATING STATION **Parent Company:**Edison International
Subsidiary Owner: Midwest Generation EME LLC
Built: 1968

Capacity: 375=4 MW
2005-08 average SO2 emissions:4,464 tons **2005-08 average NOX emissions:** 1,125 tons
Residents within 3 Miles: 314,632
Average income within 3 miles: $15,076(65% of Illinois average)
People of color within 3 miles: 83% *(38% Latino, 32% African-American, and 13% Other)*



CRAWFORD GENERATING STATION **Parent Company:**Edison International
Subsidiary Owner: Midwest Generation EME LLC
Built: 1958**, Expanded--**1961
Capacity: 59[illegible] MW
2007-10average SO2 emissions:7,276 tons **2007-10 average NOX emissions:** 1,978 tons
Residents within 3 Miles: 373,690
Average income within 3 miles: $11,097 (48% of Illinois average)
People of color within 3 miles: 84% *[illegible]% Latino, 18% African-American, and 2% Other)*

#1 and #2Crawford and Fisk

Chicago, IL

Little Village and Pilsen Community Profiles and Perspectives

These two plants — the two plants with the worst environmental justice performance scores in the U.S. — are both owned by Edison International, and are located approximately four miles from each other, along the Sanitary & Ship Canal southwest of downtown Chicago.

Crawford is located in the heart of Chicago's densely populated "Little Village" community – nicknamed the "Mexico of the Midwest" by its residents. Over 31,000 people live within a mile of the plant; three public schools and several parks are also within a mile of the plant.[162][163]

Fisk is located in the Pilsen neighborhood on Chicago's Lower West Side, which has been predominantly Latino since the 1970s. Over 45,000 people, and 13 elementary and secondary schools reside within a mile of the plant.[164][165]

Crawford and Fisk are owned by Midwest Generation, a subsidiary of Edison International, a Los Angeles-based, privately owned energy corporation that has another subsidiary, Southern California Edison, which provides power to 11 million people in California. Edison promotes itself as an environmentally responsible company to its California customers, calling itself "the nation's largest purchaser of renewable energy" and stating that the company "is committed to complying with or exceeding environmental regulations wherever we operate."[166] In August 2009, the U.S. EPA and the State of Illinois filed a lawsuit against Midwest Generation, charging that the company had repeatedly upgraded its Fisk and Crawford plants without adding the modern pollution controls required under the Clean Air Act.[167]

Crawford and Fisk have been the site of repeated protests by the Little Village Environmental Justice Organization and other local environmental justice groups, which have been arguing for decades that the plant is poisoning the neighborhood. On October 24, 2009, hundreds of protestors rallied in front of the Fisk plant, and eight were arrested for blocking an entrance.

In 2001, a Harvard School of Public Health study estimated the Fisk and Crawford plants alone are responsible for 2,800 asthma attacks, 550 emergency room visits and 41 early deaths every year.[168]According to a study by John H. Stroger Jr. Hospital of Cook County, the ZIP code area that houses Crawford has an 18 percent prevalence of asthma, and the ZIP code where Fisk is located has a 10 percent asthma rate.

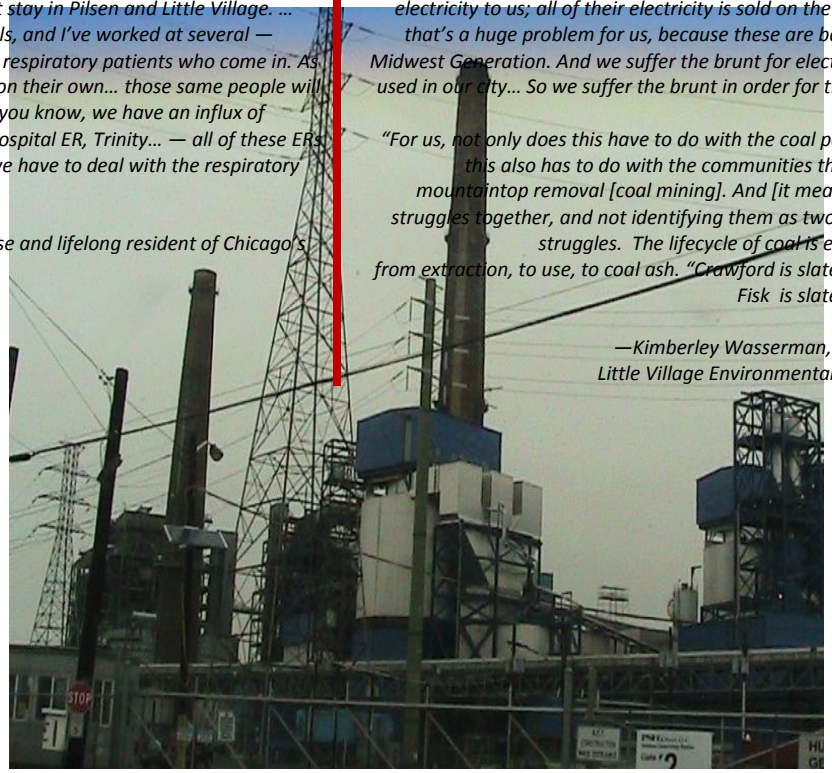
COMMUNITY SAYS…

#3 Hudson Generating Station
Jersey City, NJ

Parent Company: Public Service Enterprise Group (PSEG)
Subsidiary Owner: Public Service Electric & Gas Fossil LLC
Built: 1968
Capacity: 660 MW
2007-10average SO2 emissions:2,452 tons **2007-10average NOX emissions:** 2,565 tons
Residents within 3 Miles: 309,478
Average income within 3 miles: $21,596 (80% of New Jersey average)
People of color within 3 miles: 74% *(37% Latino, 18% African-American, 13% Asian-American, and 6% Other)*

"The Fisk and Crawford power plants… are in the Pilsen and Little Village communities — but that air doesn't just stay in Pilsen and Little Village. … Where I work at the [hospitals], and I've worked at several — consistently, we have a lot of emergent respiratory patients who come in. As soon as we get them breathing readily on their own… those same people will be right back in… And then, next thing you know, we have an influx of people in whatever ER – Cook County Hospital ER, Trinity… — all of these ERs are barraged with the same problem, we have to deal with the respiratory [cases]."

—Kimberley Harrington, registered nurse and lifelong resident of Chicago's South Side



…d and Fisk plants] shut down. They don't have a contract with the city or the state to provide electricity to us; all of their electricity is sold on the open market. And so that's a huge problem for us, because these are basically cash cows for Midwest Generation. And we suffer the brunt for electricity that really isn't used in our city… So we suffer the brunt in order for this company to make money…

"For us, not only does this have to do with the coal power plants – a lot of this also has to do with the communities that are suffering from mountaintop removal [coal mining]. And [it means] really tying in our struggles together, and not identifying them as two completely different struggles. The lifecycle of coal is extremely destructive, from extraction, to use, to coal ash. "Crawford is slated for closure in 2014 Fisk is slated for closure in 2012

—Kimberley Wasserman, Executive Director of Little Village Environmental Justice Organization

Jersey City/Hoboken Community Profile and Perspectives

Hudson Station (one of two U.S. coal plants owned by PSEG on this list of Top 12 Environmental Justice Offenders—the other being Bridgeport Station) is wedged between Jersey City and Hoboken, along the Hackensack River. Hudson Station is just over three miles from the west coast of Manhattan, and over one million people live within five miles of the plant.[169] The parts of Jersey City and Hoboken nearest to the plant are relatively low-income, and largely populated by Latinos and Filipinos.[170]

In November 2006, PSEG settled a lawsuit by the federal and state governments, which was filed due to the company's failure

to install pollution controls at its Hudson and Mercer plants. PSEG agreed to install controls at Mercer and paid a $6 million fine in order to be allowed to delay installation of pollution controls at Hudson.[171] According to the 2006 New Jersey Behavioral Risk Factor Survey, 15 percent of New Jersey children have been diagnosed with asthma, of which 69 percent continually suffer from its effects. The asthma hospitalization rates in the state show a clear racial disparity: out of 100,000 children of each racial group, 469 African-American children and 312 Latino children were hospitalized for asthma in 2004, compared with 111 white children.[172]

COMMUNITY SAYS…

N.B. Pollution Controls were installed in July 2011, which include use of ultra-low sulfur coal, compliance with annual emission caps for NOx and SO_2 and operation of an electrostatic precipitator and a fly ash conditioning system to control PM.

"I know that the kinds of emissions that this… coal plant is generating… [are] completely hazardous to human health in and around the cities of Jersey City and Hoboken, and I know for a fact that many of the people that live in the community have no idea whatsoever about what's going on here. Residents are being deliberately kept in the dark as to the toxic exposures [which] are prevalent and well-documented by the EPA and the [New Jersey Department of Environmental Protection"

"I think that the community members in the area should be informed and that the media should really take a look at the kinds of emissions that have been happening, because nobody wants to raise their children next to a coal plant like that. The emissions in this community are so off the chart and so astronomically dangerous for human health that I think that one there's some light shed on what is really going on –with the kinds of things like this coal plant, I hope that will raise awareness about this, to stop these emissions in Jersey, and to really do a lot more to clean up our environment."

—Robert Harper, resident of Jersey City

#4Valley Power Plant
Milwaukee, WI

Parent Company: Wisconsin Energy (WE Energies)
Subsidiary Owner: Wisconsin Electric Power Co.
Built: 1968-69
Capacity: 272 MW
2007-10average SO2 emissions:5,999 tons **2007-10average NOX emissions:** 2,407 tons
Residents within 3 Miles: 209,421
Average income within 3 miles: $12,852 (60% of Wisconsin average)
People of color within 3 miles: 66% *(29% African-American, 27% Latino, and 10% Other)*

Milwaukee Community Profile and Perspectives

The Valley plant, located on the Menomonee River about a mile southwest of downtown Milwaukee, is wedged between the predominantly African-American Avenues West neighborhood to the north, and the predominantly Latino neighborhood of Walker's Point to the south. Over 24,000 people live within a mile of the plant, and both the Aurora Sinai hospital and Marquette University campus are less than a mile away.[173,174]

In April 2003, the Bush Administration and We Energies reached a settlement to resolve a decade of clean air violations at the company's five coal plants. The settlement limited emissions at three of the five plants — including the Port Washington plant,

which is located in a wealthy, mostly white neighborhood, and was closed under the agreement — but did not limit emissions at Valley, and may actually have resulted in increased emissions at that plant. Sierra Club, Clean Wisconsin, and the Citizens Utility Board protested this agreement, calling it a "terrible deal" for the low-income people and people of color who live near Valley.[175,176] In 2005, Milwaukee County had the highest rate of asthma-related emergency room visits in Wisconsin: 96.3 per 100,000. The asthma hospitalization rate for African-Americans in Wisconsin is nearly six times higher than the rate for whites.

COMMUNITY SAYS…

"[I've been] talking to some people who were not willing to.. give a statement, but will be frank what they did say to me was that they know that there are some things going on here [with the power plant], because their kids are sick a lot They're sick, and they don't know why. We can't say [for sure] what is going on, but we believe it has something to do with the power plants here"

"I've been here in this area since 1965. People that live in this area — these are not people who have good incomes, a lot of them. These are people who are trying to survive, people who are living in poverty. They are out here trying to make a living for their families. They find a place to live in this area — [but] this environment isn't safe — we believe it isn't safe. But that's who you have living here. You have Hispanics, you have Puerto Ricans, you have blacks, you have Jamaicans, and poor whites living here. They recognize that there's something wrong [with the environment] here. We think that it may be the We Energies plant here, and the effect that it's having on them and the quality of their lives."

—Thomas White, resident of Milwaukee for 45 years
[NAACP Wisconsin State Conference President]

N.B. On August 17, 2012 they announced their plan to close the coal-fired power plant.

#5State Line Power Plant

Hammond, IN

Parent Company: Dominion
Subsidiary Owner: State Line Energy LLC
Built: 1955, 1962
Capacity: 614 MW
2007-10average SO2 emissions:10,326 tons **2007-10average NOX emissions:** 7,885 tons
Residents within 3 Miles: 77,931
Average income within 3 miles: $14,408 (71% of Indiana average)
People of color within 3 miles: 79% *(43% Latino, 33% African-American, and 3% Other)*

Hammond Community Profile and Perspectives

State Line Plant is located on the shore of Lake Michigan, about 12 miles southeast of downtown Chicago, and immediately across the state border from Chicago's densely-populated East Side neighborhood – one of the poorest neighborhoods of Greater Chicago, and one of the major Latino population centers in the city.[177] There are five schools and several parks within a mile of the plant.[178]

In May 2011, Dominion announced that it would be closing the plant between 2012 and 2014, having decided that it was not worth upgrading the plant in order to comply with Clean Air Act regulations.[179]

COMMUNITY SAYS…

"The incidence of respiratory diseases that occur in this area — many times, if we're not checked [by doctors], we think they're allergies. … It's not necessarily because of the allergies. Sometimes [it's] because of the pollutants that are in the air — which may not show up on examinations or tests, but we kn[illegible] th[illegible]t the[illegible] ther[illegible]'t t[illegible] c[illegible]re extensive study from those that hav[illegible] the m[illegible]ans [illegible]o ch[illegible]ck [illegible]t t[illegible]ir, [illegible]o s[illegible] if that's a reason. … We're entitled [illegible] life, [illegible] [illegible] if people who have control over those things, can [ensure] that we have… longer lifetimes, with a better quality of life, then I believe that they should do so. I don't think that's too much to ask."

—Rev. H[illegible] Co[illegible], 42 [illegible] [illegible]eside[illegible] [illegible]d [illegible]ea

"This plant is a coal-burning plant, and it is in our area, our neighborhood, and we know that plants like this are being shut down in other places, but the minorities' areas — these plants continue to function in our area. And we are finding out that there are a lot of health-related illnesses that come from us breathing this air. Today it seems really nice, we smell real nice air, but there's certain time when we can't hardly breathe. And we think that some of this comes from these plants that are put up in our neighborhood. For myself, my son has asthma, and at certain times it's hard for him to breathe, and I do know some people in my church have to use oxygen to breathe. And we think that some of these illnesses are coming from plants like this one."

—Ida Halliburton, resident of Hammond

N.B. On March 31, 2012 Hammond was closed.

Parent Company: First Energy
Built: 1962
Capacity: 256 MW
2007-10average SO2 emissions:3,492 tons **2007-10average NOX emissions:** 1,326 tons
Residents within 3 Miles: 103,333
Average income within 3 miles: $10,866 (52% of Ohio average)
People of color within 3 miles: 91% *(85% African-American and 6% Other)*

Glenville Community Profile and Perspectives

Lake Shore is located in Glenville, an overwhelmingly African-American neighborhood in East Cleveland; the plant is within a band of East Cleveland that is over 85 percent African-American. Glenville is one of the poorest neighborhoods in a city that has undergone massive post-industrial decline.[180]

The plant is located in an area with massive environmental contamination: St. Clair-Superior, the Cleveland neighborhood adjacent to Glenville, has the highest childhood lead poisoning rate in Ohio (and perhaps the U.S.), with 44 percent of children testing with blood levels of lead in excess of 5 micrograms per deciliter in 2009.[181]

There are six schools within a mile of the plant, and a large park with youth athletic facilities is immediately across the street.[182]

COMMUNITY SAYS…

"We need to find out what this toxic waste is doing in our community. What's it doing to our families and to the children? We know we have a high incidence of all kind of these issues that could very well be stemming from this plant. And we need to know that. We need to figure that out, so we can start getting people prepared to start making changes in what's going on — and we can tell this plant, if you don't change what you're putting out in our air, then you're a non-conformance to be here."

"I'm very saddened to know that the area that I grew up in… is just a haven for toxic waste, and that we could very well be affected by what's coming out of this coal plant. So we have to figure out, now that we know about this plant, how we're going to start dealing with this challenge — while we're dealing with all the other challenges that we have to deal with in Cleveland."

—Jocelyn Travis, longtime Glenville resident

N.B. originally slated for closure on September 1, 2012, the plans have been postponed until 2015.

#7River Rouge Power Plant
River Rouge, MI

Parent Company:DTE Energy
Subsidiary Owner: Detroit Edison Co.
Built: 1957-58
Capacity: 651 MW
2007-10average SO2 emissions: 14,614 tons **2007-10average NOX emissions:** 4,861tons
Residents within 3 Miles: 68,262
Average income within 3 miles: : $13,037 (59% of Michigan average)
People of color within 3 miles: 65% *(31% African-American, 29% Latino, and 5% Other)*

River Rouge Community Profile and Perspectives

This plant is located in River Rouge, an industrial suburb five miles southwest of downtown Detroit. Demographically, River Rouge is an extension of downtown Detroit, equally impoverished and overwhelmingly populated by people of color. The plant is also located just across the Rouge River from Southwest Detroit – the only major Latino district in the city.[183]

COMMUNITY SAYS…

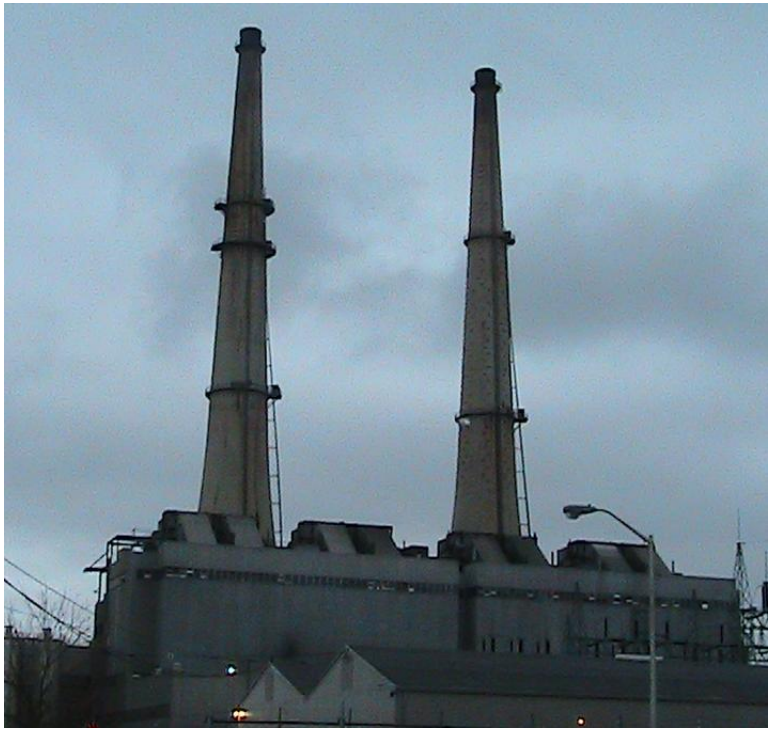
"River Rouge is known for its factories, and for the environmental issues that we have here. … About a block and a half down [from the plant], you can see actual homes, where there's a full community of people living in this environment"

"We're in front of a power plant owned by DTE [while conducting the interview]. … The plant is located right in the middle of the community. This is a park that we're standing in. In the park you'll see children playing, and there's actually the Rouge River, which comes through here, and we have a number of people who are fishing in this area. This is… a mixed community, but mostly minorities; you'll find a lot of Latinos, a lot of African-Americans in this area. And I believe less than a block or so away is an elementary school. And so, this area is very critical when it comes to environmental issues."

—Yvonne White—Detroit Resident and Community Leader

N.B.There have been no operating changes made at the River Rouge coal fired power plant.

#8R. Gallagher Generating Station
New Albany, IN



Parent Company: Duke Energy
Subsidiary Owner:PSI Energy Inc.
Built: 1958-61
Capacity: 600 MW
2007-10average SO2 emissions:37,604 tons **2007-10average NOX emissions:** 4,966 tons
Residents within 3 Miles: 60,333
Average income within 3 miles: $12,868 (63% of Indiana average)
People of color within 3 miles: 61% *(59% African-American and 2% Other)*

New Albany Community Profile and Perspectives

Gallagher is located immediately across the Ohio River from the historically African-American Shawnee neighborhood of Louisville, Kentucky.[184]

Out of the 250 largest coal power plants in the U.S. (in terms of 2005 power production), Gallagher is the dirtiest in terms of SO_2 emissions per unit of power produced, emitting 40.38 lb. of SO_2 per MWh in 2005 (compared with around 1 lb./MWh for plants with state-of-the-art SO_2 scrubbers).[185][186]

In December 2009, Duke Energy reached a settlement with the U.S. EPA, ending a legal case against Duke for pollution from the Gallagher plant. Duke agreed to shut down Units 1 and 3; Units 2 and 4 will be allowed to continue operating, but Duke agreed to install SO_2 scrubbers at these two units. Duke also agreed to pay $8 million in fines and environmental mitigation spending.[187]

COMMUNITY SAYS...

"I've known about the Gallagher plant being here pretty much all of my life, but I'm not so sure that I knew it was a coal plant. I live about a mile-and-a-half, at the most two miles, from the coal plant. I'm not sure the residents here understand the hazards of having the coal plant so close to our community."

—Nicole Yates, lifelong resident of New Albany

"I am familiar with Gallagher… My father worked there in maintenance for 27 years. It makes me wonder sometimes if he had acquired some form of cancer from working at the plant. There were nodules that were on his lungs, but he died of liver cancer, which was secondary to a primary cancer that was unknown."

—Rhoda Temple Morton, lifelong resident of New Albany

N.B. In early 2012, units 1 and 3 were closed. Units 2 and 4 have been equipped with bag houses and dry sorbent pollution-control equipment and continue to operate.

Parent Company: Xcel Energy
Subsidiary Owner: Public Service Company of Colorado
Built: 1957-68
Capacity: 801 MW
2007-10average SO2 emissions: 6,750 tons **2007-10average NOX emissions:** 9,482 tons
Residents within 3 Miles: 61,559
Average income within 3 miles: $13,682 (57% of Colorado average)
People of color within 3 miles: 64% *(56% Latino and 8% Other)*

Commerce City Community Profile and Perspectives

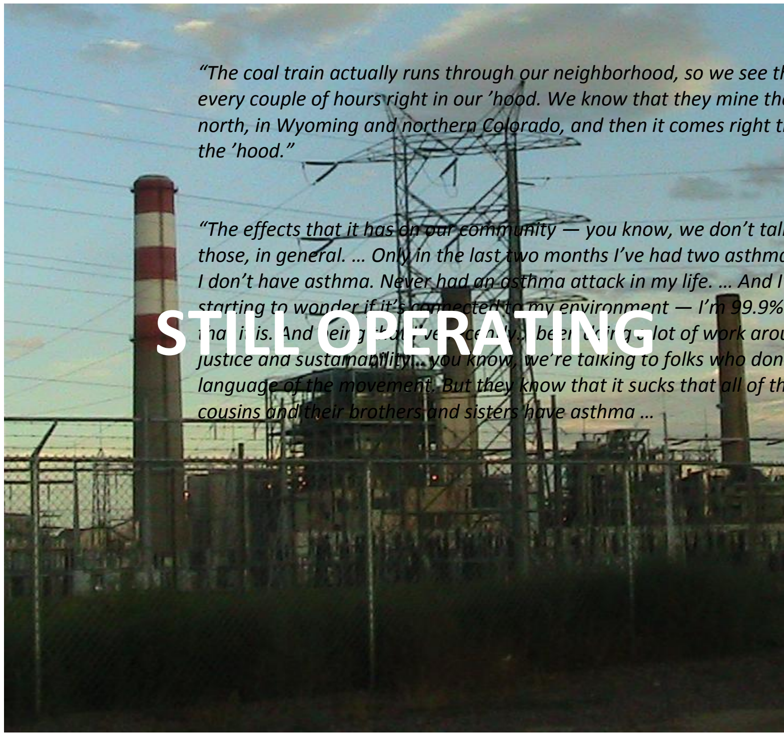
Cherokee Station is located in Commerce City, a part of the Denver metropolitan area about five miles north of downtown. The city is mixed residential/industrial, and is also home to a massive Suncor oil refinery, with a capacity of 90,000 barrels per day. It is also the center of one of Denver's two Latino population centers.[188,189]

In August 2010, Xcel agreed to close three of Cherokee's four units before 2017, and to close the fourth unit by 2022. As of December 2010, a dispute between Xcel and the Colorado Public Utilities Commission was ongoing; the commission wanted to Xcel to close the entire plant by 2017, while Xcel was insisting that the 2022 closure was "the least expensive plan."[190,191]

9Cherokee Station
Commerce City, CO

Electronic Filing: Received, Clerk's Office 08/27/2020

COMMUNITY SAYS…



“The coal train actually runs through our neighborhood, so we see the train every couple of hours right in our ’hood. We know that they mine the coal up north, in Wyoming and northern Colorado, and then it comes right through the ’hood.”

“The effects that it has on our community — you know, we don’t talk about those, in general. … Only in the last two months I’ve had two asthma attacks. I don’t have asthma. Never had an asthma attack in my life. … And I’m starting to wonder if it’s connected to my environment — I’m 99.9% sure tha[illegible] it is. And [illegible] been [illegible] lot of work around food justice and sustainability… you know, we’re talking to folks who don’t use the language of the movement. But they know that it sucks that all of their cousins and their brothers and sisters have asthma …

“We’re in Commerce City. It’s the most toxic part of Denver, Colorado. Everyone knows that. Several years ago, there was an environmental justice campaign… where they scraped off a foot of dirt in everyone’s yard — because you can’t grow your own food there. When I talk to my friends who grew up in this neighborhood, they knew that they couldn’t run barefoot outside … Those things that we’ve taken for granted [while growing up]. Clean air. It smells out here”

“I’m feeling like I need to figure out what this means, that I live so close to this power plant. Because I see the coal train go by every day, I hear it every night.”

—AsharaEkundayo, resident of northeast Denver

N.B. Unit 2 was retired in October 2011, Unit 1 was retired in June 2012, and Unit 3 is slated to be retired in 2015. A new natural gas generating plant is scheduled to open in 2015 and unit 4 of the current system will be switched to natural gas 2017.

Bridgeport Community Profile and Perspectives

Bridgeport Station (one of two U.S. coal plants owned by PSEG on this list of Top 12 Environmental Justice Offenders —the other being Hudson Station) is located in Bridgeport, a city in the southwest corner of Connecticut that is part of the New York City metropolitan area. Bridgeport is the second-poorest city in Connecticut after Hartford, with a per capita income just over half of the state average.[192]

The plant is wedged between Bridgeport's Downtown and South End neighborhoods, which are among the city's poorest. The average income of people who live within one mile of the plant is just $11,400, and over 87 percent of them are people of color.[193] Six schools are within a mile of the plant, as is the University of Bridgeport (one of the most racially diverse universities in the U.S., with over 60% students of color).[194]Over 20 percent of the population within three miles of the plant is comprised of

#10 Bridgeport Harbor Station
Bridgeport, CT

children younger than five years of age and adults over the age of 65. These are both groups that are especially vulnerable to these negative health effects.

COMMUNITY SAYS…

"The citizens have complained for years about that power plant – even though people will say now, when you talk to [PSEG], that it's been cleaned up, it's a clean power plant. Well, you can't tell that to the families that live in the South End, because they can't open their windows in the summer without having soot coming through the windows, their cars are constantly covered with it". "So the impact of that plant certainly is hitting the health of the community, the quality of life, for sure. And, on top of that [there's also health impacts from] the I-95, and another plant that's a waste-to-energy plant that's also in the South End, but a little farther west. They feel that they are very much under the gun, and they are."
—Adrienne Farrar Houel, resident of Bridgeport

"The sad reality is that a lot of these kids certainly will suffer from asthma and possibly other ailments. The school system is about 90% black and Hispanic, so it's a heavy population in terms of children of color, and also people of color, in this city. And, certainly, the coal plant doesn't help. We need industry in this city, but it needs to be balance. It's very, very difficult. It's just off the chart in terms of the illnesses that black and Puerto Rican people have within this community. … My son is a doctor, and we've had conversations regarding the pollutants in the area, and he's actually done some work with kids with asthma, so he knows that it's a very, very difficult problem in our community."
—Craig Kelly, longtime Bridgeport resident

Parent Company: Public Service Enterprise Group (PSEG)
Subsidiary Owner: Public Service Electric & Gas Power Connecticut LLC
Built: 1968
Capacity: 400 MW
2007-10average SO2 emissions: 2,044tons **2007-10average NOX emissions:** 1,404 tons
Residents within 3 Miles: 309,478
Average income within 3 miles: $16,817 (59% of Connecticut average)
People of color within 3 miles: 67% *(30% Latino, 28% African-American, and 9% Other)*

N.B. The Connecticut Department of Energy and Environmental Protection (DEEP) issued the Title V permit on October 31, 2012 which is intended to enhance compliance by providing a single, comprehensive statement of all air pollution requirements that apply to a facility.

#11 Four Corners Steam Plant

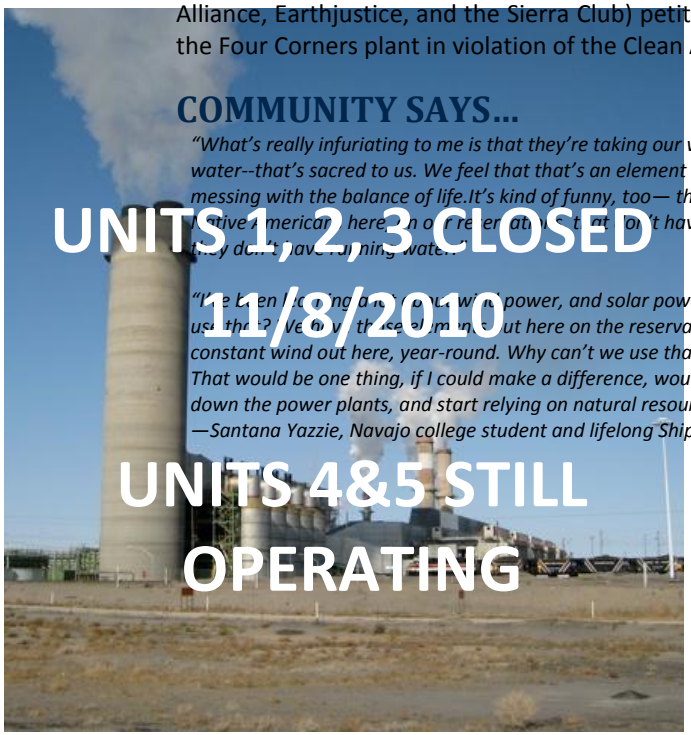
Niinahnízaad, NM

Parent Company: Pinnacle West Capital Corp.
Subsidiary Owner: Arizona Public Service Company
Built: 1963-70
Capacity: 2,270 MW
2007-10average SO2 emissions:11,032 tons **2007-10average NOX emissions:** 40,685 tons
Residents within 3 Miles: 488
Average income within 3 miles: $6,762 (39% of New Mexico average)
People of color within 3 miles: 95% *(93% Native American and 2% Other)*

Niinahnízaad/ShiprockCommunity Profile and Perspectives

This massive coal plant — the biggest in the Southwestern U.S. — is located about 15 miles east of the town of Shiprock (or *Naat'áaniiNéézin* Diné, the language of the Navajo), on the territory of the Navajo Nation. While the area around Four Corners is relatively sparsely populated, the people living near Four Corners are overwhelmingly Native American — and overwhelmingly low-income. Out of the 12,500 people who live within 10 miles of the plant, 66 percent are Native American.[195] The American Lung Association estimates that 16,000 people in the region (15% of the population) suffer from lung disease; however, precise health statistics for the Navajo Nation are not available. More concretely, Dr. Marcus Higi, who worked as a physician in the area for four years, says, "I've seen the worst asthma cases out here near the power plants. A kid would come in, barely breathing — they're basically on the verge of death."[196]

On February 18, 2010, a coalition of environmental groups (including Doodá Desert Rock, Diné CARE, the San Juan Citizens Alliance, Earthjustice, and the Sierra Club) petitioned the U.S. Department of Interior and Department of Agriculture to declare the Four Corners plant in violation of the Clean Air Act, and to require pollution reduction measures.[197]



N.B. On November 8, 2010 Units 1, 2 and 3 were close. On November 8, 2012 pollution controls were placed on Units 4 and 5.

COMMUNITY SAYS…

"What's really infuriating to me is that they're taking our water, our drinking water--that's sacred to us. We feel that that's an element of life, and they're messing with the balance of life.It's kind of funny, too— there are a lot of Native American here on our reservation that do not have electricity, and they don't have drinking water."

"I've been looking at wind power, and solar power. Why can't we use that? We have the resources out here on the reservation. We have constant wind out here, year-round. Why can't we use that to our benefit? … That would be one thing, if I could make a difference, would be [to] shut down the power plants, and start relying on natural resources."
—Santana Yazzie, Navajo college student and lifelong Shiprock area resident

"I remember the plant starting up in the '60s, and I thought it was a good idea, because it would provide income for people. But then later on I saw all the smog that's being produced, and then people started having respiratory problems. And I attribute it to what the coal plants put up in the air. I grew up in the mountains, and before the plants were built, you could see for miles and now you can't even see sometimes."

"It seems like there's more asthma. My granddaughter has asthma and then one of my grandsons also has asthma. You see a lot of that now and we didn't before. Sometimes you smell it—you smell the pollution."
—Justin Nakai, Navajo man and longtime resident of Shiprock area

#12 Waukegan Generating Station

Waukegan, IL

Parent Company: Edison International
Subsidiary Owner: Midwest Generation EME LLC
Built: 1952, 1958, 1962
Capacity: 682MW
2007-10average SO2 emissions:11,690 tons **2007-10average NOX emissions:** 3,326 tons
Residents within 3 Miles: 67,776
Average income within 3 miles: $16,197 (70% of Illinois average)
People of color within 3 miles: 72% *(47% Latino, 19% African-American, and 6% Other)*

Waukegan Community Profile and Perspectives

The Waukegan plant — the third plant in the Top 12 EJ Offenders owned by Edison, all of which are in Greater Chicago — is located on the shore of Lake Michigan, about 35 miles north of downtown Chicago. The city of Waukegan contains three Superfund sites — including the Waukegan Harbor River Area of Concern, which is half a mile south of the Waukegan plant, and is severely contaminated with PCBs.[198]

The city of Waukegan, is approximately 45 percent Latino and 19 percent African-American. The area of Waukegan where the

plant is located is just south of downtown is where Waukegan's Latino and African-American populations are concentrated; the population of the neighborhood is greater than 90 percent people of color.[199] The Vista Medical Center's East Campus is located one mile from the plant, and there are seven schools located within two miles.[200]

The Environmental Law & Policy Center (ELPC) released a report in 2010, Midwest Generation's "Unpaid Health Bills": The Hidden Public Costs of Soot and Smog from the Waukegan Coal Plant," which examines the health effects of soot and smog pollution from coal plants. The report uses data from the National Research Council (NRC) finding that particulate matter (soot), from the Waukegan coal plant creates about $86 million in health and related damages annually. According to the NRC report, overall, this coal plant has created between $520 million and $690 million in public health damages since 2002.

N.B. Units 1,2, and 6 have been retired since 2007 and 2010 respectively. Units 3,4,5,7, 8 are still in production. They must install a cold side electrostatic precipitator or bag house equipment on unit 7 by December 31, 2013.

COMMUNITY SAYS…

"The Waukegan coal plant is polluting our air, harming our health and draining our wallets. Soot and smog from the Waukegan coal plant is making us sick and costing us hundreds of millions of dollars. It's time to reduce this pollution – that's the right thing to do for our environment and our economy. Midwest Generation must be socially responsible and invest in modern pollution control equipment to clean up this old plant up, or shut it down. Enough is enough." - Howard Learner, Executive Director, ELPC

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