Yes We Did

The Fight For Clean Air, Clean Energy and the Climate During the Obama Administration
# Table of Contents

**Introduction: Saving Lives and Our Climate** ................................................. 1

**Finalized Protections and Executive Actions** .................................................. 4

Mercury and Air Toxics Standard (MATs) ............................................................. 4

Cross-state Air Pollution Rule (CSAPR) ............................................................... 8

The Clean Power Plan ......................................................................................... 11

Smog Standards ................................................................................................. 17

Coal Ash Protections ........................................................................................... 21

Toxic Water Pollution (ELG) ............................................................................... 24

Start-Up, Shut-Down, and Malfunction ............................................................... 26

Regional Haze Protections .................................................................................. 28

**Rules and Actions Not Yet Finalized** ............................................................. 31

Federal Coal Leasing ........................................................................................... 31

Strengthening the Regional Haze Program ......................................................... 34

Stream Protection Rule ....................................................................................... 35

Self-Bonding ....................................................................................................... 37

Economic Diversification ...................................................................................... 39

**Conclusion: Building on a Strong Foundation** ............................................... 42
Introduction: Saving Lives and Our Climate

Most Americans would be surprised to learn that, until this decade, the coal industry enjoyed a free pass from many of our nation’s most basic protections from pollution. For years, coal-fired power plants were allowed to dump 100 percent of their toxic mercury pollution and climate-disrupting carbon pollution into our air.

There were essentially no federal standards for the disposal of the toxic waste left behind after coal is burned in a power plant, and in hundreds of communities, it was dumped into poorly designed ponds and holes in the ground, which sometimes failed and resulted in catastrophic spills. To this day, mining companies continue blowing up mountains and devastating landscapes—including on the federal public lands belonging to all Americans—all across this nation.

The coal industry used its clout to secure loopholes in bedrock protections like the Clean Air Act and Clean Water Act, and for decades the deck was stacked against communities on the receiving end of the pollution. More often than not, those were low income and communities of color. However, with the help, the advocacy, and the hard work of the Beyond Coal campaign and our allies, that began to change under President Obama’s leadership. Community leaders and grassroots advocates fought for years to
President Obama has done more to address climate change and reduce public health threats from dirty fuels than any other any other President in history.

close these loopholes coal plant by coal plant, in the courts, on the streets, and in public hearings before every conceivable decisionmaker. These hardworking Americans took the time out of their busy lives to fight for these long-overdue pollution protections because they were the ones paying the price for this pollution—paying with their health, the safety of their children, the earnings of a lifetime poured into their homes, and sometimes even their lives.

During his eight years in office, President Obama and the leaders of his Administration, including the Environmental Protection Agency, finally heard the voices of these Americans, listened, and took action. This report chronicles the clean air and clean water protections put in place during President Obama’s tenure, due in large part to the work of Sierra Club’s Beyond Coal campaign and over 100 partner organizations, that are cleaning up how we make the electricity that powers our nation. Here, we outline the problem that each of these protections addresses, how the advocacy of Beyond Coal and our allies helped bring about a solution, and how these solutions benefit families and communities across the country. Some of these rules are not yet final, so this report also showcases a handful of issues that the Obama Administration can and should push over the finish line before the end of this Administration.

About the Beyond Coal Campaign

Not only is coal burning responsible for one third of US carbon emissions—the main contributor to climate disruption—but it is also making us sick, leading to as many as 13,200 premature deaths and more than $102 billion in annual health costs in 2009 alone, according to Clean Air Task Force’s 2010 Toll from Coal Report. The Beyond Coal campaign’s main objective is to replace dirty coal with clean energy by mobilizing grassroots activists in local communities to advocate for the retirement of old and outdated coal plants and to prevent new coal plants from being built. Working with allies, students on university campuses, and local groups in neighborhoods across the country, Sierra Club volunteers and staff are hard at work every day fighting for their families and communities. Together, they have achieved one victory after another and have fundamentally shifted the country’s energy future toward a cleaner, more sustainable path. Through a combination of local organizing and legal work, 242 coal plants—out of the nation’s 523—are already set to retire, with more on the way.

Our goals include phasing out all the remaining coal and gas from the electric sector by 2030, replacing them with clean energy like wind and solar, and helping diversify local economies that have been historically dependent on fossil fuel extraction.
President Obama has done more to address climate change and reduce public health threats from dirty fuels than any other President in history. This suite of clean air, water, and climate protections have already delivered real improvements to the lives of all Americans on a big scale, including:

- **Sulfur dioxide and nitrogen oxide pollution from coal plants, which are linked to health problems including asthma and heart attacks, fell to their lowest level since we started tracking emissions—down 62% and 32% respectively, since Obama took office, and down 69% and 75% from their record highs**
- **Mercury pollution from power plants will be reduced by 74%**
- **Climate-disrupting carbon pollution from power plants fell by 400 million short tons, equal to taking 77 million cars off the road every year**
- **1.4 billion pounds of toxic power plant pollution will soon be prevented from entering our streams, rivers, and lakes**
- **Annual health benefits from coal plants retired or announced to retire since 2010 include prevention of 6,616 premature deaths, 10,264 heart attacks, and over 109,134 asthma attacks, and $3.1 billion saved in health care costs**

There’s no question that under President Obama’s leadership, these new protections are annually saving thousands of lives, preventing hundreds of thousands of asthma attacks and other medical emergencies, and giving us a fighting chance to turn the corner on climate change.

At the same time, there is still much more work to do, and communities are still suffering from dangerous pollution. Just over half the coal plants in the US are still operating and harming public health and our climate, mountaintop removal coal mining is still taking place in Appalachia and making people sick, and pollution from natural gas fracking and pipelines threatens communities across the nation. But we’ve made big progress on some of our nation’s most stubborn health and pollution problems, and we still have a fighting chance to turn the corner on climate change, thanks to a tenacious grassroots movement and President Obama’s leadership.

As President Obama leaves office, clean energy is powering this country at record levels. Wind and solar were the biggest new sources of power on the grid in 2015, both nationally and globally. Thanks to a nationwide grassroots movement, 45 percent of the coal plants in the US are slated for retirement, with many more retirements to come, and no new conventional coal plants have broken ground in almost a decade. The amount of US electricity from coal has fallen to a historic low of one-third, down from half in 2010.

This shift in how we make electricity in America, away from coal and toward clean energy, is what created the space for the US to provide climate leadership in Paris, and what will allow us to meet the commitments we made there. And it’s regular Americans who have been the engine of that transformation. In closing the loopholes described in this report, President Obama and his Administration have responded to the call of Americans for clean air, safe drinking water, and a secure climate future for our kids. They have provided a foundation for the next Administration to keep making progress, in a decade that is sure to be one of the most pivotal in human history for the future of our common home.
Finalized Protections And Executive Actions

Mercury and Air Toxics Standard (MATS)

THE PROBLEM:
Mercury, a potent neurotoxin, is common in lakes and streams across the United States, due largely to the combustion of coal. Exposure to mercury can be extremely dangerous. When mercury in the air reaches water, it forms methylmercury, which then accumulates in fish. In fact, people are primarily exposed to mercury by eating contaminated fish. All 50 states have issued mercury advisories warning anglers to limit or avoid eating the fish they catch, due to high mercury levels in some fish. As of 2010, almost 18 million lake acres and approximately 1.4 million river miles were covered by some type of fish consumption advisory.

Mercury is a powerful neurotoxin that can damage the brain and nervous system. Women of childbearing age, developing babies in utero, and young children face the highest risks because exposure to mercury in the womb can cause developmental problems, learning disabilities, and delayed onset of walking and talking in babies and infants. EPA scientists have estimated that as many as one in 10 women has mercury levels in her blood high enough to cause damage to a developing baby.

In 2011, coal-fired power plants were the largest single source of unregulated mercury pollution in the United States, emitting over 33 tons of toxic mercury each year. Power plants emit other toxic metals, such as arsenic, chromium and nickel. Before federal standards were put in place, power plants were responsible for 50 percent of mercury emissions, over 70 percent of acid gas emissions, and 20 -
MATS is estimated to prevent up to 540,000 missed work and sick days each year, in addition to 3.2 million days when activity is restricted for those most vulnerable to air pollution.

60 percent of toxic metal emissions in the United States.\(^4\) In addition to the health problems linked to mercury, these other toxins harm the environment, pollute our nation’s waters, and have been shown to cause cancer.

**THE FINAL PROTECTION & ITS BENEFITS:**

Two decades after Congress first called for reductions of toxic air pollution, the Obama Administration finalized the landmark Mercury and Air Toxics Standards (MATS) on December 16, 2011, establishing the first-ever nationwide safeguards for toxic mercury from power plants. The standards limit emissions of toxic air pollutants from new and existing power plants (specifically, coal- and oil-fired electric utility steam generating units) under the Clean Air Act.

The standard slashes emissions of mercury and heavy metals including arsenic, chromium, nickel; and acid gases, including hydrogen chloride and hydrogen fluoride. MATS applies to power plants that generate electricity for the national grid through the burning of oil and coal (smaller boilers are covered by another standard, the Boiler Maximum Achievable Control Technology, or Boiler MACT, rule). When the EPA issued the standard, it applied to 1,100 coal-fired units and 300 oil-fired units at about 600 power plants: plants that were responsible for half of all mercury pollution in the United States and the leading sources of acid gas and toxic metal pollution.\(^5\) This rule provided up to 4 years for facilities to meet the standards, until April 2016. The standard's limits were based upon the reductions being achieved by state-of-the-art controls already in use across a substantial portion of the electric-power industry. That means that cost-effective technologies to meet the standards were widely available.

The EPA estimates that MATS will dramatically reduce domestic mercury pollution from coal- and oil-fired power plants by 74 percent, and acid gases by 88 percent. Plus, the agency estimates that the standards will reduce concentrations of fine particles (PM2.5) in our air, which would prevent thousands of premature deaths and tens of thousands of heart attacks, bronchitis cases and asthma episodes.

Not only does MATS reduce the amount of dangerous mercury and toxic, cancer-causing metals in our air, but it also improves the lives of families across America. MATS is estimated to prevent up to 540,000 missed work and sick days each year, in addition to 3.2 million days when activity is restricted for those most vulnerable to air pollution. The monetary value of these air quality improvements is $37 billion to $90 billion every year, compared to implementation costs of only $9.6 billion.\(^6\) These benefits are particularly felt by communities of color and low income communities that are disproportionately affected by toxic pollution from power plants.

By the end of President Obama’s time in office, almost all coal plants in the US will have come into
compliance with the standard, making MATS one of the biggest public health accomplishments of his presidency.

**HISTORY OF LEGAL ACTIVITY & OUR ADVOCACY:**

Congress required reductions of mercury and other air toxics from power plants back in 1990, when amendments to the Clean Air Act passed—but the coal industry succeeded in blocking the standards for over two decades. After more than 20 years of advocacy, it was a major milestone for clean air and public health when the Obama Administration and the EPA put the final MATS in place for power plants in 2011. Advocates including the Sierra Club fought for these standards in the courts and rallied hundreds of thousands of Americans who spoke up for these vital safeguards via public comments, rallies, and hearings.

In December 2000, the EPA first made the official determination that emissions of air toxics, particularly mercury, pose significant hazards to public health and the environment, which set in motion the process of establishing pollution limits for coal- and oil-fired power plants. However, President George W. Bush’s EPA proposed a weak standard called the Clean Air Mercury Rule, which was ultimately overturned in court after being challenged by a group of states, environmental groups, and public health groups. Among other glaring problems, the rule actually “delisted” power plants as sources of hazardous air pollution.

The weak Bush-era standard also inspired advocates in a number of states to push for, and ultimately win, their own state-level mercury rules. These state-level mercury safeguards, which were established in places like Illinois and Minnesota, created renewed momentum for federal action by not only highlighting the dangers of mercury pollution, but also by demonstrating that emissions could be reduced while keeping electricity affordable and reliable.

When President Obama took office, the EPA reaffirmed that it was necessary and appropriate to control air toxics from coal- and oil-fired power plants. In 2010, a federal court approved an agreement between the EPA, clean air advocates, and states that required the EPA to issue a draft of the revised air toxics standard by November 2011—a deadline that EPA met.

A massive show of public support greeted the draft mercury standard. Over 800,000 Americans submitted public comments to EPA calling for a strong final safeguard—at the time, the largest number of comments ever submitted to EPA on any issue. And we didn’t stop there. Organizers held mercury hair testing events at local salons, where participants could discover their mercury levels by sending a snip of hair to a lab. Beyond Coal Campaign director Mary Anne Hitt, a new mother at the time, appeared on Good Morning America to reveal the mercury hair test results of the show’s weatherman, Sam Champion. The Sierra Club also released a “safe sushi” smartphone app that identified types of seafood known to be high in mercury. Supermodel Elle MacPherson even got in the game, authoring a CNN op-ed about the standards that lead to this headline in Rolling Stone: “Super Model Elle Macpherson Body Slams Big Coal.”

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Led by then-New York City Mayor Bloomberg, mayors from 91 cities—many in coal mining states—penned a letter to EPA Administrator Lisa Jackson stating their support for the rule. It is “cities that have to deal with local air pollution. It’s mayors that see their constituents go to the hospital for asthma attacks,” Rit Aggarwala, environmental program lead at Bloomberg Philanthropy, told Politico. The letter included support from 7 of the 10 largest cities in the US. In June 2011, the US Conference of Mayors passed a unanimous resolution in support of the standard.

Finally, in December 2011, the EPA issued the final standard for mercury and air toxics from power plants. Not surprisingly, the coal industry and its allies launched a legal challenge to the standard. The Court of Appeals for the D.C. Circuit rejected all challenges to the rule in 2014. But in June 2015, the Supreme Court sent one aspect of MATS back to the agency. By a 5-4 decision, the Court determined that the EPA should have considered the costs of the rule earlier in the rulemaking process. The Sierra Club was among the public health, civil rights, and environmental groups who, along with several states and some power companies, joined the EPA in defending MATS against industry’s challenges in the Court of Appeals and before the Supreme Court.8

Though some state officials and industry groups requested the rule be suspended, the D.C. Circuit left MATS in place while EPA responded to the ruling. In December 2015, the EPA proposed a supplemental finding concluding that the public health benefits of MATS justified industry’s compliance costs, and this supplemental finding was finalized on April 14, 2016.8 Coal-favoring state officials and industry groups have challenged that most recent supplemental finding. The Sierra Club, fellow environmental and public health groups, and some states and industry groups continue working to defend these safeguards.

In the meantime, all coal plants are legally required to meet the standard.

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**ON THE GROUND**

**DR. STEPHEN JAY, INDIANA**

“I see the faces,” says Stephen Jay. “The patient who can’t breathe. The effect it has on them: that minute, that day, their lives. I see the effect it has on their children, their spouses. How do we capture that face and communicate it so that people understand the adverse effects of these toxic chemicals?” This is what Dr. Stephen Jay, a pulmonologist in Indiana, works with every day. As a doctor, he sees patients that come in every day with shortness of breath, coughing, wheezing, suffering from asthma attacks—and then he knows it’s a bad air day in Indianapolis.

As a researcher and professor at the University of Indiana School of Medicine and School of Public Health, Dr. Jay spends his days studying environmental pollution and how that triggers respiratory illnesses. “We’re immersed in a sea of chemicals,” he says, “many of which are known to be bad for your body, such as mercury.” Dr. Jay remembers when he first saw maps of mercury contamination downwind from the Harding Street coal-fired power plant. “When you see the neighborhoods on the map and then you see the overlays of contamination, it changes everything. You do not want your family to be exposed to these chemicals. We have to do better than this for Hoosiers.”
Cross-State Air Pollution Rule (CSAPR)

**THE PROBLEM:**
In the U.S., more than 100 million Americans regularly breathe unsafe levels of air pollution. Air pollution from power plants doesn’t stop at the state line, and communities living downwind from coal plants suffer higher levels of soot and smog pollution. This is especially true in the Eastern U.S. People in communities struck by this pollution are more at risk for severe health problems, and even premature death, as a result.

Under the Clean Air Act, states are generally in charge of regulating their own sources of air pollution, but—despite the fact that the Act requires them to do so—they have traditionally done a poor job of addressing sources of the air pollution they send to other states. In 2004, the EPA determined that 28 states and the District of Columbia contributed significantly to downwind states not meeting thresholds for soot and smog pollution—thresholds known as National Ambient Air Quality Standards for particulate matter and ozone.

As a result, in 2005, the EPA finalized the Clean Air Interstate Rule (CAIR) to cut emissions of sulfur dioxide (SO2) and nitrogen oxides (NOx), which are key ingredients in soot and smog, in the eastern U.S. However, a December 2008 court decision found that CAIR was not consistent with the requirements of the Clean Air Act, and therefore needed to be replaced. The court did keep CAIR in place through its 2014 compliance period, but directed EPA to issue a new rule to better implement the Clean Air Act requirements concerning the transport of air pollution across state boundaries. This new rule is the Cross-State Air Pollution Rule (CSAPR), finalized on July 6th, 2011.

**THE FINAL PROTECTION & ITS BENEFITS:**
The CSAPR requires 28 states to reduce annual SO2 emissions and annual/seasonal NOx emissions to assist in attaining clean air standards. CSAPR sets out allowable pollution levels for power plants in each affected state for these two pollutants. Under CSAPR, each state is encouraged to generate a
State Implementation Plan, or SIP, to meet those pollution levels. However, since many states failed to have adequate SIPs, the EPA adopted Federal Implementation Plans for each state covered under this rule to resolve the issue and help downwind states meet those health-based standards.

CSAPR set out these allowable pollution levels for power plants in each affected state over certain periods of times: 1) Annual SO2 pollution, 2) Annual NOx pollution, and 3) Ozone Season (roughly May to August) NOx pollution. Each state, and each plant within the state, received those levels based on both how much they were contributing to nonattainment areas and how much it would cost to get those reductions. The CSAPR divides the states required to reduce SO2 into two groups. Both groups must reduce their SO2 emissions in Phase I. Then, states in group one must make additional reductions in SO2 emissions for Phase II. There are sixteen group one states including Illinois, Maryland, Michigan, Pennsylvania, and Virginia.  

The current CSAPR reduces soot and smog pollution from power plants in 28 states, improves air quality, and is projected to save up to 34,000 lives annually by reducing life-threatening respiratory illnesses that affect millions of Americans.  

The current CSAPR reduces soot and smog pollution from power plants in 28 states, improves air quality, and is projected to save up to 34,000 lives annually by reducing life-threatening respiratory illnesses that affect millions of Americans. Along with other rules, every year CSAPR will reduce 6.4 million tons of SO2 (a 73 percent reduction) and 1.4 million tons of NOx (a 54 percent reduction) including 340,000 tons of NOx during ozone season. The benefits of CSAPR significantly outweigh the costs. There are projected health and environmental benefits of $120 billion to $280 billion annually, with only $800 million in annual projected costs.

Additionally, this pollution reduction drastically improves visibility in our national and state parks, and results in increased protection for sensitive ecosystems. These improvements will benefit the millions of visitors who will be able to enjoy our country’s beautiful parks to the fullest. They are also essential to the multi-billion dollar tourism economy that sustains many local communities near our national parks and other protected areas.

**THE CSAPR UPDATE RULE:**

On September 7, 2016, the EPA announced the finalization of a CSAPR Update Rule, building on the basic structure of the original CSAPR. The Update would further reduce summertime NOx emissions from power plants in 22 states in the eastern U.S. as part of EPA’s implementation of the 2008 ozone standard. While this Update does require a roughly 20% reduction in ozone-season NOx emissions from power plants in those states, it does not fully resolve interstate transport issues in downwind states under the 2008 ozone standard—a fact that EPA itself acknowledges. Nor does it resolve transport under the 2015 ozone standard. EPA has not currently...
announced any plans to build on the CSAPR Update Rule to fully resolve ozone transport issues under either the 2008 or 2015 ozone standards.

Nonetheless, EPA expects significant benefits from the Update, including $810 million in public health benefits annually through prevention of over 67,000 asthma attacks, almost 56,000 days of missed work and school, over 240 hospital and emergency room visits, and up to 60 premature deaths, as well as $66 million worth of climate-related co-benefits. These benefits are on top of the benefits conferred by the original CSAPR.

**HISTORY OF LEGAL ACTIVITY & OUR ADVOCACY:**

Clean air and public health advocates have been pushing for these strong standards for decades. The timing of CSAPR’s implementation has been affected by a number of court actions. The CSAPR was challenged in the D.C. Circuit, and the D.C. Circuit subsequently issued decisions that stayed the rule in 2011, and then vacated the rule in 2012 before implementation began. The Supreme Court upheld the rule in late April of 2014, when a 6-2 decision reversed the vacatur by the lower court. The Sierra Club, Environmental Defense Fund, Clean Air Task Force, American Lung Association, Natural Resources Defense Council and more than a dozen U.S. states and cities joined suit to defend CSAPR.

This was followed in October 2014 by the D.C. Circuit granting EPA’s motion to lift the stay of CSAPR and shift the compliance deadlines forward by three years. In response, the EPA revised the regulation compliance deadlines in November 2014 via an interim final rule. CSAPR Phase I implementation began January 1, 2015 for annual programs and May 1, 2015 for the ozone season program, and Phase II will begin in 2017.14 The reductions under the CSAPR Update Rule go into effect in 2018.

The D.C. Circuit Court of Appeals has since rejected a series of polluter-backed challenges to the CSAPR, but in July of 2015 the D.C. Circuit ordered the EPA to reexamine the level of pollution reduction the protections required of particular states. Under the order, CSAPR’s protections will remain in effect while EPA reexamines the pollution reductions the protections require; the CSAPR Update addresses this order as concerns ozone, but EPA has not yet addressed the order as regards sulfur dioxide pollution. In the meantime, the Sierra Club commissioned modeling that demonstrates individual coal plant contributions to smog pollution in downwind states. To date, both Connecticut and Delaware have filed petitions with the EPA to reduce pollution from individual coal plants in upwind states, using that modeling.15
The Clean Power Plan

**THE PROBLEM:**
Our climate is in peril, thanks in large part to coal-fired power plants. Carbon pollution is the primary contributor to climate disruption, making extreme weather worse—including more severe floods, widespread wildfires, and record drought. It also worsens life-threatening air pollution, such as smog and soot, which can trigger asthma and heart attacks. Science tells us that we are the last generation that has the opportunity to turn the corner on the climate crisis before we cross dangerous thresholds that will threaten billions of people and global political stability. We still have time—but not much.

Power plants are among the biggest sources of carbon pollution in the US, and we can’t rein in climate change unless we slash that pollution. While steps have been taken to reduce pollution that causes climate disruption from other sectors of our economy, including transportation, the power sector got a free pass to pollute for decades. In 2009, coal and gas-fired power plants emitted more than 2.3 billion short tons of carbon pollution. More often than not, the power plants spewing dangerous carbon pollution also harm low-income communities and communities of color already suffering from the adverse health effects of other dangerous pollution. For decades, the fossil fuel industry managed to block all federal attempts to rein in the pollution threatening our planet. But that finally changed under President Obama’s leadership, as the EPA
took a series of steps that ultimately resulted in both strong standards for carbon pollution from future coal plants, as well as the Clean Power Plan, a framework for reducing carbon pollution from existing power plants. This landmark plan served as the centerpiece of the 2015 climate commitment made by the US in Paris.

**THE CLEAN POWER PLAN AND ITS BENEFITS:**

On August 2, 2015, the EPA finalized the first-ever national standards limiting carbon pollution from existing power plants, known as the Clean Power Plan. These safeguards were the final step in a process that began during President Obama’s first year in office, and they require electricity providers to reduce their carbon pollution either by using technological innovation or by transitioning to cleaner sources of energy. By establishing these carbon pollution protections, the EPA has given states a framework to clean up and modernize the way we power our country. The EPA has also set carbon standards for future power plants that require new, modified, and reconstructed coal plants to significantly reduce their carbon emissions.

In the Clean Power Plan, the EPA set individual state targets for reducing carbon pollution from the electric sector, based on the mix of power and resources in use and available in each state. The EPA established both rate-based goals, limiting the carbon intensity of electricity, and mass-based goals, limiting the total tons of carbon dioxide power plants in each state can emit. States are scheduled to begin complying with the rule in 2022 and fully implement it by 2030, with a requirement that states must achieve interim reductions before 2030. By 2030, the Clean Power Plan will reduce carbon pollution from the power sector 32 percent from 2005 levels.

The EPA has estimated that, in addition to curbing carbon pollution, the CPP will result in significant public health benefits and the expansion of clean energy. The CPP will help prevent up to 3,600 premature deaths, result in 90,000 fewer asthma attacks in children, and avoid 300,000 missed school and work days by 2030.

**The CPP will help prevent up to 3,600 premature deaths, result in 90,000 fewer asthma attacks in children, and avoid 300,000 missed school and work days by 2030.**

*LONE STAR CHAPTER DIRECTOR REGGIE JAMES TESTIFYING AT THE TEXAS HEARING*
BEYOND COAL CAMPAIGN DIRECTOR MARY ANNE HITT AND HER DAUGHTER HAZEL SPEAK AT THE DC HEARING MID-DAY PRESS CONFERENCE
estimated that the CPP will result in net climate and health benefits between $25 and $45 billion by 2030.

The CPP also requires states to demonstrate how they are meaningfully engaging all stakeholders, including workers, low-income communities, communities of color, and indigenous populations living near power plants and otherwise potentially affected by the state’s plans. The EPA recognizes that participation by these communities will help states ensure that the state plans increase access to renewable energy and energy efficiency for those communities, maintain the affordability of electricity, and preserve and expand job opportunities. The CPP will help create thousands of new jobs in clean energy and energy efficiency, with new incentives to create good jobs in vulnerable communities.

The EPA has also taken steps to address the concerns of low-income communities and communities of color that are overburdened by pollution from power plants and other industrial sources. EPA has prepared a proximity analysis that found that a higher percentage of minority and low-income communities live near power plants when compared to the national averages. The agency also called on states to craft environmental justice analyses and evaluate the effects of their plans on these communities. In order to identify whether state plans would cause any adverse impact on overburdened communities, the EPA plans to perform an assessment of the rule’s implementation to determine whether the Clean Power Plan and other air quality safeguards are leading to improved air quality, or whether there are localized impacts that need to be addressed.

The Clean Power Plan contains many positive labor and economic justice provisions. The EPA is encouraging states to make sure that the skills of workers who install renewable energy or energy efficiency projects or do energy audits are certified by a third party (such as an apprenticeship program registered with the Department of Labor or state agency, or an accrediting entity recognized by the Department of Energy) that develops certification programs based on consensus-based standards. In addition, the standards reference the POWER+ Plan, described below in this report, and also encourage states to provide employment and training to affected workers and economic development assistance to affected communities.

**HISTORY OF LEGAL ACTIVITY & OUR ADVOCACY:**

The Sierra Club and many allies worked for more than a decade to push the Administration to curb carbon pollution from fossil fuel-fired power plants, the single largest source of climate pollution.

In 2002, Sierra Club joined the International Center for Technology Assessment and Greenpeace in filing a lawsuit against EPA to force the agency to respond to a petition to regulate greenhouse gases from motor vehicles. The EPA denied the petition. Joined by numerous states and other organizations, the Sierra Club challenged EPA’s denial. That lawsuit ultimately resulted in the Supreme Court’s 2007 ruling in *Massachusetts vs. EPA* that greenhouse gases are pollutants under the Clean Air Act and that EPA must take steps to limit those pollutants if it determines that they endanger human health or

Our members and supporters submitted over 8 million public comments supporting the standards, the most ever received by any agency in history.
welfare. The Sierra Club played a key role as a lead attorney and strategist.

Meanwhile, in 2003, Sierra Club and Our Children’s Earth filed another lawsuit against EPA, this time demanding that the agency update its performance standards for power plants under Section 111 of the Clean Air Act. EPA entered a consent decree requiring it to update the standards. The Sierra Club and others filed comments explaining EPA’s legal duty to include standards for greenhouse gases, but the agency failed to do so when it finalized the updated standards in 2006. The Sierra Club, along with other organizations and a coalition of states, brought suit in the D.C. Circuit. After the Massachusetts v. EPA ruling in 2007, the D.C. Circuit ordered EPA to reconsider its refusal to add greenhouse gas standards, in light of the Supreme Court’s decision.

In 2009, EPA acted on the Supreme Court’s Massachusetts v. EPA decision and issued its Endangerment Finding, which relied on scientific, peer-reviewed research to reach a formal finding that greenhouse gases like carbon pollution endanger human health and welfare. The agency followed that finding with standards limiting greenhouse gas emissions from vehicles. The Sierra Club and allies submitted extensive technical comments and public comments supporting EPA’s rules, and together with a coalition of states and organizations, intervened in the fossil fuel industry's legal challenges in order to help defend the rules. The D.C. Circuit upheld both rules, and industry then asked the Supreme Court to review them.

After nearly three years of inaction by EPA on the D.C. Circuit’s remand of the power plant standards, the Sierra Club, NRDC, and EDF submitted a letter to EPA indicating their intention to re-initiate litigation unless the agency took immediate steps to amend those standards to cover greenhouse gases. A coalition of states led by New York sent a similar letter. In a December 2010 settlement, EPA agreed to act on the D.C. Circuit remand and issue a rule governing greenhouse gas pollution from new and existing power plants.

As soon as it became clear EPA would move forward with the standard, Sierra Club began working with allies over the course of many months to create a set of principles that we would use to measure whether the final rule was strong and just. Sierra Club organizers across dozens of states and had over one hundred conversations with local allies and partners representing a range of constituencies from communities affected by power plant pollution to labor and faith communities. These organizations pushed the Administration to ensure that environmental and economic justice was top of mind as the rule was drafted and revised.

The EPA engaged in a lengthy administrative process to develop standards for new and existing power plants. The breadth and depth of EPA’s stakeholder outreach was unprecedented and public support for EPA action was overwhelming. EPA held a series of 11 listening sessions before proposing the standards, four public hearings on the proposed standards (some of which extended for two days), and additional hearings on various components of the plan. The agency also continued its extensive outreach throughout the public comment periods.

The Sierra Club and our allies turned out thousands of supporters to these hearings, from Atlanta where thousands marched in the streets and rallied outside the hearing, to Washington, DC, where a diverse group of leaders stood together to support the standard, including civil rights organizations, faith leaders, medical professionals, veterans, elected officials, environmental groups, business leaders, and children’s’ advocates. Our members and supporters submitted over 8 million public comments supporting the standards, the most ever received by any agency.
in history. Over the course of the comment period, our community held hundreds of events around the nation to engage supporters. We used each of these public venues to continue to press for a strong and just rule. Sierra Club and our allies also fought numerous attacks in Congress to reject the Clean Power Plan. The most high-profile attack was a disapproval resolution that Congress passed right before the historic Paris Climate agreement negotiations. The President made it clear he would veto this attack and vetoed it right after he arrived home from Paris.

The Sierra Club also developed extensive technical and legal comments on each of the proposals and met with senior EPA and White House officials to offer detailed recommendations on ways to ensure that the rule was stringent, equitable and legally defensible. When fossil fuel industry opponents and their state allies pursued the questionable legal strategy of filing a lawsuit challenging the proposed standards, the Sierra Club and its allies intervened in the litigation. The court threw out the lawsuit as premature.

While the final Clean Power Plan still has environmental justice shortcomings, the EPA did strengthen several areas in response to the outpouring of public support for a just rule. The final Clean Power Plan includes significant new environmental and economic justice provisions, described above, and the White House also released the Power Plus plan to help provide a transition for coal communities, which is discussed in an additional section below.

On the day the Clean Power Plan was finalized, the fossil fuel industry and their political allies challenged it in the U.S. Court of Appeals for the D.C. Circuit. The Sierra Club, along with a coalition of organizations, intervened to help EPA defend these critical standards. The industry challengers and their state allies asked the D.C. Circuit to stay the rule during litigation. While the D.C. Circuit denied their request, on February 9th, 2016, the Supreme Court issued a temporary stay of the CPP. The Court’s decision did not overturn the policy or decide its legal merits, but suspended its effect until the courts rule on the merits.

The Supreme Court has already upheld the EPA’s authority to limit carbon pollution from power plants under the Clean Air Act and we believe that the Clean Power Plan is a valid exercise of that authority. We fully expect the Clean Power Plan to ultimately prevail in the courts. Despite the temporary stay, several states are already moving forward with customized plans to set their own course for a clean energy future. Sierra Club and many allies are working in those states to advocate for strong and just plans, as we continue our legal work and public organizing in support of the overall standard.
Smog Standards

THE PROBLEM:
Ground-level ozone, or smog pollution, is a widespread public health threat affecting millions of Americans. Smog pollution robs hundreds of thousands of Americans with asthma and other respiratory ailments of quality of life. According to the American Lung Association (ALA), inhaling smog pollution is like getting a sunburn on your lungs and often results in immediate breathing trouble. Long-term exposure to smog pollution is linked to chronic respiratory diseases like asthma, reproductive and developmental harm, and can exacerbate severe illness for people with pre-existing conditions. It sends thousands of children to emergency rooms each year, costs us billions in healthcare costs and lost productivity, and is even associated with premature deaths.

Socioeconomic factors, such as lack of access to insurance and adequate health-care, poverty, lack of patient education, and proximity to polluting facilities, compound the problem for many low income families and communities of color. Analyses of U.S. populations and air quality have found that African Americans and Latinos are more likely to live in counties that have worse problems with particle pollution. African Americans are also more likely to live in counties with higher levels of smog pollution, have nearly two times the rate of current asthma as white children, and are four times as likely to die from it.

THE FINAL PROTECTION & ITS BENEFITS
Against the advice of scientists and experts, the George Bush-era White House set the standard for ground-level ozone at 75 parts per billion (ppb), a level widely recognized by the medical community to be scientifically unsupported and insufficient to protect public health, especially for sensitive populations like children, the elderly, and asthmatics. The Clean Air Act requires the EPA to update the standard every five years, and public health and environmental advocates pushed hard for the standard to be strengthened to 60 ppb, to reflect the latest medical science.

The EPA was poised to revise the standard in President Obama’s first term, but the White House abruptly pulled the plug on that effort in 2011. Then in October 2015, the EPA completed its long-awaited update of the smog standard, lowering it to 70 ppb. Although we advocated for a stronger standard of 60 ppb, the 70 ppb standard will be more protective of public health than the Bush-era level of 75 ppb.

Under the new standard, states will need to submit updated State Implementation Plans (SIPs) to address their Clean Air Act obligations, including transport of ozone precursors to downwind states. In addition, states whose air quality is not meeting, or attaining, the new standard and that do not attain the standard by their attainment date will need to submit nonattainment SIPs, including provisions to reduce emissions within and around the nonattainment area. The agency will provide guidance to states with potential nonattainment areas to help them implement the revised standards. State attainment and nonattainment designations for the updated standards, based on 2014-2016 air quality data, will likely be made by late 2017. Nonattainment areas will have until 2020 to late 2037, depending on the area, to meet the standard. These regulatory obligations provide Sierra Club and allies opportunities to engage with the states and EPA on the important public health and justice issues related to smog pollution.
The rule made several other updates, including modernizing the Photochemical Assessment Monitoring Stations (PAMS) network, the system that measures ozone, its precursor pollutants, and meteorology in order to evaluate national and local ozone formation and ozone-reduction options. The Air Quality Index (AQI)—the tool for communicating air quality to the public—was also updated to reflect the new standard and provide the most up-to-date information about air quality where people live. The agency is in the process of updating a related rule, the Exceptional Events Rule, which outlines the requirements allowing air quality data to be excluded from regulatory decisions if affected by events deemed exceptional, such as wildfires. The update to the exceptional events rule will help states make effective ozone emission reductions.17

Reducing ozone and particle pollution can provide significant public health benefits. Although the benefits from the rule would have been considerably larger had EPA heeded the consensus of the medical community and set an appropriately health-protective standard at a value near 60 ppb, even the standard EPA selected will, by 2025, prevent an estimated 230,000 asthma attacks among children, 160,000 days when kids miss school, 28,000 missed work days, 630 emergency room visits, and up to 660 premature deaths. Also, a level of 70 ppb will have estimated public health benefits worth from $2.9 billion to $5.9 billion annually in 2025, far outweighing estimated costs of $1.4 billion.

The benefits and costs of the rule were calculated separately for California because a number of areas in California have more time to meet final standard requirements. The estimated value of the additional benefits from California range from $1.2 to $2.1 billion annually after 2025, net benefits estimates at $0.4 to $1.3 billion. This includes the value of California preventing 160,000 asthma attacks, 125,300 missed school and work days, and up to 220 premature deaths. Excluding counties in California, only 14 counties are projected to have ozone levels over 70 ppb in 2025, down from 213 before the new standard.18
**HISTORY OF LEGAL BATTLES & OUR ADVOCACY:**

The Sierra Club and allies took our fight for a strong ozone standard to the courts, and won a court order requiring EPA to update the standard by an enforceable date. The Sierra Club worked closely with environmental and public health groups including American Lung Association, Appalachian Mountain Club, NRDC, and Earthjustice to push EPA through the public comment process to issue a health-protective standard, including submitting nearly 300 pages of comments to the EPA and thousands of pages of exhibits.

From the EPA’s scientific process to recommend a new air quality standard in early 2014 through the comment period and final rule in October 2015, the Sierra Club and our allies demonstrated overwhelming public support for more protections from dangerous smog pollution. In September 2015, 70 mayors—led by the mayors of Salt Lake City, Utah, and Grand Rapids, Michigan—submitted a letter to EPA calling for a strong standard. Working with our partners in the medical community, our supporters submitted hundreds of thousands of public comments throughout the process, including 72,000 comments on the final rule, and turned out more than a thousand citizens to testify and attend three public hearings. We also launched a paid media campaign to draw attention to the need for a strong standard.

In addition, the Sierra Club set up an innovative text alert system which allows users to receive a text message whenever ozone levels are at unhealthy levels in their area. These alerts are available in both English and Spanish to over 2,700 subscribers who have received more than 10,000 alerts to date.

The Sierra Club also worked with a network of groups and individuals from a dozen communities most overburdened by smog pollution. Supporting those frontline partners was an integral part of our public
THE HERNANDEZ FAMILY
Mira Loma, California

Alani Hernandez is five-year-old girl with asthma. In just her five short years on Earth, Alani has been rushed to the hospital five times due to asthma attacks. Her mother, Carol Hernandez, says it breaks her heart to see her little daughter refer to her many frequently used asthma treatment devices as “toys.” She has names for all of them. Unlike most kids her age, Alani can’t spend too much time outside because of how dirty the air is, even though the family lives in what is considered to be the cleanest area in Fontana, California—the best place they can afford to live.

In a recent article in InsideClimate News Carol said, “I don’t think [air regulators] have ever cared about us.” A new study found that the San Bernardino area has the most deadly air quality in the country. Communities of color like Mira Loma (in the Fontana/San Bernardino area) get hit the hardest by air pollution because of where the pollution sources are and where the pollution settles. The Hernandez family live in the so-called warehouse corridor and are sandwiched between two dirty power plants—Mountain View and Etiwanda. The two generating stations are always in view, venomously staring down at the largely Latino population. Mountain View, for example, sits just a few blocks away from the community pool, where the family goes sometimes to cool down.

Carol says she wants air regulators to do their job and protect public health, and to prioritize communities like her family’s that are harmed first and worst by fossil fuel pollution.

CRISTIAN GARZA
Mecca, California

Cristian has had asthma for most of his life. Now 17, Cristian lives in an area that gets too much air pollution that blows east from western portions of the air basin, and from other nearby sources like a plant to the east and agriculture-related sources. Because of this air pollution, his asthma gotten worse over the years. Last October, the dangerously poor air quality dealt Cristian a big blow when his lung collapsed during a viscous asthma attack.

Cristian’s mom, a single mother, works two to three jobs just to make ends meet, and doesn’t have the luxury of just picking up and moving the family. One of Cristian’s daily routines is walking to the library, where he applies for jobs so he can help improve his family’s situation. Often times he has to turn back, though, because the air is so bad that his asthma flares up. He’s been unsuccessful in his job search. He tries to contribute to the household by doing yard work and other chores around the house. Sometimes the air pollution won’t even let him swing that.

He says he used to get bullied as a young kid because he could never keep up with the other kids in sports and other activities. But these days he’s fighting back, in a way. He lends his voice to the growing chorus demanding more strong clean air safeguards that hold polluters accountable, not less. Cristian wants a world in which your health isn’t dependent upon socio-economic status.
engagement with the administration, including flying in representatives for meetings with the EPA and congressional offices from those areas. Coupled with powerful communications materials elevating the voices of children and families suffering from asthma and other lung diseases, our advocacy was firmly rooted in empowering those most impacted.

Some of the most powerful voices demanding a strong standard were those of young people. In Sacramento, more than 100 students from Desert Mirage High School traveled for hours on a bus to deliver moving testimony to EPA about the conditions in their community, which is plagued by asthma and other health problems linked to high levels of ozone pollution. The students called on the EPA to set a stronger health-based limits on smog pollution, and delivered moving testimony about the benefits it would have for their families in one of the most polluted areas in the country.

Sierra Club has gone to court not only to address EPA’s unlawfully underprotective update to the health and welfare standards for ozone, but also to intervene in challenges by industry and hostile states seeking to roll back even the modest progress made by EPA in this update. The legal challenges have been consolidated and briefing will be completed in the fall of 2016.

This public health protection has faced an uphill battle in the Republican-controlled U.S. Congress. In June 2016, the U.S. House of Representatives attempted to weaken this rule by passing the “Smoggy Skies Act” (HR 4775). If made law, the bill would not only delay implementation of the new smog pollution standard by up to eight years, but would also open the door to unraveling the health and science-based underpinnings of the Clean Air Act. Among the bill’s most egregious provisions is its delay of how frequently air pollution safeguards are reviewed, from the current standard of every 5 years to every 10 years—basically chipping away at the ability of the law to ensure our clean air protections are up to date with the latest medical science. Letting a decade pass between updates of this bedrock air pollution standard is an eternity in the world of health science and innovation.

Coal Ash Protections

THE PROBLEM:
Each year, coal-fired power plants in the United States produce over 140 million tons of hazardous coal ash waste, the second largest waste stream in the US after household trash. And as we’ve done a better job of removing pollutants from the smokestacks of power plants, that pollution hasn’t just disappeared—instead, it’s appearing in higher concentrations in coal ash. Astoundingly, for decades there were no federal standards for how to properly dispose of coal ash, and industry insisted it was completely harmless, despite the fact that it’s actually a toxic brew of dangerous chemicals. As a result, huge volumes of this waste are being stored in big holes in the ground, unlined landfills and ponds at power plant sites, including some locations a short distance from communities and neighborhoods. Because of the vast quantities of water needed for coal power generation many power plants—and related coal ash disposal sites—are located alongside waterways, including our Great Lakes, many of our most important and iconic rivers, and the nation’s major sources of drinking water.

The human health and environmental risks posed by coal ash are twofold. First, many of the ponds
in which coal ash is stored are prone to failure. One such pond collapsed in December 2008 at the Tennessee Valley Authority’s Kingston Fossil Plant, releasing a torrent of toxic waste 100 times the size of the Exxon Valdez spill. In 2014, the rupture of an inactive coal ash pond at Duke Energy’s Dan River Station in North Carolina released 140,000 tons of coal ash and wastewater into the river, fouling the waterway for more than 70 miles.

Second, even absent such disasters, coal ash contains dangerous chemicals that, when stored in unlined pits and ponds, often leach into streams, lakes, and groundwater, and some drinking water sources. Because burning concentrates coal’s impurities, coal ash contains high concentrations of toxic chemicals, including arsenic, lead, mercury, and selenium. EPA has concluded that contamination from coal ash in unlined impoundments presents unacceptable cancer risks from exposure to arsenic as well as unacceptable risks of developing noncancer illnesses from exposure to arsenic, lithium, molybdenum and thallium. EPA has also concluded that coal ash pollutants, particularly selenium, pose significant threats to fish, invertebrates, and the aquatic ecosystems on which they depend.

**THE FINAL PROTECTION & ITS BENEFITS:**

In December 2014, the EPA finalized the Disposal of Coal Combustion Residuals from Electric Utilities rule, the first-ever national protections from the dangers caused by coal ash disposal. The rule sets technical requirements for coal ash landfills and coal ash ponds under the Resource Conservation and Recovery Act. Although the new standards are not strong enough to fully protect public health, they do require all owners and operators of coal ash landfills and ponds to monitor groundwater to ensure that leaks are detected and that contamination is addressed promptly. And the EPA requires public posting of groundwater monitoring data, cleanup plans, inspection reports, structural stability assessments for dams, and dust control plans.

The coal ash rule will better protect communities near coal ash impoundments from exposure to toxic pollutants, better protect groundwater from contamination, and increase the chances of preventing future catastrophic coal ash spills. The EPA estimates that the average annual benefits associated with the prevention of structural failures at surface impoundments, increase in beneficial use of coal ash, and prevention of groundwater contamination are valued between $232- $289 million per year.

In all, the rule provides modest protections that need to be upheld and enforced. Unfortunately, the job of watchdogging these sites and enforcing the standards falls largely to communities.
2016, the US Commission on Civil Rights released a report about the coal ash standard that confirmed coal ash sites are disproportionately located in low income communities and communities of color. The report also found EPA had failed those communities on coal ash by placing the burden to enforce the standard on communities that are likely to lack resources to hire lawyers to enforce their rights.20

**HISTORY OF LEGAL ACTIVITY & OUR ADVOCACY:**
The environmental community has fought for decades to establish federal standards for disposal of coal ash, and the 2008 TVA coal ash spill at the Kingston coal plant shined a bright spotlight on the nation’s shocking lack of safeguards for communities. The Resource Conservation and Recovery Act requires EPA to review its standards governing the disposal of solid waste and update them as necessary every three years. After EPA failed to review or update its coal ash disposal protections for over 30 years, the Sierra Club and a number of other environmental groups sued EPA and secured a court order requiring EPA to issue regulations governing the disposal of coal ash.

The EPA first proposed a draft coal ash standard in 2010, and thousands of people turned out to eight public hearings nationwide to demand strong safeguards. Sierra Club and our allies, including Earthjustice and Environmental Integrity Project, submitted detailed technical comments demonstrating the serious risks posed by the continued mismanagement of coal ash and the need for strong federal regulations. But the standard became mired in red tape and languished at EPA for years.

Those organizations went to court in 2012, and secured a court-ordered deadline for the final standard. In 2014, the Sierra Club launched a paid media campaign in the DC Metro to push the EPA to act.

After years of sustained advocacy by environmental, health, and community groups, EPA released the final coal ash standard in late 2014, and it was published in the Federal Register in 2015. In light of the rule’s shortcomings—including the failure to prohibit or phase out the storage of coal ash in unlined impoundments, and the exemption of certain inactive sites from any of the rule’s requirements—the Sierra Club and allies sought judicial review of the rule in the U.S. Court of Appeals for the D.C. Circuit. Industry groups also challenged the rule, in contrast to our petition, claiming that the rule went too far. We intervened in that case in order to defend the provisions challenged by industry.

In addition to the ongoing federal court litigation, the final coal ash rule has been attacked in Congress. In July 2015, the House passed H.R.1734—the “Improving Coal Combustion Residuals Regulation Act of 2015”. The bill from Congressman David McKinley of West Virginia would roll back most of the protections found in the new rule. In January 2016, the related Senate bill S. 2446—the “Improving Coal Combustion Residuals Regulation Act of 2016”—was introduced by Senators John Hoeven (R-ND) and Joe Manchin (D-WV). The Senate bill would threaten health, safety, and the environment while relieving owners of coal-fired power plants of their responsibility to safely dispose of the toxic coal ash they generate. Both bills greatly increased the potential for harm to communities by removing critical and long-awaited safeguards established by the new coal ash rule.
Toxic Water Pollution (ELG)

**THE PROBLEM:**
Power plants discharge more than 5.5 billion pounds of pollutants into U.S. waterways every year, contributing to the contamination of more than 23,000 miles of rivers and 185 water bodies whose fish are too toxic to eat. In fact, according to the Environmental Protection Agency, 72 percent of all toxic water pollution in the country comes from coal-fired power plants, making coal plants the number one source of toxic water pollution in the U.S.

What’s more, 4 out of 5 coal plants in the U.S. have no limits on the amount of toxics they are allowed to dump into our water.

When it comes to toxic water pollution, coal plants create more than the next nine industries combined, including chemical plants, paper mills, and refineries—but until 2015, there were essentially no federal limits on that pollution, thanks to a loophole the industry secured for itself over three decades ago. Back in 1982, after environmental advocates went to court, the EPA issued Clean Water Act regulations for toxic pollution from industrial facilities, but coal-fired power plants got a virtual free pass. That put the burden on states, which were not up to the challenge.

As a result, coal plants across the country have been disposing of toxic heavy metals like arsenic, selenium, boron, cadmium, mercury, and lead in our waterways for decades, polluting our drinking water, fishing areas, and local rivers and streams. Research has shown that exposure to these dangerous chemicals can lead to birth defects, cancer, and even death—meaning that limiting these pollutants not only cleans up our water, but also saves lives.

These pollutants also do not degrade over time and many bioaccumulate in aquatic life, resulting in long-term damage to aquatic ecosystems. According to EPA, power plant water pollution has caused over 160 water bodies to not meet state water quality standards, government agencies to issue fish consumption advisories for 185 bodies of water, and the degradation of 399 water bodies across the country that serve as public drinking water supplies.
THE FINAL PROTECTION & ITS BENEFITS:
On September 30th, 2015, the EPA finalized its long overdue update to the 1982 power plant water pollution standards. This strong standard was a big victory for public health and clean water, because it essentially turns off the spigot of future coal plant water pollution by requiring dry handling of coal ash. The update, also known as Effluent Limitation Guidelines, sets the first federal limits to the amount of toxic heavy metal pollution coal-fired power plants can dump into our waterways. In the several decades since these rules were last updated, technological advancements have made wastewater pollution reduction technologies more affordable and widespread. Many plants already employ such technologies, and this rule is designed to ensure that all plants in the steam electric industry reduce discharges of toxic pollution from the largest sources of power plant wastewater.

The rule established requirements for the wastewater streams from several sources associated with steam electric power generation. These requirements include wastewater effluent limits for arsenic, mercury, selenium, and nitrogen from the wet waste created by the operation of power plant flue gas desulfurization systems (“scrubbers”) that help reduce air emissions, and limits for arsenic, mercury, selenium, and total dissolved solids for coal gasification water.24 Zero pollutant discharge limits are set for fly and bottom ash transport water and flue gas mercury control wastewater. Even more stringent requirements are set for any new coal or petroleum coke plants. Plants are required to comply as soon as possible after November 2018, but may be granted additional time (through the end of 2023), if necessary to install the treatment systems without affecting grid reliability.

The final standards are among the most effective EPA could have adopted to protect drinking water for millions of families by eliminating most ash-contaminated wastewater releases and putting in place rigorous treatment requirements for scrubber sludge, which will reduce toxic pollution by 1.4 billion pounds a year. Not all the benefits that will result from this rule were monetized, but the benefits associated with the rule that were monetized were valued at between $451 and $566 million per year according to EPA estimates. This outweighs the costs by as much as $86 million per year.25 Unfortunately EPA’s analysis only estimated the economic value of three specific human health benefits, disregarding the positive impact of safer drinking water and fish that are safer to eat in waterways downstream from power plants, among other things. When the full range of benefits is taken into account, they far exceed this estimate.26

HISTORY OF LEGAL ACTIVITY & OUR ADVOCACY:
The Clean Water Act requires the EPA to review its effluent limitation guidelines and update them as necessary every five years. After the EPA failed to update the ELGs for coal plants for nearly 30 years, Sierra Club and Defenders of Wildlife sued the EPA and negotiated a consent decree requiring the EPA to issue updated ELGs for coal-fired power plants. Around the time that the proposed rule was issued in summer 2013, Sierra Club and our allies initiated a massive public campaign to highlight the need for strong water toxics protections.

That included releasing a 2013 report entitled “Closing the Floodgates” that examined every power plant water permit in the nation, and documented that the vast majority were dumping toxic pollution into our waterways without limits. To release the report, Sierra Club Beyond Coal director Mary Anne Hitt joined Robert F. Kennedy, Jr., and leaders from Earthjustice, Environmental Integrity Project, and Clean Water Action for a press conference on the banks of the Catawba River in Charlotte, NC, then
took reporters on a boat ride to see a coal ash seep from a Duke Energy coal plant, directly upstream from Charlotte’s drinking water intake.

The report release was followed by local events around the country designed to draw attention to local coal water pollution problems, from a “toxic lemonade stand” in Pennsylvania to a “Miss and Mr. Toxic Water Swimsuit Competition” in Missouri, and from a kayaking trip outside a coal plant in Oklahoma to a fish-less fish fry in Illinois. Activists from coast to coast called for the EPA to finalize the strongest possible standards to protect American families from dangerous toxic water pollution. That advocacy continued until the EPA finally released a strong standard in 2015.

Start-Up, Shut-Down, and Malfunction (SSM)

THE PROBLEM:
For decades, Clean Air Act loopholes have allowed big polluters to dump huge amounts of harmful air pollution onto neighboring communities with impunity. Power plants, petroleum refineries and other industrial facilities that are old or poorly maintained often experience air emissions spikes, releasing massive amounts of pollution, for short periods of time when they start up, shutdown, or experience some type of malfunction (“upset” events).

Because these emissions spikes have historically been viewed as operationally necessary by lenient state and federal environmental officials, facilities have been allowed for decades to exceed their permit limits and break environmental laws without fear of liability for civil penalties or having to alter their operations, as required by the Clean Air Act. Since SSM loopholes allow industry to turn off pollution controls that normally limit pollution, dangerous emissions during these episodes by themselves can exceed the levels allowed in permits by ten times or more. In fact, many facilities pump out much more pollution during these upset periods than the cumulative amount emitted during the course of its normal operations for the entire year.27

Because of these loopholes, polluters have not been held accountable for these excessive pollution events.

Some loopholes known as exemptions wholly ignore emissions during upset events or give state officials discretion to rubber-stamp permit violations so that citizens cannot enforce the laws that are on the books. These exemptions eviscerate the ambient air quality standards—one of the most fundamental safeguards of the Clean Air Act to protect public health. State permitting programs that restrict pollution from large industrial facilities to levels that will not exceed those health-based standards are a critical piece of maintaining safe air quality. Even short periods of exposure to pollutants like sulfur dioxide can have significant health impacts including impaired lung function, aggravation of asthma, and respiratory and cardiovascular disease.28 For decades, communities near these facilities, who tend to be lower income communities and communities of color, have shouldered the burden of these harmful emissions.

The second type of loophole—known as the affirmative defense—allows polluters to avoid any liability for upset events, even where the violations are egregious and avoidable. States often collude with industries to approve affirmative defense claims and to sweep the plain violations of environmental laws under the rug. In a recent Sierra Club case, a Texas court found that no violations occurred at Luminant’s Big Brown coal-fired power plant despite
more than 6,500 self-reported exceedances of its permit limits. This was largely because the facility claimed affirmative defenses and the state agency approved their use time and time again.\textsuperscript{29} 

Affirmative defenses violate the Clean Air Act, as recently confirmed by the U.S. Court of Appeals for the D.C. Circuit, because the Act gives citizens the right to have a court determine whether violators should be penalized for not taking reasonable precautions to avoid upset events that cause terrible impacts on the surrounding community’s quality of life and well-being.\textsuperscript{30} Of course, courts have discretion under the Clean Air Act not to impose penalties for truly unavoidable and unforeseeable violations. There is a clear difference, however, between a facility routinely emitting levels of pollution above and beyond what the law allows, and unavoidable upsets caused events that were unforeseen, like a lightning strike, power outage, or tropical storm blowing through the community.

**THE FINAL PROTECTION & ITS BENEFITS:**

Thankfully, in May 2015, the EPA finalized a much-needed public health safeguard that closes these harmful regulatory loopholes. The new Clean Air Act (CAA) rule—called the Startup, Shutdown, and Malfunction (SSM) Emissions rule—requires states to fix the unlawful loopholes in their state rules implementing the Clean Air Act that exempt massive amounts of pollution during SSM events from regulation or allow polluters to avoid any legal consequences for such emissions.

In order to fix the loopholes, the EPA issued a “SIP call”, requiring states to correct the SSM provisions in their SIPs (State Implementation Plans). The EPA must issue a SIP call under the Clean Air Act (section 110(k)(5)) if the EPA Administrator finds that a SIP is substantially inadequate to meet CAA requirements, even though the SIP was previously approved.

The EPA’s action is just the beginning of a long road ahead until fenceline communities can finally breathe cleaner air. The CAA allows for a maximum of 18 months for states to revise their SIPs, making the deadline for those states November 22, 2016.\textsuperscript{31} The states that must revise their SIPs are Alabama, Alaska, Arizona, Arkansas, Colorado, Delaware, the District of Columbia, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Michigan, Minnesota, Mississippi, Missouri, Montana, New Hampshire, New Jersey, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Virginia, Washington, West Virginia and Wyoming.

The new SSM rule will help protect some of society’s most vulnerable communities from big polluters. Once the state rules are revised, polluters will be held accountable for violations of emissions limitations at all times, and communities will be able to exercise their statutory right to have a court determine whether violators should be penalized for not taking reasonable precautions to avoid SSM events. The SSM rule will give industry the push it needs to adopt better practices and technologies to help reduce the pollution burden that falls on the shoulders of vulnerable communities.

**HISTORY OF LEGAL ACTIVITY & OUR ADVOCACY:**

This rulemaking reflects many years of hard work from citizen and environmental groups and legal advocates across the country, and stems from a 2011 Sierra Club petition urging the EPA to initiate a rulemaking to redress the widespread problems. Following finalization of the rule, industry groups and many states challenged the EPA’s action in the D.C. Circuit Court. A coalition of environmental organizations and grassroots environmental justice groups—including the Sierra Club, Citizens for Environmental Justice, People Against Neighborhood Industrial Contamination, Natural Resources Defense
Council, Environmental Integrity Project, and EarthJustice—have intervened in the federal cases in order to defend the environmental justice victory. Environmental Intervenors’ brief was filed August 29, and oral argument on the case has not yet been scheduled.

In the meantime, the Sierra Club and its partners have been working with the states to ensure the revised SIPs adhere to the EPA’s guidance, and do not interfere with effective citizen suit enforcement under the Clean Air Act. To date, Sierra Club has participated in state working groups, submitted comments, and rulemaking contested cases in Colorado, Georgia, Louisiana, West Virginia, Michigan, North Carolina, Texas, New Mexico, and Oklahoma.

Regional Haze Protections

THE PROBLEM:
In what has been lauded as “America’s best idea,” Congress first set aside national parks in the 19th century to preserve and celebrate some of the nation’s most special places and spectacular scenery. However, thanks primarily to coal-fired power plants, haze pollution in some of our iconic national parks rivals that of America’s biggest cities. To restore the spectacular scenic views at national parks and wilderness areas, a Clean Air Act protection called the Regional Haze Rule requires states to develop plans to reduce—and ultimately eliminate—man-made haze pollution in the national parks and wilderness areas.

The same pollutants that cause haze pollution also cause serious health problems and environmental damage. Nitrogen oxides, for example, are precursors to ground level ozone, and are associated with respiratory diseases, asthma attacks, and decreased lung function. Similarly, sulfur dioxide increases asthma symptoms, leads to increased hospital visits, and can form particulates that aggravate respiratory and heart diseases and cause premature death. Both nitrogen oxides and sulfur dioxide react in the atmosphere to form fine particulate matter, which has been linked to increased respiratory illness, decreased lung function, and even premature death. In addition, particles such as nitrates and sulfates contribute to acid rain formation which make lakes, rivers, and streams unsuitable for many fish, and erodes buildings, historical monuments, and paint on cars.

On some days in our national parks, the air pollution is so severe that visitors are warned not to go hiking, because physical activity can be dangerous in those conditions. People who have traveled from across the country and around the world are deprived of famous views in places like the Great Smoky Mountains and the Grand Canyon. Local economies dependent on those tourist visits take a hard hit. Cleaning up haze pollution is essential to protect public health, the natural environment, and local economies.
THE FINAL PROTECTION & IT’S BENEFITS:
In order to reduce this haze pollution, states are required to develop State Implementation Plans (SIPs) that detail the actions they will take to clean up the air. States submit those plans to the EPA, and if they are not sufficiently strong, the EPA has the authority to reject the plans and put a better plan in place. The EPA issued haze plans during President Obama’s Administration that are poised to deliver significant pollution reductions in states including Texas, Arkansas, Utah, Oklahoma, Arizona, Washington, and Colorado. Once these plans are implemented, some of the iconic parks that will see reduced air pollution include Grand Canyon, Big Bend, Canyonlands, Zion, and Mesa Verde.

The first round of regional haze planning has resulted in reductions of more than 52 million metric tons of carbon dioxide, 785,000 tons of sulfur dioxide, and 420,000 tons of nitrogen oxides, resulting in significant visibility improvements in the national parks and billions in avoided public health costs. A 2015 EPA assessment found that full implementation of the Regional Haze Rule nationally would prevent 1,600 premature deaths, 2,200 non-fatal heart attacks, 960 hospital admissions, and over one million lost school and work days due to pollution-related illnesses.

HISTORY OF LEGAL ACTIVITY & OUR ADVOCACY:
Each of these regional haze rules was fiercely opposed by polluters, and required years of intensive advocacy to overcome that opposition and secure a strong standard. In numerous instances, advocates including Sierra Club went to court to ensure states (or the EPA, where the states failed to act) developed haze plans that required substantial pollution reductions.

In 2011, Sierra Club and its allies filed a federal lawsuit to compel the EPA to act on submitted regional haze SIPs or issue FIPs for 39 states and territories, including Texas and Oklahoma. Under the agreement resolving those claims, the EPA was required by a date certain to either approve regional haze plans or issue a replacement FIP addressing all of the required
elements of regional haze rule for each state. Sierra Club and our allies participated extensively in the regional haze planning processes and litigation that followed. Highlights include:

**Utah:** For decades, coal pollution from two plants owned by Warren Buffett’s PacifiCorp have fouled clean air and clear skies in Utah’s five national parks, the Grand Canyon, and other wilderness areas and communities across the Southwest. Utah’s parks are a vital source of the state’s growing outdoor recreation economy, which attracted more than 10 million visitors from around the world and added $730 million dollars to Utah’s economy in 2014.

To demand action, more than 85,000 people submitted comments to the EPA urging them reduce coal pollution. Over 250 outdoor recreation businesses and leaders from Utah, Colorado, and Arizona sent letters to the EPA calling for action. For months, these leaders held rallies, published opinion pieces in local papers, and vowed not to rest until they got clean air. In early June 2016, the Environmental Protection Agency released a haze plan that will protect Utah’s parks and communities.

**Texas:** The EPA released a regional haze plan for Texas, in January 2016, to address air pollution at the state’s Big Bend and Guadalupe National Parks, the Wichita Mountains National Wildlife Refuge in Oklahoma, and other parks in the region. More sulfur dioxide haze pollution come from the eight Texas’ coal plants subject to the EPA’s haze clean-up plan than from all of the sources in Oklahoma, Arkansas, and Louisiana combined. Sierra Club and other advocates fought for many years against the inadequate plan issued by the state, and have intervened in court to defend the plan put forward by the EPA.

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**KAREN SEAL, TEXAS**

Texan Karen Seal knows the realities of life with asthma. On a recent family vacation to Big Bend National Park, one particular day was extremely hazy.

“That evening we had planned to camp in a primitive site,” said Seal. “We drove to a crowded area with many parked cars and trucks. As we gathered our gear, the winds started blowing and I could not breathe. My husband, a pharmacist, tried to help and gave me antihistamines. I struggled to breathe and there was no place to go for help.”

Seal worries that others who vacation in the park have similar serious health issues and may not be able to get help. “Asthma is deadly.” She supports a strong regional haze plan to clean up the air and help decrease asthma attacks.
RULES AND ACTIONS NOT YET FINALIZED

Federal Coal Leasing

THE PROBLEM:
For decades, mining companies have received a sweetheart deal to extract coal from our federal public land at a cost far below market value. More than 40% of all coal burned in the U.S.—over 400 million tons—comes from land that belongs to the American people, a massive contributor to worsening climate disruption, polluting our communities, and slowing clean energy development.

A single coal mine operating under federal lands in Colorado, for example, releases methane equivalent to a massive leak the size of the 2015 southern California Aliso Canyon disaster every two years (and that one leak alone released greenhouse gases equivalent to the annual emissions of 500,000 cars). Many Americans don’t realize that the Bureau of Land Management allows coal companies to mine coal on federal public lands, most of which lies underground in grasslands, ranches, and delicate natural habitats.

The federal program for leasing land to coal companies run by the Department of Interior is broken, outdated, and ignores the threat of climate change in our communities. As a result, this program poses a serious threat to the health of our families while short-changing taxpayers and jeopardizing our ability to smoothly transition coal communities to a clean energy economy. President Obama’s Administration has acknowledged the sorry truth behind the current state of the coal leasing program. The government’s coal leasing program has not been updated in more than 30 years and ignores many of the critical risk factors now associated with mining, transporting, and burning coal for electricity.

While it’s clear today that burning coal pollutes our air and water and is the single biggest contributor to climate disruption, there are other, hidden costs to subsidizing coal mining on federal lands. Federal underwriting of coal production shorts taxpayers millions of dollars each year on a bad economic bet, slows the transition to a clean energy economy and undercuts opportunities for economic diversification in coal communities. In fact, the Department of the Interior coal leasing program has left money on the table for years, costing taxpayers $30 billion over the last thirty years, and effectively subsidizing mining in the Powder River Basin, a region which is the source of 13 percent of US climate emissions.

The threat to our national treasures—our parks, forests, and other special places—is very real. For example, in Utah, the Federal Bureau of Land Management (BLM) is proposing to open more than 3,500 acres of land near Bryce Canyon National Park to coal strip mining. Expanded coal strip mining would harm the region’s clean water and air, mar Bryce Canyon’s world-famous dark night skies with light, destroy habitats, and create noise disruptions. Yet the current coal leasing program has thus far failed to adequately consider these threats during the decision-making process. It also fails to fully consider the impacts on Utah’s vibrant tourism and outdoor recreation economy that generates $12 billion in consumer spending and creates 122,000 direct Utah jobs.
PROPOSED ACTION:
In January 2016, Secretary of the Interior Sally Jewell announced that the Obama Administration will prepare a Programmatic Environmental Impact Statement on coal leasing on federal public lands and immediately paused issuance of most new and modified coal leases. Secretary Jewell’s announcement followed President Obama’s statement in the State of the Union that he would “push to change the way we manage our oil and coal resources, so that they better reflect the costs they impose on taxpayers and our planet.” This is historic: for the first time the U.S. will examine the collective climate impacts from all coal mined from public lands.

In reforming the federal coal leasing program and accounting for the full cost of coal on our health and our climate, President Obama and Secretary Jewell are doing what’s right for the American people. This will be the first Programmatic Environmental Impact Statement (PEIS) on federal coal leasing in decades and will be a step forward in fixing a broken and outdated system. More importantly, this reform marks the first time that the U.S. will examine the collective climate impacts from all coal mined from public lands. Immediately suspending new and modified coal leases ensures that our federal public lands stay wild and unscathed from the dangers of coal mining while this programmatic review is underway.

LEGAL ACTIVITY & OUR ADVOCACY:
Sierra Club is working with national, regional, and local partners who, together, have been at the forefront of calls for reform of the federal coal leasing program for many years, utilizing both litigation
and non-litigation advocacy to highlight the flawed leasing structure, financial mismanagement, and severe climate impacts of mining, transporting, and burning coal from publicly-owned lands. Our litigation with these partners in state and federal courts, as well as administrative forums, has set valuable national precedents on the consideration of environmental impacts, legal “standing” to challenge agency decisions, and has helped shape the debate around the flaws in the coal mining program. That litigation has addressed climate impacts at both the national rulemaking level and at individual mines while also emphasizing destructive industry practices that harm local communities in Montana, Wyoming, Colorado, Utah, Arizona, New Mexico, North Dakota, Washington, and Alaska. We have ongoing litigation before the Tenth Circuit Court of Appeals challenging the largest expansion in the history of the federal coal leasing program and in the federal district court in Montana aiming to prevent decisions that would effectively lock in billions of tons of coal mining public lands in the Powder River Basin.

We’ve similarly engaged in a targeted and focused non-litigation advocacy campaign aimed at closing financial loopholes and moving decisionmakers responsible for managing the federal coal program. In 2012, we helped fund and create a seminal report on the financial mismanagement of the program that found taxpayers lost out on more than $30 billion on below-market price coal sales over the past 30 years. That report garnered wide media and congressional attention, paving the way for two highly-critical government audits of the program—one from the Department of Interior’s Inspector General and another from the Government Accountability Office in 2013 and 2014, respectively.

In the summer of 2015, as part of the Department of Interior’s five-city “listening sessions,” Sierra Club and our members and allies addressed the need for reforms, and specifically called on BLM and the Department of Interior to prepare the first-ever comprehensive climate analysis of federal coal leasing. The listening sessions included broad community outreach that brought together indigenous activists, public lands activists, and energy advocates to call for reform. Sierra Club has been a leader in defining and proposing a social cost of carbon standard to inform analyses of the climate impacts of federal coal leases. Less than four months after we submitted our final comments on the listening sessions in September 2015, the President and Secretary advocacy Jewell announced the federal coal leasing PEIS and moratorium that are now underway.

In May and June of 2016, the Bureau of Land Management held six more public hearings across the country to gather public input as part of the review of the federal coal program. Hundreds of people packed those hearings in an overwhelming public show of support for coal leasing reform. As one example, at the May 26th hearing in Knoxville, Tennessee, those in support of coal leasing reform made up 90 percent of the people who spoke at the hearing. Folks came in from not just around Tennessee but around the region, including community leaders from Kentucky, Alabama, Virginia and even as far away as Montana to speak in favor of strong reforms to the coal leasing process.

Then the week of July 29, 2016, well over a quarter of a million Americans raised their voices to demand reform of the broken federal program that’s giving companies a sweetheart deal to mine coal on our public lands. Sierra Club and several partner organizations delivered 320,000 total public comments calling on the federal government to get out of the coal leasing business and instead focus on investing in the clean energy economy, stewarding our public lands, and supporting a just economic transition.
Strengthening the Regional Haze Program

THE PROBLEM:
See description above, on page 28 of this report.

PROPOSED ACTION:
To reduce haze, and to make progress toward the national goal of eliminating air pollution in the national parks, the EPA has proposed revisions to the existing Regional Haze Rule. The proposed revisions makes clear that in the next round of regional haze planning, all states and major sources of pollution must take steps to ensure reasonable progress toward the national goal. The rule revision specifies how (and when) pollution sources, including power plants, must reduce emissions to protect visibility. The new rule also enhances the role of National Park Service staff to better integrate their expertise in the regional haze planning process. The EPA is in the process of finalizing the new rule, along with new technical guidance to better help restore clean air to our national parks, wilderness areas, and their surrounding communities. The EPA is expected to finalize the revised rule and guidance document by the end of 2016.

The first planning period for the Regional Haze Rule helped reduce pollution from many old polluting power plants (see page 28). These air quality and public health benefits were the result of the regional haze rule’s requirement for the oldest and dirtiest pollution sources to install, upgrade, or operate common sense, cost-effective air pollution controls. As a result of the EPA’s proposed rule revisions, those same emission reduction requirements will apply to all major sources of pollution, and therefore the rule promises additional reductions in harmful pollutants and corresponding improvements in air quality in national parks and across the country.

LEGAL ACTIVITY & OUR ADVOCACY:
The Sierra Club has a long history of advocacy to ensure Regional Haze Rule actually delivers clean air to our parks. During the first round of regional haze planning, Sierra Club and our allies were intimately involved in the development and implementation of state and federal haze clean-up plans across the country (see regional haze section on page 28). Throughout the public comment period on the revised rule, Sierra Club, along with national partners like the National Parks Conservation Association, Earthjustice, and the Appalachian Mountain Club, provided detailed legal and technical comments showing the importance of strengthening the Regional Haze Rule to achieve clean air in national parks and wilderness areas.

Sierra Club mobilized its membership to communicate this message to the EPA through its two public hearings as well as the public comment period. Over 88,000 members and supporters submitted comments on the rule, greatly contributing to the over 200,000 individual comments in support of a stronger haze rule. Over 100 national, state, and local environmental and public health organizations representing a wide range of diverse interests joined comments urging the EPA to strengthen the rule.

People traveled from across the country to attend EPA public hearings in support of a strong standard, from Maine to Navajo Nation and Nebraska to California.
Stream Protection Rule

THE PROBLEM:
For decades, coal mining companies have been allowed to destroy streams and rivers near coal surface mines. In Appalachia, mountaintop removal mining has damaged, destroyed, or buried nearly 2,000 miles of streams and threatens to destroy 1.4 million acres of mountains and forests by 2020. In addition, underground longwall mining frequently causes the de-watering of streams, and those damaged streams typically cannot be repaired.

Coalfield community groups fought throughout the George W. Bush Administration for enforcement of a standard known as the buffer zone rule, a safeguard that stemmed from the Surface Mine Control and Reclamation Act, and prohibited mining activity within 100 feet of a stream. Clearly, mining companies that were burying entire streams with rubble from former mountaintops were blatantly violating that standard. The Bush-era Office of Surface Mining responded by revoking the rule, in an infamous eleventh-hour rulemaking during the final weeks of the Administration in 2008.

The move created a massive backlash, and in 2009 President Obama’s Department of the Interior announced they planned to undo the changes, and begin a new revision of the rule. Advocates went to court, and secured a victory in 2014 when a federal judge struck down the Bush-era rule.

The rulemaking process is still underway, and in the meantime, mountaintop removal and other forms of destructive surface mining continue to threaten clean air and water, public health, and the environment. For community groups and environmental advocates, the failure to address the harm caused by surface mining has been one of the great disappointments of the Obama Administration. While this rule alone cannot solve those problems, a strong standard would be an important step in the right direction.

PROPOSED ACTION:
The Office of Surface Mining Reclamation and Enforcement (OSMRE) within the Department of Interior has proposed, and is in the process of finalizing, an updated standard for surface coal mining. The proposed Stream Protection Rule affects the ability of mining companies to destroy, bury, and pollute waterways near mining operations by giving them a regulatory framework to avoid water pollution. The proposed rule is an important measure that will help protect the waters in mining regions and ensure that communities will have viable economies after mining ceases. The proposed rule would be the most significant revision to the surface mining regulations under SMCRA since the original rules were promulgated in 1977. The rule is currently with the Office of Management and Budget, and we expect to see a final rule in the fall of 2016.

The proposed rule would create several new requirements, including requiring the collection of adequate pre-mining data of the operation site to establish a baseline for the evaluation of mining impacts. The proposed rule would also include new monitoring requirements to ensure any adverse affects to groundwater or streams is quickly detected, and require mining permits to specify the point at which impacts on groundwater and surface water constitute “material damage to the hydrologic balance outside the permit area”. Most importantly, the proposed rule includes “stream de-watering” in the definition of “material damage”, although the mining industry is lobbying heavily to delete that from the definition in the final rule. The proposed rule has several protection and restoration provisions to ensure that long-term damage to land disturbed
by mining is reduced.\textsuperscript{35} In addition to pushing the OSMRE to keep “stream de-watering” in the definition, the Sierra Club is also pushing for OSM to better clarify the right of citizen groups to enforce water quality standards under the federal coal surface mining law (SMCRA).

By updating and strengthening the Stream Protection Rule, the federal government will create greater accountability for mining companies to protect our precious water and streams. The proposed Stream Protection Rule is an important measure that will help protect the waters in mining regions, and will help ensure that communities will have viable economies after mining ceases. DOI’s careful and rigorous analysis found it would have a minimal effect on jobs in mining regions.

LEGAL ACTIVITY & OUR ADVOCACY:
Sierra Club’s work around this issue began in earnest at the end of the George W. Bush administration and involved opposition to a revision that would have stripped away the majority of stream protections provided under the Surface Mining Act. Sierra Club participated as a coalition member together with national, regional, and local Appalachia allies in litigation challenging those rules. In the end, a federal court struck down the Bush rule and remanded the matter back to the Obama Administration for additional rulemaking. The result of that process was the proposed Stream Protection Rule.

Since then, the Sierra Club and our allies have advocated for adoption of a stronger standard. The Sierra Club helped prepare extensive technical comments on the Obama Administration’s proposed Stream Protection Rule, and hundreds of our members and supporters turned out to advocate for stronger protections at public hearings across the country.

While the rule will protect communities living with mining pollution, the Sierra Club is calling for the rule to be strengthened to ensure that it can be successfully enforced. However, the House passed a bill, H.R. 1644 or the STREAM Act, which would block the rule and allow more mining waste to be dumped into the streams and create more threats to drinking water sources for many communities in Appalachia and elsewhere. While the Senate has, to date, not introduced a bill to gut the rule, there have been multiple congressional hearings on the issues with Republican leadership calling this overdue rule a federal overreach and a part of Obama’s mythical war on coal.

Self-Bonding

THE PROBLEM:
Over the past 30 years, coal companies have been playing fast and loose with our land, water, and pocketbooks by using a loophole in our federal laws that allows them to issue non-binding IOUs, instead of purchasing reliable insurance, to clean up dangerous coal mines if they go out of business. This reckless practice is known as self bonding.

Since there is nothing backing up these IOUs except the companies’ impermanent balance sheets and the legal equivalent of a pinky swear, when self-bonded coal companies go out of business, working families and honest taxpayers are left to foot the bill for cleaning up (also known as reclaiming) dangerous coal mines, while coal companies get off scot-free.

This horribly irresponsible practice has been so prevalent that coal companies have racked up billions of dollars worth of mine reclamation liabilities over the years without providing any assurance that the
money will be there to finish reclaiming their mining sites if they go out of business before that process is complete. The need to end self-bonding is especially urgent given the ongoing wave of coal company bankruptcies which has claimed some of the world’s biggest coal companies like Peabody Energy, Arch Coal, and Alpha Natural Resources and the real danger these coal companies’ finances pose to taxpayers and working families. Of the $3.86 billion in outstanding coal mining liabilities across the country in May 2016, $2.4 billion was held by bankrupt coal companies.

Unfortunately, the threat to individual citizens doesn’t stop with the costs of reclaiming coal mines. On top of the billions of dollars Americans may ultimately be forced to pay to clean up these unclaimed mines, the sites themselves can also be highly polluting and dangerous, and leaving them unclaimed poses serious health risks to surrounding communities. They also pose an economic threat, because leaving them bare, open, and unclaimed makes it very hard for communities to attract and support other forms of economic development and opportunity, which is urgently needed in coal country.

**PROPOSED ACTION:**
Following significant pressure from advocates and landowners, the federal Department of the Interior is reviewing self-bonding and considering making changes to the process. In May 2016, the Office of Surface Mining, Reclamation, and Enforcement (OSMRE) opened a comment period on self-bonding. In June, Senator Maria Cantwell introduced legislation that would put an end to the practice. In August 2016, the agency issued a policy advisory recommending that regulators stop issuing self-bonds, and announced it would open a formal rulemaking to modify its self-bonding regulations.

**LEGAL ACTIVITY & OUR ADVOCACY:**
As coal company bankruptcies began piling up, the Sierra Club and our allies pushed the Department of the Interior to put an end to self-bonding. OSMRE opened up a comment period in May 2016, and more than 37,000 Sierra Club members and supporters submitted comments calling on them to end the practice of self-bonding. Sierra Club volunteers also dropped off a giant check for $3.86 billion at OSMRE’s headquarters, made out to the “Polluting, Reckless, Irresponsible, and Noncompetitive Coal Industry,” to remind administrators of the enormous amount in self-bonded coal liabilities still outstanding across the US. Sierra Club and our partners also made an aggressive media push that included placing ads in a popular Washington, D.C. newspaper frequented by policy experts. Our organizations also submitted extensive technical comments. We plan to re-double this advocacy work in response to the forthcoming comment period on the specific changes to the self-bonding program.

We continue calling on OSMRE to ensure that no new self-bonds will be issued to any coal company and that bankrupt mine operators will not be allowed to self-bond as they emerge from bankruptcy.
Economic Diversification

THE PROBLEM:
As America shifts to a clean energy economy, significant investments are needed in economic development and diversification efforts in coal communities across the country. As good-paying, unionized coal jobs decline, coal communities need policy solutions that will create new, family-sustaining careers, shore up coal retiree pensions and health insurance, and build up local infrastructure for long term economic opportunities moving forward.

National leadership from the White House and Congress—especially Members of Congress from coal states—is essential in order to secure the resources at the scale needed on the ground. And it’s critical that those leaders rely on local expertise, to ensure that projects deliver true, long-lasting, sustainable benefits for the region.

PROPOSED ACTION:
In 2015, President Obama proposed a plan, known as Power Plus, as a first step towards addressing the issue of economic revitalization of coal communities. The plan includes four elements: 1) funding from the Abandoned Mine Lands (AML) fund for reclamation projects that link to job-creating economic development strategies, 2) targeted economic and workforce development strategies across a number of federal programs, 3) support for mine workers’ health and pension funds, and 4) tax credits for carbon capture and sequestration.

POWER+ was so popular that dozens of communities across Appalachia passed resolutions urging their representatives to support it, which prompted Representative Hal Rogers (R-KY) to introduce the RECLAIM Act, which draws heavily from part of the POWER+ proposal.

Specifically, the RECLAIM Act would implement the first element of the President’s POWER+ proposal, dedicating $200 million a year in AML funds for the next 5 years—$1 billion total—for reclamation projects that link to job-creating economic development strategies. RECLAIM currently has 20 cosponsors and counting, including both Democrats and Republicans, many from coal mining areas. Rogers is Chair of the House Appropriations Committee and represents a district in eastern Kentucky that arguably has suffered the greatest relative decline in coal industry employment. The RECLAIM Act is an important step towards getting coal mining communities the funding they need to diversify their economies and create real opportunities that can lead to long-term, meaningful careers in areas once dominated by the coal industry. It is also an important step in efforts to help diversify the economies of coal communities.

However, far more must be done, such as shoring up the pension and healthcare benefits mineworkers have earned (the Miners Protection Act), putting significant infrastructure investments into coal communities that will nurture family wage, union jobs, and cleaning up the abandoned mining sites that pose dangerous health risks to surrounding communities. While RECLAIM would free up a critical federal funding source to allow economic development through reclamation of sites destroyed by coal mining, Appalachian and other coalfield communities know only too well that a mine reclamation program alone will not solve the economic crisis facing coal communities.

That’s why the Sierra Club and its allies continue to invest in other efforts to secure a prosperous future for coalfield communities, including:

- Supporting communities seeking grants under the POWER+ program described above;
- Supporting just transition measures and policies through the Clean Power Plan State
Implementation Processes and other state and regional advocacy; and

• securing a commitment from the White House for an ongoing high level staff position devoted to just transition.

**LEGAL ACTIVITY & OUR ADVOCACY:**

Grassroots organizations in coal mining communities have been working for decades to diversify local economies and create new opportunities in the region. Those efforts have taken on a new urgency, as it becomes clear that the coal industry is not just going through a typical boom and bust cycle, but instead is in permanent decline.

As the writing on the wall for the coal industry has become impossible to ignore, local communities and decision-makers have stepped up their call for action on economic diversification. In Appalachia, over 30 elected governments and organizations have passed resolutions in support of the RECLAIM Act and Power Plus, calling for prompt action by federal decision-makers to get those proposals over the finish line. Grassroots leaders from the region have traveled to Washington, DC multiple times to personally call on decision makers to act. Thousands of people from across the country have contacted Congress, calling for passage of the RECLAIM Act.

Most importantly, local organizations are launching innovative, inspiring, and effective local economic development projects, to plant the seeds of new opportunity. Those seeds need the water and food of adequate resources, which our federal leaders must step up and provide.

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**ON THE GROUND**

**DAILE ROIS, WEST VIRGINIA**

Daile Rois, an active community member in the Kanawha Forest Coalition, moved to West Virginia four years ago and knows that she never wants to leave. “It’s the most beautiful place I’ve lived—and I’ve lived in a lot of places!” she says. “The sad part is that not many people feel this way. Everyone wants to leave, families who have lived here for generations, because they feel there is no future here.”

Daile is referring to the devastation left behind by the coal mining industry. The coal mine nearest Daile’s family home is less than a few miles away and recently racked up more than 40 violations related to water quality and sediment control. “It makes people sick and ruins this beautiful land,” Daile says. “I laugh at the ‘jobs’ people,” she says. “The ones who lie and tell these communities that continuing these destructive practices will create jobs. Corporate coal executives aren’t really interested in jobs or they’d be paying their employees what they deserve. They have million dollar bonuses but they don’t even give their workers the benefits they’ve earned. The best way to create jobs now is through reclamation. And the best ones to do those jobs are the ones that truly know the damage in the first place, the people of these communities.”

“Everyone says you can’t fight coal—but we’ve got to. Our lives, our quality of water, our communities—these should not be the costs of doing business. We can’t continue to invest in a dying mono-economy that has destroyed the state. It’s time to do what’s right for the people of West Virginia through reclamation.”
Conclusion: Building On A Strong Foundation

Our next President will stand on a strong foundation of public health and climate progress. Thanks to the legacy of President Obama’s Administration, the work of the Beyond Coal campaign, and thousands of grassroots leaders from all walks of life, millions of Americans are enjoying cleaner air and water. Levels of dangerous pollution like mercury, arsenic, and sulfur dioxide are falling. Clean energy is powering the US at record levels. We’re preventing over 100,000 health emergencies and premature deaths, and saving almost $3 billion in health care costs, every year.

But we still have a long way to go—and a lot of work to do—to turn the corner on the climate crisis and ensure Americans are no longer getting sick or risking death because of how we make electricity in this country. Every month, we break another worldwide heat record. Thousands of Americans are still getting sick from fossil fuel pollution, especially in low income areas and communities of color. And we’ve just begun to scratch the surface on clean energy deployment.

When the next President arrives in the Oval Office, they will step into leadership at a pivotal time for our climate, our clean energy economy, and the health of our communities. It’s essential for the safety and future of our families that they double down and accelerate this progress. Fortunately, the President has the authority and the opportunity to keep this country advancing as a clean energy leader.

Within the President’s first 100 days, they should commit the US to meet our Paris carbon reduction commitments, and reaffirm that they will set new ambitious climate target for 2030 in a just and equitable manner. The President should act to continue reducing climate pollution from power plants, including implementing and strengthening the Clean Power Plan. And they should ensure that, for the first time, no coal power plant is operating without modern pollution control technologies anywhere in the US, to end the disproportionate impact electricity production has on low-income and communities of color. To see the full set of climate and clean energy actions the next President can take, see the recommendations to be released by Sierra Club this fall.

We call on the next President to provide a safe and healthy future for our children, by building on President Obama’s climate and public health legacy. We are the first generation to feel the effects of climate change, and the last to have the opportunity to do something about it. We also have the opportunity to produce affordable clean energy for all that no longer makes Americans sick. But it’s a window that’s closing, and the next President must seize that opportunity.
Scrubbers are used to remove sulfur dioxide from the flue gas of an EGU so that it is not emitted into the air. Dry FGD systems spray a sorbent slurry into a reactor vessel so that the droplets dry as they contact the hot flue gas. Although dry FGD scrubbers use water in their operation, the water in most systems evaporates and they generally do not discharge wastewater. Wet FGD systems, on the other hand, contact the sorbent slurry with flue gas in a reactor vessel producing a wastewater stream. 80 Fed. Reg. 67846.