

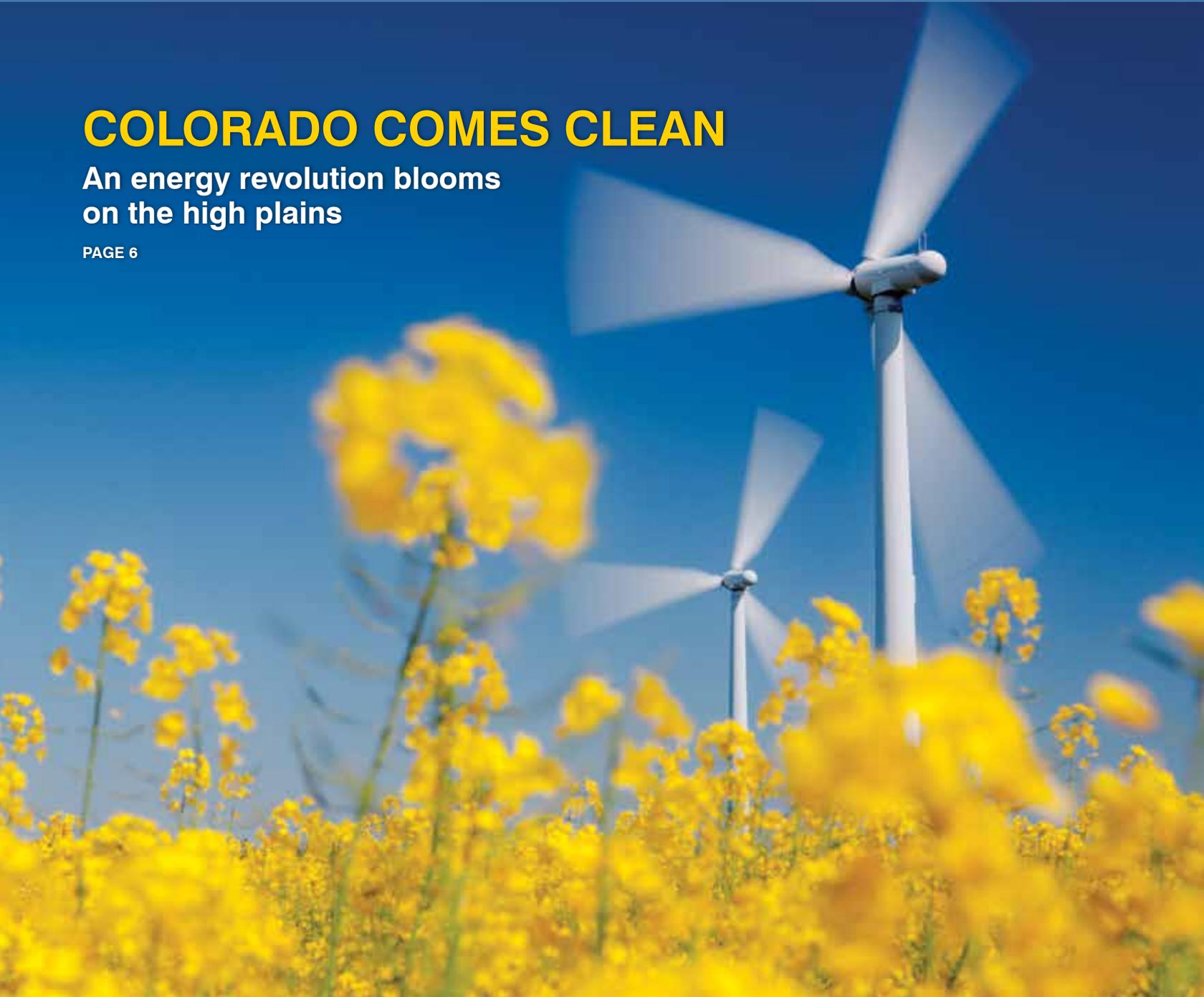
# SOLUTIONS

Vol. 44, No. 4 / Fall 2013

## **COLORADO COMES CLEAN**

**An energy revolution blooms  
on the high plains**

PAGE 6



Environmental Defense Fund's mission is to preserve the natural systems on which all life depends. Guided by science and economics, we find practical and lasting solutions to the most serious environmental problems.

Our work is made possible by the support of our members.



**ON THE COVER:**

The writer Wallace Stegner called the West "the native home of hope." In Colorado, adversaries

became allies in developing the new energy economy that President Obama envisions for America.

*Solutions* editor Peter Klebnikov reports from Colorado on the emerging contours of the low-carbon economy. See page 6.

Cover photo: Hans Laubel/istockphoto

**SOLUTIONS**

**Editor** Peter Klebnikov

Environmental Defense Fund  
257 Park Ave. South  
New York, NY 10010

Main number 212-505-2100

**Membership questions** Call 800-684-3322 or email [members@edf.org](mailto:members@edf.org)

**Feedback** Mail to address above, call 800-927-6464 or email [editor@edf.org](mailto:editor@edf.org)

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**TALK BACK**

**Letters to the editor**

**Citizen science—a powerful tool**

Your interesting article on citizen scientists [*Summer 2013*] tells only part of the story. I'm part of a citizen water-monitoring network here in Wisconsin and measure water quality in two streams. Including citizen scientists in data collection vastly expands the data in environmental quality studies. This is especially important now, as budget cuts to state agencies constrain

their ability to do even basic compliance monitoring.

The range of environmental issues being monitored by citizens (under the watchful guidance of scientists) is impressive. Monitoring efforts bring together otherwise isolated groups in a common effort to improve the environment and raise awareness. For instance, the water-monitoring program I'm involved in brings together Trout Unlimited, classes from public schools, and a group from the League of Women Voters. Another important resource is the National Ecological Observatory Network, which sponsors a wide range of data-collection projects, including their Citizen Science Academy, the first of its kind.

—Eric Godfrey, Ripon, WI



Rolf Nussbaumer/Alamy

Citizens monitor everything from dragonflies to air quality.

**Oil dispersant exposes chemical dangers**

Re your article "Gulf Restitution" [*Summer 2013*] about what BP did to the Gulf, it seems the "gross negligence" goes shockingly beyond the oil spill itself. The dispersant used, COREXIT, contains 57 chemicals (with many known toxins) and, mixed with oil, is 52 times more toxic. A Louisiana doctor has diagnosed numerous poisonings among his patients.

This speaks volumes about the related article on p. 15, "Chemical Nation." The truth about COREXIT and its terrible effects on the Gulf should make updating the weak laws of the Toxic Substance Control Act [TSCA] of 1976 even more urgent.

I was pleased to read of the plans for coastal restoration. I am so grateful for all the good work EDF is doing.

—Patricia McHugh, Sacramento, CA

**Dr. Richard Denison, EDF environmental health scientist, responds:**

We are grateful for your support.

The fact that our government could not assure the public that COREXIT was safe to use in the Gulf in such volumes can be traced directly to the flaws of TSCA, the federal law governing chemicals. This outmoded law has failed to require chemicals such as those in COREXIT to be adequately tested and assessed for safety. EDF first identified these major gaps in safety data in 1997.

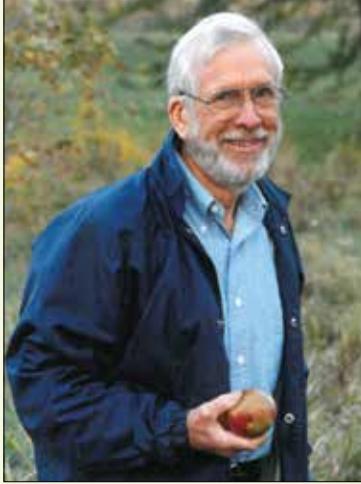
Happily, for the first time, bipartisan legislation has been introduced that opens the door to bringing chemical safety policies into the 21st century. EDF is fighting to make critical improvements to the bill and pass it.

**EDF wants to hear from you.** Email us at [editor@edf.org](mailto:editor@edf.org) or visit us online at [edf.org](http://edf.org) or at [facebook.com/EnvDefenseFund](https://www.facebook.com/EnvDefenseFund). Letters are edited for clarity and length.

## PROGRESS ON CLIMATE CHANGE

By EDF President Fred Krupp

### Member focus: Ahead of his time



Don Laughlin

Electrical engineer Don Laughlin talks freely of BTUs and solar panels as he describes his top-rated Energy Star home in Iowa City. He's proud of its power system and the money he's saved through energy efficiency since he built the ultra-insulated house in 2005.

Beyond the mechanics, "living in this kind of house brings me closer to nature," he says, "as I have to be aware of sunshine, rain, clouds and temperatures to

take advantage of the technology."

Laughlin grew up on a farm and taught at a Quaker boarding school for years. Today he's retired and nurtures gardens "so I don't have to mow—I cut my carbon footprint instead." He grows hollyhocks, beets, bok choy, honeydews and raspberries.

Laughlin has been an environmentalist for longer than he can remember. He supports EDF because "I pick and choose carefully" to have the greatest impact. For 30 years, he was a research scientist at the University of Iowa, developing medical devices.

A true Renaissance man, Laughlin was also far ahead of his time. He and his wife Lois and their four children experimented with solar power in the first house they bought in 1958 and lived off the grid for a time. He converted a 1985 Pontiac Fiero to an all-electric car and today drives a 31-year-old truck, powered by biodiesel made from used cooking oil.

Now a vigorous 90-year-old, Laughlin says, "I have time to do my part for the planet. What better way is there to spend my remaining years?"

Just two years ago, Sen. James Inhofe (R-OK), Congress's leading climate denier, proudly welcomed what he called "the complete collapse of the global warming movement." After this summer, I can confidently say that Inhofe was wrong: Action against global warming is stronger than ever.

In fact, I'm enormously encouraged. In June, President Obama made the historic announcement that EPA would begin to regulate greenhouse gas emissions from existing power plants. Since power plants are responsible for roughly 40% of emissions in the United States, this is a huge step forward. The announcement builds on the administration's earlier moves to require better fuel economy for cars and trucks.

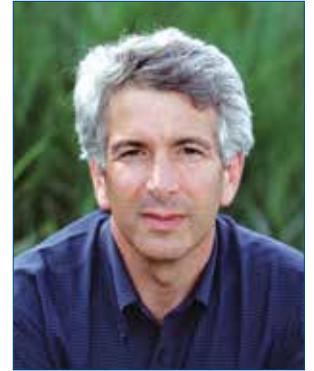
President Obama deserves tremendous credit for taking this action, and your calls and emails helped make it happen. But the president's plan won't actually be adopted without strong public support. Some members of Congress, encouraged by coal industry lobbyists, will put up every conceivable roadblock to the plan. We'll need your help in the coming months to stop them.

In August, the Department of Energy reported that wind was the fastest-growing source of electricity in the United States last year. In Colorado, for example, we report in this issue how people from every walk of life, from ranchers to utility executives, are lining up behind wind as a clean, safe alternative to coal (*see cover story, p. 6*). The clean energy future is coming, and at EDF we're doing everything possible to hasten its arrival.

In California, after four auctions in the state's cap-and-trade market, the health and staying power of the carbon market are clear. Other encouraging developments took place overseas, in China. Shenzhen, an economically vibrant city of 15 million on the South China Sea, launched the first of seven Chinese regional carbon-trading pilot programs (*see story, p. 13*). The seven pilots represent about 25% of China's GDP. President Obama and China's President Xi Jinping also signed an agreement to slash the use of hydrofluorocarbons (HFCs), used in air conditioning and refrigeration. HFCs are pound-for-pound some of the most potent greenhouse gases around.

The fight against global warming is gathering speed. Time is short and many challenges lie ahead, but the progress of this past summer gives me ample reason for hope. Can I count on you to help keep the momentum alive?

➤ **HOW YOU CAN HELP:** Tell Congress to stand with President Obama on climate action at [edf.org/climatepriority](http://edf.org/climatepriority).



T. Charles Erickson

**Give \$10,000  
without writing  
a check!**

See page 13 for details.

Alamy

# ON THE FRONT LINES: AMAZON PEOPLE DEFEND THEIR RAINFOREST HOME



Elena Kalistratov/istockphoto

By Steve Schwartzman

The Panará of the Brazilian Amazon have made a remarkable journey from near extinction to climate stewardship. EDF anthropologist Steve Schwartzman, who has worked with the tribe since the 1980s, tells their story.

When I first met the Panará people—an indigenous tribe living in a remote region of the Amazon basin—they were just beginning to recover from their first exposure to the outside world.

In 1968, the Brazilian government ran a road through the Panará territory, and at least two-thirds of them died from infectious diseases. The 79 who survived were forcibly relocated to a park for indigenous peoples. From their perspective, this might as well have been on a different planet.

I lived with the Panará for 18 months in the early 1980s, when I was doing anthropological fieldwork. Krentoma, a tribal leader, and I became friends. Years later, he reached out to me and some of my colleagues after he learned that the Panará ancestral territory, from which they had been evicted, belonged to them by law. He asked us to help his people return home.

We soon learned that much of the Panará land had been overrun, first by gold miners and then by cattle ranchers and farmers. But there remained about 1.1 million acres of intact forest—an area the size of Delaware—within the tribe's traditional borders. Working with Krentoma, we helped the Panará occupy the empty land, build a village, and plant gardens to begin to establish official recognition of their rights. The ranchers and speculators who wanted to take control of these lands were furious, but today the Panará live again on ancestral lands, and their population has increased

to roughly what it was in 1968.

But the tribe faces a dilemma—as do the Amazon's many other indigenous peoples. They don't want to cut down the forest, but they don't want to live cash-poor, low-tech lives either. Many want access to the outside world and to modern communications, medicines and more. The challenge is how to obtain this access without letting loggers or gold miners cut down their forests and pollute their streams.

So with our local partner, the Instituto Socioambiental (ISA), we've talked with the Panará and 17 other indigenous groups about an exciting idea: paying the providers of “ecosystem services.” Indigenous peoples would get paid in carbon markets for saving forest land and reducing deforestation. This wouldn't help just the Panará; the whole world would benefit, since the clearing and burning of tropical forests releases more greenhouse gas than all of the world's cars, trucks, ships, buses, trains and airplanes combined. Putting a stop to additional rainforest destruction is the fastest, cheapest route to reducing greenhouse gases.

Today, Brazil has protected 41% of its Amazon forest, an area equal to more than a third of the continental U.S. West. The Panará and other indigenous peoples, whom we supported and provided with shortwave radios to report illegal acts



John Rhee

Anthropologist and advocate: Dr. Steve Schwartzman, director of EDF's tropical forest program.



of deforestation, have become a critical element in enforcing Brazil's Forest Code. By functioning as on-site monitors and immediately reporting violations, they have become indispensable allies in stopping deforestation.

Yet they are not being rewarded for this crucial work. Without incentives, it will be difficult to conserve rainforests. My friend Chico Mendes, the legendary advocate who paid with his life for his defense of forest peoples, taught me that the forest, if it is to survive, must generate economic benefits for the people who live there.

One solution, under discussion in California and other emerging carbon markets, is that states or countries that reduce their deforestation below historical levels (and verify those reductions with satellite photos) could sell carbon credits to companies or governments that have to reduce their emissions.

The rules of these carbon sales would ensure that all those responsible for reducing deforestation would benefit: farmers who stop clearing forest and grow more on less land; indigenous peoples who defend their forests; and government agencies that enforce the laws against illegal deforestation and measure total deforestation.

EDF and ISA, among others, are working to make that vision a reality. Several countries, including Norway, Germany, France and the United Kingdom, have promised some \$5 billion for reducing emissions from deforestation. But the money has been slow to materialize, leaving the people of the Amazon to wonder if carbon credits will ever become a reality.

The Panará are proud of the role they play in helping Brazil reduce deforestation and CO<sub>2</sub> emissions. And they see it as only

fair that they should be paid for this work.

It's not just indigenous peoples who feel this way. So do many farmers and ranchers and Amazon state governments. They, too, want to preserve the unique world in which they live. But so far the biggest carbon market in the world, the European Union, doesn't accept emissions reductions from deforestation for credits.

That's why, when I accompanied Jennifer Haverkamp, EDF's international climate director, to Krentoma's village in 2010, he told her: "You all come here and tell me about carbon projects. That's great, but where are they?"

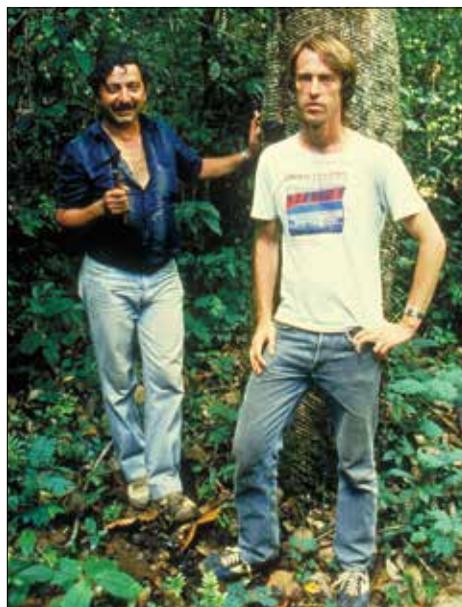
This is why the latest sign of progress is so important. Recently, a group of experts

convened by California, the Brazilian state of Acre and the Mexican state of Chiapas recommended ways for California's carbon market—the world's second largest—to include emissions reductions from deforestation in its system.

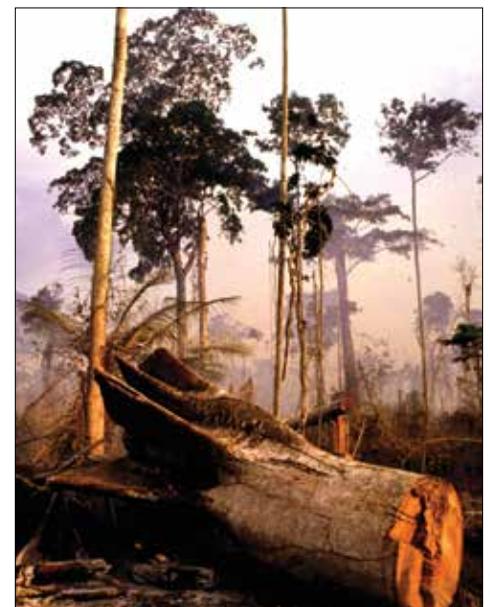
This would send a critically important economic signal that carbon credits are real and that they can help the people of the Amazon lead better lives by conserving the world's greatest rainforest. If California follows through, it would send a powerful, positive signal to Brazil and other rainforest nations—as well as to the Panará people, who, 45 years after they almost perished, have come back strong to lead the fight to preserve the rainforest.



**Rebound:** Once nearly eradicated, Brazil's Panará people have returned to their ancestral lands.



**Friend and mentor:** The late Chico Mendes, pictured here with Schwartzman, remains a revered figure for rainforest activists.



**Paradise lost:** Ranchers and miners continue to devastate Brazil's rainforest.



# LANDSCAPES OF HOPE

By Peter Klebnikov

Despite gridlock in Congress, the clean energy revolution is under way in red and blue states alike. Few places are changing as rapidly as Colorado, where no-nonsense federal regulations and relentless pressure by an EDF lawyer and her allies have helped transform the state into a testing ground for a low-carbon future.

Cleta Felzien did not hear President Obama's June 25 speech announcing tough new federal controls on America's power plants. She was busy tending the 45 Piedmontese cows at her ranch, down six miles of dirt road on the back side of Limon, CO.

But that doesn't mean Felzien isn't part of the new energy revolution that Obama called for. On her land, in addition to cows, chickens, a well-used tractor and a faded pink-and-white timber frame house, seven brand-new GE wind turbines spin lazily in the high plains breeze.

The towering additions to her farm came at the right time. "We're in bad drought here," Felzien says. "And in the last ten years, we've lost our wheat crop to hail seven times." Of the turbines, she says this: "I love 'em. You can't drought them out and you can't hail them out."

Today, the two Limon wind farms that surround Felzien's spread generate

652 megawatts—enough to power 150,000 homes. The wind farm's developers have paid out \$3 million in leases to farmers in the county and worked with local wildlife groups to minimize harm to birds and bats.

"Wind has been really good for us," says Felzien. "We want more."

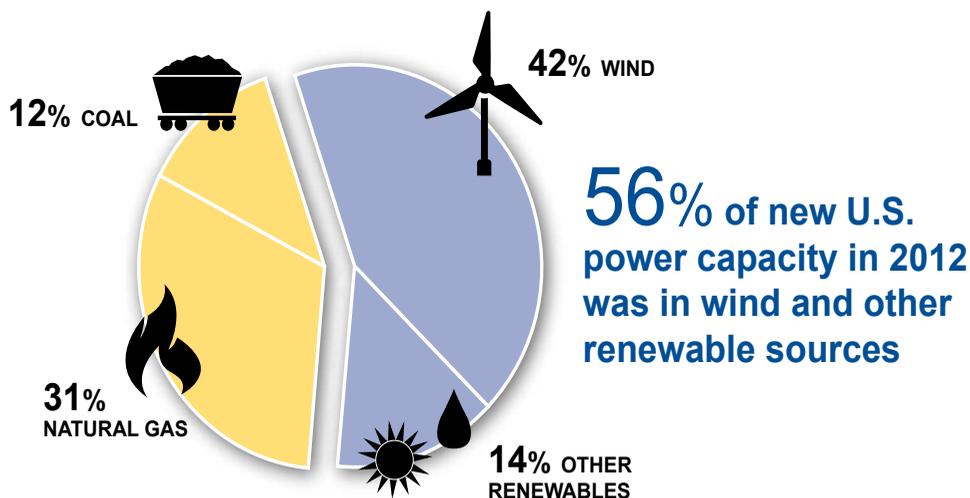
Buying Felzien's wind is Xcel Energy, the nation's No. 1 utility for wind power. Xcel's CEO, Ben Fowke, explains why: "Wind power is simply the most affordable energy resource right now." The utility supplies energy to 3.4 million electricity customers and 1.9 million natural gas customers in eight Western and Midwestern states.

Xcel's shift to more sustainable energy may soon become commonplace. In June, President Obama unveiled his climate action plan—a full-bore effort to finally make America a leader in the fight against global warming. The centerpiece of the plan is a pair of tough standards to slash carbon dioxide emissions from America's new and existing power plants. The president's action plan also encourages renewable energy development and investment in energy efficiency.

The rules represent a major victory for EDF, its lobbying arm, the Environmental Defense Action Fund and partners like the Natural Resources Defense Council. Over the years, EDF played a key role in a string of court cases (including at the Supreme Court) that reinforced EPA's authority to regulate greenhouse gas emissions. As EDF's special projects director Mark MacLeod says, "We never gave up."

In the struggle to slow global warming, nothing is more important than reducing CO<sub>2</sub> emissions from the nation's 600 coal-

## RENEWABLES GRAB THE BIGGEST SHARE



Source: AWEA

fired power plants. Power plants are the single largest source of carbon pollution in the United States, producing 40% of all emissions. EPA's new rules will finally establish carbon limits for fossil fuel power plants, which have never been held accountable for their massive emissions.

The plan, together with strong rules the administration announced to cut carbon pollution from vehicles nearly in half (*see story p. 10*), puts the nation on track to meeting the administration's goal of cutting climate pollution 17% from 2005 levels by 2020.

"It's a great start," says EDF president Fred Krupp. "But it's not enough."

In the run-up to Obama's announcement, EDF never slackened the pressure. EPA initially released a draft of the future-plant rule in April 2012 but missed its deadline this April to release a final version. EDF and a coalition of states and other environmental groups

threatened legal action to ensure EPA moved forward. EDF supporters delivered as well, submitting 115,671 messages urging the administration to adopt the strongest possible standards.

### Big coal fires back

The administration's bold action caused the usual suspects to dig in their heels.

The National Republican Congressional Committee wasted no time in blasting the president's plan. It released web ads warning lawmakers of retribution if they supported the initiative. "Skyrocketing electricity rates mean fewer jobs and a weaker economy," one ad claims.

The coal industry urged its supporters in Congress to cut all funding for the regulations. Opponents also petitioned the U.S. Supreme Court to review a Court of Appeals decision confirming EPA's authority to control greenhouse gases under existing law. EDF, 17 states and automakers quickly asked the Court to deny the petitions.

Our Action Fund responded equally aggressively. We shored up support among moderate legislators and launched television ads in eight states and Washington, DC. Our messages blanketed Washington's Union Station metro stop and the Jumbotron screen in New York's Times Square.

"Make no mistake, well-funded interest groups are doing all they can to block these common sense limits," says Action

## THE NAYSAYER

Many of Colorado's coal mines are owned by Bill Koch, the least known of the four Koch brothers. The Kochs have vowed to derail the president's Climate Action Plan, and their political operatives are pressuring Congress to oppose all limits on climate pollution.

**Tell lawmakers to support carbon limits from power plants at [edf.org/climatepriority](http://edf.org/climatepriority)**



AP Photos

Fund president Elizabeth Thompson. “The point we’re making is this: Is it fair that there should be no limits at all on this kind of pollution from its largest source? Some members of Congress apparently think so.”

### Helping the utility industry do the right thing

The opposition’s arguments have been rejected repeatedly by the courts. But the best counterargument comes from the hard-headed calculations of the energy industry itself.

In Denver, the massive, coal-fired Cherokee power plant—once the largest source of carbon pollution in the area—is turning into something new. Two coal units have been demolished, and workers are replacing them with a combined-cycle natural gas plant. A foundation is being erected for state-of-the-art V.05 GE turbines that will provide heat to power

the plant. Xcel will be the first public utility to put the super-efficient turbines into use when the plant goes online in 2015. The turbines can come up to speed quickly when wind energy dies down.

All told, Xcel is employing 1,500 workers in its new clean energy projects around the state. The utility increased its use of wind energy 20% last year, and in July, it moved to purchase another 1,500 megawatts of wind. All told, the company says its clean energy projects will save its customers at least \$800 million in fuel costs over the projects’ lifetimes.

Through such projects, Xcel has reduced its companywide carbon emissions by 18% since 2005. Carbon reduction is projected to reach 29% by 2020, exceeding the company’s goal of 20%.

“While some utilities invest their resources in opposing national carbon standards, Xcel has made real progress,”

## “Our partnership with EDF led to breakthrough solutions for the environment.”

—Ben Fowke, CEO, Xcel Energy

says Krupp.

Much of the impetus came from ratepayers. “Our customers demand clean energy but want it at an affordable price,” says Xcel CEO Fowke. “With partners such as EDF, we found a way to deliver it.”

It’s results like these that helped inspire Obama’s plan. “The progress in Colorado showed you can make dramatic cuts in global warming pollution while providing reliable, low cost energy in a fast-growing state,” says Krupp.

Part of the solution was to save energy. Environmental organizations persuaded

## THE FACES OF COLORADO’S NEW ENERGY FUTURE

**NAME:** Clea Felzien

**RESIDENCE:** Limon, CO

**OCCUPATION:** Farmer



**FARMS REBORN:** As president of the Elbert and Lincoln Counties Farmers Union, Felzien was one of the first to welcome wind power. “Look, I’m just a dirt farmer,” she says. “My husband and I are nearly 60, and there aren’t a lot of ways to make money around here. Everyone I know is in the same boat.” How will she use the income from leasing land to a wind farm? “It’ll put my son through college.”

**NAME:** Jose Vigil

**RESIDENCE:** Denver

**OCCUPATION:** Retired welder



**CLEANER SCHOOLS:** Low-income areas in Denver have been severely impacted by coal-fired plants which date back to Eisenhower days. Vigil remembers when Denver’s infamous “brown cloud” was so thick he could not see the mountains 20 miles away. “They called it progress,” says Vigil, who campaigned for cleaner air at local schools. “I am very glad the plant will now be cleaner.”

**NAME:** Gerald J. Kelly

**RESIDENCE:** Denver

**OCCUPATION:** Project manager, Cherokee natural gas power plant



**UNION JOBS:** Kelly is supervising the replacement of a coal-fired plant with a state-of-the-art natural gas plant. “There’s real excitement about working here,” says Kelly, who will oversee a crew of 400 workers. “These new gas power plants can ramp up faster and work in concert with wind to deliver a more even flow of power,” he says.

Xcel to offer efficiency programs such as ratepayer rebates for improving efficiency in homes and businesses. “This turned out to be a good way for the utility to cut carbon and give customers more control over their energy bills,” says Fowke.

We’re sharing the story of Colorado’s clean energy transition with other utilities as well as with national policy makers.

For utilities, which function on a long-term investment model, the greatest challenge is a lack of direction in climate policy. “Climate uncertainty presents a significant risk to our operations and our ability to provide customers with low-cost power,” says Fowke.

## A rocky start

Our work with Xcel had a very rocky start. Fifteen years ago, the utility was vigorously fighting clean air protections. EDF and its allies pushed back, led by EDF general counsel Vickie Patton, a mother of two and indefatigable advocate for the environment.

“We began by knocking on Xcel’s door, saying ‘We need you to be more constructive in ensuring clean air for our families,’” recalls Patton.

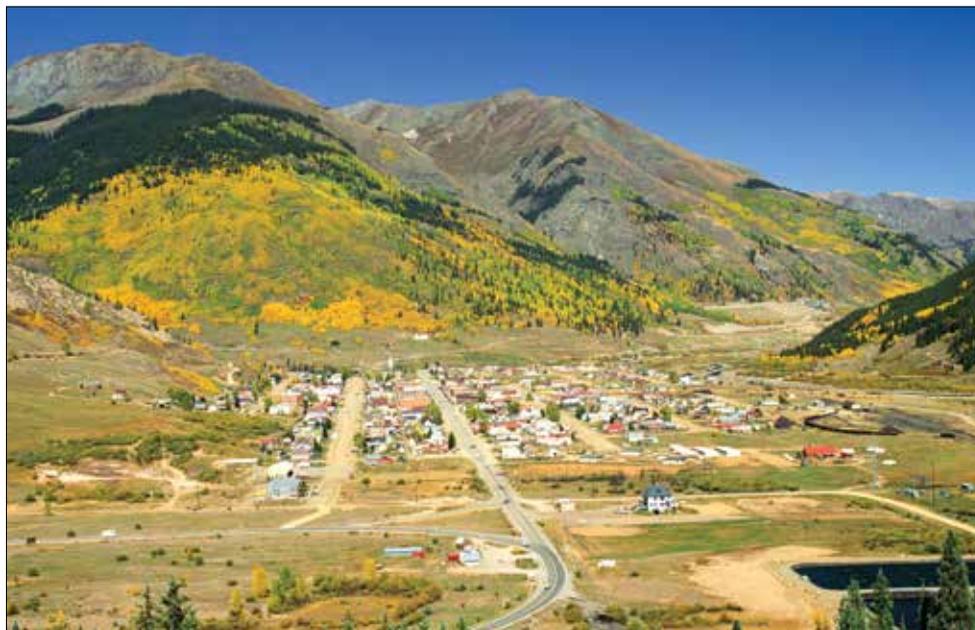
“Vickie was a royal pain,” says Frank Prager, Xcel’s vice president for environmental policy. “She’s very tough in what she wants from us.”

Eventually, Xcel joined with EDF, Western Resource Advocates and others to pass bipartisan state legislation that is leading to the shutdown of all coal plants in the Denver area and is expanding the state’s commitment to wind and solar power.

The dramatic shift to clean energy helped Colorado meet federal air quality standards that it could not have met while Denver’s obsolete coal plants, some of which date back to the Eisenhower era, were still in use.

“This agreement showed how Republicans and Democrats, businesses and environmentalists can together solve the problem and build a stronger clean energy economy,” says Krupp.

“Our partnership with EDF led to breakthrough solutions for the environment,” says Fowke. “I am confident we can continue to create and protect jobs



Gavin Heiler/Alamy

**Blue skies:** The shift away from coal in Colorado will mean cleaner air across the state.

while achieving environmental goals.”

With technology gathering speed, there is an almost religious fervor among those who work on clean energy projects in the state.

“I tell my daughter, ‘I’m doing this for you,’” says Howard Kiyota, who purchases wind power for Xcel. “But really the happiest people in the wind revolution are the farmers.”

In the end, it’s a grand success for everyone—except for some holdouts in the coal industry.

## Coal in retreat

While the president’s proposed limits on power plant pollution would move the nation away from coal as an energy source, that trend is already under way thanks to market forces and environmental advocacy.

Some 150 proposed coal-fired plants have been canceled nationwide since 2001.

“The political, economic and regulatory realities make it nearly impossible to build a new coal plant in this country,” says Fowke.

EPA’s rules have caused a split in the ranks of the Edison Electric Institute, the industry’s main trade group, with some utilities, including Xcel, seeking to work with the agency, and others, more invested in coal, digging in for a long legal fight.

In Colorado, coal mining began in the

late 1800s, but in the state’s remaining coal towns, change is in the air. In Somerset, a 12-year-old boy named Caleb spends the summer perfecting bicycle tricks by the hulking coal silo that overshadows the settlement’s playground. Caleb’s grandfather and uncle died in cave-ins, and now his mother has forbidden him to become a miner.

“It’s sad that the tradition is ending,” he says. “But I get straight A’s in school, and I can always get a football scholarship.”



### CHAT ONLINE WITH AN EXPERT!

EDF attorney Megan Ceronsky will answer members’ questions on the future of President Obama’s plan to cut carbon pollution from power plants, in a Facebook chat, Oct. 17, 2 – 3 pm, Eastern Time. Submit questions in advance or attend at [edf.org/askmegan](http://edf.org/askmegan).

# THE ROAD TO CLEANER AIR



Jerry Bernard/Alamy

More than 50 million Americans live in close proximity to high-traffic roadways. EDF helped advance new vehicle and fuel emissions standards that will clean up cars and protect public health. But there's still more to do.

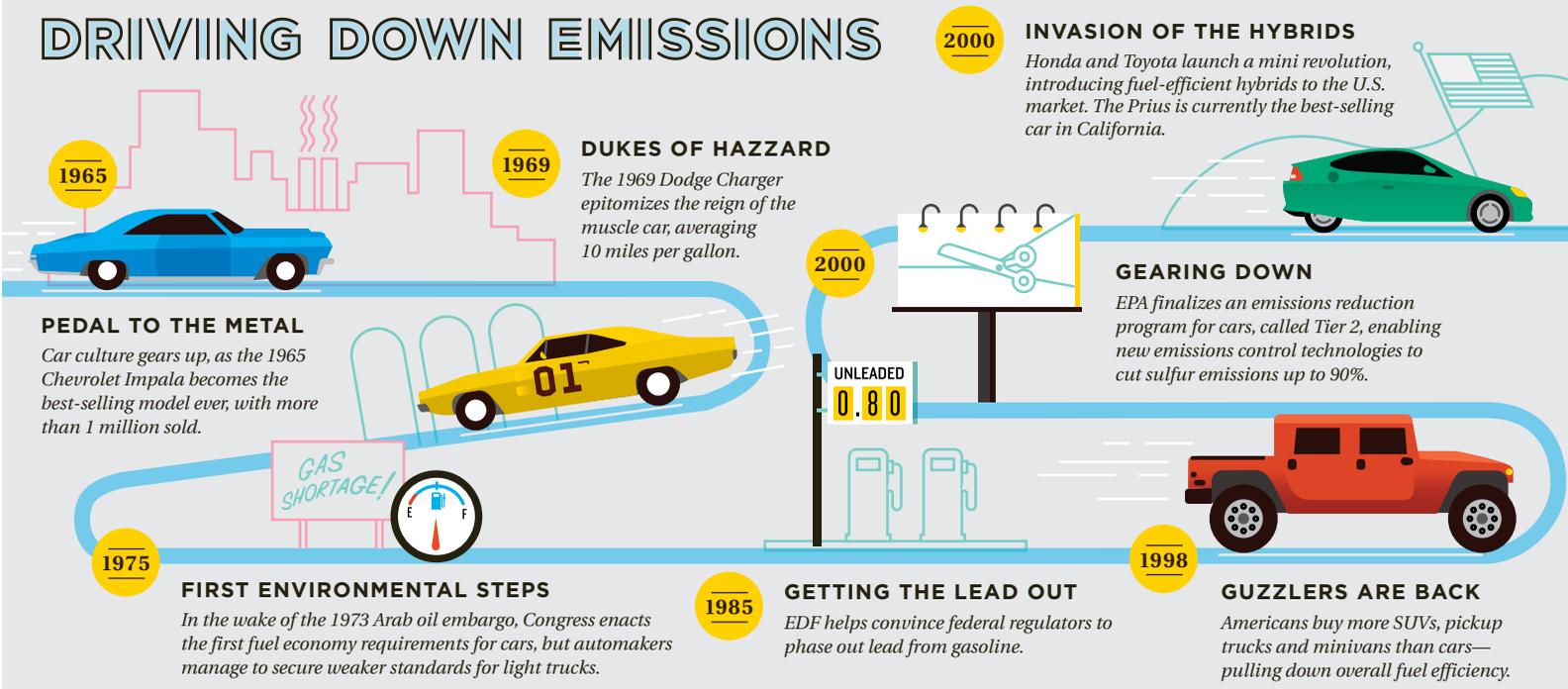
Residents of the Boynton neighborhood in southwest Detroit know all about pollution. Sandwiched between Interstate 75 and large industrial plants, they live in Michigan's most polluted zip code: 42817. This is Motor City, after all.

Boynton is also home to Mark Twain Elementary School, located just blocks from the freeway and a few miles from the busiest border crossing between the United States and Canada. Every day, some 10,000 trucks—and countless cars—rumble past, spewing dust and toxic fumes into the air.

“Before I moved here 26 years ago, I knew one person with asthma,” says Cheryl Elum. “Now at least every other kid on the block has respiratory problems.” Elum has four children with severe asthma. Her youngest, Maiya, 11, needs nebulizer treatments four times a day.

“Across the nation, asthma has reached epidemic proportions,” says Dr. Sarah Vogel, director of EDF's health program. The number of Americans with asthma has doubled in the past 15 years to more than 25 million. And cars are part of the problem. Although they are a lot cleaner than they used to be, cars are the second largest emitters of nitrogen oxides (NOx) and volatile organic compounds (VOCs) in the United States—the primary

## DRIVING DOWN EMISSIONS



pollutants that form smog, a known trigger for asthma attacks.

Health data show that children living within a quarter mile of a major highway have diminished lung capacity and face a higher risk of cancer, heart disease and respiratory ailments.

For more than a decade, EDF has been working to clean up tailpipe pollution. This year, along with our allies, we achieved a major victory when the Obama administration proposed new rules that will tighten emission limits for passenger vehicles and reduce the sulfur content of gasoline.

The standards, called Tier 3, will make the next generation of cars cleaner, cutting emissions of NOx and VOCs by 80%. New cars will also emit less carbon monoxide and particulate pollution, or soot.

EDF pushed hard for the measures, with our experts testifying at public hearings and our members sending nearly 50,000 comments to EPA. When fully implemented, the agency estimates the standards will prevent 2,400 premature deaths every year—and provide up to \$23 billion in annual health benefits. The cost: less than a penny a gallon for gasoline and about \$130 per new vehicle.

“This policy decision will have one of the biggest impacts on clean air this year,”

says EDF director of special projects Mark MacLeod.

## Environmental justice allies

A key ally in the fight has been WE ACT, an environmental justice organization headquartered in Harlem, NY. Dr. Jalonne White-Newsome, a WE ACT policy analyst who grew up in southwest Detroit, testified in support of EPA’s Tier 3 program.

“The proposed standards won’t solve all the problems environmental justice communities face,” she says, “but they are an important step forward.”

Minorities and low-income families often bear an especially heavy burden from roadside pollution. “We’re talking about people living check to check,” White-Newsome says. “They might be in a program trying to go from welfare to work. If they miss a day because their kid has asthma and has to be kept out of school, they miss that opportunity.”

EPA is expected to finalize the new rules by the end of the year, but there are sure to be challenges. The oil and gas industry has spent millions lobbying Congress to derail the standards. Still, we’re confident we’ll prevail.

The proposed limits are backed by automakers. Why? Because the rules harmonize policy across all 50 states—and



Lisa Pines/Corbis

**At risk: Asthma afflicts 29% of Detroit children, three times the national average.**

the requirement for low-sulfur gas will help carmakers meet recently adopted fuel economy and greenhouse gas standards.

“Sulfur inhibits the catalytic converter’s ability to reduce vehicle emissions,” explains Julie Becker at the Alliance of Automobile Manufacturers. In other words, low-sulfur fuel helps pollution-control equipment do its job.

Similar standards are already in place in California, Europe and Japan. By 2017, the reductions will be the equivalent of taking 33 million cars off the road. That’s good news, and not just for Detroit.

2002

### CALIFORNIA DREAMIN’

EDF co-sponsors California’s historic clean cars law, which tightens limits on climate pollution and paves the way for national action.



2007

### SUPREME COURT RULES!

EDF plays a key role in court victory (*Massachusetts vs. EPA*), allowing for car greenhouse gas rule implementation.



2009

### INDUSTRY ROADBLOCKS

Automakers and the oil and gas industry file lawsuits and spend millions trying to overturn the high court ruling on greenhouse gases.



2011

### RAMPING UP FUEL EFFICIENCY

Automakers agree to limitations on climate pollution and stronger fuel economy standards. **Cars must average 54.5 mpg by 2025.**



2013

### CLEANER, LEANER CARS

A proposed Tier 3 program will cut sulfur from fuel by 60% and reduce NOx emissions by 80%, paving the way for the next generation of cars.



Created by Column Five

# GREEN LIVING

## ARE YOU PLUGGED IN YET?

Electrifying deals are driving up EV sales



Plug In America

Americans are on track to buy some 80,000 plug-in cars in 2013, a significant improvement over the 52,835 sold in 2012. Battery vehicles didn't sprint out of the gate. It's been a slow but steady rollout—consumers are concerned about high prices, low range and the potential for expensive battery replacements down the road. But as the deals get much better, and public charging networks grow, interest is growing.

Although the cars remain fairly expensive to buy, many are now offered with \$199 per month, three-year leases. That—coupled with federal and state subsidies, perks such as access to HOV lanes and free parking—has attracted more buyers.

Among the battery cars available for those affordable monthly payments are the Fiat 500e (currently only in California), the Nissan Leaf (pictured above), the Smart Electric Drive and the Chevrolet Spark EV. The Honda Fit EV is \$259 a month to lease, but in some ways it's an even better opportunity, because it comes with a charger for your garage, requires no money down and includes unlimited mileage.

Auto companies are likely to lose money on these low-cost leases. They're offering them for a very specific reason—impending legislation. California's zero-emission rules will require automakers to sell 109,000 electric or fuel-cell cars

annually in the state by 2025. And federal Corporate Average Fuel Economy rules will require a 54.5 mpg fleet average by that same year. Not surprisingly, many automakers believe the future of their industry is increasingly electric.

Let's say up front that today's battery cars have limitations. Most can travel no more than 100 miles on a charge. And despite evidence that most Americans drive only about 30 miles a day, range anxiety is real. Although 480-volt public fast-charging is increasingly available—and the United States has finally settled on a standard for it—plugging in still takes

considerably longer than getting gas.

Electric car buyers say they adapt quickly. And they love the fact that EVs cost pennies per mile to operate, compared to 30 or 40 cents for a conventional car.

In the end, the environment is in the driver's seat. It will be impossible to rein in climate change without drastically reducing transportation-related emissions, and that fact is now widely recognized around the world.

The electric car holds out the tantalizing promise of cars that are better than what we drive today—cleaner, greener, quieter, more fun to drive and far more economical. The Tesla Model S, a battery-powered luxury sedan with up to 300 miles on a charge, has already achieved that. Owing one is aspirational for people who probably wouldn't otherwise consider an electric, and it's even outselling comparable models from market giants such as Mercedes, Audi and BMW.

There will be peaks and valleys, but there will also be many more must-haves like the Model S. Electric cars are gathering momentum—in the United States, Europe and Asia. Just a half-dozen years ago, hybrids were scarce on American roads. Now they're everywhere. The same thing will happen with electric cars.

By Jim Motavalli

## JOIN THE ELECTRIC CAR MOVEMENT

- The California-based **Plug In America** has details about state and federal EV incentives, real-life user stories and strong arguments to go electric. A sample: Gas cars pollute more as they age; battery cars improve as the grid gets cleaner: [pluginamerica.org](http://pluginamerica.org)
  - Jim Motavalli's *High Voltage: The High-Stakes Race to Plug in the Auto Industry*: [amazon.com/High-Voltage-Fast-Track-Industry/dp/160529263X](http://amazon.com/High-Voltage-Fast-Track-Industry/dp/160529263X)
  - The federal **FuelEconomy.gov** is a great site to compute how much competing models will cost to operate.
- ### Blogs on electric cars
- **Autoblog Green**: [green.autoblog.com](http://green.autoblog.com)
  - **Green Car Reports**: [greencarreports.com](http://greencarreports.com)
  - **Plug In Cars**: [plugincars.com](http://plugincars.com)
  - "Wheels" at *The New York Times*: [wheels.blogs.nytimes.com](http://wheels.blogs.nytimes.com)
  - **Inside EVs**: [insideevs.com](http://insideevs.com)

Jim Motavalli writes regularly about green products for *The New York Times*, *National Public Radio* and [thedailygreen.com](http://thedailygreen.com). Opinions are the author's and not those of Environmental Defense Fund.

# LIFTING THE CLOUD OF POLLUTION OVER CHINA



Karl Johaeniges/Getty Images

This January, the air in Beijing was so polluted that people could not see the tops of buildings. U.S. Embassy measurements for fine particulate matter (PM2.5) reached record levels—40 times the exposure limit recommended by the World Health Organization.

The coal-burning factories that ring Beijing played a leading role. Coal has fueled China's prosperity. The nation burns more than half the world's coal, using it to generate 70% of its electricity.

But pollution from coal and automobiles has created an ongoing public health problem. New research by

Boston's Health Effects Institute estimates that 1.2 million people die prematurely in China each year from breathing dangerously polluted air.

"Public outcry over air pollution is growing in China," says Dr. Dan Dudek, who has headed EDF's China team for two decades. "People are saying economic growth is not enough without healthy air."

The government is listening. The State Council has developed a ten-point plan to address air quality. In June, with EDF's help, China launched the first of seven carbon-trading pilots that will eventually cover 250 million people in Shenzhen,

Beijing, Chongqing, Shanghai and Tianjin, as well as the provinces of Guangdong and Hubei. Curbing emissions from coal-fired plants and factories slashes both climate and conventional air pollution.

EDF began a formal collaboration with Shenzhen last November, providing technical and policy support. With 15 million people, Shenzhen is a microcosm of the challenges facing China due to rapid urbanization. Over the past decade, the number of cars has ballooned from 200,000 to 2.4 million, accounting for half the city's carbon emissions.

The Shenzhen pilot will limit emissions from 635 companies responsible for about 40% of the city's carbon pollution. Companies able to reduce their emissions below their limit will be able to sell unused permits to companies unable to meet their targets—creating a financial incentive to reduce emissions while ensuring environmental improvement.

"We are grateful for EDF's support as we design and implement Shenzhen's carbon-trading program," Vice Mayor Tang Jie said at the inaugural ceremony.

EDF also helped broker a deal that opens the door to technical cooperation between Shenzhen and California, the first U.S. state to develop its own emissions trading system.

"China is the world's biggest greenhouse gas polluter," Dudek said. "The seven new pilots are the boldest experiment yet to curb greenhouse gas emissions."

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## New trucks help clean up the nation's ports



Jason Homa/Getty Images

**EDF persuaded major retailers to adopt stricter standards for trucks.**

When Juan Manuel Salazar was hauling industrial materials all over Houston in his 1989 International truck, his two daughters worried. “They were concerned about me driving all day, then working half the night to fix the truck,” Salazar says. So it was no surprise that, as an owner-operator, Salazar jumped to qualify for a combined grant and low-interest loan program tailored by EDF and its partners. Salazar invested in a cleaner 2012 Kenworth truck that uses less gas and goes farther without problems. “My

daughters convinced me,” he says.

A few years before, an emissions inventory found that one-third of the toxic air pollution at the Port of Houston was spewed out by its 3,000-truck drayage fleet. The result was the loan program. Since its creation, almost 200 drayage trucks in Houston have been updated.

Along with the Coalition for Responsible Transportation and EPA, EDF also forged partnerships between drayage carriers and retail shippers. Under EPA’s SmartWay Drayage Program, companies including Target, Best Buy, Hewlett Packard, Home Depot and Walmart agreed to work with SmartWay truckers who track emissions, replace older, dirtier trucks with newer, cleaner ones and, within three years, achieve at least a 50% reduction in soot and a 25% reduction in nitrogen oxides below the industry average.

## Reaching out to California Latinos



Alyson Allano/Getty Images

**EDF gives voice to a neglected constituency.**

Los Angeles and the Central Valley are home to the nation’s dirtiest air, according to the American Lung Association. A large Latino population lives there, and some evidence shows they are more affected by

dirty air than other groups. Predominantly Latino West Fresno, for example, has been called the dirtiest zip code in California. Global warming contributes to air pollution because hotter air leads to more smog formation.

In June, Moms Clean Air Force (MCAF) launched an initiative to engage Latinos in Southern and Central California on climate change. To lead the effort, MCAF tapped José Sigala, an experienced organizer in the Los Angeles area. An EDF project, MCAF is a vibrant, growing national organization of more than 150,000 mothers dedicated to fighting for clean air.

“Latino parents have a strong vested interest in clean air: their children,” says Sigala.

Shippers commit to ship 75% of their port cargo with SmartWay drayage carriers within three years.

With more ports, including Charleston, Baltimore and Philadelphia, adopting clean truck initiatives, Lowe’s recently committed to using 100% SmartWay carriers. EDF health scientist and head of the ports’ initiative Dr. Elena Craft said, “We are very excited to see this work taking off. It has the potential to make a big impact on air quality and public health throughout the country.”

## Progress on natural gas rules

With the boom in natural gas development, EDF is working hard to ensure that gas is produced as safely as possible. Recently, we won a major victory. With strong backing from EDF, the state of Texas has adopted tough new rules on oil and gas well construction. The new rules are designed to prevent groundwater contamination. Now the state is poised to begin a new round of rulemaking, this time focusing on another problem area: the disposal of wastewater from oil and gas production operations.

“EDF has been a responsive, practical and positive partner on sensitive and complicated energy challenges,” said Texas state representative Jim Keffer (R-Eastland), chairman of the House Energy Resources Committee. “They played a vital role in improvements.”

EDF is working in many other states to ensure the adoption of strong rules on natural gas development. In Wyoming, our technical advice helped Gov. Matt Mead (R) draft sound rules for protecting groundwater. In Ohio, we’ve been encouraging progress on safe well construction.

But getting the rules right is only half the battle. EDF is encouraging state agencies to stiffen enforcement. We have commended Ohio, North Dakota and Pennsylvania in recent months for levying big fines—and in some situations revoking permits—in high-profile pollution cases.

# CLEAN AIR UPDATE

## A busy summer in the courts and a pact to improve air quality in the Southwest



Tim Maitero/Alamy

Vistas like this at Shenandoah National Park are often obscured by pollution from Midwestern power plants. EDF is fighting this one all the way to the Supreme Court.

### Supreme Court to review “Good Neighbor” air policy

The Midwest has the nation’s highest concentration of tall power plant smokestacks, which spew dangerous pollution high into the atmosphere that often drifts for hundreds of miles into downwind states. This affects many cities struggling to comply with EPA’s health-based standards across the Eastern half of the country, including Baltimore, Houston and Cincinnati.

In 2011, EPA issued the Cross-State Air Pollution Rule, which cuts sulfur dioxide and nitrogen oxides emitted from coal-fired power plants in 28 states. EPA estimates the rule will save up to 34,000 lives every year.

But the DC Circuit Court of Appeals overturned the rule last year. In response to petitions filed by EDF, the American Lung Association, other allies and the federal government, the Supreme Court announced in June it would review the lower court’s ruling. This is one of the most important clean air cases to reach the high court in years.

“The Cross-State Rule is firmly

anchored in science and law and will ensure healthier and longer lives for 240 million Americans,” says Graham McCahan, an EDF attorney. “We look forward to presenting this compelling case for clean air to the high court.”

### EDF steps up pressure for stronger ozone standards

In another legal wrangle over unhealthy air pollution, the same court that threw out the Cross-State Air Pollution Rule also rejected a more stringent health-based limit for ground-level ozone pollution.

Although the court affirmed EPA’s current smog standard, set in 2008, a review is legally required every five years to reflect the latest science. Because EPA has not yet taken action to meet that deadline, EDF and its allies filed suit in federal court.

“Despite the court decision, there is increasing scientific evidence that ozone harms people’s health at levels below the current standard,” says EDF attorney Peter Zalzal. “EPA must move forward with stronger standards to protect Americans’ health.”

### A road map for cleaner air at the Grand Canyon

Located on Navajo lands near Page, AZ, the Navajo Generating Station is the largest coal plant in the western United States. Its emissions cast a pall over the magnificent vistas of the Grand Canyon and are a source of massive carbon pollution.

That is set to change. In July, EDF and the Navajo Nation, the Gila River Indian Community, the plant’s owners and Western Resource Advocates reached a historic agreement to reduce the plant’s reliance on coal and cut its nitrogen oxides and carbon pollution.

The agreement, which has been submitted to EPA, also calls for developing clean energy alternatives to the Navajo Generating Station. The Department of the Interior has pledged to help create clean energy projects to benefit the affected tribes.

“We had to work through some difficult issues, but together we developed an approach that provides for cleaner air, cuts carbon pollution and supports economic development for the Navajo Nation, Hopi Tribe and Gila River Indian Community,” says Vickie Patton, EDF’s general counsel.



Ross D. Franklin/Corbis

Arizona’s Navajo power plant has agreed to clean up its emissions.

# Wolf territory, or wine country?

**Climate change will shift where many crops can be grown around the world. This could displace the habitat of many threatened animals, such as gray wolves.**

That's the conclusion of a recent study coauthored by Dr. Rebecca Shaw, co-director of EDF's wildlife program. The study examined wine-grape growing regions and found that land suitable for viticulture in California will shrink 60% by 2050 and shift north to the Rocky Mountain area called the Yellowstone-Yukon conservation corridor, where gray wolves now flourish.

"We need thriving agriculture to feed people," says Shaw, "but we also need to preserve the homes of the wild creatures we share the planet with." EDF is developing programs that pay landowners to maintain habitat for threatened animals.

## **TAKE ACTION**

**Help save the wolf's home.** Tell Congress to get behind President Obama's climate action plan, at [edf.org/wolfhome](http://edf.org/wolfhome).