

The Making of a Market-Minded Environmentalist by Fred Krupp

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The Making of a Market-Minded Environmentalist

How I stopped looking at industry as the enemy and enlisted it as an ally in fighting climate change.

by Fred Krupp

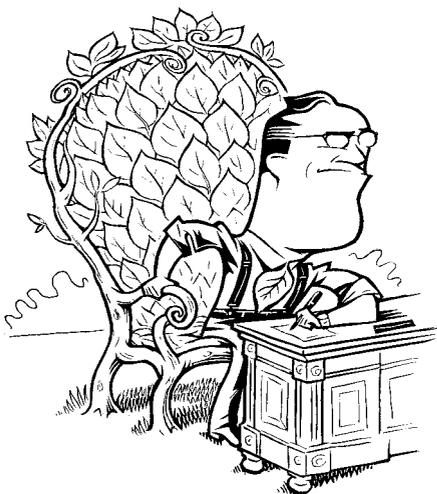
Until I was almost 30 years old, all indications were that I would spend my life as a conventional environmental lawyer, “suing the bastards.” I’d had the classic formative experiences for an environmental activist: watching the New Jersey meadow where I played as a child get bulldozed for development and finding the fish and frogs in our neighborhood lake belly-up, poisoned by a chemical spill. In high school, I was an earnest kid helping to run the first Earth Day; at Yale University, I was an impassioned undergraduate baffled by public apathy as New Haven dumped raw sewage in the harbor.

I armed myself with a law degree so I could go back and right those kinds of wrongs. I interned at two of the top organizations litigating against chemical and pesticide makers: the Environmental Defense Fund (EDF) and the Natural Resources Defense Council (NRDC). I then founded the Connecticut Fund for the Environment, with the intention of hauling “bad guys” — which, at the time,

meant just about all business leaders whose work affected the natural environment — into court.

But along the way, I changed my tack, if not my goal; I became the green community’s chief advocate for using economic incentives to solve environmental problems. The *Wall Street Journal* has cheered me on, crediting me with a “singular style that serves business and the environment well.” The *New Republic* is not so sure, labeling me “The Devil’s Advocate: He’ll work with the GOP, oil men, obdurate polluters, and any other stock environmental bête noire open to sitting down and negotiating. And, unlike most environmentalists, he shares their reverence for the marketplace.”

How did I come to believe that where legal remedies alone couldn’t generate the needed solutions, market incentives could? The first seeds were sown at Yale in the early 1970s by an engineering professor named Charlie Walker, who inspired me with his belief that people could solve environmental problems if they would just stop yelling at each other. I also took my first course on global climate change, and was stunned by the “Keeling curve,”



named for the measurements conducted by Charles David Keeling at the atmospheric observatory on Hawaii's Mauna Loa peak. The curve showed a rising staircase of carbon dioxide concentration, which has climbed from 310 parts per million in the early 1960s to more than 380 parts per million today.

At the University of Michigan Law School, I had the privilege of studying under Joe Sax, a professor of environmental law. He laid bare for us the economics of environmental problems and talked about the potential beneficiaries of the

to make water rights transferable. Instead of building new dams on California's last wild rivers, irrigation districts could sell their excess water to Los Angeles and use the money to finance more efficient irrigation systems and increase agricultural yields. At the same time, EDF software engineer Dan Kirshner was developing a computer model that demonstrated that conservation was the cheapest way to meet California's projected electricity needs. An EDF staff attorney, David Roe, took a case before the regulators, and ultimately Pacific Gas &

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policies we wanted in place. If you preserve wetlands, he told us, you get more fish, so you can get fishermen on your side. That was when I really started thinking about how powerful it would be to get the economic drivers aligned with the environment's needs.

Thinking Like an Economist

When an opportunity arose in 1984 to serve as executive director of the Environmental Defense Fund, I took it. A big part of the appeal was that people at EDF were beginning to put market mechanisms into play. The head of our California office, Tom Graff, who has degrees from Harvard Law and the London School of Economics, had hired Zach Willey, the first Ph.D. economist ever to work full-time at an environmental organization. They were developing a system

Electric (PG&E) was persuaded to cancel plans for 10 new power plants, which lowered utility rates and increased shareholder returns even as it spared the atmosphere all that pollution.

When I arrived at EDF, however, only a minority of the staff supported this approach. Most staffers still wanted us to evolve into an organization like NRDC, built around first-class litigators. But a few people, ultimately including me, saw setting tough performance standards while harnessing markets as a far more powerful way to inspire human ingenuity on behalf of the environment.

I thought about it like this: Government must set the boundaries of what's allowed, including pollution levels. Regulators must crack down on those who violate the rules. But if you just prescribe

limits and brandish sticks, with no incentives for companies to go beyond compliance, you squander the creativity of people ready to invent better ways to conserve natural resources and clean up the water and air. Instead, we had a chance to reach deep into the economy and enlist all kinds of entrepreneurs; we could give businesspeople a reason to want to be part of the solution, even if they didn't like environmentalists. And if we could unleash all that imaginative energy,

During our meeting, I wasn't sure if Dan was loony or the greatest visionary I had ever met. But I took a chance and hired him. Right away, he began working on a rudimentary trading mechanism for phasing out chlorofluorocarbons. The Montreal Protocol on Substances That Deplete the Ozone Layer, an international treaty incorporating that trading mechanism, was written and ratified during the next few years; it would ultimately take effect in 1989. Meanwhile, to further

against environmentalists. As a group, we were viewed as reflexive opponents to industry and as hostile to growth, a privileged elite indifferent to job creation.

This third wave, I promised, would be constructive in the way Charlie Walker had imagined, with environmentalists shouldering the burden of helping to find flexible and effective solutions, rather than just blaming others for the problems. The op-ed ended with a brief reference to using "market-oriented incentives" to achieve "greater environmental and economic benefits at a lower social and economic cost."

Those few words would ultimately open many doors. On the day of publication, I got a call from C. Boyden Gray, then the counsel to Vice President George H.W. Bush. (In 2006, Gray would become the U.S. ambassador to the European Union.) He told me how refreshing it was to hear an environmentalist talking about markets, and he asked me to come to the White House to meet with him.

Otherwise, we were pretty much ignored by the political right and faced a lot of criticism from the left for being, as Citizens Party cofounder Barry Commoner put it, "cynical and gutless." But we pressed on, and began working with a young Harvard professor named Rob Stavins, who had been an EDF intern in California. With Senators Tim Wirth (Democrat from Colorado) and John Heinz (Republican from Pennsylvania) cosponsoring the effort, we wrote a report called "Project 88," intended for the winner of that year's presidential race, describing how market mechanisms could solve environmental problems. One chapter outlined the use of emissions trading to cut the

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we would have a far more powerful force for change.

At first, I couldn't do much to advance those ideas. At that time, EDF had no money in the bank, an expense budget of US\$3 million, and just \$2.25 million in income. We struggled to meet payroll every two weeks, and I had to lay people off. But we worked hard on our finances, and after about six months, I was able to hire one new person: an economist and natural resources professor named Dan Dudek. I'll never forget that interview. Dan painted an amazing, brilliant, comprehensive vision of a robust market in pollution reductions and the legal regime needed to make it work. Instead of having government trying to figure out the best technology, which either missed the best approach entirely or froze in place technologies that were becoming obsolete, this regime would get everybody across the economy working to invent new ways to reduce pollution.

develop the intellectual foundations for market-based environmentalism, we organized a conference with Richard Stewart, an environmental law professor then at Harvard, who was an enthusiastic and profound thinker on using markets for environmental goals.

Flexibility and Its Discontents

In November 1986, with our budget at about \$5 million and all the confidence of youth, I wrote an op-ed in the *Wall Street Journal* announcing the arrival of a "third wave" of environmentalism. The first wave, I explained, had begun in the era of Theodore Roosevelt, with the goals of conserving wild lands and wildlife; the second, born with the publication of Rachel Carson's book *Silent Spring* in 1962, had focused on stopping pollution and the harm it was doing to human health and ecosystems. Both waves had accomplished enormously important work, but they had also stirred a political backlash

sulfur dioxide pollution that causes acid rain.

After Bush's inauguration in 1989, I called Gray and we met again. During the New Hampshire primary campaign, environmentalists had elevated acid rain as a critical issue. Fish and plants in the lakes and forests of the Northeast had begun to die at an alarming rate, and scientists had determined that sulfur dioxide pollution from power plants was the primary culprit. Bush had promised that he would do something to tackle the problem. Gray told me that the president was serious about fulfilling that pledge and promised that "if you guys can write up a market-based plan, I'll make sure the president considers it." At EDF, my colleagues (Tom Graff, Dan Dudek, Joe Goffman, and others) and I were

already concerned about global climate change. We saw that a national emissions market in sulfur dioxide could create a large-scale demonstration model for a way to rein in the greenhouse gases that cause global warming.

Emissions trading had already been the subject of intense legal skirmishing all the way to the Supreme Court, but those cases involved emissions trading without a cap, fostered by individual states striving to improve air quality. Now we were proposing a federal emissions trading system, with a declining national cap. Because the idea was so radical within the environmental community, we were nervous. And we did stir passions. Some thought we were giving corporations a way to "pay to pollute," that emissions trading would just

shuffle around the same amount of pollution. The Bush administration did try to get us to sign off on a trading mechanism without the cap, which would have been exactly that kind of shell game. But we refused to support it, insisting on a cap with a 50 percent mandatory cut, and deeper cuts over time. Bush ultimately took a stronger position on this issue than Senate Democratic Majority Leader George Mitchell had taken just a few years earlier. I thought that was pretty incredible.

In retrospect, we didn't do a good enough job explaining the declining cap to the public or to our colleagues. When I was quoted in papers across the country as being in favor of Bush's new acid rain proposal, the blowback was intense. It wasn't just from environmental groups. Many in the administration

and in Congress were mistrustful of a system with such flexibility. Regulations had always specified technologies, and we were asking the lawmakers to let go of that approach and adopt a performance-based standard, in which their role would be not to mandate certain practices but rather to rigorously measure outcomes. Even today, as Congress debates greenhouse gas control bills, some lobbyists and legislators still want to pick the winners, promoting their chosen technologies rather than letting the market find the most efficient ways to meet the emissions cap.

Mobilizing the Entrepreneurs

In the end, our advocacy of markets lost the Environmental Defense Fund some supporters. It even cost us one of our biggest donors. But ultimately our nonpartisan, market-based approach has won us support. There's been a great hunger for flexible, effective solutions among people who want a clean environment but who have been put off by some environmental strategies. And the fact that we've been able to get results, mining approaches that mobilize entrepreneurs — rather than being in denial about the world we live in — appeals to many people.

Over time, many of our early critics have come to appreciate the value of market-based regulations, largely because the results have been spectacular, right from the beginning. A few weeks after passage of the sulfur dioxide cap and trade law, I was invited to lunch in the White House mess with other members of the President's Commission on Environmental Quality, including Mike Deland, the president's environmental advisor, and

PG&E CEO Dick Clark. Deland asked the White House chef for a plate of freshly baked chocolate chip cookies. When they arrived, Clark said the only way to eat cookies was with milk, so we all raised our hands and got a glass of milk. It was as if everyone in the room, like me, had been earnest kids themselves once, and suddenly that part of us had come to the surface. There over cookies and milk in the White House mess, Clark turned to me

some plants could make reductions far more cheaply than others. And overall emissions continued to rise as new plants came on line. But once the cap and trade system was in place, we watched power plants cut sulfur far faster than the law required, and at a fraction of the cost that the industry's leaders, constrained by old-system thinking, had predicted.

All kinds of innovations emerged during the next few years.

Environmental protection was no longer a money loser. It was a potential profit center.

with a confession. When he'd heard me explaining to the president why we needed a market in pollution credits, he'd thought I had "lost it." (In other words, he'd had the same reaction that I'd had during Dan Dudek's interview five years earlier.) But now that the law was in place, he had a pile of new proposals, both from his own shop floor and from outside consultants, for how PG&E could profit by reducing sulfur more than the law required. Environmental protection was no longer just a money loser, he realized, but a potential profit center.

At that moment, my enthusiasm for market-based environmentalism grew 10-fold. Because here, in the real world, was empirical evidence that these ideas were as powerful as we'd dreamed. Under the old rules, every power plant had to have a scrubber, adding tens of millions of dollars to the cost of the facility, even if the engineers could cut emissions more efficiently a different way. Every company had to cut the same percentage, even if

A team led by chemical engineer Eli Gal at GE Environmental Services developed vastly improved smokestack scrubbers. In the East, where the local coal has lots of sulfur and the conventional wisdom had held that it wasn't possible to blend in more than about 10 percent low-sulfur western coal, power companies tinkered with their boilers until they could mix in 50 percent of the cleaner stuff. Until the new law had shown a path to profits for those who cut extra emissions, they hadn't bothered to try. The law also incorporated our proposal to allow the banking of credits, which added a further incentive to cut more emissions than required: Plant operators who reduced more than their legal obligation now held a valuable asset. And, as with carbon today, the environment needed pollution reductions sooner, rather than later.

Markets and Global Warming

In 1992, at the Rio Earth Summit, we proposed applying this strategy to carbon emissions. But our pro-

posal was roundly rejected; instead, the delegates decided that each nation would make its own plan to get back to 1990 levels by the year 2000. Our group knew this would be futile. We'd seen the Clean Water Act prescribe zero discharge into the nation's waterways and instruct every state and county to devise a plan. And it hadn't worked.

Soon after Rio, a philosophical war began within the Clinton administration: Would they champion the old command-and-control approach in the next international negotiations in Buenos Aires and then in Kyoto? Would they propose a carbon tax? Or would they advocate cap and trade? It was a knock-down, bloody fight, in which the Environmental Defense Fund was closely involved as one of the advising groups. We must have written a hundred memos and had as many meetings before our view prevailed. We worked with Larry Summers at the Treasury Department; John Podesta, President Clinton's chief of staff; Katy McGinty, who ran the White House Council on Environmental Quality; Hazel O'Leary at the Department of Energy; and Under Secretary of State Tim Wirth. And, finally, Clinton decided that cap and trade was consistent with his own "third way" political philosophy.

Thus we helped write the American proposal for the 1997 United Nations Framework Convention on Climate Change in Kyoto, Japan. The cap and trade proposal was central to the grand bargain that the U.S. forced the rest of the world to accept in return for its agreement with the Kyoto Protocol reductions. The Europeans were quite opposed at first: They wanted "policies and measures" (which is

their phrase for "command and control"). The tension between our organization and the European environmental groups was substantial. But although Kyoto was flawed in significant respects — requiring no emission reductions from developing countries and not dealing with forests in a sensible way — we ultimately found common cause in the need for mandatory reductions and real enforcement. The great irony, of course, is that after the United States demanded cap and trade, President George W. Bush turned his back on Kyoto, leaving the Europeans with the American mechanism but no American participation.

The Europeans went ahead anyway, starting their trading system in 2005 to prepare for Kyoto's

approach for a decade and had seen how well it worked for acid rain, but the sense of possibility was now so strong that I decided to write my book, *Earth: The Sequel*. I saw the power in sharing stories of the kinds of pioneers who will remake our energy infrastructure and, in the process, become billionaires.

A cap and trade system, of course, isn't based purely on free markets or voluntary action. It requires mandatory cuts in pollution and a government-created market. And markets are not an appropriate solution for every environmental problem. For particularly toxic substances such as mercury, which concentrate close to where they are dispersed into the environment, you need prohibitions, period. But for substances like carbon

With cap and trade in place, power plants cut sulfur far faster than the law required, at a fraction of the predicted cost.

2008 start. The initial experience was mixed: Permits were over-allocated on the basis of industry's self-reported emissions. Even so, money is beginning to move toward solutions. In September 2006, at a meeting of the Clinton Global Initiative (an international forum of leaders), I heard venture capitalist John Doerr, a partner at Kleiner Perkins Caufield & Byers, describe innovations he was seeing emerge in response to the new carbon market. Though the European pilot program was just starting up, the signal was being sent and people in the real world were beginning to act in response. I had believed in this

dioxide that don't have local effects, can't be banned, and are harmful in quantity, creative solutions must be found to ensure that human aspirations and human needs are met. And you need to have mechanisms that drive costs down.

One alternative to cap and trade is a tax, but a tax doesn't set a legal limit. Instead it requires government to guess just how high to set the tax to achieve the necessary reductions — another kind of precience in which success is unlikely. Nowhere in the world has a tax actually solved an air pollution problem. In this case, the risk in guessing wrong is that the planet

will go past the dangerous tipping point where disaster becomes impossible to reverse.

The other alternative to cap and trade is having laws and regulations that micromanage exactly how corporations will achieve environmental results. Corporations have long been aware of the limits of hierarchical micromanagement and have been moving for some time toward lean management, which radically decentralizes authority, conferring it on employees at all levels, and rewards incremental contributions that together are transformative. It's reasonable to think that as government agencies, companies, and groups like the Environmental Defense Fund continue to work together, all of these groups will become leaner, and thus much more capable, in dealing with the complexities of reducing waste, toxins, and greenhouse gases.

Encouragingly, as I write this, all three of the major contenders in the U.S. presidential election strongly support using cap and trade to rein in global warming pollution. The end game will play out in Washington, D.C., and in 2009 in Copenhagen (where the international treaty that will replace Kyoto will be negotiated). At the Environmental Defense Fund, we are more convinced than ever that the United States and the rest of the world should opt for an effective market system, unleashing a cascade of capital to solve the climate problem and providing a context for the lowest-cost solutions to emerge. The sooner that happens, the sooner the Keeling curve will show a downturn in the atmospheric levels of carbon dioxide — promising a safer future for the planet. +

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