The New York Times
nytimes.com

July 30, 2006

Capital Pollution Solution?

By JEFF GOODELL

Richard Sandor, chairman and C.E.O. of the Chicago Climate Exchange, seems to be fond of green. His business card and company stationery are trimmed in green; he wears green neckties. When he is photographed by the news media, there's lots of green in the frame: green file folders, green paper, anything. For Sandor, it may be a way of signaling that the Chicago Climate Exchange — a commodities market for an unusual kind of commodity, greenhouse gas allowances — is more than just another business venture. It is, as he describes it, the engine of an environmental revolution.

But of course, green is also the color of money. And Sandor, who has been called "the father of financial futures" for his role in creating interest-rate futures in the 1970's and who made a fortune during the boom years of the 80's at Drexel Burnham Lambert, the firm of the junk-bond king Michael Milken, is also familiar with that particular shade. However high-minded in principle, the Chicago Climate Exchange is also about making a buck off the planet's looming climate catastrophe.

Not that there's anything wrong with that. In fact, the trading of greenhouse gas allowances, also known as carbon trading, may be capitalism's best answer to the problem of global warming. To avoid a dangerous degree of climate change, many scientists say, greenhouse gas emissions worldwide will have to be cut by 50 to 70 percent over the next 50 years. The only hope of achieving that, short of an unforeseen technological breakthrough or the passage of draconian environmental laws, is to inspire radical change in the economic system. In a carbon-trading scheme, you must pay to pollute: price tags are placed on greenhouse gas emissions and then the market (not the government) essentially figures out the cheapest, most efficient way to reduce them. "The beauty of carbon trading," Dan Dudek, chief economist at Environmental Defense, a nonprofit advocacy group, explained to me, "is that it takes a primal human impulse — greed — and redirects it toward saving the planet rather than destroying it."

Last year, the European Union set up a carbon-trading scheme, the E.U. E.T.S. (Emission Trading Scheme), which, despite some recent problems in its teething stage, may reach $30 billion in market activity by the end of this year. Many economists speculate that a global carbon market could become the largest commodities market in the world. If the Chicago Climate Exchange were to become a major trading venue, as Sandor says he hopes it will, the commissions alone could be worth many millions.

For the time being, Sandor's operation is somewhat more modest. The exchange, also known as CCX, opened for business in December 2003, after raising $25 million in a public offering on the Alternative

Investment Market, a part of the London Stock Exchange. By May of this year, more than six million carbon allowances had been traded on the exchange, and the price for the allowances was hovering between $3 and $5 per metric ton of carbon dioxide. CCX now has more than 175 participants, including corporations like American Electric Power, Ford, Motorola, DuPont and I.B.M., as well as the state of New Mexico and six American cities, including Portland, Ore., and Oakland and Berkeley, Calif. Sandor says that in 2004, the members of CCX reduced carbon emissions by 30 million metric tons, roughly equivalent to the yearly emissions of two big coal plants. “CCX is growing,” the energy trading consultant Peter Fusaro told me recently, “but compared with mature exchanges like the New York Mercantile Exchange, the volumes are still minuscule.”

What makes CCX exceptional, despite its small size, is that it’s a private, voluntary endeavor. In Europe, the E.U. E.T.S. is a multinational, government-sanctioned project. The driving force behind the E.U. E.T.S. is a carbon-trading scheme that is built into the Kyoto Protocol, the 1997 international agreement on climate change, which committed industrialized nations to cutting greenhouse gas emissions by 5.2 percent from 1990 levels. (Kyoto’s emissions oversight is not scheduled to kick in until 2008, but last year the European Union set up the E.U. E.T.S. to help its members prepare for that eventuality.) By contrast, in the United States, which has not ratified Kyoto, there is no government-sanctioned carbon market.

Some analysts, including Sandor, contend that it’s just a matter of time before the United States adopts some sort of national emissions-trading scheme. Pressure is building on several fronts: environmentalists are demanding action on global warming, investment banks covet the arbitrage opportunities that a carbon market affords and international corporations seek long-term regulatory certainty. “I think it’s all but inevitable that a trading program will become the tool of choice for managing emissions in the U.S.,” Christine Todd Whitman, the former New Jersey governor and the administrator of the Environmental Protection Agency early in the Bush administration, told me recently. “It’s just a question of when and how the program will be designed.”

Several players are taking steps to design and implement trading schemes in the United States. In effect, they are jockeying for what economists call “first-mover status,” hoping to create the prototype for what might become a future national carbon market. A group of seven Eastern states have banded together to create a regional greenhouse gas initiative, known as R.G.G.I., which is scheduled to begin in 2009. In the West, a number of states, led by California, are considering a similar initiative.

And then there’s Sandor. No one has done more than he has to get a carbon market up and running in the United States. The World Resources Institute, a private environmental research group and an associate member of the exchange, has given Sandor an endorsement. “The Chicago Climate Exchange is an important experiment in reducing greenhouse gas emissions,” the institute’s president, Jonathan Lash, told me. Bill Richardson, the governor of New Mexico, whose state is a participant in CCX, suggests that Sandor’s project is here to stay. “I think the Chicago Climate Exchange is part of America’s future,” he said when I spoke with him. “We felt that the sooner we became a part of it, the better.”

But some observers are more wary. Mark Trexler, an industry consultant who is an advocate of emissions trading, told me that in Sandor's rush to gain a foothold in this growing market, he may be undermining the integrity and effectiveness of the very system he presumes to advocate. It may be true that a market-based system is an indispensable means for combating global warming, but does it follow that an entrepreneur, no matter how well intentioned, can be trusted to design that system for the public good? "My fear is that if we aren't rigorous enough in how we set up a trading system right now," Trexler said, "we could end up discrediting trading as a tool to deal with global warming. If we're not careful, people could get the idea that it's all a fraud. And that would be a disaster, both for us and for the planet."

On a recent morning, I visited Sandor in the CCX offices, which are housed in a skyscraper designed by Philip Johnson on LaSalle Street in Chicago. Sandor, who is 64, has a quick, practiced smile that suggests no lack of self-confidence. He speaks plainly and seriously about the dangers of global warming, though at times he can sound as if he's trying to sell you something — which, of course, he is.

As we talked in his office, I noticed a green silicone band on his right wrist. It was similar to the yellow Live Strong wristband that Lance Armstrong popularized to support his fight against cancer. It struck me as odd, since Sandor didn't seem to be a wristband sort of guy. I asked him about it.

"It's a CCX wristband," he explained. "I never take it off. Want one?"

He opened a drawer in his desk, took out a wristband in a plastic bag and handed it to me. I opened it and read the slogan on the band: "CCX — To Save the Planet."

"That's a big job," I said, poking fun at the immodesty of the slogan. "You're serious about this, aren't you?"

"Very serious," he said, stone-faced.

Sandor began his career as an academic, teaching economics at the University of California at Berkeley in the late 60's. Inspired in part by a credit crunch that hit California in those years, he came up with the idea of interest-rate futures, a financial instrument that would allow banks and investors to hedge against future changes in interest rates. In 1972, he left academia and joined the Chicago Board of Trade as an economist. In 1982, he followed the financial boom to Wall Street, taking a job at Drexel, where he worked developing futures markets in insurance and other fields. By 1990, however, Drexel was in bankruptcy, and Sandor turned his attention elsewhere: to environmental problems and how market mechanisms might be used to solve them.

Sandor's interest was sparked by the Environmental Protection Agency's 1990 Acid Rain Program, which sought to reduce sulfur dioxide emissions from coal-burning power plants in the United States. The design of the program was ingenious but simple. Instead of trying to regulate sulfur dioxide emissions the usual way, by dictating a certain kind of emissions-control technology on each power

plant, the E.P.A. employed what is known as a cap-and-trade program. The agency set an overall limit, or cap, on the amount of emissions permitted from all power plants combined. Then it allotted a certain number of pollution allowances to each emitter and let the operators of individual plants figure out how they wanted to proceed. A company might install scrubbers or switch to lower sulfur coal in order not to exceed its quota, but if the company determined that polluting beyond its quota was necessary, it could buy additional allowances from companies that had not used up their allotments. Companies that reduced their emissions could bank their credits for later use or sell them for a profit.

Fascinated, Sandor joined the E.P.A.'s Acid Rain Advisory Committee, which was charged with helping to implement the new law. Among other things, Sandor persuaded the E.P.A. to hold the annual auction for sulfur dioxide allowances on the exchange run by his former employer, the Chicago Board of Trade. In the end, the cap-and-trade program reduced pollutants more quickly, and far more cheaply, than anyone anticipated and became the model for market-based environmental success. Best of all, it helped transform the problem of reducing pollution from a moral issue into a pragmatic one.

Not long after the acid-rain program began, Sandor and other economists began thinking about how to apply the same market-based strategies to an even bigger problem, with an even bigger potential market: global warming. Whereas sulfur dioxide is a pollutant emitted from a measurable number of specific smokestacks, greenhouse gases, which are commonly measured in metric tons of carbon dioxide equivalent, are emitted from millions of diverse sources, including cars, jets, farm animal waste, factories and power plants. And unlike sulfur dioxide, which is a regional pollutant, greenhouse gases are a global problem: a metric ton of carbon dioxide emitted in Russia has the same impact on the atmosphere as a metric ton emitted in Ohio.

Despite these critical differences, in principle the same market-based approach could be used. First, set the overall limit of greenhouse gases that countries are collectively permitted to emit, then distribute (or auction off) allowances among various pollution sources within each country and sit back and watch the emitters trade those allowances as their needs and market strategies dictate. There would even be room for speculators to join in the market: if you think next summer is going to be a scorcher, you might buy up allowances on the theory that in hot weather, coal plants often run at maximum capacity to meet the power demand, dumping more carbon dioxide into the atmosphere and thus raising the demand (and the price) for carbon allowances.

A key innovation in the design of carbon markets was the idea of offsets. The basic concept was that polluters could earn emissions credits not only by cutting their own carbon emissions but also by assisting in efforts to reduce emissions from other sources elsewhere in the world: for instance, by paying farmers to reduce the emission of methane, a potent greenhouse gas, from animal waste. Another example of an offset was the so-called natural carbon sink — something like a forest, which absorbs carbon dioxide through photosynthesis. If you increase the absorption of carbon dioxide with plants, you create the same net effect on the atmosphere as cutting emissions from your car — so why not allow polluters to earn credits for, say, investing in reforestation?

The use of offsets also added the possibility for greater profits and speculation by carbon traders. For instance, if the price for carbon emissions credits is, say, $15 a metric ton, a company that can buy or lease land in Brazil and plant trees that will sequester carbon for the equivalent of $2 a metric ton stands to make a tidy sum by selling the credits it can generate.

Policy makers in the United States were excited by the idea of carbon trading, and during the mid-1990's, American negotiators pushed hard to make sure the framework for a carbon-trading scheme was included in the Kyoto Protocol. Sandor, for his part, was eager to capitalize on a global carbon market and began dreaming up the idea for an all-electronic exchange for carbon trading. In 2000, with a $450,000 grant from the Joyce Foundation, a private organization with a history of financing environmental initiatives, he enlisted about 100 people — power-industry executives, environmentalists, lawyers — to study the feasibility of establishing a voluntary market in advance of what he assumed would eventually be a mandatory emissions-trading scheme in the United States. In theory, his market would give companies practice measuring and managing their greenhouse gas emissions, preparing them for life in a carbon-constrained world. It would also put him in a position to be the dominant trading platform when the American market opened in earnest.

Sandor's first challenge was to recruit companies to join the exchange, and his ace in the hole was American Electric Power, or A.E.P. Sandor, it so happened, had joined A.E.P.'s board of directors at about the same time as the design process for CCX was getting under way. Not surprisingly, in 2000, A. E.P. enlisted in CCX and was joined by a number of other blue-chip corporations, including Ford and I. B.M.

In 2001, the Bush administration threw CCX a curve when it declined to ratify Kyoto. As a result, when CCX opened for business in 2003, it became virtually the only carbon-trading game in town for the foreseeable future. As with the trading scheme regulated by Kyoto, CCX brokers trades for credits of the six main greenhouses gases; its transactions are audited by N.A.S.D., a respected private securities industry regulator; and it has links to the E.U. E.T.S., where Sandor also runs an exchange. Unlike Kyoto, however, CCX has no teeth: it is an entirely private effort. In the first full month of trading on CCX, credits for about 82,000 metric tons of greenhouse gases swapped hands at a price of about $1 per metric ton. "It was a little like the Wright brothers at Kitty Hawk," Sandor told me. "Nobody believed it would fly. But it did. Maybe not elegantly at first, but it flew."

Not everyone was so upbeat about CCX. When the exchange first began recruiting companies to join and soliciting environmental groups for endorsements, several of those groups started to have reservations. The Natural Resources Defense Council and Environmental Defense kept their distance. The Nature Conservancy consulted on the rules for CCX's forestry offsets but did not join the exchange. The concern, several members of these groups told me, was that the initial design of CCX was too industry-friendly. Of its participating emitters, CCX required emissions reductions of just 1 percent a year during the market's first phase, from 2003 to 2006. (This was far more modest than even the gentle cuts mandated under Kyoto.) CCX's trading scheme threatened no explicit penalties for companies that missed their targets; in fact, a provision was included in the exchange's rule book stating that emissions more than 4 percent over a company's baseline (today it's 7 percent) would not even be counted.

Finally, the rules that governed the use of offsets, critics said, were lax. “Clearly, the initial goal was to make it as painless as possible for companies to sign up,” the industry consultant Mark Trexler told me. “If you’re designing a voluntary system, it’s hard to do it any other way.”

Despite the claim that industry had a strong influence on the design of CCX, many of the biggest emitters — including companies with solid environmental credentials, like BP, the global oil and gas conglomerate, and Cinergy, the Midwestern electric-power company — declined to sign on. There were a variety of reasons given for this, but one of the most important issues very likely concerned something called the emissions baseline. In any trading scheme, picking a baseline — the point from which emissions increases and reductions are measured — is controversial. In the Kyoto Protocol, for instance, all reductions are measured against a baseline of emissions levels in 1990. For its baseline, CCX decided to use an average of emissions from 1998 to 2001. As it happened, one of the big nuclear plants of A.E.P. was mostly shut down during those years, meaning that A.E.P. had to burn more coal to make up for it, presumably inflating its carbon dioxide emissions. Thus, the choice of an artificially high 1998-2001 baseline was a benefit to A.E.P. (on whose board Sandor sits), since it could more easily remain below it.

Bruce Braine, vice president for strategic policy analysis at A.E.P. and a CCX board member, told me that “the question of establishing baselines is always difficult. No matter how you choose to set them, someone complains that it’s unfair.” But as I was told by one former executive for CCX, who was granted anonymity because the executive was not authorized to discuss CCX’s internal matters, “other big emitters had no interest in joining a program that seemed designed to help A.E.P. look like a good corporate citizen.”

In the three years that CCX has been in operation, criticisms from environmentalists have only grown. This is particularly the case with CCX’s standards for using agricultural offsets, in which carbon is sequestered in farmland soils and then sold for emissions credits. Agricultural offsets are notoriously difficult to measure and quantify, and a less-than-rigorous program is essentially a way of introducing overvalued emissions allowances into the trading system. Advocates of carbon trading like Environmental Defense have worked hard to develop stringent protocols for soil sequestration, while others, like David Doniger, the climate policy director at the Natural Resources Defense Council, remain skeptical of the whole concept. “The problem with these kinds of offsets is that we’ve never found a way to separate the wheat from the chaff,” Doniger told me. “There is a constant tension between quality control and high participation rate. And it’s usually quality that goes in the toilet.”

To check this out for myself, on a rainy afternoon this spring I drove a few hours southwest of Omaha to visit Steve Wiese, a 51-year-old farmer who earns extra money by sequestering carbon on his 2,500-acre farm and selling the carbon allowances on CCX. When I arrived, Wiese was going over some paperwork in his barn. On his desk was a check for $2,008.94. “It just came in the mail the other day,” Wiese said, waving it happily.

Wiese, like hundreds of other farmers who are getting paychecks from carbon emitters by way of CCX,

practices a form of cultivation known as no-till. Instead of tearing up the fields each spring and releasing the carbon stored in the soil (mostly in the form of decomposing plant matter and roots), no-till farmers plant right over the previous year's crop, leaving the soil undisturbed.

"How long have you been no-tilling?" I asked him.

"About 14 years," he said, leaning back in his chair.

"How long have you been getting paid by CCX?"

"Just signed up last year," he said.

Here was an instance of a major problem that critics of CCX have raised: Wiese is getting paid for storing carbon in his soil, even though he has done nothing to increase the amount of carbon that is being stored on his land — he's just doing exactly what he's been doing for the last 14 years. A polluter like A.E.P. or Ford can use a credit from Wiese's farm to offset their greenhouse gas emissions, but the fact is, in cases like these the payments from CCX are having no net effect on the level of greenhouse gases in the atmosphere.

And Wiese is hardly alone. Of the half-dozen farmers I spoke to in Nebraska and Iowa, all had started no-tilling before they ever received a check from CCX. When I asked Sandor about this, he argued that it doesn't matter if these agricultural reductions are "real" or not, because they make up only a small fraction of CCX's overall reductions. "What's important," he told me, "is to incentivize people who are doing the right thing. I think of these payments as a kind of 'tickler.' " To critics like Doniger, though, the problem is that Sandor doesn't advertise these kinds of offsets as a "tickler" — he advertises them as actual improvements in the atmosphere.

Environmentalists have also raised questions about another aspect of CCX: how it calculates emissions reductions. Sandor regularly notes that CCX members reduced carbon emissions by 14 million metric tons in 2003 and 30 million metric tons in 2004. (2005 numbers aren't available yet.) That is, of course, a good thing. But it's not clear that CCX should get the credit.

Consider the case of DuPont. Overall, DuPont's carbon dioxide emissions are down 72 percent since 1990 — an example, according to Edwin Mongan, the director of energy and environment at DuPont, of "what a company can do if it sets its mind to it." DuPont has beat its CCX baseline by more than 50 percent, cutting emissions by 8 million metric tons more than required. "We're supportive of CCX because it has given us experience trying out selling, working in a carbon market," Mongan told me. But he also suggested that being a member of CCX has not, in itself, led to reduced emissions. "I think CCX has been most valuable to us in helping to certify and validate the emissions cuts that we've already made," he said.

The fact that companies like DuPont are reducing their carbon emissions does not mean that the

emissions reductions trumpeted by CCX are necessarily unreal. But it may mean that these reductions are mostly the result of good corporate citizenship, not the power or efficiency of Sandor's market.

Unfortunately, sorting out the real from the unreal is not always easy with CCX projects. It was precisely this difficulty that bothered David Littell, the commissioner of Maine's Department of Environmental Protection, when he heard a pitch from CCX in 2004. At the time, CCX had approached a number of states about joining the exchange. Maine, which was among the first states to take progressive action on global warming, was a coveted recruit for CCX. Littell told me that he and other state administrators were "generally supportive" of CCX's goals but had concerns that the exchange "was a system set up by private entities, with private transactions, set up to ensure confidentiality." Why was this a problem? "It creates an appearance that the emission reductions might not be enforceable and verifiable," Littell told me. Like several other Eastern states that were courted, Maine didn't sign up.

Instead, Littell is now concentrating on the creation of R.G.G.I., the regional greenhouse gas initiative that also involves Connecticut, Delaware, New Hampshire, New Jersey, New York and Vermont. Unlike with CCX, which was devised essentially behind closed doors by a group of corporations, the creation of the rules for R.G.G.I. has been open and transparent, with dozens of public meetings and ample time for all stakeholders — environmentalists, industrialists, politicians, citizens — to comment on the program's design. As a result, the program is proceeding cautiously; for instance, instead of allowing a wide variety of offsets, as CCX does, the R.G.G.I. program will begin with a limited set of five categories of offsets (including collecting methane from landfills) and does not include the controversial agricultural offsets. "We believe public confidence in the program is vital," Franz Litz, of the New York State Department of Environmental Conservation, told me.

If CCX has such troubling flaws, why has it attracted so much support, particularly in corporate America? One explanation, provided by Sandor and others who endorse CCX, is that by joining CCX, companies get valuable experience managing emissions in a functioning market. In addition, of course, there is the public-relations benefit that goes along with being part of an enterprise that is widely viewed as part of the solution, not part of the problem.

But what's going on here may be more complicated than that, and it has to do with that other shade of green. The logic goes like this: in a few years, if a mandatory carbon-trading system is finally established in the United States, one of the most contentious issues in the design of that system will be how companies that have already made reductions in their emissions will be credited for those reductions — if indeed they are credited at all. In other words, should a company like DuPont or I.B.M., both good corporate citizens that have already made sizable cuts in emissions, be required to reduce greenhouse gas emissions just as much as a competitor who has done nothing? If they do get credit for those early reductions, how might that credit be measured? For DuPont and I.B.M., hundreds of millions of dollars could be at stake in how this question is resolved.

With CCX, Sandor has effectively played this uncertainty to his advantage. The bigger CCX gets, the more cities and states it can get to join, the more likely it will be that carbon credits on the exchange will

be viewed as the de facto standard by politicians and others responsible for designing a national system — and the more likely it will be that credits on the exchange, which at the moment are only informally recognized among CCX participants, will be grandfathered into a national system and granted full legal status as property rights. “This is all about business,” one carbon-market veteran told me. “It has nothing to do with the environment.”

To Sandor, these criticisms of CCX are, if not trivial, then at least beside the point. “At a certain level, all this becomes a debate about how many angels can dance on the head of a pin,” he told me. “In the larger scheme of things, they are meaningless. Global warming is an extremely urgent problem. Is CCX perfect? Of course not. Neither was the U.S. Constitution — they forgot the 10 amendments, including freedom of the press and freedom of speech. The important point here is that markets work to solve problems. The sooner we admit that, and the sooner we get around to building those markets, the better.”

Not long ago, at the University of Minnesota campus in Minneapolis, I was part of a standing-room-only crowd gathered in an auditorium to hear Sandor speak. He took the podium and charmed the audience with a mix of business savvy and social conscience. His message was one of hope and confidence and creativity, a response to the people he calls the Darth Vaders of the world — all those environmentalists, politicians and businessmen who think that global warming is too difficult an issue to tackle, who believe we have to wait longer and study it more before we do anything and, most of all, who are determined to make the perfect the enemy of the good.

If CCX were simply a giant eBay, there would be nothing to do but celebrate Sandor’s gumption and step back and see if his vision had wings. But creating a market for public goods is different from creating a market for Elvis memorabilia. Sandor is in the business of commodifying the air we breathe, and in that regard he is indeed a revolutionary, pushing the boundary between public and private and, in the process, raising new questions about what capitalism can and cannot do. It’s easy to see how a carbon market might be designed to enrich traders and investment banks; what is still far from clear is whether one can be designed that will significantly reduce greenhouse gas emissions. It may seem paradoxical, but the real lesson of CCX could turn out to be that markets may be wonderfully efficient systems, but they are no substitute for strong government action — both in setting the broad social goals of how to deal with global warming and, in the case of carbon markets, ensuring that the rules are not inclined in favor of private interests.

“Integrity is the linchpin to both public and investor confidence,” the emissions-trading pioneer Dan Dudek told me. “Without integrity, investors won’t commit serious capital either to generate the supply of reductions necessary for trading or to buy the reductions in the first place.”

Sandor doesn’t disagree. “This is just the beginning of a long journey,” he told me as we walked down the Minnesota campus steps after the speech. He was, as usual, in a hurry, his BlackBerry in hand, heading to California and Asia in the coming days. A black sedan waited at the curb. “I don’t pretend to have all the answers,” he said, reaching for the door. “I’m just a humble economist. All I want to do is solve the problem of global warming.”

Jeff Goodell, a frequent contributor to the magazine, is the author of “Big Coal: The Dirty Secret Behind America’s Energy Future.”

Home

- World
- U.S.
- N.Y. / Region
- Business
- Technology
- Science
- Health
- Sports
- Opinion
- Arts
- Style
- Travel
- Jobs
- Real Estate
- Automobiles
- Back to Top

- Privacy Policy
- Search
- Corrections
- XML
- Help
- Contact Us
- Work for Us
- Site Map