Changing Markets to Address Climate Change

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Abstract: This Keynote Address from the Boston College Environmental Affairs Law Review 2007 Symposium, The Greening of the Corporation, examines the use of market pressures and incentives to encourage corporations to make more environmentally friendly decisions. Peter Lehner, Executive Director of the Natural Resources Defense Council (NRDC), draws on his experiences as a litigator and his work for the NRDC in explaining that changing markets will help decrease the impact that corporations have on global warming.

The Greening of the Corporation is a great topic. Although we often look at corporations as a big part of the problem—they are after all responsible for most pollution, deforestation, and natural resource degradation—we must look to them as a big part of the solution if we are to deal with global warming and other major issues.

Of the top 150 largest global economic actors, ninety-one are corporations and fifty-nine are countries. Companies like Wal-Mart, BP, CitiGroup, IBM, GE, and Exxon are bigger than many countries, including significant countries such as Indonesia and South Africa. If we are going to achieve our goals in addressing global warming in the timeframe that we need to, corporations have to be part of the answer.

If we are going to address corporations, however, we are also going to have to address the world in which they operate, that is, the markets in which they operate. There are legal and institutional arrangements in which corporations function, which direct them, for example, to focus on achieving shareholder goals, such as maximizing productivity and profit; all are set to rules. The legal framework is set by the laws within which corporations act. The institutional and financial framework is the particular market in which corporations operate and the incentives established. To really change corporate behavior, we need to address those frameworks.

* Executive Director, Natural Resources Defense Council (NRDC). “NRDC is the nation’s most effective environmental action organization. We use law, science and the support of 1.2 million members and online activists to protect the planet’s wildlife and wild places and to ensure a safe and healthy environment for all living things.” NRDC: About Us, http://www.nrdc.org/about (last visited Apr. 30, 2008).
We can generally think of greening a corporation in three different ways, and the Natural Resources Defense Council (NRDC) is working on all these levels. The first approach is to green a company’s operations. Many of these companies have significant footprints themselves. There is a lot that a company can do to change operations, whether it be, for example, Wal-Mart’s truck fleet, lights, or heating. Office Depot overhauled the lighting in its North American stores and obtained a ten percent absolute reduction in carbon dioxide (CO\textsubscript{2}) emissions.\(^1\) Wal-Mart has a Zero Waste initiative that so far has saved 478.1 million gallons of water, 20.7 million gallons of diesel fuel, many millions of pounds of solid waste, and they did not even calculate their carbon footprint.\(^2\) So greening what corporations do themselves can make a big difference.

The second way that corporations can go green, or act in a more environmentally responsible manner, is through their supply chains. The NRDC reached an agreement with the Bowater Corporation, one of the largest paper corporations, on how it would source its paper,\(^3\) and thus, what the company would demand from the timber companies from which it bought pulp. By working back up the supply chain, we use the power of the consumer. Since Bowater buys all the timber, if it insists on different environmental standards, the producers, the timber companies, will respond. Similarly, when enough law firms commit to buying only post-consumer recycled paper—in addition to recycling, of course—they are working through their supply chain, and will change what the paper companies produce.

We are also working in a similar way right now in China, where there is horrific pollution; you have never seen anything like it in this country. But it turns out that many polluters do not comply with the law, they don’t seem to care what the government says. On the other hand, if a company like the Gap says that it will not buy from Chinese companies unless they clean up their environmental performance, they will clean up very fast. So, we are now working on a program with the Chinese government to rank polluters on a scale of one to five—one is

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good, five is bad—and also with a major American company, so that it will say that it will not buy from any Chinese factory that is a four or five. If we are successful, this approach will have a tremendous impact.

The last way one can green a corporation, the way that I am going to focus on, is to change entire markets: to change the ground rules within which companies are operating so the right incentives are sent throughout the companies’ operations. So, let us look at markets for a minute. There is no dispute that markets work extremely well in distributing goods and services. We can see this in the real price drop over the last hundreds of years of many of today’s basic staples. Adam Smith talked about this effect, referring to the invisible hand. Everyone’s individual actions, acting in self-interest—some might call it progress, others might call it greed—provide an efficient marketplace. But while this freedom has tended to work well for providing for economic prosperity, we have seen now that it works extremely poorly for certain types of goods. In particular, while it works for private goods—those that you can buy or sell and those where ownership of the goods by one person excludes ownership by another—it does not work very well for public goods. Classic public goods are, of course, clean air, clean water, and environmental protection. Another public good, that you can mention if you are ever debating this point with conservatives, is national security. But a public good cannot be bought and sold in the marketplace, the same way a bottle of ginger ale can be bought and sold. In that sense, the market system fails us. I am going to explore a little bit why exactly that is and what we can do about it to address climate change.

Let me focus just a moment on climate change to set the stage for my discussion. The scientific debate, I think we can all agree, is over. Indeed, the scientific debate, I would venture, was largely an industry disinformation campaign for the last fifteen years. I brought a lawsuit in the late 1980s, suing the federal government over its lowering fuel economy standards.\footnote{See generally City of Los Angeles v. Nat’l Highway Traffic Safety Admin., 912 F.2d 478 (D.C. Cir. 1990) (discussing the link between CO₂ and global warming).} I was representing a group of cities focusing on local pollution; the NRDC brought a parallel case focusing on global warming and CO₂. As far as we can tell, this was the very first climate change case. Nobody disputed the science. The judge noted in that case, in the D.C. Circuit, that the federal government did not dispute the science of climate change, that it was caused by human emissions of CO₂, which were rising, and that if we did not address those emissions...
soon, climate change was going to be a serious problem. The last fifteen years were really an unfortunate detour on the path to sound policy.

But today, again, we are no longer arguing the science. The Intergovernmental Panel on Climate Change (IPCC), as a group of scientists, always issues their predictions about climate change as a range. It turns out that in almost every instance, we are seeing that the upper end of that range—whether it is temperature, sea level rise, or precipitation changes—is proving more accurate. The last five years have seen the atmospheric concentration of CO₂ grow by almost two parts per million per year, the fastest it has ever grown since records have been kept.

Now, the best we can hope for, the best that the IPCC and others hope for, is to stabilize atmospheric CO₂ levels at about 450 parts per million. The preindustrial level was about 280. That, it is sobering to realize, is just the level that we think is plausible, but by no means certain, for avoiding catastrophe. There will still be very significant impacts around the world, many of which we are seeing now, whether they be the changed weather patterns, the wildfires in the West, the drought in the South, or the heat waves throughout the country. Those impacts will still happen, and they will get worse. But if we can manage to stabilize the atmosphere at a concentration of 450 parts per million, then maybe we can avert catastrophe. We would generally hope for a little better than that, but that is what in fact we are aiming for right now.

To stabilize atmospheric concentrations at that level, we need to cut CO₂ emissions—most of which are emitted by corporations or their products—by eighty percent by 2050, or perhaps even sooner. Let us look at some of the structural market failures that we need to address if we are going to enlist corporations in that battle—onto our side of the battle in fact—on climate change.

The first major market failure is that climate change is a classic externality. Anyone can emit CO₂ without having to pay any of the costs of the environmental damage caused by the emissions. The harms, whether they be rising sea levels, changing weather patterns, changing water supplies, or species extinction—none of those have a price. So companies can continue to emit all the CO₂ they want and not pay a price. Society will pay that price, but the companies doing the emitting will not: a classic externality.

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5 See id. at 493–94 & n.2. A majority of the court found that global warming was real and that there was a basis for standing to challenge automobile fuel economy standards, noting even then that "no one . . . appears to dispute the serious and imminent threat to our environment posed by a continuation of global warming." Id. at 493–94.
The problem has worsened in the United States and in many other countries because fossil fuel use is actually subsidized. Not only is CO₂ pollution free, it is actually encouraged. We subsidize oil and gas drilling and coal burning both directly and indirectly. We actually changed the tax treatment and offered direct subsidies for fossil fuels in the Energy Policy Act of 2005. Hopefully we will get a much better energy act in Congress this year. There are currently an estimated nine billion dollars of subsidies for coal, and six billion dollars worth of subsidies for the oil and gas industry.

We subsidize coal indirectly by allowing coal-fired power plants to spew sulfur dioxide, nitrogen oxide, and mercury— in addition to CO₂—into the air, and thus into our lungs almost for free. This pollution causes tens of thousands of early deaths each year and hundreds of thousands of hospital visits. These health effects cost society tens of billions of dollars that coal companies and power companies do not pay at all.

Another example is the real price of gasoline. If you were to truly include all the costs of gasoline—its health costs, its environmental costs, and perhaps even the costs of maintaining our supply of petroleum—it is estimated that gasoline would cost somewhere between five and fifteen dollars per gallon, rather than the three dollar cost that you see at the pump.

Another way that we are subsidizing CO₂ pollution is the tremendous subsidy we have for our highway system. We heavily subsidize the use of motor vehicles so that vehicle miles traveled are going up and up. Of course, cars are responsible for about one-fourth to one-third of U.S. greenhouse gas emissions.

One aspect of the fact that carbon is an externality is that nobody puts a price on it. Companies have no internalized incentive to reduce

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their carbon footprint. More than that, because there is no price on carbon, it is very hard for new or low-carbon energy systems to take the place of a fossil fuel system. What bank is going to invest in or loan money to somebody saying, “Well, I have a type of energy which is a little bit more expensive than coal, but it does not produce any carbon”? If you are a bank, you are only looking at the income stream and the fact is that if the new energy source is more expensive than coal-fired power, you are not going to loan the money to that wind farm or solar factory. So we have a real problem when carbon has no price.  

A second major market failure is that there are both insufficient information and split incentives, particularly for energy efficiency. With standard incandescent lighting, ninety percent of the energy used is wasted. Only ten percent of it is coming out as light. Energy efficiency has tremendous opportunity to reduce our demand and lower pollution. It can also buy us time while we move away from a fossil fuel system. 

Yet, our energy efficiency implementation is woeful. Why is that? Partly because of a lack of information. We do not know or trust the information we get when we have an opportunity. For example, should I really pay an extra one hundred dollars for some different refrigerator because it says that it is going to save me money over three years? Is it really? I do not really trust that. I think cash in the hand is worth a lot more. 

In addition, there are split incentives, which are significant in this country. If you are a builder of houses who will also sell the houses, you are by and large thinking about the price at which you will sell the house. The buyer is similarly interested in the first price. So you have little incentive to spend extra money on the house to make it very well-insulated because you are the builder and you are not going to pay the heating bill. Similarly, if you are a landlord, you are happy to buy the

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cheapest appliance because your tenants, not you, will pay the utility bill. This split incentive applies to large segments of the economy: commercial landlords versus tenants, manufacturers versus users of appliances, and many others. It largely eliminates any incentive for those who are in control to go for energy efficiency.

A third and related problem here is the very unrealistic return expectations most consumers and many businesses have. People often talk about the need to have an energy efficiency program pay for itself in three or five years. Well, think about that. Say you have a three or five year payback for an energy efficiency program, such as insulating your house. You buy a house and you get a thirty-year mortgage; why should energy efficiency pay back over three years? A three-year payback is actually the equivalent of almost a twenty-five percent rate of return. You are not getting that in your invested money anywhere. If you could get an absolutely risk-free ten-percent return, you would be doing well. You cannot do that in the bond market or the treasury bill market. And yet a ten-percent return is a seven-year payback. But, the reality is that most companies and most people do not go for seven-year paybacks. Somehow, they think that doubling their money because of an energy efficient device in seven years is far beyond what is reasonable for them. So, in fact, consumers are acting, in a sense, irrationally. They will thus miss the chance for very effective investments and energy efficiency, while they meanwhile are investing their money or savings at a far less lucrative rate of return.

Another market difficulty is the instability of the oil market. It has gone up and down and up and down. The natural gas market is the same. This fluctuation makes it difficult to finance any alternative energy proposal. Even if it may be profitable today at eighty dollars to one hundred dollars a barrel for oil, that proposal is unlikely to get financing because it is unclear that it will still be able to compete over two or three years when the price of oil may be $150, but also may drop down to forty dollars again. And because of the push in many utility industries and state regulatory commissions to prohibit, or provide disincentives for, long-term contracts forcing utilities to buy energy on the spot market, we have effectively created a major disincentive to long-term investments in clean energy alternatives.

The last market failure is the problem of fast followers. If you invent something new that may be great, but have many others who can quickly follow in your footsteps, it is hard for you to recoup the research and development cost or that initial market advantage that you might have had. If you are the first to go through the legal and administrative hurdles of siting a wind farm, you will have no long-term ad-
vantage over the guy who comes second. There is no brand loyalty here.

One important example of this problem is carbon capture and sequestration, which, as you know, is the technology of taking from a coal-fired power plant the CO2 stream and pumping it into the ground. That way, it is not released into the atmosphere. This system works, and has a lot of promise, but nobody yet is doing it for a commercial-scale power plant. It is being done with respect to enhanced oil recovery. Part of the reason for that is the tremendous research and development costs that would go into such a system. And, once it has been proven, it is not necessarily the case that you, the coal or energy company that invented this technology, or got this concept working, will stand to be at much of a competitive advantage with respect to your competitors.

So these are all real market failures, and they are all failures that we need to address if we are to enlist corporations in the battle against global warming. As I said earlier, each corporation can and should clean up its carbon footprint. And each company can and should address its supply chain. But, in the policy area, we also have to figure ways to change these incentives (or disincentives).

How are we going to do that? Well, the first and most significant way is to address that first problem I mentioned: we have to put a price on carbon. That is probably the most significant step we can take in the next couple of years. As you probably know, that is indeed the environmental battle going on in Washington right now. Just two or three days ago, Senators Lieberman and Warner introduced a bill that will have a declining cap for carbon emissions. To emit a ton of CO2, one must have a CO2 allowance. The cap creates scarcity and scarcity creates a price. The NRDC argues that since the atmosphere should be considered to belong to all of us, to the public, then a private company should pay the public for the right to dump CO2 into it. The polluter should pay for the allowances. The polluters, however, are very powerful politically so the Lieberman-Warner bill, while it makes polluters pay for some allowances, also gives away many for free to the polluters. Then,

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over a twenty-year timeframe, the ratio of those given away for free would change. But fundamentally what this bill would do is to put a price on carbon.

Now, some have said that we should have a carbon tax, which would also directly put a price on carbon. The answer is, that would be fine. And in many ways, a system where the government auctions all the allowances—that is, makes the polluter pay for all of them—and a carbon tax, are very similar. The northeastern states have joined in the Regional Greenhouse Gas Initiative, which will cap CO₂ pollution from power plants. Polluters will have to buy all allowances. We strongly support this system. The reality we are always told, however, is that despite the fact that most economists will argue for a carbon tax over a cap and auction system, a tax is not politically feasible in Washington these days. So that is why, you will see, the effort is to put a price on carbon by putting a cap on carbon. It may not seem quite as direct, but in fact it does effectively work that way.

Another way to put a price on carbon, beyond the legislative approach, is seen in the recent leveraged buyout of TXU by several venture funds. TXU owned a number of coal-fired power plants and had plans to build another eleven coal-fired power plants in Texas, and another twenty to thirty in other states in the country. The possible buyers of TXU were concerned that this deal was going to get a lot of environmental opposition and that opposition would make it harder to finance the deal. The issue here is not putting a price on carbon legislatively, but making it harder to finance the deal, making the price of the deal more expensive because of the carbon emissions. So one of the buyers called the NRDC to see if we could reach a deal. We, with Environmental Defense, worked with the buyers of TXU, and they agreed to drop their plans for eight of the eleven plants in Texas and all of the twenty to thirty plants that they were planning in other states. We were allowed to keep going fighting the three that they were going to try to move ahead in Texas. As a result of that deal, much of the opposition to the deal was withdrawn. That exchange effectively put in the private market, not the public market, a price on carbon.

Another example of what we can do is to put new standards in place for energy efficiency. In an area where there are split incentives among landlords and tenants, manufacturers and consumers, and

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owners and builders, the clear answer is to have policy changes to mandate efficiency. The easiest examples of those types of standards, being debated by Congress now, are vehicle efficiency standards, or corporate average fuel economy (CAFE) standards. We have not had an increase in the fuel economy standards for this country since 1975, for thirty-two years. Now technology, needless to say, has advanced a lot since then. And, unfortunately, most of it has gone into making the cars bigger and bigger. So actually with the advent of SUVs, as I am sure that you all know, the average fuel economy of the American fleet has gone down. That is far more significant in terms of our oil importation than any other factor. Again, the car companies do not pay the gasoline bill, you do. The car companies themselves have relatively little incentive to make their cars a lot more efficient, although perhaps the American car companies are beginning to learn from the fact that Toyota has steadily increased its market share from a relatively small company to now almost the world’s largest automobile manufacturer. But, in order to address this split incentive for efficiency, as well as a lack of trust in any information there is, and an unrealistic return rate for efficiency, we need mandated standards to guide the market. There is still plenty of room, with higher standards, for companies to innovate, cut costs, compete, and use different technology. But this market needs new rules.

Another example: I brought a case not too long ago where the U.S. Department of Energy had been mandated to improve the efficiency of a whole range of household appliances. They did not. They were over a decade late for many of these mandates. So, a coalition of states and the NRDC sued the Department of Energy, and, after litigation, entered into a settlement. The Department of Energy is now implementing these standards. These standards, covering household appliances like ovens and fans, will have the equivalent carbon effect of taking twenty million cars and trucks off the road. They will save con-

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15 The recent CAFE increase is a very good start, but the miles-per-gallon standard could be even higher and more quickly implemented. We also need a federal standard for CO₂ emissions from automobiles.

sumers money. They will be virtually invisible to consumers, because consumers will still have their toasters and their fans, but without the equivalent of twenty million cars and trucks on the road—a huge benefit in the global warming battle.

Another market failure I mentioned is the lack of information. If you wanted to build a green building not too long ago, you would not really know what exactly to do. And if you did a green building, you would not necessarily get credit for it; if you say it is green, how does anyone know whether you are being honest or not? To address this problem, the U.S. Green Building Council, the NRDC, and others formed what is now known as LEED, Leadership in Energy and Environmental Design. You can now get your building certified as LEED Platinum if it is really terrific, LEED Gold, or LEED Silver. Builders know what to do and buyers know what they are getting. The NRDC also just recently developed what is called LEED-ND, or LEED for Neighborhood Development, so not only individual buildings, but entire communities can now be certified for their environmental compliance. Market failures can be fixed.

I will mention just one more market change. In most states, utilities make money by selling electricity, and, because of their ratio between fixed costs and variable costs, they make a lot of money with every additional kilowatt-hour they sell. Or phrased differently, if a customer is more efficient, the utility loses revenue, which is almost all profit. They do not like that very much. Utilities, however, are the major players in the energy market. They send you bills every month. They run the system because they buy the energy, they sell it to you, and they control all the wires in between. If we can change the utility rate structure, so that a utility, instead of having a strong economic disincentive towards energy efficiency, has an economic incentive for customers to increase efficiency, we will transform the utilities from being a major opponent of efficiency and clean energy to being a proponent. California was the first state to do that. Idaho, not generally considered an environmental leader, was the second. New York has recently done that. And the NRDC is working with many other states to make similar utility rate reforms. By changing the structure of the market, we take these

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tremendously powerful players and instead of being on the other side, we make them become allies in the battle against global warming.

Reducing global warming will take a lot of work on all levels: individual, academic, governmental, and corporate. We need to get companies to not just be a part of the problem, but actually be a part of the solution. We have to change the rules that they play by. By and large, they will play by the rules. It is our job, as those working in the public policy arena, to change the rules and then it will be their job to address the shareholder needs, employee needs, and community needs within those changed rules in a way that will better affect and address climate change.