

What's the Big Idea?

Trading Up to an Affordable Clean Energy Future

By Howard Silverman

Selling permits to pollute might seem like an odd way to clean up the air. Why sell the rights to pollute, when we want there to be less pollution? And yet, such a scheme has tremendous power to reduce our dependence on fossil fuels and hasten the arrival of a clean energy future. Here's how.

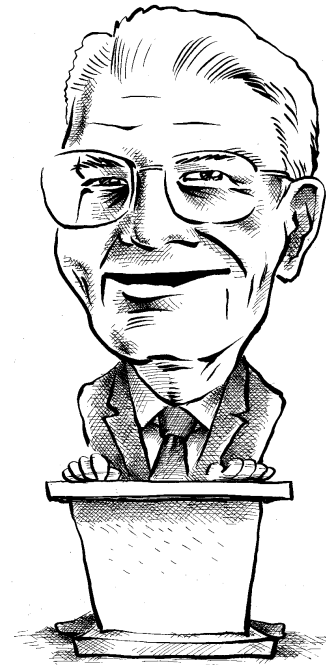
No one sets out to muck up the air or the water. But sending pollution up the stacks or down the sewers wouldn't cost a penny unless society decided that it ought to. Princeton economist Paul Krugman notes, "Going all the way back to Paul Samuelson's first edition in 1948, every economics textbook I know of has argued that the government should intervene in the market to discourage activities that damage the environment."

Taxes are one obvious means for the government to use, but they're inefficient for several reasons. One is that it's hard to get the tax level just right - too high and production is stifled, too low and the environmental problems are not adequately addressed. Other possibilities, such as an outright ban, or a rigid limit on each factory's emissions, each have their own inefficiencies.

Instead, in the late 1950s, economist Ronald Coase devised the radical idea of selling "rights" to pollute. It's like selling spaces in a parking garage. "This permit allows the bearer to 'park' one ton of crud in the atmosphere." Rejected at first, Coase's theories about a more practical and systemic approach to economics won him the Nobel Prize thirty years later. And in 1990 Congress, President George H. W. Bush, and the Environmental Protection Agency (EPA) took a chance on an experiment in Coasian logic.

The problem was acid rain. Sulfur dioxide (SO₂), mostly emitted from coal-fired power plants and ore smelters, was mixing with rain and snow to create sulfuric acid. It was destroying forests and lakes, scarring buildings and burning people's lungs.

The EPA instituted a policy on sulfur dioxide that required factories to obtain permits to pollute. The result? The title of a 1998 report published in *Science* says it all: "[Acid Rain Control: Success on the Cheap](#)." SO₂ emissions were down. And preliminary estimates that the reductions would cost \$10 billion a year turned out to be ten times too high. Tradable pollution permits had proven their worth.



"[The problem is that] economists don't study the system... It is as if a biologist studied the circulation of the blood without the body."

– **Ronald Coase**,
Professor Emeritus of Economics at the
University of Chicago Law School; Nobel
Prize in Economics, 1991

Source:
Why Economics Will Change
<http://coase.org/coaseremarks2002.htm>

"Cap and Trade"

Here's how the pollution permit system - known as "cap and trade" - works in the case of acid rain. The EPA sets a limit, or cap, on the total amount of SO₂ that can be released. That cap is gradually lowered to reach a target level of emissions - in this case, about half the 1980 baseline. But decisions on how to achieve those reductions are completely in the hands of each utility. Some might use smokestack scrubbers, others might seek out lower-sulfur coal, and still others might find it cheapest to do nothing but rely on buying their permits on the trading market. At the end of each year, each utility must turn in one permit for every ton of SO₂ released. Efficient ones with extra permits may trade them away or bank them for future use.

The EPA's SO₂ program was soon declared such a success that other similar initiatives arose. Discussions about reducing carbon dioxide (CO₂) emissions, the main cause of global warming, coalesced into the 1997 Kyoto climate change agreement, extending the U.S. experiences with its acid rain program to an international arena.

Ironically, after pioneering market-based solutions to reduce pollution, the U.S. has now opted out of a worldwide plan to implement a similar system. President George W. Bush says that plans to reduce CO₂ emissions through carbon trading are too expensive. That's exactly what nay-sayers claimed about the acid rain scheme at its inception in 1990. They were wrong. And for CO₂, a [joint statement](#) endorsed by over 2,500 economists states that carbon trading could "slow climate change without harming American living standards."

"[Scenarios for a Clean Energy Future](#)," a study by the U.S. National Laboratories, agrees. Examining the monetary effects of carbon trading, along with renewable electricity standards and other clean energy incentives that we've discussed in Section Z, they conclude, "The overall economic benefits of these policies appear to be comparable to their overall costs." In other words, we reap the other benefits of clean energy - cleaner air and water, increased energy security, and a more stable climate - at no extra charge.



"Can 2500 economists be wrong? Well they can, but this time they're not."

-- Paul Krugman,
Professor of Economics, Princeton
University

Source:
Earth in the Balance Sheet: Economists
Go for the Green
<http://web.mit.edu/krugman/www/green.html>

The Missing Step: Auctions

But there's still one big problem with the cap and trade system as it's been implemented in the acid rain program. It turns out that it makes a huge difference how the initial rights to pollute are allocated. We should actually be practicing a slightly different kind of scheme. Call it: "cap, auction and trade."

Here's what happened. When it came time to distribute the initial rights to pollute, Congress allotted permits based on each plant's history of SO₂ emissions. The dirtier the plant, the more permits it started out with. In other words, the utilities' pollution rights were grandfathered in. Instead, the better choice would be an auction system - selling the initial pollution allowances to the highest bidder.

In the details of grandfathering versus auction, even Ronald Coase's recommendations have been a little fuzzy. But a 2001 report by the research institute Resources for the Future demonstrates that auctions are clearly preferable. "Our main finding is that the auction is dramatically more cost-effective than the other approaches - roughly one-half the societal cost of grandfathering," they write in their report, "[The Effect of Allowance Allocation on the Cost of Carbon Emissions Trading](#)."

The conclusion that auctioning will be far cheaper than grandfathering may be all that some people need to know. Grandfathering of SO₂ emissions was a mistake that we should not make again. But there are other fascinating, and perhaps more fundamental, questions at work here as well. After all, where do these "rights" to the sky come from and who owns them?

The Western legal tradition provides one answer to the question of who owns the rights to the sky. We all do. In the 6th century A.D., the legal code of the Roman Emperor Justinian spelled out various types of ownership, including: private, public and common. Under common ownership it says, "These things are common to mankind - the air, running water, the sea, and consequently the shores of the sea." The air, or sky, is thus owned in common by all.

Many will tell you this is just "common" sense - the sky cannot belong to a handful of companies, it belongs to all of us. And so economic modeling, the legal tradition, and good sense all provide the same answer. The sky is ours to sell. And as the example of sulfur dioxide demonstrates, sell it we should.

One intriguing proposal that builds upon the notion of our common ownership of the sky is the Sky Trust. In the plan for the Sky Trust, each American would become a shareholder of our rights to the sky, and receive the dividends from each year's auctions of pollution permits.

Another proposal would keep that money in the hands of the government, and lower other taxes - say payroll taxes - to balance out the receipts. Either way, we'll be trading up to an affordable clean energy future.



"Who owns - or should own - the sky? In the coming era of scarce sky, the answer will affect every American's pocketbook... It's nothing less than a trillion dollar question."

-- Peter Barnes

Co-Founder, Working Assets; Author, *Who Owns the Sky?: Our Common Assets and the Future of Capitalism*

Source:

Who Owns the Sky?

<http://www.skybook.org/>