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Making sense of pollution markets

Trading carbon credits will clean up state better than heavy-handed regulation

By Joe Nation

Here are my imaginary results from a public opinion survey taken in late June:

-- Teenagers (and adults) who closely followed Paris Hilton's jailhouse stint? 87 percent

-- Adults who can name the United Kingdom's new prime minister? 4 percent (Sorry, Mr. Brown)

-- Californians who understand how a carbon market will reduce greenhouse gas emissions? 1 percent (with a margin of error of 3 percent)

These survey results are made-up, of course, but they may reflect the state of public opinion, especially as it relates to greenhouse gases and climate change. Californians cheered the passage of AB32, California's Global Warming Solutions Act, as a positive step toward cooling the Earth and clearing the air but few know how it works. Will it really reduce greenhouse gases? And why is California heading in a direction that, as many say, gives the right to pollute for a price?

The explanation begins with the climate change policies we are developing. The Kyoto Protocol, adopted by nearly 170 nations -- but not the United States -- established the first regulated carbon market. AB32 is expected to lead to the creation of a carbon market in California. Some activists, notably the Climate Protection Campaign, have even argued for personal carbon budgets (i.e., individual limits on greenhouse gas emissions).

This carbon market, sometimes referred to as "cap and trade," does allow pollution for a price. But it limits the total by issuing (by fiat) maximum greenhouse gas emissions or by auctioning these pollution rights. Either of those actions creates a market where emissions permits can be traded.

At first glance, a carbon market is like most other commodity markets, such as oil or wheat, or a consumer market for food, cars, MP3 players, and so on. Sellers offer a product at a price, buyers offer to buy, and a market with fairly stable and predictable quantities and prices emerges.

Critics of carbon markets object mostly on philosophical grounds, arguing that we can't put a price on clean air, clean water or slowing climate change. Instead, they advocate regulation. But history has shown that regulation typically costs much more and may lead to poorer results. For example, the acid rain trading program (a cap-and-trade system to control sulfur dioxide emissions from power plants has achieved program cost savings estimated at up to 65 percent compared with a purely regulatory approach.

So the question is, how will a carbon market reduce greenhouse gas emissions? Some critics, in fact, suggest that a carbon market won't reduce emissions.

AB32 sets an economy-wide cap on greenhouse gas emissions in California. In addition, individual entities will face annual emission caps. Let's assume a very simple world with only two companies (called simply Company A and Company B), each with an emissions limit of 100 tons of carbon dioxide, the major greenhouse gas. In the first year, economy-wide emissions are 200 tons.

Obviously, in this first year, there is no required reduction in greenhouse gases -- we simply maintain the status quo. But in subsequent years, because AB32 calls for declining economy-wide emissions, each company will be forced to reduce their emissions. Without that economy-wide cap and reduction, critics would be right: the carbon market would result in the trading of greenhouse gas emissions, but no overall reductions in pollution.

The overall reductions required by AB32 are substantial: a return to 1990 emission levels by the year 2020, about a 35 percent reduction from where we are today when we include anticipated economic growth. In this simple example, each company must cut 35 tons of emissions, or 70 tons total. Both companies would likely begin to reduce their own emissions by installing solar panels, buying biogas digesters, improving insulation, and other emissions-reduction measures. In fact, each will try to reduce as much as possible because failing to reduce will result in stiff financial penalties. In Europe's system, for example, the penalty for failing to meet targets is about double the market price for a credit for one ton of carbon dioxide, and it jumps to five times that price in 2008.

Assume that Company A reduces its emissions by 50 tons, more than it's fair share of 35 tons. Assume also that Company B falls short, reducing only 20 tons. (Company B probably fell short because the costs of reducing were far higher than for Company A.) Since Company B has missed its reduction target, it must purchase the extra 15 tons from Company A. In the end, Company A is rewarded, and Company B is penalized.

Under a regulated approach, Company A would have stopped reducing at 35 tons. And Company B would have either been forced to reduce 35 tons (rather than 20) or face large fines. That regulated approach may have led to the same result, but the total costs to society would almost certainly have been higher.

Here's the key point: Each company has a financial incentive to reduce as much as possible. That incentive will remain as long as overall reductions are required.

And here's another key point. As long as there is a declining cap, a carbon market will reduce greenhouse gas emissions more than a regulated approach, and those reductions will cost less. That market does put a price on pollution. However, contrary to criticism, this market makes polluters pay more while the good guys pay less. And that is exactly the approach needed to beat climate change.

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