

## The Limits of Carbon Pricing: Can High Prices Alone Cut Emissions?

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We place too much faith in pricing as a singular mechanism for solving environmental problems in this country. The most vivid example is the call to create a price for carbon as the solution to the climate change problem. As the logic goes; if we set a price for carbon high enough, innovators will create new gadgets that emit fewer greenhouse gases, investors will invest in them, companies will adopt them and consumers will buy them.

But, not so fast. We are not like some sort of mice chasing a piece of cheese whenever it is placed in front of us. Unlike mice, we are not so singular in focus. We actually care who is placing the cheese and we may even ignore the cheese if it is not placed in the right way.

In short, pricing is never contextually or politically inert. Contrary to what many would like to think is a quick fix, a price for carbon is but one tool that must be accompanied by others to make sure that markets respond effectively and efficiently. Put too much faith in pricing as the only answer and success will be either elusive or found through sheer luck.

Consider the gasoline price spike of two summers ago. The market responded efficiently with the sales of gas-guzzlers dropping like a stone and consumers flocking to their fuel efficient neighbor. Pricing worked! But consider an alternative scenario. Imagine we faced the same price spike, but instead of its cause being the invisible hand of the market it was the very visible hand of a government gas tax.

Would consumers have been so pliable? Would auto suppliers have been so flummoxed? No, unlike our friends in Europe who accept government inflated gasoline prices, there would have been widespread revolt with defiant customers and auto execs remaining intractable.

Consider another example. In 2002, the Irish government instituted a 15 cent fee (aka tax) on plastic grocery bags. Within one year, plastic grocery bag use dropped by 94 percent. Score one for pricing-induced behavior change! Well not entirely. Unlike the experience in many US cities that are trying to institute similar initiatives (for example, San Francisco), the context in Ireland was ripe for the "[plastax](#)."

The reasons, in no particular order, include: there are no plastic bag manufacturers in Ireland to mount an organized opposition; there is no problem of leakage from neighboring countries or states that did not have a similar tax; almost all markets are parts of chains that are highly computerized with cash registers that already collect a national sales tax, so adding the bag tax involved a minimum of reprogramming; the country has a young, flexible population that has proved to be a good testing ground for innovation, from cell-phone services to nonsmoking laws.

In fact, the country was primed for change having just shifted from the Pound (or Punt) to the Euro; and people generally didn't mind paying the tax as the litter from the bags was seen as a common nuisance. All of this led up to the development of a norm that it was socially unacceptable to be seen carrying a plastic bag. In fact, it was downright rude, with violators being treated much in the same way as someone who did not curb their dog.

What does all this have to do with carbon pricing? Plenty.

Markets respond to pricing, sometimes. McKinsey and Company has developed what has become a very well known analysis called a "[Cost Abatement Curve](#)" for reducing Greenhouse gas emissions. The curve shows that many greenhouse gas reducing technologies are cost effective today. Most of these technologies are within the construction industry - insulation, lighting, water heating, etc. And yet, many of these technologies remain unadopted.

Why is that? Well, of all industries, the construction is one of the slowest to change. Inertia rules the day - particularly in the small and fragmented home building sector - as the way we've done things becomes the way we will do things. And even if a contractor decided to take the risk of installing something new and unfamiliar (such as greywater systems) he or she would face the risk of a bank refusing a loan on "unproven" technology, the building inspector balking at its novelty or the customer requesting a callback if it doesn't work.

And that assumes that the customer knows enough to even want it. Whirlpool once considered taking the [Energy Star label](#) off its washers because consumers thought that if it used less water and less energy it must not clean as well. Today, the company still finds consumers who will balk at buying the super efficient washers at as much as a \$700 price premium even though an average family of four can get that money back in less than 2 years in some parts of the country.

This is not uncommon. After all, we are talking about human behavior here. And while pricing is one factor in driving that behavior, individual psychology and social norms also play an enormous role, something that is often overlooked when politicians work to develop economic policies to reduce greenhouse gas emissions. They are just too messy and too hard to consider. Pricing is simple and relatively straightforward (the debate over a cap-and-trade system notwithstanding).

So, as politicians consider how to create the proper price for carbon, they must consider other instruments for breaking down the inertia of the market. The government can stimulate markets through its huge purchasing power (The Clinton Administration was instrumental in jump starting the paper recycling industry by mandating that government agencies buy recycled paper). It can stimulate innovation through its R&D labs. It can mandate change through Renewable Portfolio Standards. And

it can make me or the farmer down the road into energy entrepreneurs by establishing Net Metering or Feed In Tarriffs.

While economics can get us started on the path of shifting markets, the behavioral and social sciences (psychology, sociology etc) can help us understand the inherent humanness of markets. President Obama understood that his challenge in averting a financial collapse was as much psychological and sociological as it was economic. So too is the challenge we face over climate change. We need to consider a suite of policies that must accompany a price for carbon to shift the market and achieve our climate goals.

Note, on the area this topic, there will be workshops on Addressing the Challenges of Climate Change Through the Behavioral and Social Sciences, organized by the National Research Council's Committee on the Human Dimensions of Global Change and with support from the William and Flora Hewlett Foundation. The first of these will be held on December 3-4, 2009 at the National Academy of Sciences, 2101 Constitution Ave, Washington DC.

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