

Putting Knowledge Into Action



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Getting the Rules Right: Carbon Market Design

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The debate on climate change at the U.S. federal level is on, but the real action is now at the state level regarding greenhouse gas market design. This is not such a bad deal, as the same thing happened in SO₂ (acid rain) and NO_x (ozone) trading markets. The states began the process and because of all the confusion, these markets were federalized. But I think this time the states may build a better mouse trap that the federal government can emulate. With talk of up to 50 climate bills in Congress and a straw man recently raised on carbon taxes, the federal efforts are dogged by politics and special interests. To reach consensus seems many years off, despite talk of President Bush doing a “Nixon goes to China” on climate change. The real action is now at the state level for carbon market trading and finance.

Let's then look at the states and find out what works and why California may be leading the pack. The reason I say this is that European entities active in carbon markets in London and the continent are now setting up shop in California. I call it the California Carbon Rush!

To a lesser extent, we have another market in Northeast U.S. under the Regional Greenhouse Gas Initiative. But it only impacts electric utilities and in effect, mimics the highly successful cap and trade market for SO₂ allowances which began in 1995. That market begins on January 1, 2009.

Market Design 101

There are basic elements of market design that must be created for a viable regulatory policy framework for cap and trade carbon markets. The first step is to base the program on an accurate measurement of the carbon footprint of a company. Second, keep the program relatively simple and do not micromanage the process. Third, make the program economy-wide, not just electric utilities like RGGI. Fourth, establish defined targets over multiyear and have compliance standards that have to be met with financial penalties. Fifth, do not over auction the program and instead allocate with a possible 25 percent

auctioning provision. Finally, create a permit based system for source or facility reporting, monitoring and enforcement.

Making the rules clear and easy to understand gives markets simplicity, which is easier for replication of trade, and does not allow changing them like the EU ETS phase one reallocation program. There is also a need to create incentives to foster GHG reductions in other geographic areas. Emissions allowances can be banked for other vintage years. Use the existing infrastructure and expertise to run, operate, monitor, and inspect facilities.

None of the above is an easy exercise, but getting the rules right leads to market liquidity.

What California Has Done Right and Wrong in Market Design

California's climate exchange law AB 32 is not perfect but it has many of the design elements needed for success. The long-term goal of 25 percent emissions reduction to 1990 levels has set the bar high for GHG reductions, especially since California is also the most energy efficient state on a per capital basis. California also has a Renewable Portfolio Standard of 20 percent, which means that investor owned utilities in the state must purchase that percentage of renewable energy by 2010. This standard may rise to 33.3 percent by 2020. The state also has a \$2.9 billion solar subsidy to deploy solar technology throughout the state as a means to drive down costs of solar installations. Finally California's Public Utility Commission has pursued ongoing demand side (energy efficiency) programs now called demand response. These elements and the fact that the regulatory structure is working together forebode the creation of a vibrant greenhouse gas market.

The design elements in California are as follows: the voluntary reporting on the California Climate Action Registry (www.ccar.org) will become mandatory on January 1, 2009. This is an important element in emissions reporting for the state. Emissions caps are currently being developed by the California Air Resources Board for each industry sector. The goal is a 175 million tonne emissions reduction by 2020.

So far, the biggest mistake has been the pursuit by the California Public Utility Commission (CPUC) of load-based emissions caps. This adds too much complexity to the program. The load-based approach is not suitable for creating allowances with sufficient integrity that they can be traded under enforceable emission limits. Why? Because load-based emissions can't be measured accurately, can't be verified, can't be enforced, and won't be tradable allowances. The reason for this overly cautious approach from the CPUC is the fear that their market design efforts repeat the failure of the California electricity markets of 2000 and 2001 which bankrupted investor-owned utilities in the state. This error can be corrected as the market for GHG does not become fully implemented until January 1, 2012.

RGGI in the East

The Regional Greenhouse Gas Initiative in the Northeast begins a GHG market on January 1, 2009. This impacts all electricity generators of 25 MW or more and calls for a 10 percent reduction in emissions below 1990 levels by 2020. RGGI mimics the SO₂

allowance program and promises to be highly successful. The only issue becomes when will utilities buy their allowances as RGGI is now following a 100 percent auctioning program which is substantially different from the 100 percent SO₂ allowance allocation program administrated by the U.S. EPA. Auctioning has become popular since state agencies can get paid for the allowances sold, and state agencies are already budgeting those revenues in their budgets for 2009 and beyond, so it is unlikely that allowances will be issued freely. RGGI does not target other industries, mobile sources or buildings which all contribute to GHG emissions in the Northeast. Nevertheless, it promises to be a successful yet modest program.

Why Getting the Rules Right is Important

U.S. industry plans on long-term time horizons. In making the investment in cleantech and emissions reductions strategies, there is a need that standards are going to be mandated. The fact is that industry needs time to retool for investments in new plants and equipment. Those investments are substantial, and will deploy technologies that last for many decades. Distorted market signals, like price caps, distort not only the market but investment plans.

Today, research and development by energy companies is only \$4 billion, and the scaling of investment by cleantech venture capital, some hedge funds, and private equity players is just beginning. These actors in financial markets are less risk adverse than energy and utility companies. What I see are trade sales or exits of the new cleaner energy technologies by the major energy players. They clearly are not going to create many of these new technologies. They will buy them and deploy them.

Pragmatic regulation is not a bad thing. When industry knows the long-term rules such as the California implementation plan, industry will comply with the law. It will not do so in any great degree voluntarily despite all the current hoopla on carbon neutrality. The major reason we have a voluntary carbon market today has been the policy vacuum on greenhouse gas reductions at both the federal and state levels. The states are moving to rectify that problem. Clearly defined market rules are essential to deploy these new technologies. Emissions trading, under cap and trade regimes, is only a facilitator to deployment of cleaner technologies. We all benefit from “getting the rules right.”

Greenhouse gas markets are the most complex commodity markets ever created. During the past year, in my carbon market webinars and seminars, I have seen this market reach Fortune 1000 companies in the United States. Most companies outside the energy industry do not know their carbon footprint. There are issues on the 1990 baseline emissions for much of the U.S. industry, but none collected the data then. These are not trivial issues. The requisite skill set to create this market requires public policy knowledge, engineering solutions, and trading acumen. These are distinct skill sets. The learning curve will be steep but the market-based solutions approach will deploy hundreds of billions of clean technology and create a new economic area for wealth and job creation. It's time for the heavy lifting to begin!

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