

Putting Knowledge Into Action



April 10, 2007

Focus on Carbon Market Developments 2007

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2007 has become the breakthrough year in U.S. carbon consciousness. The realization that U.S. multinational companies fall under the Kyoto Protocol in 169 nations, coupled with state lead initiatives on both the East and West Coasts, have now crystallized Congressional attention on the issue of global warming. The recent U.S. Supreme Court ruling on greenhouse gases adds a further impetus for the United States to take action on climate change this year. While there are almost as many bills as people running for president, the stark realization is that both the House and Senate do not understand how to craft legislation that shares economic burdens. Sharing the burden is only one issue. Legislation must also create economic incentives to deploy carbon reduction technologies in the markets, and create long-term federal standards on cap and trade that achieve significant carbon dioxide reductions without a price cap.

California has the right market approach. They are planning a 25 percent reduction by 2020. This provides a long-term solution and time period for the industry to achieve that goal. It does not, however, put all of the burden on electric utilities, such as the Regional Greenhouse Gas Initiative in the Northeast which will only produce a 10 percent reduction by 2019. That plan is too modest and too burdensome on electric utilities, as it basically modeled the successful acid rain program.

The reality is electric utilities are not the only source of greenhouse gases. Mobile sources, automobiles, trucks and airplanes also impact the environment, as do other industrial facilities and buildings. When it comes to real environmental goals, we must first look aggressively at all sources of pollution and focus our attention on energy efficiency as the most economic means to achieve that goal. Secondly, we have to face the reality that carbon emissions in the United States are actually going up, not down, due to the increased energy consumption of fossil fuels. That means SUVs and big energy-consuming homes impact the environment in a myriad of ways. The U.S. carbon footprint is growing and now the Federal government acknowledges that emissions will rise 19 percent by 2020 from the levels recorded in 2000.

Reality Versus Rhetoric

Emissions are not going down despite all the noise about biofuels, ethanol, the hydrogen economy, and the sounds we continue to hear emanating from Washington D.C., until we deal with the long term problem of how we use energy. **There is no quick fix.** The technology will come from multiple places (see chart below), and that technology will impact every sector of the U.S. economy. If you let engineers loose to attack a problem, they will inevitably come up with more ingenious solutions than can be imagined. The problem of climate change is so vast and complex that the opportunities to achieve emission reductions are overwhelming. In fact, if we looked at this problem holistically, we would see that it took us three decades to get deeper into this current issue, and it's going to take us 50 to 100 years to resolve it. The real focus is on the term "incrementalism," which means a little bit at a time. A little energy savings here and there will add up to real savings over time. The attention, therefore, needs to be refocused on long term provisions and not on political palliatives that mean less than nothing, and are quickly forgotten into the media vortex which is now hot for anything green.

The technology opportunities are vast and all encompassing on how we use energy and they include the following:

- Alternative Energy
 - Solar
 - Wind
 - Hydro, Tidal & Wave
 - Geothermal
- Bioenergy & Ethanol
- Distributed Energy
 - Microturbines
 - Fuel Cells
 - Hydrogen Generation
 - Flywheels
- Energy Recycling
- Waste-to-Energy
- Energy Efficiency
 - Lighting
 - Buildings
- Battery Technology & Energy Storage
- Medical & Biological Technology Cross Overs
- Environmental Technologies
 - Water & Wastewater Treatment
 - Clean Coal Gasification
 - Emissions Mitigation
- Information Technology
 - Net Metering & Real-Time Pricing
 - Demand Response
 - Remote Sensing

Source: Global Change Associates Inc.

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Markets Like Simplicity

Make the rules clear, consistent and easy to understand. Establish emissions allocations at the offset (do not revise them like Phase One of the EU ETS did), and include an emission banking feature to the program. Finally, make it long term, like the SO2 program. To craft economically viable and workable carbon markets is not rocket science. There is too much concern on the minutiae such as carbon intensity targets. What politicians in Washington need to craft are broad strokes that set appropriate long-term timelines with financial sanctions for non-compliance. This means no price caps, which are always disincentives for market development. 2020 is the first target and moving forward to 2030, 2040 and 2050 and beyond is the long term goal. This timeframe will give American industry the time to implement new technology and reduce the carbon footprint. We need to reverse the trend of higher greenhouse gas emissions now. Energy efficiency seems to be a no brainer. We are the most energy inefficient developed country on the planet, consuming 25 percent of oil production and have an installed base of over 900,000 MW (The PJM grid is larger than all countries in the world save two). It's the scale of the U.S. economy that matters. We can afford this. In my opinion, won't cost more than \$30 to \$40 per ton of CO2 reductions, and it will create new industries.

We Can Do This Fast

The good news on climate change is that once the United States decides to do something, it will be done faster than anyone would imagine. I am looking at a constant flow of new technologies that reduce the carbon footprint and run the gamut from the upstream oil and gas sector to electric utilities to ocean energy (Blue Energy). We live in a time of continuous technology improvements coupled with the fact that the technology will come from everywhere, especially with so many scientists and engineers focused on this worldwide problem. Do not underestimate the power of ingenuity married to capital markets. Just get the regulatory framework right and this market will accelerate!

Peter C. Fusaro has worked on climate change issues for 17 years and holds the annual Wall Street Green Trading Summit in New York each spring.



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