

Putting Knowledge Into Action



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Carbon Trading is the Missing Link in Cleantech Investment

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Entering a carbon constrained world will take time because transforming the U.S. economy is very complex. Unfortunately, many Americans lack patience and expect quick fixes to our energy and environment problems. They don't exist as it took decades to create the problems and will take decades to fix them. More importantly, time is necessary to develop, deploy and scale the roll out of environmentally benign technology. California's Silicon Valley has learned that the energy and environmental crisis is not an IT solution and has now undertaken the learning curve that is necessary to understand the complexity of the world's largest business called energy. It is a \$5 trillion business and will require what Enron called "iron in the ground" and advanced engineering and technology solutions which will require hundreds of billions of dollars of capital investment. The emerging carbon markets are now bringing an uplift to cleantech investment, and as a colleague in cleantech has mentioned to me carbon is the "missing link" in accelerating clean technology deployment.

In California, we are seeing the catalyzing effect of its mandatory 25 percent greenhouse gas emissions cut by 2020, coupled with large scale solar and energy efficiency initiatives. To a lesser degree, the more modest Regional Greenhouse Gas Initiative (RGGI) in the Northeast, which cuts emissions by 10 percent by 2020, is moving electric utilities to look at their carbon footprint as well. Mandatory federal standards on carbon dioxide emissions are a question of "when" not "if" anymore, and sooner would be better than later. Carbon constraints are beginning to incent the market to deploy better and more efficient clean energy technology. Much of this investment is now seen in over 60 carbon funds globally that are investing in clean energy projects.

From this historical and institutional perspective, the need is now for a more long-term energy and environmental policy that is not dedicated to a trendy focus on biofuels, Future Gen and hydrogen economies or highways. While a palliative to politicians, these solutions offer no long-term solution on how the United States uses energy, and how it needs to transition to a less carbon intensive economy. They actually mask the true

dimensions of the energy and environmental problem which is obviously a major investment opportunity as well. This theme is just starting to resonate on Wall Street as it begins to cover this sector and is already of major interest by many investors.

The United States burns up 9.7 million barrels per day of gasoline in the summer, an all time peak. A more sane solution would be to create more market-based incentives for the rapid deployment of both hybrid cars and trucks as well as next generation plug-and-play hybrids plus implementation of fuel economy standards. Mayor Bloomberg is following this approach with a mandate for hybrid taxi cabs in the New York City for example. These types of initiatives would clip gasoline demand by four million barrels per day instead of pushing a listless “alternative fuels” platform that is more hype than reality and will waste tens of billions on finding the holy grail of “alternative fuels.”

The U.S. Infrastructure Gap Widens

These same flawed arguments for alternative fuels were heard about compressed natural gas (CNG) in the late 1980s. Advocates for CNG crowed about how CNG would power America's cars and trucks, but that didn't move the needle. CNG today is used mostly for buses and fleet vehicles totaling 150,000 vehicles compared to 250 million vehicles in the United States using gasoline and diesel fuel. CNG failed to capture the fuel market because there wasn't any credible distribution infrastructure. This “infrastructure gap” is also the fatal flaw for both the “hydrogen highway” and biofuels. Without the infrastructure the product can't be moved and marketed. The reality is that we have a gasoline and diesel fuel infrastructure in place that cost hundreds of billions to build and maintain. Deal with that reality or alterative scenarios won't fly.

Delving more deeply to U.S. infrastructure problems, we see that today the United States is underinvesting \$1.6 billion in our energy, water and telecommunications infrastructure. It is just not considered attractive in Washington to talk about these basics. Our infrastructure is crumbling and needs reinvestment. Why not marry that opportunity to greener technology choices? Moreover such a reinvestment strategy will create jobs and new businesses for Americans in engineering, construction, financial services and other venues. This would be a good way to close many gaps. It would be a **net** gain for the economy instead of the specious argument that environmental remediation hurts the economy.

Incenting Greentech Now

To make our economy greener, we first need a regulatory policy framework on climate change ([IssueAlert May 9, 2007](#)). We are inching closer to that goal at the federal level, but it is evident that the states have moved first. The next step will be to let the markets work their magic by incenting innovation. Mandatory carbon “Cap and Trade” will do that, and credible financial penalties need to be in place for confronting noncompliance, just like we have done with the acid rain program.

The acid rain program took a financial instrument from the mortgage-backed securities market and applied it to air quality. We created a commodity called SO₂ allowances. We did not offer a “safety valve” for industry and created the economic pain of “what the market will bear” to incent the electric power industry to invest in remediation. Carbon

dioxide emissions are now following that same commodization path but are on a global scale this time.

Establishing viable markets take time as do most energy projects which take four to seven years to implement. We also need to look seriously at making significant energy efficiency improvements in buildings, which also have a significant carbon footprint. However, since most energy efficiency in building design and green buildings is associated with new construction, we need to incent the building retrofit market once again to deploy more existing, energy efficient technology and attack greenhouse gas emissions in our housing and commercial building stock.

Carbon Markets are Growing & More Funds are Forming

Today, the global carbon footprint is 27 billion tonnes of carbon dioxide emissions and that is growing by over one billion tonnes per year as more fossil fuels are consumed. The Kyoto Protocol was the start of an attempt to limit greenhouse gases to 5.2 percent by 2012, but we know now that this target will not be met. The United States emits 22 percent of the world's greenhouse gas with China second at 18 percent and set to pass the United States soon. On January 1, 2008, we will see the beginning of the real global greenhouse gas market. U.S. multinationals will be taking part in that market in 172 countries under the Kyoto Protocol. This should help to speed up the development and introduction of the cleaner and greener technologies and infrastructure improvements needed. Today, there are over 60 carbon funds that are spurring investment in cleantech and less carbon emitting technology. Many more are emerging.

On the investment side of the equation, there will be an “environmental or carbon kicker” will reduce capital costs and generate greater deployment of clean technology across the energy value chain. The monetization of carbon and other emissions reduction credit streams through innovative deal making and carbon finance will create even more long-term clean energy projects. These will generate credits for several decades.

The rationale for investing hundreds of billions of dollars on clean energy technology will be pushed forward by formal U.S. carbon standards. The capital is already there. What's lacking is the U.S. regulatory framework to make this market soar. Going further, emissions trading will prove to be the “missing link” in cleantech investment. The point is that marrying cleaner technology with carbon reductions is where the markets are heading. Today cleantech investment in the United States is \$9 billion and rising. Carbon trading globally is \$30 billion and rising. Money talks.

Now Poised to Accelerate Investment Flows

Carbon is the new gold, and the missing link in cleantech investment. The world is already moving to the much talked about carbon constrained world but that means transformation in transportation, power generation, industrial processes and building infrastructure in the United States and globally. We are going to see a \$3 trillion carbon commodity market in trading and probably a larger market in energy investment of \$20 to \$30 trillion in the next 25 years. That excites investors. This is just the beginning of a major market transformation. It is the “greening” of the \$5 trillion energy business and will take decades to implement. But we have to start now!

Peter C. Fusaro is holding a “Carbon Trading and Finance” seminar with Pillsbury Winthrop LLP on July 17th in San Francisco (go to www.energymediagroup.com) to learn more on the linkage of cleantech and carbon trading and finance.



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