

*Putting Knowledge Into Action*



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## **Cleantech and Emissions 2.0**

*By Peter C. Fusaro  
Chairman, Global Change Associates*

As 2007 has begun to roll along, I am experiencing a bit of a carbon trading snowball. Having preached the value of "green trading" for over a decade, it is somewhat of a surreal experience to be "discovered." What I have basically been saying is there cannot be dual environmental standards for the United States and the rest of the world. That message has arrived in 2007! The calls are from the airlines, nanotechnologists, headhunters, cleantech venture capital, hedge funds, private equity, Europeans, the Japanese, and others. They all want to know what is carbon trading and finance? How will that impact my business? What should I be doing about it? Where is government regulation in this arena?

### **The United States Finally Blinks**

The point is that the 800 pound gorilla on the climate change issue, the United States, has arrived in the carbon constrained world. There is some anxiety about what to do, but more interest on what investment opportunities are there out in Kyotoland. So, while the United States is not part of Kyoto, multi-national U.S. businesses are. Beginning January 1, 2008, they are falling under the Kyoto umbrella with 169 countries participating in the protocol that's just about everyone but the United States and Australia. Now, with Congress seriously debating the issue of climate change and states on both coasts charging forward with their own climate change regimes (California has its own regulatory framework and 12 states in the U.S. Northeast are involved in the Regional Greenhouse Gas Initiative (RGGI for short). Even TXU has accepted its green fate as it is now to be acquired by private equity funds that are green, and is canceling much of its proposed coal plants and will push a greener future in doing business. The capital markets have spoken, and they want greener corporations. After all they lend for project finance, invest their own capital, and trade emissions.

## **California is a Hot Bed of Green Activity**

I just completed a very interesting seminar linking cleantech venture capital and emissions trading/renewable energy in San Francisco. The audience was rather varied and international, and it included venture capitalists, public and private companies with new technologies, hedge funds, Native Americans, government and the press. The greentech, or cleantech, revolution that resides in the San Francisco Bay Area is pushing an all green environmental agenda that wants to scale new technologies now. Emissions trading and carbon credit monetization is an outlier in how to reduce the cost of capital for new technology projects. These folks understand "Green Finance," and they are starting to recognize that the greenhouse gas problem and opportunities are immense. What they are just coming to grips with is the scale of capital needed in energy investments.

Ironically, just when investment for the future should be accelerating, it is actually static or declining. The energy industry is woefully under spending in its transformation to a carbon constrained world with an annual research and development budget of \$4 billion in the United States. The U.S. Government, which would normally be proactive in this space, unfortunately has a total budget of \$7.5 billion according to the President's Office of Management and Budget (OMB). These monies are mostly tied up to pork barrel programs on clean fuels (read ethanol) or clean coal (read FutureGen). The bottom line is that the capital is going to come from the private sector, but not the energy industry or big government. The private sector will be engaged in the investment to constrain greenhouse gas emissions for the United States and the rest of the world. The deep pools of capital include family office, university endowments, hedge funds, private wealth, private equity and others. We've only just begun this process.

What is now occurring in Silicon Valley and other venture capital pockets, like 128 areas in Boston, is the realization that the scale of investment for the energy industry is massive. Hundred million dollar solutions require scale. It is not the corn-based ethanol mom and pop plants that are the flavor now. It is multi-billion dollar investments with four to seven year time horizons. The venture business is now starting to realize this, and capital deployment will escalate from hedge funds, but most probably private equity funds will provide the bulk of the investment needed. These private equity funds are now raising their tens of billions of dollar war chests with the energy industry in its sights (TXU is an almost \$40 billion play). Green investment will require that much money for transportation, power generation, energy management, bio-energy, chemical energy technologies, alternative energy, and the like.

## **Carbon Rising as a Financial Issue**

The carbon overlay to this investment opportunity is a potential \$3 trillion commodity trading market. It is now doubling outside the United States every year and was \$25 billion for 2006. When the United States enters this market, and that is shortly, there will be an uplift in U.S. equity prices alone. In fact, Wall Street is beginning to revalue companies on their greenness. This greenness also refers to money.

Let's see: we have a \$3 trillion energy commodity market that is growing, a potential \$3 trillion emissions market, multi-hundreds of billions of dollars in capital investment, no quick fixes like "ethanol," and a global scale of opportunities. I think that we have now entered a world of continuous technology improvements in reducing greenhouse gas footprints and that technology will come from everywhere including India, China and South Africa in particular. The emissions markets are actually the missing link in that this system of international emissions trading which will link all markets and facilitate more rapid technology transfer of more environmentally benign technology. The United States is about to enter this global market at full tilt. Watch out for unexpected and unintended consequences. The greener world is being created before our very eyes. It's about time!

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Peter C. Fusaro has been on the forefront of energy and environmental change for 32 years, and runs the annual Wall Street Green Trading Summit in New York each spring ([www.hedgeconnection.com](http://www.hedgeconnection.com)).



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