

The Green Power Fund: Carbon Negative Technology for Sustainable Development

Background Information:

This event examines how a Green Power Fund would aid the rapid transition to a renewable energy economy. Panelist Graciela Chichilnisky proposed a Green Power Fund at COP 15 in 2009, where it was soon supported and announced publically by Hilary Clinton in a modified form as the “Green Climate Fund.” However, the mechanism to fund the “Green Climate Fund” remains uncertain. In contrast, the Green Power Fund would leverage the existing carbon markets to direct up to \$200 billion year of private and public capital to finance carbon negative power plants in developing countries. It will invest only in investment-grade firms building negative carbon power plants based on Power Purchasing Agreements (PPAs or Off-Take Agreements) that are paid over time by the Kyoto Protocol CDM in Africa, Latin America, and Small Island States.

The Carbon Market Has Had a Significant Impact to Date, but Needs to be Expanded

The global carbon market established by the Kyoto Protocol and authored by Professor Graciela Chichilnisky has had a tremendous impact in addressing climate change and promoting sustainable development to date. The Kyoto Protocol has already funded US\$50 billion in clean technology projects in developing nations through its Clean Development Mechanism (CDM), and these projects have decreased carbon emissions by the equivalent of 40% of EU emissions.

As impressive as the numbers are, the carbon market and its CDM need serious improvements. The majority of all CDM projects are implemented in China and in India, with very few projects in Latin America, Africa, and Small Island States, where the funding could have in the greatest effect on development and future emissions. Why this bias?

The reason is simple. As currently designed, the Kyoto CDM supports projects that reduce *existing* emissions. China and India have huge emissions to reduce – the two of them together exceed 20% of the global human emissions of carbon. By contrast, Africa, Latin America, and SISs currently emit little: Africa emits 3% of global emissions, Latin America 5.5%, and the 43 Small Island States a mere 0.3% of global emissions. The arithmetic is clear: since they emit so little, Africa, Latin America, and the SIS attract little CDM project support.

Carbon Negative Technologies Can Dramatically Expand the Impact of the Carbon Market

How can we use the CDM to support clean projects in Latin America, Africa, and SISs? The solution is simple and radically new: *Negative Carbon Technologies*.

Negative carbon technologies capture more carbon than they emit. One example is provided by Global Thermostat (GT), a new company which Professors Chichilnisky and her Columbia University colleague Dr. Peter Eisenberger (noted physicist, ex-Bell Labs researcher, and founding Director of the Columbia Earth Institute) co-founded in 2006. GT created carbon negative technology to capture carbon from the air, transforming a fossil power plant into a net carbon sink: for example, a plant that emits 1 million tons of CO₂ annually becomes a 1 million ton sink using GT carbon capture technology. The GT process uses residual heat in a power plant, called ‘process heat’, to cogenerate CO₂ capture with electricity. In this way, the more electricity one produces, the more carbon one reduces. GT is not just for fossil fuel plants – it works with any source of heat to capture carbon from air, and can accelerate the transition to renewable power plants. With GT cogeneration, renewable

power plants such as concentrated solar plants (CSP) become more profitable as larger carbon sinks. The captured CO₂ need not be buried; it can be fed to algae to produce gasoline and clean water.

A Green Power Fund Can Accelerate the Adoption of Carbon Negative Solutions Worldwide

2012 is the year of Sustainable Energy for All, with the objective of ensuring universal access to modern, sustainable energy services for all. The private energy sector is, in terms of emissions, the biggest problem, but is also the key to reaching this objective. A Green Power Fund can speed the transition to sustainable energy worldwide, by reducing current emissions and avoiding future emissions.