

National Journal

Are We Ready To Act?

By [Graciela Chichilnisky](#)

Director, Columbia Consortium for Risk Management, and Professor of Economics and Statistics, Columbia University

Extreme weather events — including droughts, wildfires, and heat waves — have indeed thrust the topic of climate change into the limelight. Some influential climate experts from the American Meteorological Society - explicitly link now some extreme weather events with climate change in their official publications. This is a scientific breakthrough. The *New York Times*' David Leonhardt wrote an interesting article [also saying](#) that despite the odds, the nascent renewable - energy industries are thriving as costs continue to come down - although Leonhardt curiously fails to link this change to the Kyoto Protocol carbon market that puts a price on carbon, making dirty energy undesirable and more expensive than clean energy, which becomes more profitable. This is why clean energy is gaining momentum now. The United Nations Kyoto Protocol carbon market is now trading \$200 Bn/year as of the end of 2011 and has funded much of the world's innovation in clean energy. China is the recipient of \$50Bn in UN Clean Development Mechanism Projects, and became the largest exporter in solar and wind energy equipment in the world since the Kyoto Protocol and its carbon market became international law in 2005.

We are in the eye of the storm. Major change always happens in a ragged and somewhat confusing way - it is not a smooth transition that is clear to the observer. And there is more change than meets the eye. The carbon market is now mandatory in four continents: EU, Asia, Australia and the Americas (Canada and now also in the USA, California). As the author of the carbon market of the Kyoto Protocol I applaud these regional carbon market developments which are starting to converge -- due to what economists call "no arbitrage" conditions. The carbon market provides healthy economic incentives for clean energy - and a market mechanism to put a fair price on carbon emissions - thus changing the use of energy and therefore the production of all goods and services in the world economy in the right direction.

And yes, an overarching agreement including the United States and other parts of the world is needed to address global warming to cut global greenhouse-gas emissions. The Kyoto Protocol's limits were to expire in 2012 - but were extended in Durban COP 17 to 2015 together with a mandatory agreement to continue globally after 2020. The Protocol itself remains as international law. A pioneering overarching global agreement was the Kyoto Protocol in December 1997 and a global extension is on the way. In Durban South Africa December 2011, parties of the United Nations Climate Convention on Climate Change - which includes the US - adopted the Durban Platform for Enhanced Action, which launched a new round of negotiations aimed at developing further the Kyoto Protocol or otherwise a legal instrument for mandatory limits of global emissions by the nations of the world - which is the essence of the Kyoto Protocol. This Platform was voted by the nations at COP17. Once a mandatory limit on emissions is set for all nations the natural next step is to allow flexibility for overemitters to buy credits from underemitting ones. In this process the global limits are preserved. This is, in essence, the carbon market I designed and wrote into the Protocol in 1997. It is now trading \$200 Bn/year and growing branches all over the world.

What else is needed in order to spur more concrete action on this front? Is a carbon tax possible, both politically and economically? What other options should be on the table?

A carbon tax is possible and desirable at the national level - and it tallies well with the global carbon market. In fact any national solution to limit emissions works well with the Kyoto Protocol's limits. But at the international level - where global emission limits are needed - a carbon tax is nearly impossible. Think of it this way - who would be able to collect taxes from the nations of the world - would we need to create a global tax authority? This is not likely to happen in our life time. The carbon market is much more flexible than taxes and achieves something that taxes do not achieve: it limits strictly global carbon emissions. This is why the global carbon market will continue to flourish - having achieved in 2011 \$200 Bn of annual trading the carbon market is expected to become the largest commodity market in the world. Not bad for a market solution that we created in 1997 - and which became international law only in 2005.

Despite all these advances, the reality today continues to be grim. We have procrastinated so long that now - rather than slowing down emissions we need to actually reduce the carbon that is already in the atmosphere. I call this a "negative carbon solution(TM)". It requires technology - no carbon market can actually take carbon from air. In Copenhagen I proposed the Green Power Fund

to implement a solution involving carbon negative technologies. This is a \$200 Bn a year private/public fund to build 'carbon negative power plants' -- particularly in developing nations of Africa, Latin America and the Small Island States. These nations can use the Clean Development Mechanism to channel the \$200 BN/year already traded by the carbon market to build carbon negative power plants that produce economic progress while cleaning the atmosphere. I proposed and published this in Copenhagen COP15 December 2009 - while I was working for the Papua New Guinea delegation, gave the proposal to Mr. Pershing of the State Department, and to Will Pizer of the US Treasury -- and my proposal was taken up by Secretary of State Hillary Clinton in the next two days, who announced it in Copenhagen COP15 as US proposed policy. It had a warm reception. The idea became a seed with irresistible growth. It was adopted in December 2011 at the Durban South Africa COP 17, now called the Green Climate Fund. The difference is that my concept of the Green Power Fund is funded by the carbon market - the \$200 Bn that is already traded - and will build carbon negative power plants. The Green Climate Fund is more diffuse as a concept: it aims to mitigate effects of climate change in general, and has no identified source for funding. In my view the two concepts will converge - the Green Power Fund I suggested and the Green Climate Fund that was voted in Durban, South Africa. How effective can the Green Power Fund be in taking the edge from climate change concerns?. It can be transformational. It is targeted to making the problem the source of the solution. The \$55 trillion global power plant infrastructure is responsible for about half of the world's carbon emissions. If these same power plants are fitted with new carbon negative capture technologies - for example that of the Global Thermostat LLC www.globalthermostat.com -- the worse offenders - the power plants - can reverse course and actually clean the atmosphere. A coal power plant can become a sink of carbon emissions if fitted with carbon negative Global Thermostat technology. And the CO₂ thus captured can be used profitably to produce synthetic fuels, plastics, to carbonate beverages and food, for greenhouses, to feed algae that produce clean fuels, to make synthetic gasoline from air and water anywhere in the world - and generally to make money. The whole thing is profitable and it creates new jobs. My response to the question is unequivocal. There is an underground swelling that is difficult to pin point but emerges in many parts of the world - new cleaner and profitable technologies, new international mandates to limit emissions, and new mandatory carbon markets across four continents that put a price on emitting carbon. As President Bill Clinton said last week at a speech in Oxford University UK - the issue now is timing. Can we move fast enough to prevent the

risk of potentially catastrophic climate change? "Nobody knows" - he said. "But when you are playing to win, you don't give up - you just keep on playing." I agree.