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## Will 21st century capitalism go green?

Graciela Chichilnisky

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**The role of economics and the future of capitalism will be to preserve our natural resources rather than destroy them but the US may be missing the message, says economist Graciela Chichilnisky**

Capitalism is transforming itself. Having caused the worst environmental excesses of the 20th century – overconsumption of fossil fuels and forests in rich nations and the attendant denuding of poor nations’ resources needed for survival– capitalism is now changing its stripes.

New global scarcities have emerged, and with them new limits on the use of critical natural resources such as air, water and energy that are key to human survival. The limits on resources are in turn creating new markets.

These new markets – for clean air, water, fossil and clean fuels - are transforming capitalism. An example is the US Clean Air Act, which put limits on the emission of sulphur dioxide by power plants, from which emerged a market that trades rights to emit SO2 at the Chicago Board of Trade. The SO2 market successfully and quickly eradicated acid rain in the US.

At the global level a similar market mechanism emerged in 1997, when the Kyoto Protocol laid limits on carbon emissions by rich nations. From these limits a carbon market was created that became international law in 2005, is now trading \$165 billion/year at the EU Emissions Trading System, and is expected to become the largest commodity market in the world. The carbon market privatizes the atmosphere of the planet, but favours the poor nations who have more rights to emit; as a result \$50 billion has so far been transferred from rich to poor nations for productive projects that have allowed their economies to reduce carbon and leapfrog into clean development strategies, avoiding the heavy industrialization followed by rich nations.

### The USA being left behind

The transformation is causing a clash between the old and the new. There is a heated political debate about whether to continue the Kyoto carbon limits after 2012. The nation that led capitalism during the last century is the most resistant to change: the US is the only advanced nation that has accepted no limits on carbon emissions, and the largest emitter among them.

Last week the US steelworkers union sued the Chinese government at the World Trade Organisation, for offering favorable credit and subsidizing land used for its clean technology industry, and President Obama plans to follow suit at the national level. In contrast, China is an enthusiastic supporter of the Kyoto Protocol and has become the leading exporter of clean energy equipment, having created one million jobs in clean energy manufacturing.



Graciela Chichilnisky is professor of economics and mathematical statistics at Columbia University

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The US is the single advanced nation that has not ratified the Kyoto Protocol and does not trade in its carbon market. It desperately needs to create jobs as it has 9.6 per cent unemployment, the highest unemployment since the Great Depression - a major challenge to the Democratic administration in the November 2010 elections. One million jobs would be very valuable in the US right now, whilst 14.6 million people are unemployed and 170,000 families are living in homeless shelters.

The US has every reason to emulate China. But instead of investing in clean tech jobs, the US invested hundreds of billions of taxpayers funds in the past three years to provide credit and bail out venerable old financial institutions - the heroes of last century's capitalism - who have created the US's main exports, financial services and products. These are the same financial institutions that caused the worst financial crisis of our times.

### **China, India and Brazil go renewable**

As the OECD nations slowly emerge from the worst financial crisis in 80 years, a completely different transformation is taking place in the rich nations and in the less industrialised world. Less industrialised nations for the first time lead world economic growth. China received tens of billions from the Kyoto Protocol Clean Developing Mechanism for clean energy infrastructure, and is emerging as the world's leading exporter in clean energy equipment - exporting wind turbines and solar energy equipment to Europe and the US.

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India is quickly growing its clean technology industry based on its engineering capabilities, and is the largest exporter of software in the world, topping \$60 billion per year in exports from Bangalore. Brazil and other large developing nations are quickly stepping up to the challenge using the Clean Development Mechanism and leapfrogging over heavy industrialisation to a clean future while they combat their citizens' hunger and deprivation.

Among advanced nations, the US is alone in resisting change and denying the need for carbon limits. US Senators face more acceptance from the power plant industry for creating a US carbon market than they do from their constituents at home, who will vote in the November 2010 elections and will decide the nations' political future for the next few years. The US public still regards clean technology as a cost and not a profit, asking how much the transformation will 'cost'.

Instead, the Chinese, the Indians, and the Brazilians see investment in clean tech as an opportunity for profits and growth. US reaction to China's export leadership is to sue the Chinese, rather than to compete and take over the reins in an area where, due to its own technological prowess, the US should be a natural leader.

### **Economics of restraint and preservation**

But the world is moving on. Markets for biodiversity and for watersheds and forests will emerge in the near future. The United Nations, which created the carbon market as part of the Kyoto Protocol, is working on new global environmental markets. We need to create these market solutions before it is too late, before we destroy the remnants of the planet's biodiversity in seas and soils. We are in the midst of the 6th largest extinction event in the history of the plant and the first caused by human action.

The new markets that arise from ecological constraints will dominate the 21st century economy, and so will markets for knowledge. The carbon market will become the largest commodity market in the world because carbon is emitted in producing energy, energy is the mother of all markets, and 89 per cent of the energy produced in the planet comes from fossil fuels. Energy creates today the largest source of carbon emissions in the world - about 41 per cent.

The transformation of capitalism is unstoppable because we need limits on resources for humans to survive. And from these limits, new markets will emerge as we trade the rights to use resources. These new markets are quite different from what we had until now and will change capitalism. They involve 'non rival' goods, since carbon in the atmosphere, biodiversity in the planet and even global knowledge are non-rival goods, they are the

same for all and can be shared without losing them.

## No more private goods

This is very different from the private goods that characterised capitalism until now, where 'whatever you have, I cannot have'. Markets for private goods divide us and create competition because goods are rival in consumption - 'what I consume you cannot consume'. The new markets involve non-rival goods that are the same for all. This is for physical reasons. Since CO2 distributes uniformly all over the planet and we all face the same atmospheric carbon concentration, we must all cooperate to find a global solution, rich and poor, young and old, black or white.

The markets of the future are here today. They are starting to cause a great and most welcome transformation for capitalism. The question now is how long the transformation will take, and whether we will experience ecological and climate disasters. Human civilisation as we know it may not be able to survive during the transition. Time is not on our side. The longer it takes, the greater the risk we face.

*Professor Graciela Chichilnisky was the architect of the Carbon Market, and lead author on the Intergovernmental Panel for Climate Change which won the 2007 Nobel Prize. She is UNESCO professor of mathematics and economics, director of Columbia Consortium for Risk Management and professor of economics statistics at Columbia University, NY*

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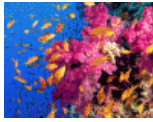
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#### **Re: Will 21st century capitalism go green?**

Posted By EC0190531 September 23, 2010 02:57:02 PM

Dear editors I know the Ecologist is not what it used to be, but let me tell you, your remaining subscribers do expect better quality control and political awareness than this. This article is pure one-sided propoganda. The author may have won a Nobel prize - but it surely wasn't for work like this. The piece glosses over all the serious problems with carbon trading and other marketising approaches to environmental protection, and instead tries to obscure the issues with nonsense like the claim that the carbon market involves non-rival goods. A carbon credit (ie the things that are actually traded in the market) is an entirely private, rival good. No-one is trading "atmospheric carbon concentration", as she well knows. Please let's have some coverage of the massive literature critiquing this pernicious movement to financialise the natural world. It's all about making profits from new markets, not about "saving" anything. Check out the resources here for details of the realities of the carbon market... <http://www.thecornerhouse.org.uk/resources/results/taxonomy:47> and for a look at where things are going next, try this... [http://www.worldecologyresearch.org/papers2010/Sullivan\\_financialisation\\_conservation.pdf](http://www.worldecologyresearch.org/papers2010/Sullivan_financialisation_conservation.pdf) The markets of the future are indeed here today. But this doesn't mean that "capitalism is changing its stripes"! We need, somehow, to resist this madness. Mike Hannis

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