'Negative carbon' to benefit poorest nations?

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LONDON (AlerNet) - Graciela Chichilnisky, a Columbia University economist and mathematician who played a key role in designing carbon markets for the Kyoto Protocol, says continuing increases in greenhouse gas emissions mean the planet is now "beyond the line of no return" in holding temperatures to a maximum 2-degree Centrigrade hike recommended by the U.N. Intergovernmental Panel on Climate Change.

What is needed going forward, she says, is "negative carbon" technology to pull carbon dioxide already emitted back out of the air. The technology is steadily gaining scientific support, says **Chichilnisky** , who holds patents on some of the emerging processes.

She - and increasingly others- believe it could bring impressive benefits for the world's poorest and most energy deficient countries if a world carbon market is successfully established.

Chichilnisky spoke to AlertNet while in London to promote her new book, "Saving Kyoto: An Insider's Guide to What it is, How it Works and What it Means for the Future."

Q: How does "negative carbon" technology work?

A: Waste heat from power plants is used to power mechanisms that use a solid absorbent to take carbon dioxide out of the air.

The machinery can be added on to existing power plants, regardless of their fuel source, and is relatively cheap. A 400 megawatt power plant today costs about $2 billion. One of these devices costs $100 million to build and could remove a million tons of carbon dioxide a year from the atmosphere.

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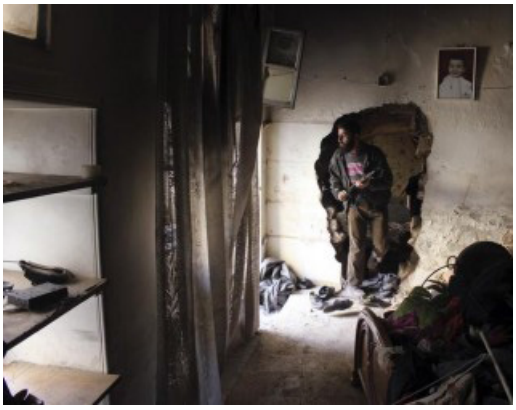

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Q: What happens to the trapped carbon dioxide?

A: It is liquefied under pressure and pumped into long-term underground storage, as with existing carbon capture and storage processes, or potentially used to feed algae to produce fuels or plastics.

Q: Why would 'negative carbon' technology benefit poorer countries?

A: Africa is responsible for just 3 percent of global greenhouse gas emissions, so it has little to gain from the Clean Development Mechanism, which gives developed countries emission-reduction credits for helping poorer nations reduce their carbon emissions.

But if there was a working carbon market and negative carbon technology, Africa could capture a lot of funding by capturing a lot of carbon emitted elsewhere. Right now that's impossible.

With this technology you can build power plants that reduce the amount of carbon in the atmosphere as they produce electricity. Imagine what that would mean to places with no reliable power or no power. With energy you can create economic growth.

Q: Does it work? How close is it to being a reality?

A: The first demonstration will take place at the Stanford Research Institute in the first few months of 2010 and the first commercial project is planned at a power plant in Texas in 2011.

Q: Couldn't the emergence of this kind of technology hamstring current mitigation and adaptation efforts and hurt chances of reaching a new international climate deal at Copenhagen?

A: To fight climate change you never try to do just one thing. You need a portfolio of options. This won't replace humanitarian efforts for people who are really affected, for instance.

The truth is that, by itself, adaptation to climate change won't work. There's nothing you can do for the low-lying island nations. You'll have people falling into the ocean in the biggest humanitarian problem of our time. That's why people like President (Mohamed) Nasheed of the Maldives back this kind of technology.

Q: What are others saying about this it?

A: The U.S. Department of Energy in May for the first time announced it was including so-called "direct air capture" of carbon in $2.4 billion in funding for carbon capture and storage projects.

And a report on climate geo-engineering last month by the British Royal Society urged the deployment of carbon dioxide removal technology as quickly as possible if it can be proved safe, effective and affordable.

The report says scientific limitations aren't the problem for the process; political and legal wrangling are more likely to hold it back.

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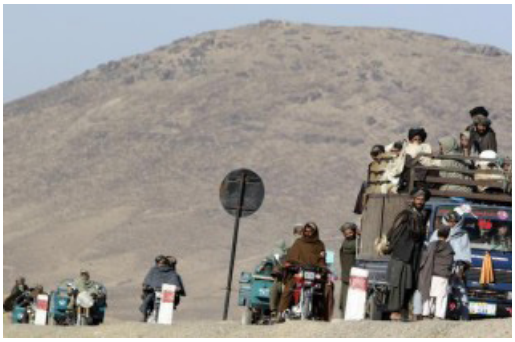

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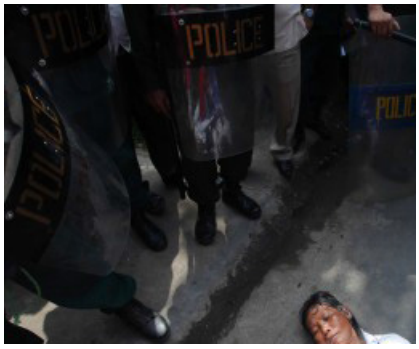

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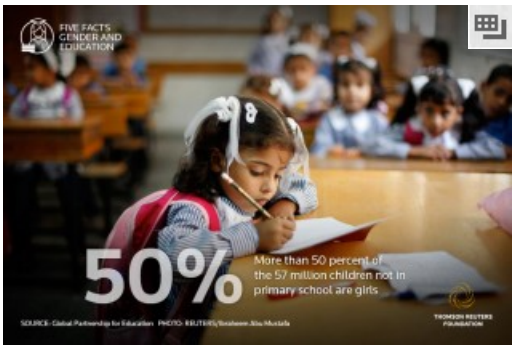

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