

How Carbon Capture Technology Can Almost Turn CO2 Into Cash

[Rob Wile](#) | Apr. 2, 2013, 6:46 PM | 472 |



Global Thermostat

If you haven't heard, our airplanes are already [getting some of their gas from algae](#).

But that algae needs its own power source — in the form of carbon dioxide, or CO₂ — to produce the jet fuel.

That's where Columbia professors Graciela Chichilnisky and Peter Eisenberger come in.

Their company, [Global Thermostat](#), has developed a technology Chichilnisky says can suck carbon dioxide out of the air, store it up, and sell it back to companies that need it.

Chichilnisky recently came by our offices to show off the product.

The profit motive is just a necessary evil, she told us.

The real reason behind their carbon capture invention is tackling climate change, since more carbon dioxide in the air increases global warming.

"It's no longer enough to reduce emissions," she said. "We've procrastinated enough, and so to avoid the worst, catastrophic risks, what we need is to take it down from air to close the carbon cycle, which means whatever we put up, bring it down. And that's what our technology does."

Of course, removing excess carbon dioxide from the atmosphere would only get at part of the problem underlying climate change. But Chichilnisky says the product could save large carbon-emitting businesses from a lot of grief.



Rob Wile/Business Insider

Sample of Global Thermostat's carbon capture cube.

It works by coating cubes just slightly larger than your hand — like the one at left — with a nitrogen-based compound developed by Global Thermostat that absorbs carbon dioxide.

Stack a bunch of the cubes on top of one another, add some exhaust pipes, and you get a full facility, like the one shown above.

The plants are capable of processing 100,00 cubic feet of air per minute. The end product is 97-percent-pure CO₂.

Chichilnisky compares the technology to a dehumidifier.

"You plug it in, air circulates inside dehumidifier, there's a chemical that loves water, so water is captured," she said. "And then the water, as it cools, condenses and falls down on tray, then you change the tray.

"Now replace water molecules by CO₂, and replace the chemical that loves water by a chemical that loves CO₂, and that's what it is."

The company's first commercial partnership is with Algae Systems, a company that's utilizing Global Thermostat's packaged CO₂ to produce the aforementioned jet fuel. A factory to do so is currently under construction in Alabama.

Edgar Bronfman Jr., former Vivendi and Seagram CEO, is a minority owner in Global Thermostat, and the firm has received a loan from [Goldman Sachs](#).

The Alabama factory won't be finished before the end of the year.

But Chichilnisky says she's already received interest from companies in India and Saudi Arabia for their own carbon capturing facilities. The company made \$1 million last year.

Her elevator pitch, while over the top, is not totally inaccurate.

"We transform [CO₂] into money, we make it into cash."