



The New Climate Hero?

You have to like *the idea* carbon sequestration: if our ability to stop putting carbon into the atmosphere is limited, why not try taking it out? But it always seems to founder on a life-cycle analysis: it costs so much in energy to get the system working that you wind up producing more carbon than you withdraw. But [now comes Roland Dittmaier of Germany's Karlsruhe Institute of Technology and Geoffrey Ozin of the University of Toronto, with a new idea: use the HVAC system to do it.](#)

What does HVAC have to do with anything? Simple: HVAC systems move a lot of air around, all the time. They can completely replace the air in a building from 5 to 10 times an hour. And if they can move air around, they can move carbon dioxide around — in fact, they already do. Thus, [Dittmaier and Ozin](#)

imagine a system of modular components, powered by renewable energy, that would not just extract carbon dioxide and water from the air. It would also convert them into hydrogen, and then use a multistep chemical process to transform that hydrogen into liquid hydrocarbon fuels. The result: “Personalized, localized and distributed, synthetic oil wells” in buildings or neighborhoods, the authors write. “The envisioned model of ‘crowd oil’ from solar refineries, akin to ‘crowd electricity’ from solar panels,” would enable people “to take control and collectively manage global warming and climate change, rather than depending on the fossil power industrial behemoths.”

The commenters in the article think it's a promising idea, but seriously doubt that it can be done on a large scale. For me, though, the key lies in the dependent clause “powered by renewable energy.” It doesn't matter how cool any new gizmo is: what matters is the life cycle analysis. And interestingly, none of the more skeptical views in the *Scientific American* article seem to question that. Arte Johnson would find this very interesting.

