



Apr 27, 09

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WORLDCHANGING

Geoengineering and the New Climate Denialism

[Alex Steffen](#)

April 27, 2009 1:59 AM

This is a draft essay, and obviously still rough in patches. I'd appreciate feedback! - Alex

GEOENGINEERING AND THE NEW CLIMATE DENIALISM
by Alex Steffen

The *Idea* of Geoengineering is Being Used Dishonestly

Though we spend our time here at Worldchanging focused on solutions to the planet's most pressing problems, sometimes the politics around an issue become so twisted that it's necessary to address the politics before we can have a real discussion about the problems and how to solve them. That's the case with [geoengineering](#).



Some scientists suggest that certain massive projects -- like creating artificial volcanoes to fill the skies with soot, or seeding the oceans with mountains of iron to produce giant algal blooms -- might in the future be able to put the brakes on climate change. These "geoengineering" ideas are [hardly shovel-ready](#). The field at this point consists essentially of little more than a bunch of proposals, simulations and small-scale experiments: describing these hypothetical approaches as "back up options" crazily overstates their current state of development. Indeed, almost all of the scientists working on them believe that the best answer to our climate problem would be a quick, massive reduction in our greenhouse gas emissions.

None of this has stopped geoengineering from becoming part of a new attempt to stall those very reductions, though. The same network of think tanks, pundits and lobbying groups that denied climate change for the last 30 years has seized on geoengineering as a chance to undermine new climate regulations and the U.N. climate negotiations to be held at the end of the year in Copenhagen. They're still using scare tactics about the economic costs of change, but now, instead of just denying the greenhouse effect, they've begun trying to convince the rest of us that hacking the planet with giant space-mirrors or artificial volcanoes is so easy that burning a lot more coal and oil really won't be a problem.

Delay is The Carbon Lobby's Strategy

It's a central, yet often forgotten, fact in the climate debate that pumping greenhouse gasses into the atmosphere is incredibly profitable. For a small group of giant corporations (the coal, oil and car companies which we can collectively call the Carbon

Lobby), business as usual is big bank. The difficulties of addressing climate change have much more to do with the political power of these corporations than with the technical challenges of building a carbon-neutral economy (a carbon-neutral economy being an engineering and design challenge that we already have the capacity to meet).

For the last thirty years, the Carbon Lobby's strategy on climate change has been to delay. Almost every informed observer knows, and has known for decades, that the days of fossil fuels are numbered, but how quickly and how completely we shift away from them makes all the difference to these industries. They have a huge investment in oil fields and coal mines and dirty technologies, and each decade they delay the transition away from coal and gas means literally trillions of dollars more profits. Delay = big bucks.

The best way for the Carbon Lobby to delay that transition has been to make regulations and treaties that limit the amount of CO2 emissions politically impossible, especially in the U.S., where the Lobby's influence is the greatest because of their hold over the Republican party.

That's why they put such emphasis on attempting to portray the science of climate change as inconclusive or hotly debated (despite the fact that [their own scientists told them in 1995 that the science on climate "is well established and cannot be denied"](#)). If they could make people feel uncertain, they could make it safe for politicians to actively oppose new regulations and treaties (a strategy laid out in the famous [leaked "Luntz Memo"](#)). Lying about the science made people uncertain; that uncertainty let the Carbon Lobby stall U.S. action; and by stopping the world's biggest polluter from participating, they stymied any real global deal on greenhouse gasses.

The strategy worked, up to a point. But now most Americans understand that climate change is real and that it demands action. Our new president advocates strong action on climate; business leaders from many industries back him, as do most labor and religious groups; and foreign nations are eager to negotiate ([European conservatives are even competing to show leadership on tackling climate emissions](#), rather than denying that those emissions are a problem). This emerging consensus on the need for regulatory action and effective treaties threatens to accelerate the transition away from fossil fuels much more quickly than anyone expected, so the Carbon Lobby is scrambling to find new reasons for delay.

How Geoengineering Becomes an Argument for Delay

Their new justifications for delay are simple. Taking advantage of the economic crisis, they call climate action a job killer. If the Right's anger and vehemence against the very idea of green jobs has shocked and confused you, well, understand that it's important that climate change be framed as a threat to the economy, and never an opportunity: the growing importance of clean tech industries and jobs to the American economy must be downplayed in order for this strategy to work (never mind that [wind power already employs more Americans than coal mining](#)). Look for this argument to increase in volume as [Copenhagen](#) draws near.

But to really make their case for more delay, they can no longer be seen as outright opponents of climate action. They've got to have their own plan. And that's where geoengineering comes in.

The biggest argument for strong actions taken quickly is that delay or weak responses may put us in a position of facing rapid, perhaps even runaway climate change. The longer we wait, the more dangerous our position becomes. The only certain route to safety would be rapid emissions reductions, including programs for ecosystem restoration and [other forms of sustainable sequestration](#) to help draw CO2 levels down.

But if we can be made to believe that megascale geoengineering can stop climate change, then delay begins to look not like the dangerous folly it actually is, but a sensible prudence. The prospect of geoengineering is the only thing that can make that delay seem at all morally acceptable.

In other words, combining dire warnings about climate action's economic costs with exaggerated claims about geoengineering's potential is the new climate denialism.

The Carbon Lobby Spins Geoengineering *Instead of Emissions Reductions*

The new climate denialism is all about trying to make the continued burning of fossils fuels seem acceptable, even after the public has come to understand the overwhelming scientific consensus that climate change is real. That's why denialists present geoengineering as an *alternative* to emissions reductions, and couch their arguments in tones of reluctant realism.

One of the earliest political calls for geoengineering was Gregory Benford's essay [Climate Controls](#), written for the Reason Foundation (you can find out more about their links to the Carbon Lobby and their role in climate denialism [here](#)). Benson was explicit that he saw geoengineering as a way to avoid reducing CO2 emissions:

"Instead of draconian cutbacks in greenhouse-gas emissions, there may very well be fairly simple ways--even easy ones--to fix our dilemma. ...take seriously the concept of "geoengineering," of consciously altering atmospheric chemistry and conditions, of mitigating the effects of greenhouse gases rather than simply calling for their reduction or outright prohibition."

Benford is far from alone. One of the major proponents of geoengineering is the American Enterprise Institute. AEI has [a long history of working to deny the scientific consensus on climate change](#). They have strong ties to the Carbon Lobby (ExxonMobil CEO Lee Raymond served on the AEI board of trustees, and \$1,870,000 from ExxonMobil helped fund their anti-climate work).

Now AEI is working both sides of the new climate denialism street. They claim that climate action is too expensive (In a January paper, AEI's Willem P. Nel and Christopher J. Cooper argue that "The extent of Global Warming may be acceptable and preferable compared to the socio-economic consequences of not exploiting fossil fuel reserves to their full technical potential." In other words, "It's more profitable to let the planet roast."). They also house one of the few funded policy centers on geoengineering, the AEI Geoengineering Project.

The Geoengineering Project is run by Lee Lane. Lane is smart, and so he doesn't say outright that we should dump climate negotiations and trust in geoengineering, but you don't need to read too far between the lines to hear that's what he's saying.

In 2006, Lane specifically [advised](#) the Bush Administration to urge a greater focus both on debating carbon taxes (we know how Republicans like to "debate" taxes) and on geoengineering as "strategic measures" to "block political momentum toward a return to the Kyoto system." He continues to put forward geoengineering as an alternative to real emissions reductions anytime in the near future. As he said at AEI's recent [geoengineering conference](#):

"I think in response to all of those difficulties that certainly I am not the only person to see, a growing number of experts are becoming increasingly concerned about the need to broaden the debate on climate policy. What I mean by broaden it is to expand what we consider as serious climate policy options from what has been a very narrow focus on greenhouse gas emissions limitations, and indeed rather steep and rather rapid greenhouse gas emissions limitations, to consider a much broader range of policies that go way beyond simply attempting to make short run reductions in greenhouse gases."

In other words, Lane wants us to believe that emissions reductions are politically impossible (never mind that he works at an institution which has labored mightily to sabotage emissions reductions treaty negotiations, and that he himself explicitly advised the Bush Administration on how to do the same), so we ought to be considering geoengineering as the "serious" option instead.

The Distortion of Geoengineering has Become Widespread

Turn over denialist rocks and you'll find political advocates for geoengineering a-plenty. For instance:

*The Cato Institute ([denialists](#)), whose senior fellow and director of natural resource studies, Jerry Taylor, [says](#) that if we end up forced do something about global warming, "geo-engineering is more cost-effective than emissions controls altogether."

*The Heartland Institute ([denialists](#)), whose David Schnare now [advocates](#) geoengineering as quicker and less costly to the economy than greenhouse gas reductions:

"In addition to being much less expensive than seeking to stem temperature rise solely through the reduction of greenhouse gas emissions, geo-engineering has the benefit of delivering measurable results in a matter of weeks rather than the decades or centuries required for greenhouse gas reductions to take full effect."

*The Hudson Institute ([denialists](#)) [advocates](#) geoengineering as substitute for reductions:

"Successful geoengineering would permit Earth's population to make far smaller reductions in carbon use and still achieve the same retarding effect on global warming at a lower cost. The cuts in carbon use proposed by international leaders and presidential candidates would have a drastic effect on the economy, especially since substitutes for fossil fuels will be expensive and limited for a number of years."

*The Hoover Institution ([denialists](#)) is home to not only to senior fellow Thomas Gale Moore, author of "Climate of Fear: Why We Shouldn't Worry About Global Warming" but also nuclear weapons engineer and original SDI "Star Wars" proponent [Lowell Wood](#). Wood has become an outspoken geoengineering proponent and co-authored [a recent WSJ op-ed](#) in which he warns "But beware. Do not try to sell climate geo-engineering to committed enemies of fossil fuels," thus revealing that the point is to be friendly to fossil fuels.

And, of course, denialists' allies in the media and the blogosphere have been quick to take up the call. Conservative columnist

(and climate "contrarian") John Tierney thinks geoengineering [makes superfluous](#) emissions reductions ("a futile strategy") and [wants](#) "a geoengineering fix for global warming," to provide an alternative to the idea that "the only cure [is] to reduce CO2 emissions." Wayne Crews of the denialist site [globalwarming.org](#) (a project of the Carbon-Lobby-funded Competitive Enterprise Institute) likes geoengineering strategies as possible "options apart from carbon constraint," while climate treaty opponent and ["delayer" Roger Pielke, Jr.](#) finds it [encouraging](#) that geoengineering's getting so much buzz.

It would be easy to go on. But the point is obvious: the Carbon Lobby, no longer able to deny the reality of climate change, is hoping to use the idea of geoengineering to undermine political progress towards reducing climate emissions through sensible, intelligent regulations and international treaties. Big Oil, Big Coal and the auto companies want you to believe that reducing emissions is too expensive to work, climate negotiations are too unrealistic to succeed, but we can keep burning fossil fuels anyways because geoengineering gives us a plan B. If you think that, you've been spun.

How to De-Spin Geoengineering

None of this is to say that megascale geoengineering should be a taboo subject. We need a smart debate here, where we explore the subject honestly and without industry spin. Here are six suggestions for returning reality to the geoengineering debate in these critical months leading up to Copenhagen:

First, **Demand that bold emissions reductions be acknowledged as the only sound foundation for any climate action plan.** The Carbon Lobby thrives on half-truths and obfuscation. Ethical people -- whether geoengineering proponents, opponents or doubters -- all need to be extremely clear in saying that a strong, rapid movement away from fossil fuels and toward climate neutrality is non-negotiable. Many leading thinkers on geoengineering (such as Paul Crutzen and Ken Caldeira) already make clear that immediate action on reducing greenhouse pollution (on both the national and global levels) is the first step, period. We should follow their lead.

Second, **Point out that a climate-neutral world is realistic.** One of the public debate's biggest failures is the extent to which we've let people be convinced that a climate-neutral planet is some distant, improbable fantasy world. It's not. We know, already, right now, how to dramatically slash emissions using currently available technologies, and make a profit. Economists (like Lord Nicholas Stern, former Chief Economist at the World Bank) estimate that the total cost of pursuing climate neutrality could be as little as 1% of GDP (far lower than the anticipated costs of allowing climate change to worsen). But there may not even *be* a cost: a great many of the actions we need to take (like rebuilding our cities and using energy more efficiently) return greater economic benefits than they demand, and when something pays you money, [it's not a cost, it's an investment.](#)

Third, **Be extremely clear about geoengineering's real possibilities and actual limitations.** Journalists tend to sell the planetary engineering sizzle, rather than serve the heavily-caveated steak. Advocates need to continue to emphasize that geoengineering proposals are still extremely early-stage, experimental and surrounded with unknowns. (On the other side, even determined opponents of geoengineering need to acknowledge the good intent and sound reasoning of [scientists who are doing their best to add new insight to an extremely important debate.](#))

Fourth, **Get the order right: zero-out first, adapt next, engineer last.** We need to be clear that because of the experimental nature of geoengineering projects, their use should be a last resort, not a primary option. Megascale geoengineering should not yet be part of any national strategies for addressing climate change, or a part of any offset systems in carbon trading regimes. We need first to drive greenhouse gas concentrations down with proven methods, and then begin preparing to [adapt to the climate change we know we've already set in motion.](#) We should only turn to megascale geoengineering as a last resort.

Fifth, **Keep a wary eye on the Arctic ocean and other tipping points.** Last year, scientists conducting research in the Arctic made a startling discovery: [what might perhaps be formerly-frozen methane was bubbling to the surface of the warming ocean in alarming amounts.](#) Their work demands corroboration, but if confirmed, this should cause us all to worry. Methane is an incredibly potent greenhouse gas and huge amounts of it are trapped beneath frigid waters and frozen permafrost, waiting perhaps to be released by rising temperatures. That methane could set off runaway climate change. Even if their findings are refuted, though, [potential tipping points](#) need to be watched. If we find we've blundered into rapid runaway climate change, some forms of geoengineering, however poorly understood, may quickly move from "last resort" to "needed option."

Sixth and last, **Continue outing the Carbon Lobby and its cronies, and reject their intervention in the debate.** Legitimate debates about the possible uses of megascale geoengineering should not include people whose institutions have been consistently and intentionally dishonest about science and science policy.

The next two decades will have an almost unparalleled importance in human history, and the decisions we make during this time could have almost unthinkable impacts for millennia. The world in which scores of future generations will live -- its climate, the plants and animals that make up its biosphere, the material possibilities of its cultures -- will to an astonishing degree be influenced by the choices we make in the next score of years.

How we interpret the possibilities of (and understand the limitations to) large-scale geoengineering projects will help shape the clarity and velocity with which we act on reducing emissions and building a new, climate-neutral economy. These questions matter too much to allow them be twisted by a bunch of skills for fossil fuel industries.

We need to reclaim the debate about our planet's future, together.

Image credit: Edward Burtynsky



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COMMENTS

I thought that was an excellent article; informative and thought provoking; well constructed and easily understood.

Nice work.

Posted by: [Steve](#) on April 27, 2009 7:15 AM

Is [this](#) geoengineering or is it adaptation? Either way, it deserves more attention than the methods Steffen mentions.

[\(How fire can be domesticated\)](#)

Posted by: [G.R.L. Cowan, H2 energy fan until ~1996](#) on April 27, 2009 8:02 AM

Alex,

Nice post. I'm glad to see you're engaged in elevating the debate on geoengineering, which is poised to become the most highly charged and controversial aspect of climate change. It will become the global focusing agent of all the angst and fear around climate change like nothing else.

Unfortunately, my informed opinion is that tipping points are much closer than most people realize, and that geoengineering is probably the only tool to prevent crossing climate tipping points while we create carbon neutral economies. You are right to highlight the Arctic-methane feedback loop, which threatens to release 100 times the historical total of human CO2 emissions in roughly 100 years. But there are many more tipping points to worry about (e.g. ocean circulation and primary production, droughts and wildfires, etc...)

We have very little time to understand how to use geoengineering effectively. The necessary research that society must do includes not only the science of geoengineering, but also the politics and ethics around potential implementation. Winners and losers will be created by both geoengineering and climate change, although geoengineering will hopefully produce fewer losers and for a shorter time period. How will the world decide on who the winners and losers will be? This is the sort of debate that would be perfect for Worldchanging.

Cynodont

Posted by: [Cynodont](#) on April 27, 2009 9:07 AM

Much happier with this new perspective Alex, or perhaps the old perspective more eloquently articulated. I agree w/ Cynodont above that the threat of tipping points argues that we move forward simultaneously w/ the research necessary to understand the portfolio of approaches and which (if any) make sense, as well as the safety, ethical and governance questions surrounding them.

Certainly that should not, *must* not distract from emissions reductions efforts. That is clearly job #1 and must not be characterized otherwise.

Maybe we're all in agreement now?

Dan

Posted by: [Dan Whaley](#) on April 27, 2009 10:04 AM

The article is dead on. However, there is the other side - the side that presents itself as lowering emissions to affect climate change as well. There are certain indicators that demonstrate that humanity (and lack of it) are impacting the global environment, but global warming has become more of a marketing strategy than the *theory* that it truly is. The fact is that everyone is shooting in the dark, and even with the sizable amount of data on hand there is not enough to make iron-clad forecasts.

The middle ground isn't the fence, it's realizing the strengths and weaknesses of either side and acting intelligently. It's easy to become polarized, and that's where politics enters. That and... money and power. Much like the World Bank and other things have been maneuvered in the past to assure that developing nations get nice forecasts for high price tags in the political and financial arenas.

Knowing the facts is what this should be all about. Things based on opinion need to be filtered out, and more people need to see the raw data. The facts. And, most importantly, the how and why of the fact collection process itself. Motivations are not always as they seem.

Posted by: [Taran Rampersad](#) on April 27, 2009 10:07 AM

It is nice to see that scientists have come to a consensus as to what god they worship. Nice to see how far scientists can distance themselves from math and physics.

Posted by: larrydalooza on April 27, 2009 10:08 AM

The removal of my comments regarding contrails and space based solar/microwave energy production makes me question the true intent of this web site. The world is changing, are we going to have an honest discussion about it?

Posted by: Matt on April 27, 2009 10:15 AM

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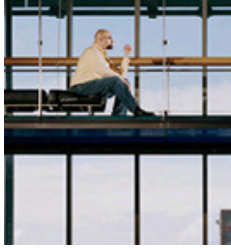
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