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NEWS

Sep 1, 2009

Geoengineering could be needed to halt climate change

New technologies that remove carbon from the atmosphere could be needed to combat man-made climate change, according to a report published today by the Royal Society.

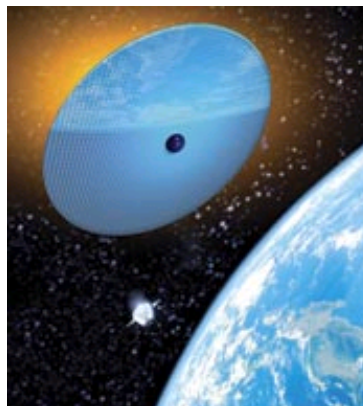
Most attempts to deal with climate change involve reducing emissions of carbon dioxide - the report also calls for governments to work towards an agreement to cut carbon dioxide emission by 50% on 1990 levels by 2050 - but some scientists believe that this may not be enough to stop the planet's average temperature rising by 2 °C by the end of the century.

Geoengineering is the deliberate intervention into the climate system to counteract man-made global warming. It could offer a solution to climate change, but some scientists are reluctant to discuss it, fearing that it could encourage complacency in cutting emissions.

Giant sunshades

The Royal Society report, *Geoengineering the climate: Science, governance and uncertainty*, looks at different geoengineering options for tackling climate change, including constructing giant sunshades in space that can reflect the Sun's rays and introducing iron into the world's oceans to rapidly increase the amount of phytoplankton that consume carbon dioxide.

The 12 authors of the report - led by [John Shepherd](#) from the UK's University of Southampton - divide geoengineering into two types: carbon dioxide removal (CDR) that acts to remove carbon dioxide from the atmosphere and solar radiation management (SRM), which involves reflecting sunlight back



Space sunshade

into space.

Soaking up carbon

They conclude that CDR technologies would be best suited to combat climate change. These include capturing carbon dioxide from ambient air as well as using land to soak up carbon. "It is too soon to pick winners," says Shepherd. "We need more research into several avenues to decide which technologies are most effective."

However, they conclude that SRM methods, such as constructing giant sunshades in space and pumping aerosols into the atmosphere to reflect sunlight, would not be long-term solutions and their usage offers potentially dangerous consequences. "Using aerosols would be like taking an aspirin to cure a headache," Shepherd told *physicsworld.com*. "But it might not be a long-term solution to the underlying problem."

The report, which contains seven recommendations, calls for £10m per year to be spent by UK research councils to fund geoengineering projects. "This is still only about 10% of what the UK spends on climate change," says Shepherd. "We must make sure that the projects are researched in a responsible manner and that they are openly discussed."

For a detailed discussion of geoengineering schemes, see "[Engineering the climate](#)", which appears in the September issue of *Physics World*.

About the author

Michael Banks is news editor of *Physics World*

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Thinker
Sep 4, 2009 8:08 AM
Dallas, United States

Geoengineering, Climate Change

It seems to me that what is being proposed is nothing more than another version of climate change... still man made or more accurately... man modified.

While I realize that there are niche positions out there which obviously pay quite well... what I keep waiting for is the realization that: Climate Changes!

Oddly enough... since well before there were humans to either observe or fret about it... the climate of the planet was changing... constantly. And surprise! It still is.

1

A much better utilization of funding would be to manage adaptation to any such change rather than tilting at windmills with the misguided notion that we can exert any control over something as huge and dynamic as the earths climate. As the preface to Jurassic Park noted... "The Earth will be just fine without us."

That last sentence IS something to give thought to, however. Because if your valiant efforts do succeed in cooling the earth more (yes... the average temperature has been declining over the past decade) then you'd better hope and pray you can reverse your tampering. Global warming... climate change... whatever you choose to call it... IS survivable... even beneficial. Global *cooling* or even another ice age would be a thousand times worse and kill billions.

Be careful what you wish for.....

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Nick Cook
Sep 4, 2009 9:12 AM
Toddington, United Kingdom

Climate Management. Yes we can 2
Re: Thinker's comment, "A much better utilization of funding would be to manage adaptation to any such change rather than tilting at windmills with the misguided notion that we can exert any control over something as huge and dynamic as the earths climate."

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I would suggest that global warming caused by anthropogenic CO2 emissions is in fact doing exactly that, I would say that the billions of tons of CO2 we're pumping