



Geoengineering the climate - the Royal Society study

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The majority of the climate change we are experiencing now is very likely caused by an increase in greenhouse gases due to human activities, including burning fossil fuels, agriculture and deforestation. There is now widespread belief that a global warming of greater than 2 degrees C above pre-industrial levels would be dangerous and should therefore be avoided. However, despite growing concerns over climate change, global CO₂ emissions have continued to climb. This has led some to suggest more radical “geoengineering” alternatives to conventional mitigation via reductions in CO₂ emissions.

Geoengineering is the deliberate intervention in the climate system to counteract man-made global warming. There are two main classes of geoengineering: direct carbon dioxide removal from the atmosphere, and solar radiation management, which aims to cool the planet by reflecting more sunlight out to space. This presentation will summarise the findings of a recent review of geoengineering carried-out by the UK Royal Society, discussing the climate effects, costs, risks, and research and governance needs for each approach.

Key findings include:

- Geoengineering is not a magic bullet and not an alternative to emissions reductions.
- Cutting global greenhouse gas emissions must remain our highest priority...
- ... but this is proving to be difficult, and some forms of geoengineering may be useful to support it
- Some carbon dioxide removal and solar radiation management techniques are very likely to be technically possible
- However, there are major uncertainties and potential risks concerning effectiveness, costs and social & environmental impacts
- Much more research is needed, as well public engagement and a system of regulation (for both deployment and for some R&D).
- The acceptability of geoengineering will be determined as much by social, legal and political issues as by scientific and technical factors