The government’s view on geo-engineering research

Geo-engineering proposals to counter climate change are attracting growing attention, yet the scientific evidence base to inform a rational debate on their merits or otherwise is currently limited.

Geo-engineering can be described as the deliberate intervention in the planetary environment of a nature and scale intended to counteract man-made climate change and/or its impacts. A wide range of different techniques may be encompassed by this term and can be broadly placed into two categories: those techniques that aim to remove carbon dioxide and other greenhouse gases directly from the atmosphere, and those that aim to reflect some of the Sun’s energy that reaches Earth back into space.

Based on the evidence currently available, it is premature to consider geo-engineering as a viable option for addressing climate change. The priority is, and must be, to tackle the root cause by reducing emissions of greenhouse gases from human activities and adapting to those impacts that are unavoidable. Mitigation of climate change, by reducing emissions and protecting natural carbon sinks, remains the surest way of increasing our chances of avoiding dangerous climate change in the future.

Some, including scientists, have suggested that in the future geo-engineering may have a role to play in supplementing our efforts to mitigate climate change. However, for most techniques, current understanding of the costs, feasibility, environmental and societal impacts is limited.

International regulation of geo-engineering is currently inadequate. A specific international legal instrument to regulate geo-engineering is not currently available, and work is underway to examine how existing instruments could be used. Therefore the Government has supported the Convention on Biological Diversity (CBD) in their review of existing regulatory instruments, and has contributed to work under the London Protocol on the prevention of marine pollution by dumping of wastes and other matter to regulate ocean fertilisation research and develop a framework to assess its potential impacts on the marine environment.

Should the need ever arise to deploy geo-engineering techniques in the future, a thorough understanding of all the options available to counteract dangerous climate change and knowledge of their risks and benefits will be needed. This understanding can only be developed through relevant, careful and responsible multi-disciplinary research. The Government is supportive of the need to undertake such studies, in accordance with Decision X/33 and Article 14 of the CBD[1] and relevant agreements such as the London Convention and its Protocol.

Research and ongoing dialogue with the public and other key stakeholders, is vital to inform future policy and decision-making. The conduct of research does not imply an intention to deploy geo-engineering.

Further reading:

- Command paper 7936: Government response to the House of Commons Science and Technology Select Committee 5th report of session 2009-10: The regulation of geoengineering[External link].
- The Royal Society (2009): Geoengineering the climate: science, governance and uncertainty[External link].
- Natural Environment Research Council (NERC)/Sciencewise public dialogue exercise on geoengineering: Experiment Earth? A report on a public dialogue on Geoengineering[External link].

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1. Pursuant to the Decision X/33 on the application of geo-engineering approaches adopted by the Parties to the Convention on Biological Diversity in October 2010; no climate-related geo-engineering activities that may affect biodiversity should take place, until there is an adequate scientific basis on which to justify such activities and appropriate consideration of the associated risks for the environment and biodiversity and associated social, economic and cultural impacts, with the exception of small scale scientific research studies that would be conducted in a controlled setting in accordance with Article 3 of the Convention, and only if they are justified by the need to gather specific scientific data and are subject to a thorough prior assessment of the potential impacts on the environment.