

# IAGP



Integrated Assessment of  
Geoengineering Proposals

## PUBLIC AND OTHER STAKEHOLDER PERCEPTIONS OF GEOENGINEERING: FACILITATING RESPONSIBLE INNOVATION

The second of a set of four Briefing Notes summarising the findings of the Integrated Assessment of Geoengineering Proposals

The Integrated Assessment of Geoengineering Proposals (IAGP) research project has brought together a broad range of expertise, from climate modelling to philosophy and from engineering to public perceptions, to situate the assessment of geoengineering within wider societal values

**BRIEFING  
NOTE 2**

The prospect of geoengineering raises profound social, moral, legal, and ethical uncertainties that are likely to be important for members of the general public as well as a range of other stakeholders (e.g., civil society groups, Non-Governmental Organisations and policymakers).

## How should the public and other stakeholders be consulted about geoengineering?

The public and other stakeholders should be consulted on geoengineering as early as possible, and their views embedded in decision-making processes about research and development.

When a technology is still at a very early stage – as is the case with all geoengineering proposals – public and other stakeholder engagement is termed ‘upstream’ (that is, it occurs prior to significant research or policy developments taking place). This approach has been productive in understanding public views on nanotechnologies and GM crops, and now it is being applied to geoengineering.

**Incorporating public and other stakeholder views into decision-making about the research and governance of an emerging technology is part of a process known as ‘responsible innovation’.** Responsible innovation involves considering the societal impacts, ethical implications, and unanticipated risks of a new technology while it is still ‘upstream’.

The aim of engaging the public and other stakeholders at an early stage is not to seek to persuade people that a particular geoengineering technology is safe. Instead, it aims to ‘democratise’ the process of decision-making around new technologies, to build-in a range of ‘non-technical’ views and perspectives, and to help ensure that research and development proceeds in a responsible way.

Important questions might include:

**What is a technology for?  
What is the need?  
Who owns it?  
Who will be responsible if things go wrong?  
Who will profit from it?**

While it is essential to start to engage the public and other stakeholders at an early stage, this process of deliberation will need to be ongoing.

## What do members of the public think about geoengineering?

Knowledge and awareness about geoengineering is low.

IAGP research shows that when members of the public are provided with a definition of geoengineering, or a small amount of information in a structured group discussion, they distinguish between different geoengineering approaches. **Carbon dioxide removal approaches are usually favoured over solar geoengineering approaches.** The more people knew about geoengineering the more they supported carbon dioxide removal approaches and the less they supported solar geoengineering approaches.

People tend to make a distinction between research into geoengineering and deployment. Although some people are favourable towards incremental and accountable research, few are currently positive about the prospect of full-scale deployment of geoengineering technologies. Ensuring that the governance of research on geoengineering is completely transparent is a particular concern.

It is important to consider perceptions of geoengineering in the context of attitudes to other climate policies.

**Geoengineering is much less popular than mitigation strategies such as energy efficiency measures or scaling up renewable technologies.**

Perceptions of geoengineering are partly a function of the existing social, political, and moral views that people hold. Some evidence suggests that for those who dislike the idea of governments regulating industry to reduce emissions, or ‘interference’ in people’s lives through behaviour change campaigns, geoengineering may offer a response to climate change that is a more comfortable fit with their values.

**The idea that geoengineering involves ‘messing with nature’ has been found to be a central theme in public discussion groups.** People have strong – but often competing – views on what they consider to be an acceptable level of intervention into natural systems. Geoengineering, for many, represents a new frontier in this debate – and people’s views about the human-nature relationship plays a key role in their views about geoengineering.



## What do other stakeholders think about geoengineering?

A range of overlapping and sometimes conflicting stakeholder views exist, from outright opposition toward geoengineering (expressed by, for example, the civil society organization ETC), to ‘we need a Plan B’ enthusiasm of, for example, groups like the Institution of Mechanical Engineers.

Many geoengineering technologies do not yet exist and some describe these as ‘technological imaginaries’. **However, even the concept of geoengineering provokes strong and often divided positions.** This is not particularly surprising: although many emerging technologies are accepted into society with little controversy, others – like nanotechnologies, or GM crops – have catalysed societal disputes that have implications much broader than the technologies themselves.

The fact that stakeholders may put forward competing and conflicting views is not a barrier to involving them in decision-making. Through repeated engagement processes – such as those initiated by the IAGP team – diverse views and values can be included in science/policy decision-making processes.

However, IAGP work designed to map stakeholder perspectives has also revealed some striking consistencies too. **Most stakeholders** (including policymakers and representatives of environmental Non-Governmental Organisations) **show a preference for mitigation alternatives to geoengineering, including low carbon living and offshore wind energy.**

## Are public and other stakeholder views being listened to?

The ‘Oxford Principles’ for the governance of geoengineering research, as well as key reports by the UK Royal Society and the US Government Accountability Office, all **recommend public engagement for exploring the public views towards geoengineering.** IAGP research is therefore fulfilling a critical role in the responsible exploration of geoengineering.

A criticism often levelled at engagement exercises is that the findings may have little impact in policy terms – that in effect they have ‘nowhere to go’. However, as support for the principles of responsible innovation has gathered momentum, IAGP research has played an important role in informing policy decisions.

The ‘SPICE’ (Stratospheric Particle Injection for Climate Engineering) project, IAGP’s sister initiative, was subject to a decision-making process regarding a particular aspect of the research (a small-scale test of a piece of technical equipment outside of the laboratory). Because the test was deemed to raise social and ethical concerns, public engagement – conducted by the IAGP team – was initiated. **The resulting findings formed part of the decision taken about SPICE: a practical and important outcome of IAGP engagement research.**

A project called the Solar Radiation Management Governance Initiative (SRMGI) has begun engaging with stakeholders in developing nations. However, few – if any – public voices from these communities are yet represented.

## What does the IAGP project recommend?

The IAGP project recommends that:

- Public and other stakeholder perspectives should continue to play a prominent role in researching geoengineering responsibly.
- Policymakers should consider that among both public and other stakeholder audiences, there is a strong preference for mitigation policies with geoengineering approaches being seen by most as a ‘sticking plaster’ rather than a solution.
- Extending and expanding public and other stakeholder engagement to communities including those in developing countries is critical.

## Further resources

Bellamy, R., Chilvers, J., Vaughan, N. E., Lenton, T. M. (2013) 'Opening up' geoengineering appraisal: Multi-Criteria Mapping of options for tackling climate change, *Global Environmental Change*, 23(5), 926-937. 

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<http://www.iagp.ac.uk/publications/>

## About us

The IAGP project has been carried out by researchers at Cardiff University, Lancaster University, Met Office, Tyndall Centre for Climate Change Research, University of Bristol, University of East Anglia, University of Leeds and University of Oxford. The IAGP project has received funding from the Engineering and Physical Sciences Research Council (EPSRC) (EP/I014721/1) and the Natural Environment Research Council (NERC) and support from Living With Environmental Change (LWEC).

## Project Website

[www.iagp.ac.uk](http://www.iagp.ac.uk)

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