

To: The Committee on America's Climate Choices and its panels
From: Environmental Defense Fund, New York, NY
Date: June 8, 2009
Re: Written input on practical, legal, and ethical issues associated with geoengineering

Environmental groups, including Environmental Defense Fund, have been hesitant to speak out on geoengineering mainly for two reasons: the lack of maturity in the underlying science and so-called “moral hazard” arguments. Based on the best science geoengineering (including artificial carbon sinks, albedo modification, and other schemes) has to be considered an unproven option for addressing climate change that could include many risks, e.g. harmful side effects and a failure to meet the intended goals, none of which are well understood.¹ Perhaps equally important are concerns around “moral hazard,” i.e. that mentioning the possibility of ameliorating the climate problem through geoengineering could detract from efforts to address the unsustainable use of fossil fuels. Since efforts to study geoengineering are moving ahead, we are suggesting guidelines to help ensure the adoption of pro-active policies that promote sound research on geoengineering approaches while preventing rash and risky experimentation and deployment.

1. Flexible definition

In the policy arena, geoengineering needs to be defined as precisely as possible while being as all-encompassing as necessary for policies to cover any potential means of intentionally influencing the global climate. One possible definition is “deliberate large-scale manipulation of the environment to reduce undesired anthropogenic climate change” (Keith 2000).

2. Global jurisdiction

Geoengineering requires a global policy regime regulating both experiments and deployment, like nuclear proliferation. The potential for nations to implement geoengineering solutions unilaterally is a real concern.

3. Regulations on scientific experiments

- The international community should set general guidelines for scientific experimentation. At a minimum, any experiment must be small-scale, short-term, and conducted in a low-risk location.²
- Decisions to allow experiments should be made on a case-by-case basis, with the presumption that any experiment is illegal unless it has received prior approval.³
- The international agreement could be modeled on the London Convention and Protocol of the International Law of the Sea, which allows “legitimate scientific research” on ocean fertilization schemes but not “other activities,” such as large-scale commercial deployment.⁴

¹ See references listed at the end.

² This may, in fact, rule out certain kinds of experiments altogether – for example, stratospheric sulfur injection, which would necessarily have large-scale impacts.

³ Once a particular type of experiment – for example, seeding of low marine clouds – is approved, multiple experiments below a certain scale and impact could be conducted without the need for individual re-approval.

⁴ http://www.imo.org/includes/blastDataOnly.asp/data_id%3D24337/LC-LP1%2830%29.pdf

- Decisions on specific scientific experiments could be delegated to an international scientific panel.

4. Full-scale deployment

- Nations should agree in advance on a general set of parameters as to what constitutes imminent catastrophic climate change that might warrant large-scale geoengineering deployment.

- Actual full-scale deployment of geoengineering should, in addition, require international ratification.

5. Clear liabilities and stiff penalties

Nations need to be held fully accountable for any damage caused by experiments or deployment in violation of international guidelines. Once an experiment or deployment is approved, the international community needs to share the responsibility for any resultant damages.

6. Funding guidelines

Government funding of geoengineering experiments and deployment should be predicated on having international guidelines and regulations in place prior to initiation. Government funding for theoretical studies should continue and be increased, provided it is additional to funding for climate change mitigation and adaptation research.

7. Timing key

Geoengineering legislation or treaty development must not distract from efforts to secure legislation and international agreements on mitigation of climate change.

References

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