Statement for the US House of Representatives Science and Technology Committee by Phil Willis MP

INTRODUCTION

This inquiry really began life in April 2009, when we visited Washington DC and met with your Chairman, Bart Gordon. We discussed then the possibility of a joint inquiry. My fellow committee members and I are delighted that we have managed—within the restraints of procedure—to undertake something that approached a 'joint' inquiry.

May I state for the record that our staff have found your staff to be terrific to work with, professional, helpful and knowledgeable.

And we as a committee have thoroughly enjoyed the process of dovetailing our inquiry on geoengineering specifically to fit neatly into your larger inquiry into geoengineering issues more broadly. I very much hope that this relationship between the two committees is something that outlast mine and Bart's tenures.

BACKGROUND

Today we published our Report, the Regulation of Geoengineering.[1] Geoengineering is a topic that as a committee we have been interested in for a while. We were, I believe, the very first legislature to examine geoengineering, which we did as part of a larger report on engineering. In that report we urged the UK Government to consider the full range of policy options for managing climate change, and that includes various geoengineering options as potential "plan B", in the event of "plan A"—mitigation and adaptation—not being sufficient.

We divided geoengineering into technologies that reduce solar insolation (that is, keep the earth cooler by reflecting more of the sun's energy) and carbon sequestration (that is, taking carbon out of the atmosphere to reduce the greenhouse effect).

We cautioned against mass rollout without extensive research and suggested that our UK research councils fund research on modelling the effects of geoengineering and start a public debate on the use of geoengineering techniques—both of which are now underway.

Following that inquiry, the Royal Society produced a report on geoengineering—a fine report that detailed the scientific and technological issues and options—and I believe that you took evidence from Professor John Shepherd, who was chairman of the Royal's geoengineering panel.

One of the key recommendations from the Royal's report was that the regulation of geoengineering required careful consideration. We decided—as part of a dovetailing exercise with your committee—to take on that challenge and move the debate on the regulation of geoengineering a little further.

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[1] The Science and Technology Committee, The Fifth Report of Session 2009-10, The Regulation of Geoengineering, HC 221

A NEED FOR REGULATION?

The first question in our terms of reference for this inquiry was: is there a need for international regulation of geoengineering research and deployment and if so, what international regulatory mechanisms need to be developed? We discovered two things.

First, some geoengineering techniques are already subject to regulation. For example, ocean fertilisation is being managed by the London Convention on ocean dumping under the London Protocol. And existing international regulatory arrangements such as the UN Framework Convention on Climate Change could relatively easily incorporate some geoengineering techniques such as carbon dioxide removal technologies.

Second, as regards the remaining techniques—such as stratospheric aerosols or space mirrors—it is not clear that any existing treaties could be adequately altered to encompass them. Additionally, particularly for technologies such as injecting aerosols into the stratosphere, the costs are relatively low—which means that a rich country might be able to engage in this kind of activity unilaterally—and the effects are not predictable and cannot be contained with national boundaries—we should be keen to avoid a situation where one nation deliberately or otherwise alters the climate of another nation without prior agreement.

We concluded that "the science of geoengineering is not sufficiently advanced to make the technology predictable, but this of itself is not grounds for refusing to develop regulatory frameworks. There are good scientific reasons for allowing investigative research and better reasons for seeking to devise and implement some regulatory frameworks, particularly for those techniques that a single country or small group of countries could test or deploy and impact the whole climate."

We also concluded that there is a need to develop regulatory frameworks for geoengineering. There are existing international regulatory regimes, which need to develop a focus on geoengineering. And some regulatory systems need to be designed and implemented for those solar radiation management techniques that currently fall outside any international regulatory framework.

PRINCIPLES FOR GEOENGINEERING REGULATIONS

Having decided that there is a need for regulatory regimes for geoengineering we considered what principles might govern them. A group of academics from Oxford, University College London and Cardiff came up with a set of five principles of which we are very supportive. These principles are:

- geoengineering to be regulated as public good
- public participation in geoengineering decision-making
- disclosure of geoengineering research and open publication of results
- independent assessment of impacts, and
- governance before deployment.

We made a series of recommendations on the basis of these excellent suggestions.

1. Geoengineering should be for the public good. That is a given. And therefore any regulations should support this position. However, we suggested that for the sake of clarity,

"public good" should be defined; after all, there are many different "publics"—some would benefit from global warming and they might not be too pleased with geoengineering deployment. We also noted that striving to make geoengineering for the "public good" might risk intellectual property rights, and that would be a shame. No IP means no industrial and private sector input; and without industrial input, a lot of these technologies might never get off the ground.

2. We are in favour of public consultation, but a bit cautious about "public participation in ... decision-making". For example, could people who were adversely affected by geoengineering—even if the majority of people benefited—veto or alter geoengineering tests?

3. Our support for the notion of full disclosure of geoengineering research and the open publication of results is unqualified. In fact, we went further and suggested that an international database of geoengineering research to encourage and facilitate disclosure might be useful.

4. The called for "independent assessment of impacts" is very important. Independent assessment is a key scientific concept—it takes the task of assessing the effectiveness of an intervention away from its inventors. That is a good thing. However, we do think that the term 'impacts' covers a range of issues. For example, deployment of geoengineering might occur only when temperatures go past a dangerous point of warming, say 3.5 degrees centigrade, so our definition of impact would need honing. Another issue it raises is compensation for people that suffer because of geoengineering. This legal aspect of geoengineering is unavoidable and central to the reasons why good regulation is necessary.

5. The last of the principles, "governance before deployment", again, we support without qualification. We suggested that our government commission research and press for research to be carried out through international bodies on the legal, social and ethical implications of geoengineering.

SPECIFICS

May I conclude with a few specifics that may be of interest to your inquiry? Following careful consideration of a wide range of views on geoengineering, we concluded the following:

- regarding research that uses computers to model the impact of geoengineering technologies, we support that work—so long as it adheres to principle 3 on the disclosure and open publication of results;
- we thought that even a short-term ban on all solar radiation management research would be a mistake, at least in part because it would be unenforceable;
- it seems sensible that if small-scale testing of solar radiation management geoengineering is going to take place it should adhere to the full set of principles that I just outlined, that there should be negligible or predicable environmental impact as far as is possible, and that there should be no trans-boundary effects;
- it would be prudent for researchers exploring the impact of geoengineering techniques to make a special effort to include international expertise, and particularly scientists from the developing world which is most vulnerable to climate change; and

– finally, we concluded that “any testing that impacts on the climate”—that is, that is large-scale enough to have a real impact on the wider climate—“must be subject to an international regulatory framework”.

CLOSING

May I finish my comments, Chairman, by making some broader observations. We found this to be a very complex area. International agreements are not always easy for non-controversial issues. Climate change, which is a controversial issue because of the impact that mitigation efforts might have on our economies, has proven very difficult to get international agreement on. I cannot see how geoengineering would be any easier.

But that should not be a reason to back off. If the climate warms dangerously, and we can’t fix the problem by reducing carbon emissions or adapting to the changing climate, geoengineering might be our only chance. It would be irresponsible for us not to get the ball rolling on regulations.

To that end, we considered that the only appropriate forum for managing something like geoengineering would be the UN. Geoengineering covers such a wide range of technologies that more than one international body would be required to work on international agreements. We suggested that the UK government—and this is something it might be able to do in partnership with the US government—should (1) press hard for a suitable international body to commission a review of how geoengineering regulations might work in practice; and (2) press hard for the establishment of an international consortium to explore the safest and most effective geoengineering options.