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RESEARCH IS RESPONSIBILITY

As geoengineering moves from the sidelines of scientific scrutiny to a pivotal position in the discourse on climate change, its risks are becoming ever more apparent.

Last month saw the largest meeting to date of geoscientists in Europe, with over 8,000 Earth, space and planetary researchers gathering in Vienna for the European Geosciences Union (EGU) annual assembly, which took as its theme 'geosciences is responsibility'. The record number of attendees was the not the only first for the meeting: also new this year was a session on geoengineering — the deliberate manipulation of the Earth's climate — an addition that, to many, reflected the increasing acceptance in research circles of this long marginalized idea (*Nature* **447**, 132–136; 2007).

The concept of using technology to cool the planet is hardly new, having first been proposed in policy forums as far back as the 1970s. But even as climate change took centre stage as enemy number one last year, geoengineering schemes were being sidelined from mainstream discussions (*Nature* **447**, 115; 2007). With emissions now soaring beyond the worst-case predictions of the Intergovernmental Panel on Climate Change, we can no longer allow ideological objections to get in the way of considering all necessary means — including a climate emergency response system — of avoiding the worst effects of rising temperatures.

Yet there is little in the way of research or funding to trial the various proposed geoengineering options, from blocking the Sun's rays with massive space shields to simulating a volcanic eruption though the release of sulphate aerosols into the atmosphere. Whether the geoscience community should now begin to put these concepts to the test was the topic of a 'great debate' complementing the EGU science session. Speaking at the debate, Ken Caldeira of the Carnegie Institute in Washington, D.C., warned that a perceived quick fix to climate change could present a dangerous diversion from the need to rapidly reduce emissions, ultimately causing more harm than good. Of equal, and mounting, concern are the unforeseen side effects of playing with the planet's climate, from more acidic seas to worsening ozone loss over the poles, as highlighted on page 51 of this issue.

Arguably, what should be of greater concern is the prospect that not a single one of the myriad schemes would actually work in reality. To rely on geoengineering as a solution to climate change would be massively irresponsible, akin to using gambling as a way to get out of debt, and with much higher stakes. But it would be equally irresponsible to avoid garnering all the knowledge we can about whether it is a feasible option.

The EGU debate concluded with a majority vote for small-scale trials of geoengineering technologies. This vote should be heard as a call to action. If the theme of this year's EGU is to be taken seriously, the geoscience community can act responsibly by proceeding — albeit with caution — in informing science and society about the real-world risks and benefits of tampering with the climate.

OLIVE HEFFERNAN, EDITOR

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