

The Carnegie Climate Geoengineering Governance Initiative (C2G2)

An update and plans for 2017-2018

28 September 2017

The Context

In December 2015 in Paris, world governments agreed to limit average global temperature rise to within 1.5-2°C above pre-industrial levels. To do this, they envisaged a rapid decarbonization of the world energy system. Implementation of the Paris agreement is closely linked to the 2030 Agenda for Sustainable Development, together with all the 17 Sustainable Development Goals, also adopted by world governments in 2015.

Two years later, a growing number of scientists are warning these targets may not be achieved through mitigation alone, and some are proposing the additional use of geoengineering to keep temperatures within safe limits.

The world is already suffering from the impacts of an approximately 1°C temperature rise. Extreme heat is increasing death rates in many parts of the world. The melting of glaciers is changing the ecosystems, and indeed the geology of high mountain regions. And the hurricanes seen in the Caribbean and the Atlantic in August-September 2017 show how people, especially the poor, are increasingly vulnerable to catastrophic weather events.

The 2014 Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) made use of models that already rely on the deployment of one family of geoengineering technologies – **'carbon removal' (or 'negative emissions')** - in order to not go beyond 2°C warming. But to work at scale, some of these technologies would have major consequences for biodiversity, land and water use, and food security.

Another branch of geoengineering known as **'solar radiation management' or 'solar geoengineering'** would keep temperatures down by reflecting more heat back into space. But these are untested, and could lead to disruption of global weather patterns.

Geoengineering options cannot solve the climate change problem on their own. If at all, they need to be considered as complementary to massive mitigation, as well as adaptation. Under any circumstance, geoengineering will need to be governed. Until recently, however, the debate has largely been mostly limited to scientific circles, and governance has seen only limited consideration by the policy community. This needs to change.

The time has come for a frank policy discussion on geoengineering technologies and their ability to supplement mitigation efforts, and of pivotal importance: an open, inclusive and considered discussion of how these technologies are to be governed, at the sub-national, national and international levels.

The C2G2 Initiative

With generous funding from the V.K. Rasmussen Foundation (VKRF) approved for 2017-2018, the Carnegie Climate Geoengineering Governance Initiative (C2G2) was established in January 2017 as a programme of the Carnegie Council for Ethics in International Affairs.

The purpose of the C2G2 initiative is to catalyse the creation of effective governance for climate geoengineering technologies by increasingly shifting the conversation from the scientific and research community to the global policy-making arena, and by encouraging a broader, society-wide discussion about their risks and potential benefits.

With backing from its Advisory Group, C2G2 has developed **3 priorities to guide its work:**

1. To encourage the development of **governance for research** on climate geoengineering that is balanced between enabling and regulatory aspects;
2. To ensure that **deployment of solar geoengineering be put on hold** until (i) the risks and potential benefits are better known, and (ii) the governance frameworks necessary for deployment are agreed; and
3. To **encourage policy discussions and agreements about atmospheric carbon removal** at national as well as global levels.

Key Milestones in 2018

2018 will serve as a critical inflection point in this governance discussion, with four key events taking place that will have direct bearing on the governance of geoengineering.

1. Governor Jerry Brown of **California**, in conjunction with the UNFCCC's Executive Secretary and civil society partners, will host an international **Climate Action Summit** in mid-September 2018, in which actions at the sub-national level will be profiled. Potentially, this could include actions on carbon removal.
2. The **IPCC will release its Special Report on 1.5°C** in September, focusing attention on the feasibility of achieving this temperature goal. The issue of scale of use of CDR and the governance of SRM is likely going to be addressed.
3. The **UNFCCC's "Facilitative Dialogue"** is scheduled to take place during COP24 in November 2018. In the lead-up to this dialogue, governments will be urged to increase their efforts to reduce carbon emissions.
4. The **Biodiversity Convention's** meeting of its Conference of the Parties (CBD COP) in Egypt in November 2018 provides a potential opportunity for governments to address how carbon removal technologies should be governed.

C2G2 Achievements in the First Eight Months of 2017

Substantive Achievements

Over the course of 2017 the nature and intensity of discussion on geoengineering has substantially changed. C2G2's work has undoubtedly been a catalyst for part of that shift.

C2G2 is putting geoengineering governance on the radar screen of **policy makers**. Based on their excellent professional contacts, C2G2 Staff are now having **regular conversations with leaders** (senior government officials, including ministers, heads of intergovernmental organizations, treaty bodies, and NSAs). No other organization is doing this at anywhere near the level of professional credibility, seniority and global reach.

C2G2 receives **high-level substantive advice from its Advisory Group**: a unique group of global leaders in sustainable development, intergovernmental affairs, governance, and geoengineering. No other entity in the field has this kind of international brain-trust.

With the backing of its Advisory Group, C2G2 has shifted from listening mode to proactively advocating for its three priorities mentioned above. This is having a substantial impact on C2G2's work programme, as these priorities are incorporated into its work streams.

During the first half of 2017 C2G2 has made **substantial inputs into key intergovernmental processes**. Notable examples include:

1. A successful public webinar on the governance of solar geoengineering, where lead authors of the IPCC Special Report on the 1.5C target (SR15) also participated;
2. Series of capacity building and outreach events prepared for the UN-ESCAP Environment-Development Ministerial Conference in Bangkok in September;
3. Addressing the UN Interagency GESAMP meeting in Geneva in September;
4. Initial work programme with the CBD secretariat in support of CBD Decision XIII/14 to address the need for more transdisciplinary research and sharing of knowledge to better understand the impact of geoengineering on biodiversity, ecosystem functions and services, implemented in collaboration with the CBD secretariat;
5. Series of meetings with senior staff of UN Environment (previously known as UNEP) to develop a set of activities UN Environment could take on;
6. Close contacts with executive and senior staff at a number of other intergovernmental organizations, including UNFCCC, OECD, WMO, UNESCO, etc.

During the same period, C2G2 has made many **contacts with non-state actors**, in some cases also involving small amounts of co-financing. Notable examples include:

1. Engaging with **GreenFaith** and a senior religious figure to educate and engage multiple faith groups, with a view to participating in international climate geoengineering governance discussions;

2. Speaking at a **UNFCCC** side event on geoengineering at the Bonn intersessional, organized by Climate Action Network (CAN) International, and working closely with CAN International on efforts to inform and engage civil society organizations;
3. Cooperating closely with the **Forum for Climate Engineering Assessment (FCEA)**, and the its Academic Working Group on Climate Engineering Governance (AWG);
4. Partnering with the Potsdam-based Institute for Advanced Sustainability Studies (IASS) to support **the 2017 Climate Engineering Conference (CEC17)**, including by organizing a session on governance and facilitating participation by policy specialist;
5. Initiating and hosting a panel session on the “Security Dimensions of Geoengineering” at the **Planetary Security Initiative** conference in The Hague – the first time geoengineering has been explicitly addressed in this forum;
6. Meeting with sub-national leaders to discuss the need for governance of research and carbon removal technologies;
7. Partnering with the **University of Calgary-based Geoengineering Research Governance Project** on codes of conduct for geoengineering research;
8. Partnering with the **Solar Radiation Management Governance Initiative (SRMG)** to increase the participation of developing country representatives in discussions related to the governance of geoengineering.

C2G2 staff have also made direct contacts with **representatives of governments** (e.g., **China, India, Canada, France**) with a view to setting up cooperative activities with government offices or with non-state-actors. **Specific activities are being planned in India and China.**

Substantial engagement with the media - both for interviews (Technology Review, Wired, Spiegel Online, CBC, NYT, The Guardian, Greenpeace Magazine, etc.), and writing in C2G2's own name (e.g., the editorial C2G2 senior staff prepared for Science in July).

With these activities, C2G2 has in half a year achieved **general recognition that it is the most significant initiative in the global policy space focusing on the governance of geoengineering.**

Managerial Achievements

The Executive Director has hired the core senior staff needed for C2G2, as well as a number of other policy advisors. This allows C2G2 to deliver its work programme.

Arrangements have been put in place to manage the staff as well as travel and other activities on a day-to-day basis (including budget management; payments; basic procedures; and ITC infrastructure that allows virtual operation).

Accreditations to participate as observers in key intergovernmental organizations and treaty bodies have been approved for the UN, UN Environment, IPCC, CBD and UNFCCC.

Proposed enhanced action in 2018

From the outset, the VKRF approved project document assumed that the baseline activities would not be sufficient, and that supplementary activities would be needed to increase the speed and depth at which those objectives would be realized.

While the objectives of the original baseline project document can be achieved with the resources included in the original budget, C2G2 is looking to fund three sub-projects in order to **enhance its activities in 2018, to build on the rising momentum around geoengineering.**

1. **Governance of Research:** *To encourage the development of governance for research on climate geoengineering that is balanced between enabling and regulatory aspects*

To take informed decisions on geoengineering, the world urgently needs more research into the risks, costs and benefits of various technologies. We aim to bring together scientists, representatives of science bodies and of civil society organizations, and intergovernmental bodies and non-state actors, to encourage and contribute to the governance of geoengineering research, including public policy inputs for intergovernmental agreements, and codes of conduct for geoengineering research.

2. **Putting Solar Geoengineering Deployment on Hold:** *To ensure that deployment of solar geoengineering is put on hold until (i) the risks and potential benefits are better known, and (ii) the governance frameworks necessary for deployment are agreed*

The international community currently does not have a sufficient understanding of the risks, cost and potential benefits of solar geoengineering, as well as its governance requirements. An agreement to put deployment on hold globally would reduce risks and allay concerns about premature action, whilst allowing and encouraging more essential research to allow informed decisions. We aim to strike a balance between those interested in researching solar geoengineering to see if there is sufficient merit, weighed against risks, in potentially deploying it, and those who want to ensure that deployment of solar geoengineering does not occur for fear of making matters worse.

3. **Governance of Carbon Removal:** *To encourage policy discussions and agreements about atmospheric carbon removal at national as well as global levels*

Carbon removal plays a prominent part in most models to limit global temperature rise to within 1.5-2°C. But there has been insufficient discussion of the political, ethical and economic challenges of deploying these technologies at scale. We aim to kick-start an international discussion on the governance requirements for mass deployment of carbon removal technologies.

More detail about these three sub-projects are available from the C2G2 secretariat at contact@c2g2.net.