

Proposed Engagement Process for SCoPEx

Prepared by the Independent SCoPEx Advisory Committee

Published on August 3, 2020

A Proposed Process for Public Engagement in the Ethical Issues and Uncertainties Raised by Solar Geoengineering Research

Background:

SCoPEx is a proposed research experiment to release small quantities of calcium carbonate particles from a balloon in the upper part of the troposphere and see how these particles disperse. The experiment could help assess the feasibility of the large-scale release of such particles in the atmosphere to reflect sunlight and offset some of the heating caused by the release of heat-trapping (or greenhouse) gasses. The large-scale release of particles to reflect sunlight is one a method for solar radiation management; solar radiation management itself a method for geoengineering; and geoengineering is general term for any large scale scheme for intervention in the climate system designed to reduce the effect of climate change. The Independent SCoPEx Advisory Committee was created to provide advice on the research and governance of SCoPEx. The Committee is reviewing the legal frameworks that apply to the experiment, scrutinizing the financial support for this work, overseeing a scientific and technical review of the work using the process of peer review, and has designed a process for public engagement in the ethical and moral dimensions of this work. This document is the first public draft of that engagement process, and we invite comments and suggestions that can improve the process and launch the engagement. These activities will guide the independent Advisory Committee in making recommendations about whether, and if so how, SCoPEx should be carried out.

Our Committee has decided to use the phrase “Ethical Issues and Uncertainties” as an umbrella term for the complex, multifaceted, interconnected and highly contested questions related to solar radiation management as a method of reducing the impacts of climate change. These include questions like:

- Will solar radiation management enhance our ability to cope with climate change by lessening the intermediate impacts and allowing more time for emissions reduction, CO₂ removal and adaptation, or will it undermine efforts to reduce greenhouse gas (GHG) emissions by, for example, persuading some people that solar geoengineering makes emission reductions unnecessary - i.e. does solar radiation management pose a moral hazard?
- Is it ethically permissible to intentionally add chemicals to the atmosphere that are long-lived and have global impact with the goal of intentionally changing the climate? If it is, who has the authority to make that decision?
- Can we trust the collective wisdom and governance of society in an endeavor of this magnitude - are we opening a Pandora’s box?
- Does research in solar radiation management make the application of geoengineering more likely - that is, is SRM research a slippery slope to deployment of SRM?

Background and Introduction

Wrestling with SCoPEX’s, or any small-scale experiments, responsibility to tackle the ethical issues and uncertainties related to solar radiation management research is challenging. SCoPEX represents a small, evaluative step on the pathway toward a decision whether to deploy geoengineering. Every step, no matter how small, shares the responsibility of considering the ethical issues and uncertainties of solar radiation management research. At the same time, SCoPEX is a just one small experiment, and it is not appropriate, or feasible to place the responsibility for addressing the full scope of the ethical issues and uncertainties of solar radiation management on a single, small and limited scope experiment. It is not appropriate because these issues need to be discussed and evaluated over time as information, perspectives, and situations change. It is also not appropriate because the moral hazard question must include perspectives and voices from all sectors of society and all parts of the globe – and a small experiment in one location does not feasibly allow wide-scale engagement. Our Committee suggests, however, that it is appropriate for this small experimental project to pilot and test an approach to public participation to examine the ethical issues and uncertainties of solar radiation management research with multiple publics and integrate these perspectives into decision making around the experiment. The process, outlined below, aims to be a fair, inclusive, and reflective process of deliberative engagement in the ethical issues and uncertainties associated with geoengineering research. Designing such a process, deploying it, and sharing it with a broader community, is entirely within the scope of SCoPEX and will provide the necessary public discussion of the SCoPEX experiment. By doing this well, SCoPEX can also make a unique contribution to addressing the engagement concerns around future solar radiation management and like research, which can facilitate public engagement with the ethical issues surrounding the research and application of geoengineering. While there has been (and continues to be) significant scholarly work on the engagement issues of solar geoengineering as a whole, and there are

initial steps toward global deliberation and governance, there is little practical and applied guidance for grappling with ethical issues as part of a single experiment. The Committee has elected to design such an engagement process for the SCoPEX project. The Committee will work with the SCoPEX research team to implement this process, but ultimately hold the research team accountable for the proper implementation of this engagement process. The Committee will evaluate the outcomes of this process as input to our recommendation as to whether or not SCoPEX should proceed. This recommendation, while reflecting a larger discussion of the ethical issues and uncertainties, should and will not be a final, summative, or comprehensive recommendation about the advisability of solar radiation management research or deployment. Instead, it will be a recommendation about a small and limited experiment related to solar radiation management that was made after careful consideration of the ethical issues associated with solar radiation management by the people in and around the location of the experiment as well as evaluation of the scientific research merits and the scientific integrity of the work.

We acknowledge that our process will not be perfect. It is an early attempt at public engagement but, it will provide a basis for innovation and refinement. The Committee is committed to evaluating the outcomes from this engagement work undertaken through SCoPEX and to refine our engagement process model and develop materials that describe the process for others. We fully expect that future strategies for public engagement will be strengthened as a result of what we've learned and shared.

To deal with ongoing, larger, and systemic ethical issues, the world needs a large-scale, multinational governance system for solar radiation management research. Ideally, processes like the one developed and deployed in SCoPEX to engage local community members in the moral hazard discussion will be inputs to this larger governance process. It is beyond the scope of SCoPEX, or this Advisory Committee, to set up such a global governance process, though we point out that there are emergent efforts underway. Nevertheless, Harvard and SCoPEX have the responsibility to contribute such a process and have the opportunity and influence to advance these processes. Given Harvard's entry into the domain, their prestige, and access, we strongly urge them to take a catalytic and cooperative role.

A Process for Engaging the Public in the Ethical Issues and Uncertainties Raised by SCoPEX

As mentioned above, this is a process for engaging the public, both people in and around the region where the SCoPEX project would occur and the broader public. Our intent with this process is not to engage all stakeholders in the larger issues of solar radiation management research or deployment, but to model a process for engagement that can be used in multiple places to engage a larger, more globally representative, set of publics. This process is designed in the context of a small scale research experiment. While no effort can truly reflect the diversity of the planet, the process will include the opportunity to reflect on potential impacts on planetary scales and on peoples all over the planet.

A Deliberative Dialogue

The Committee is recommending a deliberative dialogue be conducted around the SCoPEX project. This dialogue will engage stakeholders and publics in the area where the experiment might occur. If feasible, the Committee also recommends hosting dialogues with global stakeholders.

This process would include the following elements:

1. Dialogue Framing and Briefing Book

The Committee will design a set of questions to prompt consideration of the multiple dimensions of the ethical issues and uncertainties of the SCoPEX project, including consideration of known and potential risks to local communities and ecosystems. The briefing book will start with a broad framing and then narrow to focus on the specifics of the SCoPEX research. We will review these questions with a diverse set of people who have thought about moral hazards, including scholars who have studied these issues as well as passionate and informed thought leaders with diverse perspectives. We will also review these questions for accessibility and test them with focus groups. The goal is to get a set of accessible, neutral, questions that invite consideration of the moral hazards of SCoPEX (and, by extension, solar geoengineering research).

Based on this work, the Committee will prepare a publicly-available, Internet-accessible, briefing book to share these questions. While the Committee will prepare this book, it will do it with input and guidance from similar experts and organizations who informed the development of the questions. The briefing book will include:

- a. Questions designed to guide constructive dialogue about the moral hazards associated with solar radiation management.
- b. A cogent and fair synthesis of the background information necessary for an informed consideration of those questions.
- c. Clear descriptions of the regional outcomes and impacts that would result from large-scale solar radiation management, including information about which communities and regions will experience disproportionate impacts.

The Committee will convene a group to review the briefing book and briefing materials. As before, this group will include people with a strong interest in geoengineering research; both opponents of outdoor experimentation and advocates for continuing this research. This group will also include people who are interested, but not strong advocates. We will strive to produce briefing materials that fairly represent the facts and perspectives from all relevant sides, and this group's feedback will help ensure that happens. For topics where no strong consensus opinions exist, the briefing book will include arguments representing differing opinions. The

Committee will share the briefing materials with SCoPEX for their comment and consider their input.

2. Local Engagement and Dialogue

The Committee will require SCoPEX to hire a team with appropriate expertise, experience, and independence to lead several deliberative dialogues. This team must include trusted local partners who will help design stakeholder groups and encourage people to participate. The Committee will have final review of the team before it is selected.

Using information on where the experiment will occur, this team will identify and recruit groups of local stakeholders and publics to participate in deliberative dialogues. The stakeholder groups will reflect the diversity of the region in which the experiment takes place (including the launch and landing sites). These groups will not, however, be a statistically accurate representation of the local population— the team will be required to make extra effort to include people who are from communities that have been historically underserved, climate-vulnerable, or currently and historically hold less power. Using the briefing book as the reference source, the team will lead and facilitate deliberative dialogues. In these dialogues, members of the stakeholder groups will make a collective recommendation about the SCoPEX experiment. There will be multiple groups and dialogues, each making their recommendations independently. The team hired to facilitate and lead these dialogues will also prepare a summary of each dialogue and a synthesis of the main points raised in all the dialogues.

3. Global Engagement and Dialogue

The Committee will supplement this local engagement with by engaging and gathering input from members of the global public who reside outside of the region of the experiment. The Committee will use the same briefing materials to proactively invite input from people from the research, advocacy, social equity and other communities with interest in the research. The Committee will also offer open comments on their website so that any member of the public can participate in a discussion related to the briefing materials.

4. Developing Recommendations from Deliberation

In addition to the analysis and synthesis provided by the teams that lead the local engagement, the Committee will analyze and synthesize the outcomes from the dialogues and the global engagement. This synthesis will include reflections on stakeholder perspectives and the

Committee's analysis of the processes and outcomes. Based on this and completion of other elements of the review process, the Committee will make a recommendation to the SCoPEX team and Harvard on whether the experiment should proceed. This recommendation, and the materials on which it was based, will be made public and all work will occur prior to a potential particle release flight.

5. Sharing Lessons Learned

Based on our experience with this engagement process the Committee will make revisions to the process and the guides and then share them for others to use. Our hope is that the process we develop will be adapted to engage various and distributed publics in the moral hazard discussion. This would build awareness of solar radiation management and perhaps even geoengineering more generally engage the broad set of publics that are commensurate with the global nature of solar radiation management and geoengineering, and engage publics and regions that stand to be disproportionately impacted by solar radiation management and/or geoengineering.

Beyond Ethical Issues and Uncertainties

As described above, this work is a part of a comprehensive review performed by the independent Advisory Committee. In addition to the ethical issues and uncertainties considered in the public engagement process outlined above, there are scientific, social and ethical issues associated with SCoPEX, and our Committee is addressing those through a peer review process to evaluate the technical and scientific merit of the experiment; a review of project funding and funding guidelines to assess any potential conflicts of interest; and a legal and regulatory review to ensure compliance with federal and local regulation and permit requirements. The Committee will ensure each of these review processes proceeds according to established best practices and provide a model for other research institutions working on solar geoengineering research.