

3/Risky Science across Borders

Acronyms and abbreviations

AFCIG: Australian Forum for Climate Intervention Governance

CCS: Carbon Capture and Sequestration

CCT: Cirrus Cloud Thinning

CEEW: Council on Energy, Environment, and Water (mistakenly called CEEE in the book)

COP: Conference of the Parties

GHG: Greenhouse gases

IMO: International Maritime Organization

IPCC: Intergovernmental Panel on Climate Change

MCB: Marine Cloud Brightening, also called Marine Cloud Whitening

OSTP: (White House) Office of Science and Technology Policy

RAF: Refreeze the Arctic Foundation

SAI: Stratospheric Aerosol Injection

SCoPEx: Stratospheric Controlled Perturbation Experiment

SPICE: Stratospheric Particle Injection for Climate Engineering

SRM: Solar Radiation Modification

TUDCI: Technical University of Delft Climate Institute

Glossary

1.5 degrees Celsius: The acceptable increase in average temperature above pre-industrial levels that 195 nations agreed to as a goal in the 2015 Paris Agreement; exceeding this level is referred to as climate overshoot

Carbon emissions: Carbon dioxide emissions created from human use of fossil fuels make up most of the greenhouse gas emissions currently responsible for global warming

Conference of the Parties (COP) meetings: Annual meetings of the United Nations Framework Convention on Climate Change, the parent convention of the 1997 Kyoto Protocol and the 1995 Paris Agreement, aimed at stabilizing global greenhouse gas emissions through international cooperation

Fossil fuels: Non-renewable energy resources such as coal, gas, and oil that cause harmful greenhouse gas emissions when burned

Geoengineering: Large-scale manipulation of the Earth's climate processes to mitigate global warming by reflecting solar radiation back into space (solar radiation modification) or removing carbon dioxide from the atmosphere (carbon capture and sequestration)

Please see the following page for some additional resources.

Additional Readings

Baur, S., Nauels, A., Nicholls, Z., Sanderson, B. M., and Schleussner, C.-F.: The deployment length of solar radiation modification: an interplay of mitigation, net-negative emissions and climate uncertainty, *Earth System Dynamics*, 14, 367–381

This study models hundreds of potential geoengineering scenarios to account for factors such as how quickly global emissions fall, how much carbon is removed from the atmosphere each year and how the climate system physically responds, which is still uncertain.

VOLTS with David Roberts (2023), “How to think about solar radiation management” February 24, 2023. Podcast.

In this episode, Kelly Wanser of nonprofit SilverLining makes the pitch for solar radiation management, the practice of adding our own shielding particles to the atmosphere to buy us some time while we step up our greenhouse gas reductions.