



Book review

A Case For Climate Engineering

By David Keith

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Review

Climate engineering is a possible third option for addressing climate changes, next to mitigation and adaptation. The basic rationale dovetails in the physics underlying global warming: greenhouse gasses, and CO₂ in particular, retain/stock more solar energy than an atmosphere with its normal composition. Hence, making sure the atmosphere will receive less energy from the sun, and/or will contain less CO₂- will (partially) solve the problem. This reasoning also explains there are two major, large scale engineering approaches to climate changes: solar radiation management and carbon dioxide removal.

This book makes a case about solar engineering (or solar radiation management) – an option which according to the

author – should make part of the tools for managing climate risk. The rationale supporting the discourse is sound, clear and nice, and developed in 6 steps, each of them a chapter:

- First the theoretical basis behind geo-engineering using the atmospheric injection of sulphuric acid, is explained. This strategy should complement mitigation and adaptation to reach the imperative significant CO₂-reductions in the atmosphere.
- Climate change is a particularly dangerous problem resulting from the industrial civilisation, and should be mitigated, also for the well-being of the next generation.
- Geo-engineering science is *in se* not normative, but allows answering questions such as; “How effectively can science counteract climate change?” and “What are the risks and the uncertainties?”.
- What may one expect from geo-engineering science, and what is the role of an environmental approach?
- Ethical criticisms on geo-engineering dovetail among others in considerations on responsibility, utilities, self-interest, inequality and geo-politics.

The central point is: technology (of which geo-engineering is part) has been used altering our environment for many years: nothing is wrong with that; consequently it is legitimate using geo-engineering solutions to alleviate the pressing cases of climate change.

What will geo-engineering bring in the future? It is a new and valid tool in dealing with climate change: we should make use of it with the humility of recognizing its limits.

In all, this book offers a well-informed case providing the arguments in favour of applying geo-engineering. It is short, easy to read and gives a synoptic view on the subject. The core message is clear: after years of failing emission reduction policies, one should seriously consider preventing the accumulation of solar energy in the atmosphere as a complementary instrument to cope with climate change, alongside with mitigation and adaptation. The rationale on which this message is based is well developed, using professional insights, academic arguments, and refined discussions.

The author fails however in presenting a balanced case. The arguments used by those pointing to the risks, the uncertainties, the adverse effects, the uncontrollability and irreversibility, are mentioned, but not balanced against the expected positive effects of solar geo-engineering. The text gives e.g. ample attention to the “romantic embrace of the primitive”, referring to the idea that nature and the environment should be kept in their original, hardly disturbed state. Evidently, this is only one of the components of contemporary environmental policy. As far as geo-engineering is concerned the precautionary principle guides much more the actions than “embracing the primitive”. Only, in the chapter on “Ethics and politics” the precautionary principle is hardly mentioned. The reader might presume it is set aside with the “old assumptions environmental advocates need to re-examine”.

This book is written as a novel. It does not show the classical introduction (problem formulation, aims, structure)/core part/ discussion and conclusions structure. Rather it offers six dissertations on solar-engineering, which, taken together, provide interesting information and (biased) insight in the “case for climate engineering”. As a novel, the reader should not expect an alphabetical “list of subjects, nor a systematic list of literature references (instead the min text refers to a series of 59 notes, most of which entail a reference to the scientific and/or policy literature).

The author, David Keith, is a professor at Harvard University.

As an academic he worked on the interface between climate science, energy, technology, and public policy for twenty years. He is vocal in the public environmental discussion in (mainly) Northern America. This is likely one of the most important keys to this handily booklet: it is a contribution to – but definitely no (intermediate) conclusion of – the debate on the applicability of solar geo-engineering in a human ecology context. In this way the book provides a valuable addition to the “Boston Review”-series of MIT Press.