

## What is the best measure of justice in climate engineering assessment?

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Advocates and opponents of climate engineering both support their positions with arguments about justice. Such arguments draw on a range of – often contested – philosophical and cultural conceptions of justice. This paper seeks to review the merits of different approaches to justice as a means of supporting judgements about climate engineering. It addresses a range of approaches: including distribution, recognition, capabilities, rights, procedural, utilitarian, restoration, egalitarian and sufficientarian; and the metrics each might involve, to make an initial assessment of their practical capacity to assist with policy making on climate engineering.

The paper will examine each approach against three basic questions. First, how far do they help us to meaningfully compare or contrast the justice of climate engineering in comparison with mitigation and adaptation responses to climate concerns? Second, how far do they help us to meaningfully compare or contrast the relative justice of different proposals for climate engineering (including different categories, techniques and applications)? Third how well do they encompass or reflect public or political concerns about the potential justice implications of climate engineering?

The paper will test the various justice conceptions against both carbon dioxide removal and solar radiation management forms of climate engineering. It will consider both international and intergenerational dimensions of justice. It will draw conclusions on the appropriate framing of debate and assessment of climate engineering by policy makers and researchers; the implications for institutions and governance for climate engineering research and deployment; and on the next steps in development of a multi-dimensional assessment metric of justice, including further research to fill information gaps regarding public views and cultural variations in conceptions of justice, and more widespread public engagement and deliberation.