Who's Ready to Think About Blocking Out the Sun?

By Alexa,der C. Kaufman, *The Atlantic,* Nov 24th, 2025

For years, the idea of geoengineering—artificially lowering global temperatures through technological means—has been met with skepticism. This September, in a study published in the journal *Frontiers in Science*, more than 40 experts warned that geoengineering was extremely unlikely to work and likely to have dangerous consequences. Spraying reflective aerosols into the atmosphere to deflect the sun's heat, could, for instance, "cause stratospheric heating, which may alter atmospheric circulation patterns, leading to wintertime warming over northern Eurasia," they wrote.

But as the predictions for Earth's future have become more dire, scientists are starting to agree. More than 120 of them signed on to a response to the *Frontiers* paper that argued that more research into geoengineering was, in fact, "urgently needed."

"Within the scientific community, there's growing support for the research, just driven by the reality that climate change is progressing," Philip Duffy, the former top science adviser in the Biden administration, told me. "There's a very strong realization now that mitigation alone can't fix this." Hopes of cutting emissions quickly enough to limit the dangers of climate change are fading: This year's United Nations climate summit concluded over the weekend with a final statement that avoided any mention of fossil fuels, in what was widely hailed as a victory for oil and gas producers. If the world cannot drastically, quickly overhaul global energy and agricultural systems before the planet reaches irreversible tipping points, then what?

In theory, geoengineering could mean brightening marine clouds, or encouraging heat to bounce back into space by mirroring light off polar ice. The term has also been used to describe technology that removes carbon from the atmosphere, which is now widely accepted as a necessary tool to limit global warming.

After years of being treated as fringe notions, all of these ideas are gaining traction. One Silicon Valley-backed company, Make Sunsets, went as far as carrying out a rogue experiment in Baja California in 2022.

But at the same moment that scientific and business leaders are softening to the idea of geoengineering, the political opposition in the U.S. is growing. "The politics are wildly bipolar," Craig Segall, a senior adviser to the Federation of American Scientists and a former top lawyer at the California Air Resources Board, told me. On the left, the most extreme thinkers argue that the world should be talking only about mitigating emissions—that the solution to climate change is dramatically scaling back energy production. On the right, a contingent of MAGA leaders have become vocal adversaries to geoengineering research and are using it to feed conspiracy theories about government manipulation of the atmosphere.

On the left, Craig Segall told me, the opposition to geoengineering has been mostly moral signaling. But on the right, millions of dollars are going toward blocking geoengineering before it ever starts in earnest. More than two dozen states have introduced legislation, mainly sponsored by Republicans, to block any geoengineering efforts.

The arguments that scientists still make against geoengineering follow much the same logic as those made against sea walls since the early 2000s: In the *Frontiers* paper, the authors wrote that geoengineering technologies offered "false hope," and risked sapping the will to address greenhouse gas pollution. [...]But short of just going for it, the only way to find out how helpful or dangerous geoengineering might be is to let people ask.