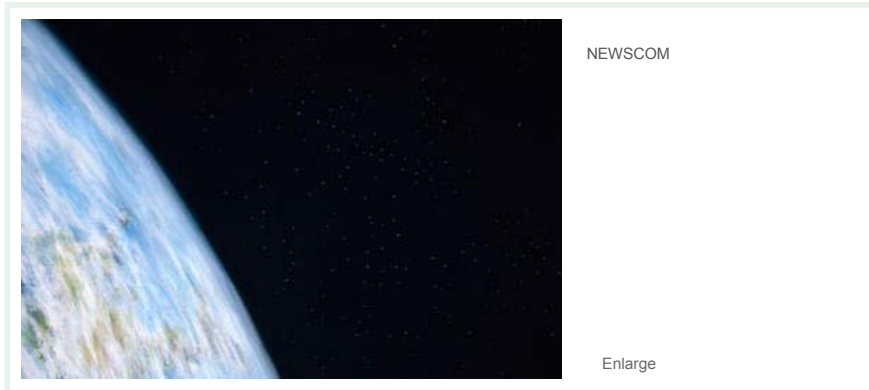


Can we engineer a cooler earth?

As CO2 mitigation efforts lag, some explore sun-blocking, cloud-forming technologies, and more.



By Gregory M. Lamb, Staff writer of The Christian Science Monitor / July 16, 2008



Launch myriad mirrors into space to deflect a fraction of sunlight from reaching Earth. Seed the stratosphere with sulfur or other particles to cut some of the sun's rays. Bioengineer trees to soak up huge amounts of carbon dioxide from the air. Scatter unmanned self-powered ships to roam the world's oceans funneling sea spray high in the sky to help form protective clouds.



Scott Wallace

Enlarge

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Thinkers have posed a number of creative ideas on how to protect the planet from global warming. But they've been dismissed by most environmentalists and many in the scientific community as science-fiction whimsy, at best. At worst, critics say, these schemes might have unexpected and potentially disastrous consequences or distract from the effort to cut greenhouse-gas emissions.

But today, attitudes show signs of shifting as meaningful efforts by governments to cut emissions have proved elusive. More and more scientists and environmentalists, despite their continuing reservations, are seeing "geoengineering" projects as a necessary backup plan. In June, the top scientific academies in 13 countries, including the United States, joined in a call for more aggressive action against global warming, including serious consideration of geoengineering.

At the same time, the Group of Eight leading economic powers meeting in Japan failed to set any near-term goals to reduce emissions. The group's soft, conditional goals for 2050 will be too little, too late, many environmentalists say.

"The reality is that de-carbonization is not happening fast enough," says Jamais Cascio, an environmentalist and futurist in northern California.

The need for geoengineering is "almost certain," he says.

The attitude among tech-friendly environmentalists, sometimes called "Bright Greens," has been shifting in favor of geoengineering, Mr. Cascio says. "This is by no means anyone's first choice, but it is better than the alternative," he says, which is unmitigated warming of the planet.

"I think that you'll see quite a few relatively desperate nation-states willing to try something like [geoengineering] simply to avoid global disaster," Cascio says. Since such efforts are very likely, in his view, the role of environmentalists will be to "make sure we do it in the way that is most responsible," he says.

Opponents remain unpersuaded and point to a litany of potential problems with geoengineering schemes. Chief among them is that efforts to engineer humanity's way out of the climate challenge are likely to distract from the hard work of mitigation: cutting greenhouse-gas emissions.

"To me, that [argument] doesn't make sense," says Samuel Thornstrom, a resident fellow studying public policy and geoengineering at the American Enterprise Institute (AEI) in Washington. No political leaders have said they would drop emission cuts in favor of geoengineering, nor do opinion polls indicate the public supports that idea, he says. In fact, Mr. Thornstrom argues, geoengineering is more likely to have the opposite effect. If a US president says we've got to start thinking about blocking the sun to cool the earth, "People are going to start taking mitigation [emission cuts] really seriously," he says.

Geoengineering faces legal hurdles. Would nations or private enterprises undertake the projects? Would an international agreement need to be reached? Might countries work at cross purposes?

"What if India wanted it a couple of degrees colder, and Russia didn't mind it a couple of degrees warmer?" asks Alan Robock, an environmental sciences professor at Rutgers University in New Jersey. Last spring, Dr. Robock published a paper entitled "20 reasons why geoengineering may be a bad idea."



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