Although I’m a newbie at the Emmett Institute, I have been working on geoengineering for a decade now. I have heard countless arguments over whether and how solar geoengineering could be useful in the struggle to manage climate change. I have seen deeply misleading claims by both its supporters and detractors, many trying to coopt the issues and victims of climate injustice to their case. So why have I signed up to an initiative by senior scholars from the social sciences which might appear to be doing the same thing – in this case calling on governments to withdraw support from the development or use of solar geoengineering, without first engaging with those whose interests they claim to be defending?

The ‘no-use’ call and geoengineering research

There are five key asks of the ‘no-use’ campaign with respect to solar geoengineering. Don’t fund technology development. Don’t permit outdoor experiments. Don’t issue patents for technologies. Don’t deploy the technologies. And don’t support them in international institutions. The full open letter is available here. In the months since its release it has polarised the climate research community. Particularly so around the question of what it means for research into solar geoengineering.

Even many researching the science or politics of geoengineering are deeply cautious about whether its deployment could ever be justified. But they see a strong case for more research, as well put by Kate Ricke in Nature just this week. And some of them fear that the non-use agreement (NUA) effectively advocates a ban on (at least publicly-funded) research. By contrast some of the more vociferous supporters of the NUA are afraid that even research will bolster continued delay in emissions reduction. They argue for defunding or tightly regulating all solar geoengineering research – drawing analogies with chemical weapons research, for example. Sadly both sides seem to question the motives of their opponents, rather than seeing these issues as legitimate topics of debate that demand public or political judgements.

Fortunately, for most of the academics involved this division does not extend to their views on deployment, especially commercial deployment. The recent announcements from ‘Make Sunsets’ that they are selling ‘cooling credits’ based on an untested and unverified form of solar geoengineering has generated condemnation from all sides. This has included a rapid announcement on a ban on

geoengineering activities and experimentation by the government of Mexico. But this commercial initiative makes clear that governance of solar geoengineering – and of solar geoengineering research – is a live issue.

Over several years I have made repeated efforts to promote reflexive governance of geoengineering research (including here, here, and here). I have highlighted various ways in which idealized modelling and technological speculation tends to facilitate predatory delay and procrastination. At the same time, I have seen the impacts of exaggerated promises and misleading modelling of carbon removal technologies play out. Procrastination and co-option by commercial interests set on resisting a phase-out of fossil fuels has flourished (see for example here).

A ‘charm offensive’ in favor of research

Yet in recent years, key advocates for solar geoengineering research have actively sought to normalize the concept, especially in the USA. Since the election of Joe Biden, they have implemented what looks rather like a coordinated ‘charm offensive’ to set a US-led global agenda for research and development.

The NAS report ‘Reflecting Sunlight’ epitomizes this process. Despite recognizing some limitations and risks in conventional research methods, it prioritizes increased research budgets and programmes ahead of public deliberation and international engagement to establish effective governance and regulation. And such a normalization of research – from my reading of the social science literature – risks enabling further climate procrastination. It might be dressed up as rational trade-offs in integrated assessment models, or as sustaining fossil fuel use in the interests of the poor. But procrastination via normalization will happen unless we intervene to prevent it.

So while I believe more research into solar geoengineering could yet be valuable, I think the unilateral, preemptive approach that has gained momentum in recent years should be spiked. The average person’s reaction to learning about solar geoengineering is crudely, to see it as ‘stupid’ and possibly ‘evil’. I fear that such views will only spread if efforts to push unregulated modelling and research continue as they are now – even if commercial deployment attempts are quashed.

The ‘non-use’ call is not a perfect instrument. But it does provide a platform that could put a halt to efforts to develop solar geoengineering in the technological imaginaries promoted by US scientists and engineers. Yet it does not reject

legitimate scientific research into the issue, nor the development of a broader base of knowledge, drawing on methods and epistemologies both of social science, and of decolonial and indigenous scholarship. Its call to prohibit public funding for development is perhaps too easily understood or portrayed as a wider ban on research. However, the London Convention places a moratorium on ocean fertilization as a commercial measure, with defined exceptions for legitimate scientific research. We surely can imagine and design effective similar international research governance for solar geoengineering. Such governance should aim to eliminate – or at least minimise – the risks of research leading to undemocratic and securitized forms of solar geoengineering that could easily undermine other climate action.

A moratorium on deployment

Personally I would think it wise to action the Non-Use call as a moratorium, rather than a permanent ban, but such a measure ought to be debated. The US, with support from Saudi Arabia, prevented the UNEA from even assessing options for governance of geoengineering. Geoengineering advocates consistently talk-down and ignore the milder measures agreed in the UN CBD. In that context it would seem time for a proper discussion – perhaps at the UNGA – with all options on the table, up to and including a ban. If countries collectively don’t want to ever use such techniques, it would be good to know that. Otherwise we may sleep-walk into a situation where solar geoengineering could be our only option that might prevent further climate catastrophe.

In the breathing space provided by a moratorium, we would have a meaningful chance to discuss the prospects for effective and just governance of such technologies, and to undertake careful balanced risk-assessment. Geoengineering optimists tend to presume that effective multilateral governance is possible, or if not, that a ‘coalition of the willing’ should or would act with benign intent in the collective interest. By contrast, political, legal and governance scholars are divided on whether effective and just governance is even possible at all. Amongst the many experts on environmental and technology governance signing the NUA initiative, most fear that solar geoengineering is ungovernable, but there are a handful of more optimistic scholars who argue otherwise.

For my part, my PhD research in this area concluded that in the existing global political economy, just deployment of geoengineering is infeasible. In that context,

pursuit of geoengineering would most likely undermine existing climate action in ways that would be on balance much more harmful than any potential gains from deployment. In subsequent work on climate security, I have seen additional reasons to worry, in particular because security analysts see solar geoengineering as a highly disruptive technology. They predict that it would inflame international tensions, and thus undermine the capacity of states to collaborate on effective climate mitigation. And deliberate disinformation circulated by actors as diverse as extremist groups and the fossil fuel states would exacerbate this problem.

To me it is clear what a just response to the climate emergency demands right now: accelerated mitigation to minimize emissions, phasing out of fossil fuels, funding for adaptation and reparations for loss and damage. In the contemporary world solar geoengineering easily distracts from that already difficult agenda. But taking it off the table (for now) need not preclude legitimate, well governed research, nor broad international public deliberation on whether other climate measures might be merited or desirable in the future.

Division and inclusion

Nonetheless, I am concerned that the NUA demands may continue to facilitate division and polarisation, especially if read or presented as seeking a prohibition on all research. I fear that geoengineering research advocates will claim they are being stifled or censored. Or that they may claim that the non-use suggestion disadvantages notional prospective geoengineering researchers from the global South – as if the existing imbalances in international systems will somehow be overcome in this case.

Others might worry that the ‘non-use’ initiative could backfire, and stimulate the denialist right to rally around solar geoengineering. If it were really an effort to prohibit all research and political engagement with the topic, then it probably would contribute to such a trend. But that interpretation is not one I share. Moreover, if we shape all our political activities according to what works in domestic US politics, then we are already lost. Procrastination originating in the US has cost the world decades in addressing climate change, and pursuing the chimera of solar geoengineering could fuel yet more procrastination.

Rather, I see the NUA as a potentially valuable effort to stimulate a new inclusive international process of public engagement over climate action, bringing the voices

of those most vulnerable to climate impacts, least responsible for past emissions, and on the sharp end of historic and continuing colonialism and extractivism into the centre of global debate. And maybe at the same time, we’ll recognise, and set about imagining better ways to represent other voiceless interests – including future people and other species. I would hope all climate scholars could support these goals.

Going forward

I plan to continue using the non-use call as a step towards appropriate international governance of research in this area. I will also continue to encourage the organizers of the call to clarify what sort of research and research governance they support.

Looking ahead, the results of well-governed research, with appropriate public input – including from global South and indigenous peoples – shaping the agenda, might persuade me to change my mind about a development and deployment ban/moratorium as proposed by the NUA. On the other hand, continued US-led, instrumental research pushes, based on utilitarian ethics and presumptions about the inevitability of a deeply unequal and divisive economic model, would likely harden my objections to solar geoengineering development.