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Geoengineering, the Billionaires' Solution for Climate Change, Won't Save Us

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As the latest UNEP reports point out, we will blow past 1.5°C in global temperature rise. To deal with that, we must prioritise solutions that work, rather than focusing on complex, unproven technologies like geoengineering.

For anyone who's been paying attention, it is no surprise that the United Nations Environment Program (UNEP) reports that we will now inevitably blow past the global average temperature threshold of 1.5°C above pre-industrial levels.

Extreme events are already exposing our vulnerabilities, and if we thought 2026 was bad, count my words: we ain't seen nothing yet.

Climate scientists like myself have been warning for years that we are about to cross this invisible red line, while quietly worrying that global average temperatures will end up being double that. Personally, I said goodbye to 1.5°C several years ago, but it still feels momentous to see it written in print, and that too by the UN.

The target to keep warming to 1.5°C above pre-industrial temperatures is not some hard red line in the sand, because all warming carries some risk, but it's relevant because limiting warming to 1.5°C gives us a good chance of avoiding some of the worst impacts of climate heating. We've already had a glimpse of what this looks like in the myriad heatwaves, wildfires, floods, droughts and storms that have made headlines this year.

Every tenth of a degree of heating means real-terms impacts for peoples' lives, livelihoods and property, and increases the risk of the extreme events that we've already seen tragically claim so many lives. It also increases the likelihood of exceeding critical tipping points such as the collapse of the West Antarctic Ice Sheet, beyond which there's no return.

We've already had single years that have exceeded the 1.5°C limit, but the widely discussed Paris Agreement target is a multi-year average. That means we won't know we've reached it until it's in the rearview mirror, but it's also possible to "overshoot" 1.5°C, temporarily peak at higher temperatures, and then bring them back down-and that's now the best-case scenario outlined by UNEP.

This would mean we would have to take drastic action to bring temperatures back down again rather than continuing to drive them ever upwards. Which, in the current political climate, feels like a bit of a stretch.

Temperatures will not stabilise until we reach net zero emissions, where we remove as much carbon from the atmosphere as we add to it. Until then, we will still be increasing greenhouse gas concentrations in the atmosphere and turning up the dial on the thermostat. Net zero is not a nice-to-have, despite what certain parts of the political spectrum would have you believe, it is an essential if we want to have a liveable planet.

In fact, UNEP's latest report points to the need to take action beyond net zero. Once we have limited heating to 2°C or below-which currently feels optimistic-we will have to roll out carbon dioxide removal (CDR) to reduce temperatures on an enormous scale.

CDR often connotes high-tech solutions to suck carbon dioxide out of the atmosphere, but it can also mean one of the oldest technologies in the world: trees. That's why restoring nature and preventing deforestation is so important for climate action.

But UNEP reports that CDR only works if we limit heating to 2°C or below. As the stakes of climate heating continue to rise, another idea is moving from the sidelines to centre-stage: geoengineering, or deliberate technological interventions to alter the Earth's climate.

Our infrastructure was built for a climate that no longer exists. If we are to survive the coming decades, we need to build preparedness and climate resilience into our society.

Geoengineering is a spectrum, ranging from the comparatively reasonable and well-researched (injecting particles into the stratosphere to reflect incoming sunlight and cool the surface, much like major volcanic eruptions have done) to downright barmy (launching mirrors into space - you can imagine which Silicon Valley billionaires love that idea). And while there are sensible (if heated) scientific

discussions about how to actually do it, there are also some very serious ethical and governance hurdles to overcome.

The tech bros will tell you that geoengineering will save us and allow us to keep doing what we are doing while still 'fixing' climate change. But beware any arguments that downplay the importance of emissions cuts. We cannot simply geoengineer our way out of this crisis.

For example: who decides when to deploy? What happens if an intervention makes things better for some and worse for others? How do we safeguard against bad actors acting unilaterally? These questions are largely unanswered, and that's before we get to the scientific questions around unintended consequences, like [disrupting the Arctic food chain while trying to refreeze ice](#), or what happens if we stop the intervention, resulting in a so-called [termination shock](#), where temperatures would shoot back up with devastating effect.

In some senses the climate crisis is relatively simple: we are pumping planet-heating carbon dioxide into the atmosphere, and it's heating the planet. To reverse it, we need first to stop adding planet-heating carbon dioxide to the atmosphere, and then to start removing it.

The good news is that we do know what we need to do to achieve that. Climate action is less a knowledge problem, and more an implementation one.

Proponents of geoengineering argue that it is not an either/or between emissions cuts and major interventions. But in a world with finite resources, expensive and unproven geoengineering solutions should not be a priority, rather, we should prioritise the simple stuff we know works: decarbonising energy production, improving public transport, retrofitting and building greener housing, reducing meat and dairy consumption, restoring natural ecosystems.

That said, we are now committed to some level of change, and we need to behave as such. That means we need to prepare for the sea level rise that's to come, and adapt societies, behaviours and infrastructure to a less predictable and more extreme climate.

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|| There's no other safe option.

If the summer of 2026 has taught us anything in the United Kingdom, it's that our houses, schools, offices, railways, emergency services, power networks and public transport are simply not fit for purpose in the heat. Nor are they built to withstand the wet, stormy, flood-prone autumn and winter that is on its way. We're not equipped to deal with the rapidly extremifying climate or the weather whiplash it brings. Simply put: our infrastructure was built for a climate that no longer exists.

If we are to survive the coming decades, we need to build preparedness and climate resilience into our society. Extreme events are already exposing our vulnerabilities, and if we thought 2026 was bad, count my words: *we ain't seen nothing yet*.

In the wake of our [hottest summer on record](#), it's abundantly clear that we need to slash emissions to save lives, and at the same time prepare for the changes that are now committed.

The geoengineers are right about one thing: it's not an either/or. We have to reduce emissions to net zero and remove carbon from the atmosphere and adapt to what's in store. There's no other safe option.

Ella Gilbert is a climate scientist and multi-award-winning presenter with a PhD in Antarctic climate change.

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