# UK launches £57 million geoengineering trials amid scientific controversy



# Controversial Geoengineering Experiments Set to Begin in the UK

In a significant move towards combating climate change, the UK government has earmarked £57 million for ambitious geoengineering experiments, spearheaded by the Advanced Research and Invention Agency (ARIA). These projects, expected to commence outdoor trials by 2027, aim to explore innovative methods to reflect sunlight away from the Earth, thereby aiming to mitigate global warming. However, the approach has sparked a heated debate within the scientific community regarding the potential risks and ethical implications of such interventions.

Among the proposed methods are stratospheric aerosol injection and marine cloud brightening. The former involves releasing tiny particles, such as sulfur dioxide, into the stratosphere to create reflective aerosols, a process that mirrors the cooling effect observed after major volcanic eruptions. Meanwhile, marine cloud brightening seeks to enhance the reflectivity of low-lying clouds through the spraying of saltwater, thereby preventing excessive sunlight from reaching the Earth's surface. Professor Mark Symes, programme director for ARIA, emphasised that while modelling and laboratory studies can provide valuable insights, real-world tests are crucial to fully understand the feasibility and environmental impacts of these techniques.

Despite the urgency to address climate change, many scientists remain cautious. Mike Hulme, a professor at the University of Cambridge, has voiced concerns over the potential consequences of investing substantial public funds into what he describes as "speculative technologies." He argues that there is no guarantee these interventions will achieve their intended results or that they will not provoke unwanted side effects. Dr Naomi Vaughan, a climate change professor at the University of East Anglia, also highlighted the risks associated with solar radiation management, cautioning that these methods could create 'new risks' to society.

Moreover, concerns extend beyond the immediate environmental effects of geoengineering. A coalition of experts has called for a global moratorium on such technologies, warning that attempts to manipulate solar radiation may lead to unpredictable changes in climate patterns. They argue that the focus should remain on reducing carbon emissions rather than pursuing potentially hazardous interventions that could exacerbate existing problems. Critics like Raymond Pierrehumbert and Michael Mann have likened the UK's investment in geoengineering to "taking aspirin for cancer," advising a renewed focus on sustainable solutions for climate change rather than untested high-tech remedies.

In addition to the £57 million allocated by ARIA, the UK Research and Innovation (UKRI) has initiated a separate £10.5 million programme to conduct independent analyses of solar radiation management techniques. This initiative aims to model the environmental responses to these approaches without endorsing outdoor experiments. The emphasis on independent research illustrates the duality of exploring innovative solutions while remaining grounded in scientific caution.

As the UK embarks on these geoengineering trials, the broader implications for global climate strategy remain uncertain. While the hopes are high that these methods could mitigate the effects of climate change, the unresolved ethical and governance issues surrounding geoengineering call for unprecedented scrutiny. Examining the potential societal risks and ensuring that any progress remains responsibly managed will be crucial as the nation navigates this challenging new frontier.

## Reference Map:

* Paragraph 1 – [[1]](https://www.dailymail.co.uk/sciencetech/article-14690763/global-warming-reflect-sunlight-Britain-five-years.html?ns_mchannel=rss&ns_campaign=1490&ito=1490), [[2]](https://www.theguardian.com/environment/2025/apr/22/uk-scientists-to-launch-outdoor-geoengineering-experiments)
* Paragraph 2 – [[1]](https://www.dailymail.co.uk/sciencetech/article-14690763/global-warming-reflect-sunlight-Britain-five-years.html?ns_mchannel=rss&ns_campaign=1490&ito=1490), [[3]](https://www.ukri.org/news/research-programme-to-model-impact-of-solar-radiation-management/)
* Paragraph 3 – [[1]](https://www.dailymail.co.uk/sciencetech/article-14690763/global-warming-reflect-sunlight-Britain-five-years.html?ns_mchannel=rss&ns_campaign=1490&ito=1490), [[4]](https://www.ucl.ac.uk/news/headlines/2023/sep/experts-call-global-moratorium-efforts-geoengineer-climate)
* Paragraph 4 – [[2]](https://www.theguardian.com/environment/2025/apr/22/uk-scientists-to-launch-outdoor-geoengineering-experiments), [[5]](https://www.theguardian.com/commentisfree/2025/mar/12/solar-geoengineering-uk)
* Paragraph 5 – [[2]](https://www.theguardian.com/environment/2025/apr/22/uk-scientists-to-launch-outdoor-geoengineering-experiments), [[6]](https://www.ukri.org/what-we-do/browse-our-areas-of-investment-and-support/modelling-environmental-responses-to-solar-radiation-management/)
* Paragraph 6 – [[1]](https://www.dailymail.co.uk/sciencetech/article-14690763/global-warming-reflect-sunlight-Britain-five-years.html?ns_mchannel=rss&ns_campaign=1490&ito=1490), [[6]](https://www.ukri.org/what-we-do/browse-our-areas-of-investment-and-support/modelling-environmental-responses-to-solar-radiation-management/)

Source: [Noah Wire Services](https://www.noahwire.com)

## Bibliography

1. <https://www.dailymail.co.uk/sciencetech/article-14690763/global-warming-reflect-sunlight-Britain-five-years.html?ns_mchannel=rss&ns_campaign=1490&ito=1490> - Please view link - unable to able to access data
2. <https://www.theguardian.com/environment/2025/apr/22/uk-scientists-to-launch-outdoor-geoengineering-experiments> - The UK government is funding outdoor geoengineering experiments to combat climate change. The Advanced Research and Invention Agency (ARIA) has allocated £50 million for small-scale trials, including methods like stratospheric aerosol injection and marine cloud brightening. These approaches aim to reflect sunlight away from Earth to reduce global temperatures. However, some scientists express concerns about the potential risks and unintended consequences of such interventions. The programme director, Professor Mark Symes, emphasizes the need for real-world data to assess the feasibility and impacts of these technologies.
3. <https://www.ukri.org/news/research-programme-to-model-impact-of-solar-radiation-management/> - The UK Research and Innovation (UKRI) has launched a £10.5 million, five-year research programme to model the environmental responses to solar radiation management (SRM) techniques. The programme aims to provide independent risk analyses to inform policymakers about the potential impacts of SRM approaches, such as stratospheric aerosol injection and marine cloud brightening. The research will focus on understanding how Earth's systems would respond to these interventions if implemented at scale, without supporting outdoor deployments. The initiative underscores the UK's commitment to exploring climate engineering solutions while considering associated risks.
4. <https://www.ucl.ac.uk/news/headlines/2023/sep/experts-call-global-moratorium-efforts-geoengineer-climate> - A group of experts has called for a global moratorium on efforts to geoengineer the climate, expressing concerns over the unpredictability and potential dangers of such interventions. They argue that manipulating solar radiation could lead to unforeseen climate changes, emphasizing the need for caution and further research before considering large-scale deployment. The call highlights the ongoing debate over the ethics and governance of geoengineering technologies as potential solutions to climate change.
5. <https://www.theguardian.com/commentisfree/2025/mar/12/solar-geoengineering-uk> - In an opinion piece, Raymond Pierrehumbert and Michael Mann criticize the UK's investment in solar geoengineering research, likening it to 'taking aspirin for cancer.' They argue that such interventions are a dangerous distraction from the essential task of reducing carbon emissions and could lead to unforeseen consequences. The authors call for a focus on sustainable solutions to address climate change rather than relying on unproven and potentially risky technologies.
6. <https://www.ukri.org/what-we-do/browse-our-areas-of-investment-and-support/modelling-environmental-responses-to-solar-radiation-management/> - The Natural Environment Research Council (NERC) has initiated a £10.5 million, five-year programme to model environmental responses to solar radiation management (SRM) techniques. The research aims to understand how Earth's systems would respond to SRM approaches, such as stratospheric aerosol injection and marine cloud brightening, if implemented at scale. The programme focuses on delivering independent environmental science through modelling and laboratory work, without supporting outdoor research, to inform policymakers about the potential impacts of SRM interventions.
7. <https://www.manchester.ac.uk/about/news/solar-radiation-modification-technology/> - A European team, including researchers from the University of Manchester, is investigating the governance principles and guidelines for responsible research into solar radiation modification (SRM) technologies. The three-year project aims to support policymakers in engaging with SRM research, which involves interventions to limit global warming by reducing the amount of solar radiation reaching Earth's surface. The study will examine the ethical, social, and political dimensions of SRM to ensure responsible development and deployment of these technologies.