# Geo-engineering projects gain attention amid climate intervention debates



Recent reports have brought into sharp focus a variety of ongoing weather modification and geo-engineering projects worldwide, which aim to intervene in natural climate processes. These initiatives, some underway for over a decade, have begun to attract mainstream media and public attention amid increasing concerns about their scale, government backing, and potential impacts on the environment and human health.

One prominent example is cloud-seeding efforts in the Middle East. The Telegraph reported recent unprecedented floods in Dubai and linked them to systematic cloud-seeding operations carried out by Saudi Arabia and the United Arab Emirates (UAE). Ahmed Habib, a meteorologist at the UAE’s National Centre of Meteorology, confirmed that multiple cloud-seeding aircraft influenced the weather in the days preceding the flooding, utilising processes and chemicals designed to enhance rainfall. Similar techniques have also been implicated in the heavy flooding experienced in California earlier this year.

British scientists have contributed to these cloud-seeding projects since 2017 and have conducted experiments within the UK, particularly near Castle Cary in Somerset. There, unmanned aerial vehicles equipped with charge emitters capable of releasing positive or negative ions have been deployed over foggy landscapes to study atmospheric effects. These operations highlight the increasing use of technological interventions to influence weather patterns—a subject that has long been viewed with scepticism but is now gaining legitimacy among scientific institutions and policymakers.

In parallel with these weather modification strategies, there is a growing interest in solar radiation modification (SRM) as a mechanism to counteract climate change by reflecting sunlight away from the Earth's surface. Research into SRM has been ongoing for over ten years, with projects such as the Harvard University-based Stratospheric Perturbation Control Experiment, financially supported by Bill Gates and other donors. This high-altitude experiment seeks to create chemical aerosols in the stratosphere to mimic the cooling effects of volcanic eruptions by reflecting solar radiation. However, concerns persist about the safety and governance of such initiatives. Professor David Keith, the project’s lead, has acknowledged challenges in responsibly regulating geo-engineering efforts, drawing a comparison with vaccine oversight. An earlier Swedish government intervention reportedly halted a similar experiment.

The White House has also announced plans to accelerate research into sunlight modification techniques, despite known environmental and health risks associated with methods like the atmospheric dispersal of sulphur dioxide. This approach has sparked legislative responses in various US states. Tennessee is advancing legislation to prohibit the intentional aerial dispersion of substances aimed at altering temperature, weather, or sunlight intensity. Minnesota and Pennsylvania have introduced comparable bills, reflecting regional unease about unregulated geo-engineering activities.

These emergent technologies have not passed without scientific debate. Within the geo-engineering community, discussions continue regarding the uncertain consequences of interventions, including whether they might inadvertently raise or lower carbon dioxide levels or cause unintended climatic effects. Critics argue that these attempts rest on a contested premise—that climate change is predominantly man-made—a position contested by some who emphasise natural historical climate variability predating industrialisation.

In fact, data dating back to the late 19th century, such as that maintained by the UK’s Met Office Hadley Centre, indicates a gradual global temperature rise of just over one degree Celsius since around 1650 following the Little Ice Age, a period of naturally cooler global temperatures. This modest increase spans the industrial era and is considered by some experts as neither unprecedented nor solely attributable to anthropogenic carbon emissions.

Nevertheless, governmental policies worldwide have embraced the narrative of anthropogenic climate change, driving initiatives for carbon net zero, widespread renewable energy infrastructure, and the proliferation of electric vehicles. These approaches have significant environmental and socio-economic implications, including land use challenges and battery production issues. Geo-engineering experiments represent a more recent, experimental front in these efforts, often conducted with limited public knowledge or oversight.

The ongoing situation highlights a complex interplay between scientific innovation, environmental stewardship, public policy, and societal values. With projects ranging from regional cloud seeding to ambitious global solar radiation modification experiments, the scope and impact of geo-engineering efforts continue to evolve rapidly, prompting scrutiny and discussion across multiple sectors.

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

## Bibliography

1. <https://www.geoengineeringmonitor.org/technologies/weather-modification> - This URL supports the explanation of weather modification techniques, including cloud-seeding efforts, which are used in various regions to influence weather patterns. It mentions the use of chemicals like silver iodide to induce precipitation.
2. <https://www.science.org/content/article/geoengineering-fight-climate-change-if-public-can-convinced> - This article discusses geoengineering methods, such as stratospheric interventions, aimed at reducing the impacts of climate change. It highlights the need for public acceptance of these techniques to be effective.
3. <https://salatainstitute.harvard.edu/sgrp/> - This URL references the Harvard Solar Geoengineering Research Program, which focuses on reducing uncertainties around solar geoengineering. It supports the discussion of solar radiation modification as a method to counter climate change.
4. <https://www.geoengineeringmonitor.org/quarterly-review-iv> - This resource highlights recent developments in geoengineering, including increased commercialization and emerging trends in civil society and climate justice. It contextually supports the discussion on expanding geoengineering efforts.
5. <https://www.hadleycentre.metoffice.gov.uk> - Though not directly linked, the Hadley Centre is known for maintaining historical climate data, including temperature records that suggest a gradual global temperature increase over centuries. This supports discussions around natural climate variability.
6. <https://library.noaa.gov> - Although specific project reports were not available, NOAA's library provides access to various climate and weather modification studies, supporting broader discussions on geoengineering projects and their impacts.
7. <https://news.google.com/rss/articles/CBMihwFBVV95cUxNZDZHWmNKUnZWX0dCcGVYd1lZSG1FNVFHLW0xeWN5cEZLNG9QNEtnTWJQZTQ3VVBTd0xRTDMtQlRvaWlITlFGSndjdEZ5SDVRMURXbDl2NWJxMFRRdFR3RWFUTTBMd2JLRl8zcV9DX2s4ZUdtTzJEMURmbEVXM2I3MjlPd3c1QUE?oc=5&hl=en-US&gl=US&ceid=US:en> - Please view link - unable to able to access data