A Contact us form has been submitted at 2026-04-16 11:54 AM:

Name: [redacted]

Email: [redacted]

Company or Organisation:

Your job title or role:

Share a URL:

How did you hear about us / other: I was told about ARIA by someone else

Who does your enquiry relate to: General enquiry

Your enquiry: can you please tell me your involvement with the daily spraying (not contrials) chem trials of our sky ? EVERY single day the sky is like noughs & crosses, then the blanket of cloud follows & rain. I and many others have been tracking the planes as they zig zag and unless drunk, are methodical in their pattern of distribution of this cloud cover daily blocking our life giving sun - a crime against humanity. I implore you to help provide an answer for the sake of my grandchildren of what we are breathing in anymore importantly ~ simply WHY 😳
As I write another what was potentially spring day is vanishingly behind the zig zag stripes spreading out to darken the day !!

[redacted]

[redacted]

22 April 2026

Dear [redacted],

Environmental Information Regulations 2004 ("EIR") Request

We are writing in response to your recent request for information to the Advanced Research + Invention Agency ("**ARIA**") dated 16 April 2026 in which you asked:

> *"can you please tell me your involvement with the daily spraying (not contrials) chem trials of our sky ? EVERY single day the sky is like noughs & crosses, then the blanket of cloud follows & rain. I and many others have been tracking the planes as they zig zag and unless drunk, are methodical in their pattern of distribution of this cloud cover daily blocking our life giving sun - a crime against humanity. I implore you to help provide an answer for the sake of my grandchildren of what we are breathing in anymore importantly ~ simply WHY 🥲 As I write another what was potentially spring day is vanishingly behind the zig zag stripes spreading out to darken the day !!"*

Response to EIR request

ARIA is not funding the deployment of climate cooling approaches, nor are we funding research to facilitate the deployment of such technologies. For clarity, ARIA has no plans to fund any experiments that would cause a noticeable effect on the weather or any lasting environmental impact. In addition, no toxic material will be released into the atmosphere in the course of any ARIA-funded experiment.

ARIA is funding five projects that will undertake carefully controlled outdoor experiments to responsibly gather crucial real-world data about the feasibility and risks of climate cooling approaches. Any outdoor experiment will only go ahead once an independent environmental impact assessment has been made, and if the results of this suggest that the experiments will be safe (the impact assessment will also be made publicly available before experiments start). These experiments will only go ahead after a period of meaningful public engagement with local communities, and will all be subject to oversight by the programme's independent Oversight Committee.

Whilst we do expect that several of these experiments may take place in the UK, no locations for these have yet been selected. At present, no ARIA-funded outdoor experiments have taken place anywhere in the UK. When sites are provisionally selected, public engagement with the communities local to the experiment sites will be undertaken.

The outdoor experiments being funded by ARIA's Exploring Climate Cooling programme are as follows:

- One project will explore the efficacy of rethickening arctic sea ice using seawater.
- Two projects will explore the effects of seawater spray on cloud reflectivity.
- One project will explore the effects of electric charge on cloud reflectivity.
- One project studies how milligram quantities of mineral dusts age in the stratosphere. In this controlled experiment, none of these materials will be released; all are returned to the ground for analysis by scientists.

For more information about the Exploring Climate Cooling programme, please see our website: Exploring Climate Cooling. For your convenience, we have enclosed a copy of this information at **Annex 1**. Details of the outdoor experiments being funded by the Exploring Climate Cooling Programme can also be found on our website: Exploring Climate Cooling | Funded Projects | Controlled, small-scale outdoor experiments. We have enclosed a copy of the relevant extract at **Annex 2**.

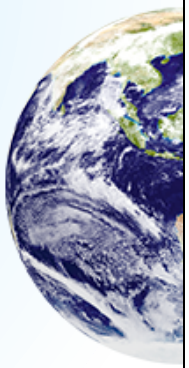
Yours sincerely,

ARIA

You can ask us to review our response. If you want us to carry out a review, please let us know within 40 working days by emailing eir@aria.org.uk.

If you are still dissatisfied after our internal review, you may complain to the Information Commissioner's Office (ICO) for further investigation who can be contacted at: Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow, Cheshire, SK9 5AF.

Annex 1: Exploring Climate Cooling



Opportunity space: Future Proofing Our Climate and Weather

Programme: Exploring Climate Cooling

Exploring Climate Cooling

This £56.8m programme aims to build a robust evidence base to explore – with independent oversight – if climate cooling approaches could ever be feasible, scalable, safe, and governable.

Overview | Oversight + Governance | Community engagement | Funded projects

Our goal

To build an evidence base to support the effective governance of emerging climate cooling approaches. We are funding transparent, public-good research — from ethics to real-world experiments — so the world can make better-informed decisions about this field.

Why this programme

Cutting emissions is the only sustainable solution to the climate crisis. However, ever-rising global temperatures are driving a surge of interest in approaches designed to cool the climate on timescales faster than decarbonisation.

This new field is evolving fast, attracting venture capital and giving rise to new private companies. Yet our understanding of the impacts, risks, governability, and even the basic feasibility of these approaches is poor.

We lack the deep technical and societal understanding required to govern this field responsibly: to reduce risk in a way that is ethical, legitimate, and inclusive.

This programme exists to fill that evidence gap. We are funding fundamental research — transparently, and free from any profit motive. We are focused on building the open and objective knowledge base the world needs to make better-informed decisions, which could include deciding not to use these approaches.

How we're doing it

Our international research portfolio is comprehensive, funding everything from computer modelling, to ethical frameworks, and observations of natural analogues of climate cooling approaches (like volcanoes). Where essential questions cannot be answered by models, we also fund a limited number of small-scale, carefully controlled outdoor experiments, with stringent requirements for safety, respectful engagement, and transparency.

The world has a critical window of opportunity to build this evidence base, ensuring that robust safeguards can be developed while this field is still at a nascent stage. We are committed to sharing our results openly for the common good, and to working in partnership with others with the same goals.

Read the programme thesis

Read the accessible version of the programme thesis

Explore the funded projects

We're funding 22 research teams uniting specialists across diverse disciplines – from atmospheric physics, chemistry, and climate modelling to chemical engineering, systems analysis, and oceanography, alongside crucial expertise in governance and ethics – reflecting the programme's holistic approach.

Discover more

progress

Programme Director Mark Symes provides a status update on our funded projects and the importance of building a scientific evidence base on climate cooling.

Read more

Meet the programme team

Our Programme Directors are supported by a core team that provides a blend of operational coordination and highly specialised technical expertise.

Mark Symes

Programme Director

Mark is an electrochemist with a 15-year career developing sustainable fuels in the drive towards net zero. He joined ARIA from the University of Glasgow, where he is Professor of Electrochemistry and Electrochemical Technology.

George Horner

Technical Specialist

George has a background in atmospheric physics, holding a PhD from Imperial College London, where he was researching how clouds evolve over time and how they may be impacted by aerosol particles.

Mike Farrar

Programme Specialist

Mike is a condensed matter physicist by training and joined ARIA from his postdoc at Oxford, where he conducted research on novel photovoltaics. Prior to this, he was responsible for the set-up of several high volume, thin-film deposition operations across the globe for the world's largest electronics original equipment manufacturers. Mike supports ARIA as an operating partner from Pace.

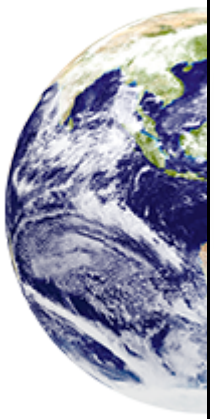
“Decarbonisation is the only sustainable route out of the climate crisis. However, decarbonisation is not happening quickly enough to protect many parts of the world from the worst effects of global heating. Current

answers on a topic of this consequence. ARIA's Exploring Climate Cooling programme is providing the objective evidence base the world needs to make safe, informed decisions about these proposed interventions – so that, if the world ever faces a decision on climate cooling approaches, it will be made with rigorous scientific evidence."

Mark Symes

Programme Director

Annex 2: Exploring Climate Cooling | Funded Projects | Controlled, small-scale outdoor experiments



Opportunity space: Future Proofing Our Climate and Weather

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This £56.8m programme aims to build a robust evidence base to explore – with independent oversight – if climate cooling approaches could ever be feasible, scalable, safe, and governable.

Funded projects

Our 22 funded research teams unite specialists across diverse disciplines – from atmospheric physics, chemistry, and climate modelling to chemical engineering, systems analysis, oceanography, and radiative transfer, alongside crucial expertise in governance and ethics – reflecting the programme's holistic approach. This group shares a deep commitment to objective research conducted transparently and responsibly, aiming to navigate the complex ethical dimensions and establish best practices within this field.

Projects will utilise a range of methodologies, including modelling, observations and monitoring, indoor testing and – where strictly necessary and in accordance with our oversight and governance principles – small scale, controlled outdoor experiments.

The programme will also fund projects exploring the broader societal aspects of this scientific research, including methods for public engagement, public attitudes to the field, and governance.

In cases where essential scientific questions cannot be answered by modelling or indoor experiments alone, these five projects will undertake carefully controlled outdoor experiments, allowing crucial real-world data to be gathered responsibly. These experiments will only proceed if ARIA's stringent governance requirements are met in full. An environmental impact assessment will be performed and made publicly available before any experiment starts, and experiments will have to be developed through engagement with local communities. All funded experiments will be time-bound and limited in size, scale so their effects dissipate within 24 hours or are fully reversible.

Our planned outdoor experiments are at different stages of development. The first RASI ice-thickening experiment is already underway in northern Canada, and the marine cloud brightening project in the Great Barrier Reef is building upon pre-existing site requirements and community relationship.

The remaining three teams are in the very early stages of planning – technical design and pre-site selection. This means they are scoping a range of potential locations to understand technical feasibility, defining logistical requirements, and beginning initial outreach to key stakeholders like landowners and local authorities. No locations have yet been agreed for any outdoor experiments in the UK.

You can read more about the process of experiment development and engagement here.

Project Lead: Shaun Fitzgerald, Centre for Climate Repair

Award: £9.9m over 42 months

Key team members and approximate budget breakdown: Shaun Fitzgerald, University of Cambridge (£1.4m) | Geoff Evatt, University of Manchester (£0.63m) | Michel Tsamados, University College London (£0.63m) | Einar Ólason, Nansen Environmental and Remote Sensing Center (£0.4m) | Andrea Ceccolini, Real Ice (£3.5m) | Fonger Ypma, Arctic Reflections (£3.3m) | Edward Blanchard, University of Washington (£90k) | Steven Desch, Arizona State University (~£10k travel costs funded from Real Ice's share)

Engagement progress: Phase 4 (First experiment in progress)

The Arctic is warming much faster than the global average, leading to dangerous sea ice loss with far-reaching consequences. This project investigates whether deliberately thickening sea ice during winter could be a viable way to slow summer melt, reduce Arctic warming, and mitigate further ice loss. The research aims to provide critical data on the feasibility, scalability, potential ecological impacts, and overall effectiveness of this approach, which involves accelerating natural freezing processes using seawater from underneath the ice.

The RASI project is led by the University of Cambridge and includes a number of collaborating sub-teams looking at computer modelling, laboratory studies on ice mechanics, ecological studies and small, controlled outdoor experiments. Two separate sub-teams of researchers (Real Ice, Arctic Reflections) will conduct controlled, small-scale experiments in two locations in Canada. These experiments have been designed in close collaboration with local communities and in compliance with ARIA's stringent governance framework. The goal is to gather essential real-world data to rigorously assess if this intervention warrants further consideration.

View the full grant agreement for this project, which outlines its objectives, milestones, and deliverables here.

Marine Cloud Brightening in a Complex World

Project lead: Daniel Harrison, Southern Cross University

Award: £1m (potentially rising to £5m with matched funding) over 5 years, contingent upon security an additional £10m of funding from other sources

Key team members: Southern Cross University | Commonwealth Science and Industrial Research Organisation | University of New South Wales | Freie Universität Berlin | Queensland University of Technology | Shaun Fitzgerald, University of Cambridge (contributing and funded via the REFLECT project)

Engagement progress: Phase 2 (Engagement + impact assessment)

This project investigates Marine Cloud Brightening (MCB), a potential way to cool specific areas by enhancing cloud reflectivity using a spray of seawater. Building on their experience conducting previous small-scale outdoor experiments in partnership with local communities around the Great Barrier Reef, Australia, this team seeks to deepen our understanding of MCB. While the concept could potentially protect vulnerable ecosystems like coral reefs from heat stress, its real-world effectiveness remains uncertain. This research aims to address this critical knowledge gap by investigating the complex atmospheric dynamics and microphysical processes involved, moving beyond basic principles to assess if, and how, MCB could work safely and effectively.

The research combines advanced computer modelling with the development and indoor testing of sea salt sprayers. If these findings suggest promise, and subject to meeting ARIA's governance requirements, the project plans to conduct small-scale, controlled outdoor experiments over the Great Barrier Reef in years 3 and 4 of the 5-year project. These outdoor experiments are strictly

determine the effectiveness and risks of MCB, and its potential for protecting vulnerable ecosystems at a regional scale.

View the full grant agreement for this project, which outlines its objectives, milestones, and deliverables here.

A REsponsible innovation Framework for assessing noveL spray tEChnology research To examine local albedo changes from marine brightening and its multi-scale impacts (REFLECT)

Project Lead: Hugh Coe, University of Manchester

Award: £6.1m over 3 years (initial phase)

Key team members and approximate budget breakdown: Hugh Coe, Robert Bellamy, University of Manchester (£2.1m) | Shaun Fitzgerald, University of Cambridge (£1.8m) | Dan Mace, Archipelago Technology (£0.9m) | James Haywood, University of Exeter (£1.1m) | Lindsay Bennett, University of Leeds (£22k) | Sami Romakkaniemi, Finnish Meteorological Institute* (£160k) *Finnish Meteorological Institute are contributing to the modelling exercises in this proposal and are not involved in any outdoor experimentation

Engagement progress: Phase 1 (Technical design + pre-site selection)

Marine Cloud Brightening (MCB) and Marine Sky Brightening (MSB) are ideas for cooling the Earth by increasing the reflectivity of clouds using tiny droplets of seawater. These methods are based on the concept of increasing the number (and hence reflectivity) of the water droplets that make up clouds. There currently is a knowledge gap as to the best method of altering the droplet size in a consistent, controlled, predictable way and we are reliant on computer models for prediction, the results of which need to be verified

design potential future outdoor experiments. Any small-scale, controlled outdoor experiments to test sprayer performance would only occur after this initial phase (and therefore not before 2028), contingent on further funding, successful co-design demonstrating community engagement and support, and strict adherence to ARIA's safety and governance protocols. These potential tests are expected to be undertaken in the UK (location to be determined). Initial tests, if approved, would be very limited, and would consist of producing short (5-10 minute) bursts of seawater spray, which would then be monitored as they drift out over the sea. Only if these initial tests prove successful and safe, later experiments may explore if there is any detectable effect on clouds (still in compliance with ARIA's technical requirements on area and scale threshold).

These tests are inherently benign, replicating natural processes that generate sea spray over the ocean, and developing spray systems such as those that are already employed to cool crowds with fine mists of water and dampen construction sites to suppress pollution. The overall goal is to establish a robust and responsible experimental framework to assess the technical feasibility and optimal methods for MCB and MSB.

View the full grant agreement for this project, which outlines its objectives, milestones, and deliverables here.

BrightSpark – Cloud brightening with electric charge

Project Lead: Giles Harrison, University of Reading

Award: £2m over 36 months

Key team members and approximate budget breakdown: Giles Harrison, Maarten Ambaum, Keri Nicoll, University of Reading (£1.75m) | John Mooney, Menapia Ltd (£170k)

influencing water droplets in fogs and clouds to increase reflectivity. The project will also develop new tools for computational modelling of charge in fogs and clouds.

The team will begin by testing equipment and gathering monitoring data in winter 2026. If approved, very small-scale, controlled outdoor experiments would take place in the UK in winter 2027, and would involve artificially charging a small region of fog (roughly the size of a football field) using electrodes attached to small drones, similar to those used in light displays. The electrodes will emit positive or negative charge, and the team will measure the effects on droplet properties, mapping this to changes in reflectivity. During the experiment, it's unlikely changes in the fog will be visible to the unaided eye, so the team will use specialist meteorological sensors to measure and detect any change in the fog's thickness. Effects of charge persist in air for up to a few minutes and will not be of a level to create sparks or present electrical hazards. No materials or chemicals will be emitted.

These experiments are strictly conditional on demonstrating appropriate levels of community engagement, co-design, and adherence to ARIA's rigorous safety and ethical governance framework. The core goal is to gather foundational data to assess if this method is viable and safe enough to warrant further investigation.

View the full grant agreement for this project, which outlines its objectives, milestones, and deliverables here.

Natural Materials for Stratospheric Aerosol Injection

Project Lead: Hugh Hunt, University of Cambridge

ward: £5.5m over 36 months

Engagement progress: Phase 1 (Technical design + pre-site selection)

Stratospheric Aerosol Injection (SAI) is an increasingly discussed potential climate cooling method, but the most commonly proposed materials (based on sulfur) carry hazards in this context, including potential ozone depletion, toxicity, and altered atmospheric circulation patterns. Alternative, safer materials have been proposed for use in SAI, but little is currently understood about how they would behave in the stratosphere. This project will undertake fundamental research to investigate the properties and behaviour of non-toxic, non-sulfate materials for this purpose.

The research combines laboratory studies and computational modelling with highly controlled material exposure experiments. In these experiments, tiny (milligram) amounts of non-toxic materials (such as limestone, dolomite, and corundum) will be placed inside a specialised container. This container will be transported to the stratosphere by a solar-powered high-altitude glider. This uncrewed vehicle is remotely piloted from the ground and capable of remaining aloft and in place for periods ranging from days to weeks. This method allows for precise flight control, far exceeding the capabilities of traditional high-altitude balloons.

The materials will be exposed within the stratosphere for periods ranging from hours to weeks. **Crucially, the materials will remain entirely confined; nothing is released into the atmosphere**. The glider is then piloted back to Earth and the samples are examined in a laboratory. Studying these materials will reveal how stratospheric conditions affect their properties over time. This foundational science is essential to advance our understanding of the potential impacts of SAI and to determine if any of these alternative materials warrant further study.

View the full grant agreement for this project, which outlines its objectives, milestones, and deliverables here.

The projects we are funding here have been selected from teams and individuals who applied to our previ
programme. You can read more about these calls below.

Exploring Climate Cooling: Full proposals