From: [redacted]
Date: Tue, 17 Mar 2026 at 10:45
Subject: Climate change
To: <info@aria.org.uk>

Good morning.

I have recently been researching the science into solar radiation management, specifically to do with reflecting sunlight and cooling the climate.

I noticed your company have been taking part in this research project over the previous year. And I have a few questions related to this topic. My questions are as follows.

How do you conduct this research? Eg via aviation and naval means.

Is this conducted solely in the UK or elsewhere?

Is there any drawbacks or potential harm this type of research could cause?

Thank you.
Kind regards.

Advanced Research + Invention Agency ARIA

[redacted]

16 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 17 March 2026 in which you asked:

> *"I have recently been researching the science into solar radiation management, specifically to do with reflecting sunlight and cooling the climate.*
>
> *I noticed your company have been taking part in this research project over the previous year. And I have a few questions related to this topic. My questions are as follows.*
>
> *How do you conduct this research? Eg via aviation and naval means.*
>
> *Is this conducted solely in the UK or elsewhere?*
>
> *Is there any drawbacks or potential harm this type of research could cause?"*

We have provided answers to each of your specific questions below.

Response to EIR request

1. *"How do you conduct this research?"*

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. 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.

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.

2. *"Is this conducted solely in the UK or elsewhere?"*

The programme is funding up to three small, controlled, outdoor experiments planned to take place in the UK. The specific locations have not yet been decided.

In addition, we expect at least two small experiments to take place outside the UK. The provisional sites of these experiments are:

- Nunavut, Canada
- Over the Great Barrier Reef in Australia

Each of these experiments will only proceed:

- Once independent environmental impact and legal assessments state that the experiments are safe and legal (these assessments will be publicly available).
- After meaningful public engagement with the local communities.
- After being subject to oversight by the programme's independent oversight committee.

3. *"Is there any drawbacks or potential harm this type of research could cause?"*

All the experiments are designed to be safe and must meet strict safety rules for humans, animals and marine life. None of the experiments will release anything toxic into the environment. All of the experiments have been designed so that the effects dissipate

within 24 hours or are fully reversible. Environmental impact assessments will be undertaken by independent experts and published before any experiment begins.

No noticeable effect on weather or seasons will occur. Independent environmental impact assessments are performed before and after any outdoor experiment to ensure no lasting environmental impact.

For more information about the Exploring Climate Cooling programme, including details of the funded projects, teams, amount of funding and locations, please see our website: Exploring Climate Cooling. For your convenience, we have enclosed a copy of this information at **Annex 1**.

Yours sincerely,

ARIA

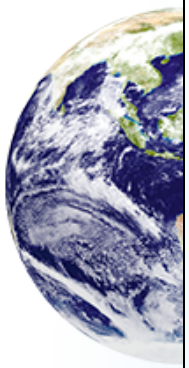
You can ask us to review our response. If you want us to carry out a review, please let us know within 40 working days by emailing eir@aria.org.uk.

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.

Advanced Research + Invention Agency

ARIA

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