

The University of Manchester (**Grant Recipient**)

Oxford Road
Manchester
M13 9PL

10 June 2025

Attention: Professor Hugh Coe

Dear Professor Hugh Coe,

FPCW-PR01-P009- A REsponsible innovation Framework for assessing novel spray tEchnology Research To examine local AlbeDo changes from Marine brightening and its multi-scale impacts. (REFLECT) – Standard Grant Funding Letter

Congratulations, we can't wait to see what you will achieve and very much look forward to working with you and your team.

You recently submitted an application in response to Exploring Climate Cooling and ARIA is pleased to offer you a Grant for the performance of the Project Activities up to the Maximum Sum, subject to your agreement to, and compliance with, the terms and conditions set out in this Grant Funding Letter and its Schedules.

1. Overview of the Grant

Any reference in this letter to "you" or "your" means the Grant Recipient and any capitalised terms have the meanings given in the ARIA Grant Conditions (Conditions).

The key elements of the Grant are described in the table below:

Project Activities	REFLECT. A more detailed description of the Project Activities is set out in Schedule 2 (Project Activities).
Maximum Sum of the Grant (inclusive of taxes)	£6,100,000 (inclusive of all taxes where applicable)

Commencement Date	<p>The Commencement Date is 10 June 2025</p> <p>The Project Activities as detailed in Schedule 2 of this agreement shall commence on the 1 August 2025.</p>	
Completion Date	The completion is 31 July 2028	
Grant Review Intervals	ARIA will review the Grant at quarterly intervals using the process referred to in clause 6 of the Conditions	
Adequate Insurance	<p>Employers' liability - At least £5 million (as required by the Employers' Liability (Compulsory Insurance Act 1969))</p> <p>Public liability: £10 million (per year in aggregate</p>	
Monitoring and Reporting	<p>The performance reports referred to in clause 7 of the Conditions shall be provided at the frequency identified in Schedule 2 to the ARIA point of contact as set out in the project kick-off documentation.</p>	
Project Representative	<p>Professor Hugh Coe Department of Earth and Environmental Science The University of Manchester ████████████████████ ██████████ ████████████████████</p>	
Grant Manager	Mark Symes, Programme Director, ████████████████████	
Escalation Contacts	ARIA	Grant Recipient
	<p>Chief Product Officer</p> <p>████████████████████</p>	<p>Head of Department</p> <p>Earth & Environmental Sciences</p> <p>██</p> <p>██████████</p> <p>████████████████████</p>

Notices	ARIA Contracts [REDACTED]	Executive Director Research & Business Engagement [REDACTED] [REDACTED]_copied to Professor Hugh Coe [REDACTED]
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2. Confirmation of Bank Details

- 2.1. You must complete and sign the Confirmation of Bank Details form available [here](#) as part of your acceptance of the Grant and return it to [REDACTED].

3. The Grant Agreement

- 3.1. Once you sign a copy of this Grant Funding Letter in accordance with paragraph 6 (Acceptance) below, it will form a binding "**Grant Agreement**" between you and ARIA that includes and incorporates the following documents:

- 3.1.1. the **Grant Conditions** in Schedule 1;
- 3.1.2. the **Project Activities, Milestones** and **Grant Application** in Schedule 2;
- 3.1.3. the **Royalty percentages** (including annexes) in Schedule 3; and
- 3.1.4. the terms relating to Data Protection in Schedule 4.

- 3.2. The parties confirm that it is their intention to be legally bound by the Grant Agreement.

4. Warranties

- 4.1. By signing this Grant Funding Letter, you warrant and represent that:
- 4.1.1. your obligations under the Grant Agreement are legal, valid, binding and enforceable;
 - 4.1.2. all authorisations and consents necessary to enable you to enter into and perform the obligations in the Grant Agreement have been obtained;
 - 4.1.3. the person signing the Grant Agreement is duly authorised to sign on your behalf; and
 - 4.1.4. your Project Representative referenced in the table above is authorised to make decisions and provide information on your behalf.

5. Amendments to the Grant Conditions

- 5.1. Not used

6. Acceptance

6.1. To accept this Grant Funding Letter, please arrange for an authorised signatory to sign and date the duplicate copy of this Grant Funding Letter as indicated below, and return to ARIA as a complete signed original of the Grant Agreement including its Schedules, accompanied by evidence of the authorised signatory's authority to enter into the Grant Agreement and to bind the Grant Recipient.

6.2. The offer of this Grant Funding Letter will expire on 13 June 2025.

Yours sincerely

for and on behalf of ARIA

Name of ARIA signatory:

Position Held:

Date:

I confirm the agreement of The University of Manchester to the terms and conditions in this Grant Funding Letter and its Schedules.

Signature:

Name:

Position:

Date:

SCHEDULE 1 - GRANT CONDITIONS

1. PRECEDENCE

- 1.1 Where there is any conflict between the documents that make up the Grant Agreement the conflict will be resolved in accordance with the following order of precedence:
- (a) the Grant Funding Letter;
 - (b) these Conditions;
 - (c) the remaining Schedules to the Grant Agreement with the exception of Schedule 2 Part 2 (the Grant Application);
 - (d) Schedule 2 Part 2 (the Grant Application); and
 - (e) any other documents incorporated by reference in, or developed in accordance with, the Grant Agreement.

2. DURATION AND PURPOSE OF THE GRANT

- 2.1 The Grant Agreement will subsist for the duration of the Funding Period unless extended by written agreement signed by a duly authorised representative of the parties or terminated earlier in accordance with its terms. Any provision of the Grant Agreement that expressly or by implication is intended to come into or continue in force on or after termination or expiry of the Grant Agreement shall remain in full force and effect, including clauses 1, 2, 4, 7.4, 8, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22.3, 22.7, 22.8, 22.11, 22.12, 23, 24, 26, 27, 28, and 30.
- 2.2 You may only use the Grant for carrying out the Project Activities. You may not make any changes to the Project Activities without ARIA's prior written agreement.
- 2.3 You may not unreasonably withhold, condition or delay your agreement to any changes requested by ARIA to the Project Activities or the amount of the Grant. Any agreed change will be recorded in a written variation to the Grant Agreement in accordance with clause 26.

3. ENVIRONMENTAL AND SAFETY REQUIREMENTS

- 3.1 In performing the Project Activities, you shall meet the requirements of all applicable Laws regarding the environment and safety, including laboratory safety requirements, in all material respects.

4. PAYMENT OF GRANT

- 4.1 Subject to the remainder of this clause 4, ARIA will pay the Grant to you:
- (a) up to the Maximum Sum;
 - (b) in pounds sterling (GBP) by wire transfer into your bank account, details of which you provided in the Confirmation of Bank Details form attached to the Grant Funding Letter; and
 - (c) if a tax is chargeable in respect of the Grant, all payments will be deemed to be inclusive of all such taxes and ARIA will not be obliged to pay any additional amount.
- 4.2 The bank account of which you provided details in your Confirmation of Bank Details form (and any alternative bank details nominated subsequently by you) must be an ordinary business bank account

with appropriate segregation of duties and control. During the Funding Period, you must notify ARIA of any change of bank account details as soon as reasonably practicable on the same form and signed by an approved signatory. You must notify ARIA of any change of signatory for approval, as soon as known.

- 4.3 You will be the sole recipient of the Grant and you will be responsible for managing the Grant as between you and any Third Parties involved in performing the Project Activities. This includes securing the repayment of the Grant if requested by ARIA in accordance with the Grant Conditions, including where the Grant has already been distributed to Third Parties.
- 4.4 You must promptly notify ARIA if any money is incorrectly paid to you for any reason, and must repay it as soon as reasonably practicable. Any amount not immediately repaid will be recoverable as a civil debt.
- 4.5 ARIA reserves the right not to pay any Grant Claims that are not submitted within the period set out in the Grant Funding Letter or that are incomplete, incorrect or not accompanied by full supporting documentation (including any documentation that ARIA reasonably requests).
- 4.6 You may not apply for or obtain Duplicate Funding for any Project Activities.
- 4.7 You may not retain any Unspent Monies and must repay them to ARIA within 30 days after ARIA's request for repayment.
- 4.8 You acknowledge the critical importance of cash flow for Sub-Contractors (including startups and small businesses) and commit to paying all valid and undisputed invoices relating to the Project within a maximum of 30 days from the date of receipt.
- 4.9 Where required, you will work with Sub-Contractors to arrange more frequent payment schedules (e.g., same day, weekly or milestone-based payments) to better support their cash flow needs.

5. ELIGIBLE AND INELIGIBLE EXPENDITURE

- 5.1 ARIA will only pay the Grant for Eligible Expenditure incurred by you in carrying out the Project Activities. You must provide ARIA with any evidence reasonably requested by ARIA (including receipts, invoices and other documentary evidence) that all Grant Claims relate to costs that are Eligible Expenditure.
- 5.2 You may not in any circumstance claim as Eligible Expenditure paid-for lobbying, which means using the Grant to fund lobbying (via an external firm or in-house staff) in order to undertake activities intended to influence or attempt to influence Parliament, government or political activity; or attempting to influence legislative or regulatory action.

6. GRANT REVIEW

- 6.1 ARIA will review the Grant at the intervals specified in the Grant Funding Letter. The review will take into account your carrying out of the Project Activities against the Milestones. As part of the ARIA review process, ARIA will review the reports produced by you in accordance with clause 7.3.

- 6.2 Following the review carried out under clause 6.1, ARIA may choose to do any of the following, taking into account any representations made by you in the course of the review:
- (a) consent to the Project Activities and the Grant Agreement continuing in line with existing plans;
 - (b) increase or decrease the Grant for the remainder of the Funding Period, as applicable;
 - (c) redefine the Milestones;
 - (d) require you to carry out remedial activity with the aim of improving delivery of the Project Activities; and/or
 - (e) terminate the Grant Agreement in accordance with clause 22.
- 6.3 Any change to these Grant Terms, the Project Activities, or the Grant pursuant to clause 6.2(b), 6.2(c) or 6.2(d) will be recorded in a written variation to the Grant Agreement in accordance with clause 26.
- 6.4 For the avoidance of doubt any decision to terminate the Grant Agreement as a result of a Go/No Go Milestone will be made at ARIA's sole discretion and done so in accordance with clause 22.6.

7. MONITORING AND REPORTING

- 7.1 You must closely monitor the carrying out of the Project Activities throughout the Funding Period and must notify ARIA as soon as reasonably practicable of any actual or potential failure to comply with any of your obligations under the Grant Agreement.
- 7.2 ARIA does not limit its engagement with you to purely administrative activities and will require details of all Results and all material Foreground IP, so you must allow ARIA personnel to visit your premises at a reasonable frequency and at dates and times agreed with you to liaise with your applicable researchers for the purpose of identifying Foreground IP, evaluating Milestones and assessing progress with the Project Activities. ARIA will treat the Results and Foreground IP, and other information it learns from such visits, as your Confidential Information under clause 11.
- 7.3 You must provide ARIA with:
- (a) the Milestones and a report on your performance against the Milestones at the intervals and for the periods of time specified in the Grant Funding Letter. ARIA may copy and adapt the contents of any of the Milestones and those reports for ARIA's internal use to review, develop and shape ARIA's funded research programmes, but ARIA will treat those contents as your Confidential Information under clause 11;
 - (b) any assistance and information reasonably requested by ARIA to establish whether you have used the Grant in accordance with the Grant Agreement; and
 - (c) a quarterly report on the use of the Maximum Sum, details broken down in accordance with ARIA's prescribed form.

- 7.4 ARIA is built for long-term impact and needs to be kept informed of the impact of its funding activities and compliance with the terms of the Grant Agreement. ARIA will therefore have the right to make reasonable requests for information from you from time to time after the end of the Funding Period about the impact metrics, commercial exploitation or other dissemination of the Results and how this has benefited the United Kingdom. You must respond and provide the information requested within one month (unless ARIA specifies otherwise). If requested, ARIA will treat the information provided as your Confidential Information under clause 11. Nothing in this Grant Agreement will be deemed to limit ARIA's ability to use, share or publish such information as part of aggregated and anonymised reporting. This clause 7.4 shall survive termination or expiry of this Grant Agreement.

8. AUDITING AND ASSURANCE

- 8.1 For Grants over £500k: Annually, and on each anniversary of the Commencement Date and at the end of the Funding Period you must provide ARIA with independent assurance that the Grant has been used for carrying out the Project Activities. To satisfy this requirement you must provide a statement showing that the use of the Grant has been certified by an independent and appropriately qualified auditor or accountant.
- 8.2 Subject to clause 11, ARIA and/or its authorised representative may, at any time during the Funding Period and for up to 7 years after the end of the Funding Period, conduct audits in relation to your use of the Grant and your compliance with the Grant Agreement. You must act reasonably in cooperating with any such audit, including by granting access to relevant documentation, premises and personnel.
- 8.3 You must:
- (a) maintain an appropriate system of financial management and controls, maintain detailed records in relation to those controls, and provide copies of those records to ARIA on request; and
 - (b) retain, and procure that your Sub-Contractors retain and will provide to you on request, all relevant documentation relating to the Eligible Expenditure (including invoices, receipts and accounting records) during the Funding Period and for a period of 7 years thereafter.

9. FINANCIAL MANAGEMENT

- 9.1 You must:
- (a) maintain a sound administration and audit process, including internal financial controls, to safeguard against fraud and theft, money laundering, terrorist financing or any other impropriety, or mismanagement in connection with the administration of the Grant; and
 - (b) notify ARIA of any actual or suspected cases of fraud, theft or financial irregularity relating to the Project Activities as soon as they are identified, and keep ARIA informed of your remedial actions.

9.2 In the event of any actual or suspected fraud, theft or other financial irregularity (which includes use of the Grant for any purpose other than that envisaged by the Grant Agreement), ARIA may, at its absolute discretion:

- (a) require you to take any remedial steps that ARIA may reasonably specify; and/or
- (b) suspend the Project Activities and future payment of the Grant to you,

and in all cases you must explain to ARIA what steps are being taken to investigate the fraud, theft or irregularity (as applicable) and must keep ARIA informed about the progress of any such investigation. You must, if required by ARIA, refer the matter to an external auditor or any other relevant Third Party.

10. CONFLICTS OF INTEREST

10.1 You must inform ARIA promptly of any actual, perceived or potential conflicts between your and your Representatives' obligations under the Grant Agreement and your and their personal, business or professional interests. You must have adequate procedures to manage and monitor any actual or potential conflicts of interest, whether identified in the application process or notified to ARIA during the Funding Period.

10.2 If ARIA is not satisfied that you are adequately managing any actual or potential conflicts of interest, or that these conflicts are not capable of such management, the parties will discuss the issues raised and try to agree a resolution. If this is not possible, ARIA may request you or your Representative to cease the conflicting activity and if that is not acceptable to you or your Representative, either party may terminate the Grant Agreement on at least 30 days' notice in writing.

11. CONFIDENTIALITY

11.1 Except to the extent set out in this clause 11 or where disclosure is expressly permitted by the other party, each party must treat all Confidential Information belonging to or disclosed by the other party as confidential and will not disclose any such Confidential Information to any other person without the prior written consent of the other party, except to any persons who are directly involved in the provision of the Project Activities, who need to know the information and who are subject to binding obligations of confidentiality to the disclosing party.

11.2 ARIA may publish a summary of the Grant Agreement in any medium (having redacted both parties' Confidential Information), including a summary of any changes to the Grant Agreement agreed from time to time. Additionally, ARIA may publish a copy of the Milestones (in whole or in part) in any medium (provided that, where such Milestones contain or constitute your Confidential Information, ARIA has given you a reasonable opportunity to make representations in respect of any redactions or amendments you wish to be applied). For the avoidance of doubt, ARIA's publication rights under this clause 11.2 are exercisable at ARIA's sole discretion.

11.3 Nothing in this clause 11 will prevent either party disclosing any Confidential Information of the other party:

- (a) for the purpose of the examination and certification of its accounts and/or pursuant to section 6(1) of the National Audit Act 1983;

- (b) to any government department, consultant, contractor or other person engaged by that party, provided that such party only discloses information necessary for the purpose concerned and obtains appropriate confidentiality undertakings in relation to such information;
- (c) where disclosure is required by Law, including under the Information Acts to the extent they apply to that party and where no exception to disclosure under them is applicable; or
- (d) where that party (acting reasonably) considers disclosure necessary or appropriate for the carrying out of its public functions.

11.4 Nothing in this clause 11 will prevent either party from using any techniques, ideas or know-how gained during the performance of its obligations under the Grant Agreement in the course of its normal business or activities, to the extent that this does not result in a disclosure of the other party's Confidential Information or an infringement of the other party's Intellectual Property Rights.

12. STATUTORY DUTIES

- 12.1 Each party must comply with its obligations under the Law, including where applicable the Information Acts, the EA and the HRA and you shall notify ARIA immediately of any investigation of or proceedings against you under the EA.
- 12.2 You acknowledge that ARIA is subject to requirements under the Information Acts (other than the FOIA) and you will provide reasonable assistance and cooperation to ARIA to assist ARIA's compliance with its information disclosure obligations.
- 12.3 You acknowledge that ARIA, acting in accordance with the Information Acts (other than the FOIA), may disclose information concerning you and the Grant Agreement without consulting you. ARIA must take reasonable steps to notify you of any request for information to the extent permissible and reasonably practical and will give you adequate opportunity to make representations before ARIA discloses any information relating to such matters. ARIA will be responsible for determining in its absolute discretion whether any information is exempt from disclosure in accordance with the Information Acts.
- 12.4 Where you are subject to the Information Acts and receive a request for disclosure that relates to ARIA or the Grant Agreement you will notify ARIA and give ARIA adequate opportunity to make representations to you before you disclose any information relating to such matters.
- 12.5 You must take account of the requirements of the National Security and Investment Act 2021 before assigning or licensing Results or Foreground IP. You are encouraged to give a voluntary notice to the Secretary of State under the Act in advance of any such assignment or licence if the assignment or licence is likely to meet the requirements of section 18 of the Act and inform ARIA if any mandatory or voluntary notification is made.
- 12.6 You must take account of the Secure Innovation and Trusted Research Guidance. You must also consider any risks to the physical safety and security of the public and implement any appropriate

mitigations and measures where the Project Activities you carry out have the potential to interact with the public.

13. DATA PROTECTION

- 13.1 Each party must comply at all times with its obligations under the Data Protection Legislation. At ARIA's request you must provide ARIA with all relevant documents and information relating to your data protection policies and procedures that ARIA may reasonably request.
- 13.2 The parties do not envisage that either party will process any Personal Data for or on behalf of the other party under or in connection with the Grant Agreement. If either party anticipates that the other will process any Personal Data on its behalf under the Grant Agreement it must notify the other party and the parties must agree a variation to the Grant Agreement under clause 26 to incorporate appropriate provisions (such as those set out in Schedule 4) in accordance with, or as otherwise required by, the Data Protection Legislation.

14. SUBSIDY CONTROL AND STATE AID

- 14.1 ARIA intends that the Grant complies with the Subsidy Control Act 2022 on the basis that the Project Activities are not economic activities and do not give a specific advantage to one or more enterprises. You must take all reasonable steps to maintain this position and to assist ARIA to comply with the requirements of the Act and must cooperate with any investigations under the Act.
- 14.2 Where the EU state aid laws apply to the Grant (where the Project Activities will affect trade between Northern Ireland and the EU), you acknowledge that the Project Activities are designed and performed so they are compatible with state aid laws. You will take all reasonable steps to assist ARIA to comply with state aid law requirements and cooperate with any investigations by the European Commission into the Project Activities.
- 14.3 ARIA will immediately stop future payments of the Grant and may require repayment of some or all of the Grant if subsidy control or state aid laws so require for the funding to be compliant.

15. INTELLECTUAL PROPERTY RIGHTS

- 15.1 You must act in good faith and comply with the spirit of clauses 15 and 16 and not seek to avoid their application by artificial means.

Background IP

- 15.2 The Grant Agreement does not affect the ownership of your Background IP. You must notify ARIA during the Funding Period if any additional Background IP is required either to carry out the Project Activities or to exploit commercially any of the Results.

Foreground IP ownership

- 15.3 You will own all Foreground IP unless your policy is for individual researchers to own the Foreground IP they create, or you agree your Sub-Contractor (or another third party) will own all, or parts of, the

Foreground IP. Where your Sub-Contractor or individual researchers (or any other third party involved in the performance of the Project Activities) will own any of the Foreground IP you must impose on them the obligations relating to Foreground IP and Results contained in clauses 15 and 16. Where you assign any Foreground IP to a Third Party (including your technology transfer company) you must impose on that Third Party the obligations relating to Foreground IP and Results contained in clauses 15 and 16.

- 15.4 You must submit all (i) all patents within or covering the Foreground IP and (ii) data generated from any activities or experiments identified in the Project Activities to the Future Proofing our Climate and Weather Intellectual Property Pledge promptly following creation or filing (as applicable) of such patents and/or data (unless otherwise agreed in writing with, or instructed by, ARIA). For clarity, your rights to use and commercialise Foreground IP set out in clauses 15 and 16 are subject to the terms of the Future Proofing our Climate and Weather Intellectual Property Pledge. You hereby agree to comply and uphold the terms of the Future Proofing our Climate and Weather Intellectual Property Pledge.

Attribution to ARIA

- 15.5 You must ensure that whenever any Results are used with or communicated to Third Parties or are exploited commercially, ARIA's funding of the Project Activities is suitably accredited in accordance with ARIA's accreditation guidelines in force at the time. When using ARIA's name and logo you will comply with ARIA's branding guidelines in force at the time.

Patenting and publication

- 15.6 You must ensure that all Foreground IP is protected and managed in a professional manner, which may include patenting of any Results that are patentable.
- 15.7 You must notify ARIA where practicable at least 30 days (and in any event at least 48 hours) before publication of any Results by any person. This is intended to give ARIA the opportunity to discuss with you the possibility of filing a patent application before publication, and if appropriate assisting you with that process.
- 15.8 You must give ARIA as much notice as possible, but no less than 30 days' notice, of any decision to abandon or withdraw patent protection for any of the Results for the lifetime of the relevant patents or such shorter period as is agreed with ARIA so that ARIA can consider whether it wishes to fund future prosecution and maintenance and/or request the assignment of the patents to ARIA or its nominee.

Inventor first preference

- 15.9 Subject to the terms of the Future Proofing our Climate and Weather Intellectual Property Pledge if any inventor or active participant in the Project Activities expresses interest in the exploitation of the Foreground IP they have developed, you must give them an opportunity to negotiate an assignment or commercial licence of the Foreground IP, on reasonable terms, prior to negotiating with any entity in which an inventor or active participant in the Project Activities is not involved as a shareholder or other key stakeholder.

16. COMMERCIALISATION OF RESULTS

- 16.1 Save for Results that are subject to the terms of the Future Proofing our Climate and Weather Intellectual Property Pledge, where they are capable of commercial exploitation you should seek to exploit the Results commercially. This should be done, where applicable, in accordance with the Commercialisation Hypothesis.
- 16.2 Save for Results that are subject to the terms of the Future Proofing our Climate and Weather Intellectual Property Pledge, if for any reason you choose not to exploit any such Results commercially within a reasonable timeframe (or, where applicable, the timeframe set out in the Commercialisation Hypothesis) you are encouraged to discuss the position with ARIA, and you may request that ARIA exploit them or assist you with their exploitation. In this case ARIA may request that you assign the relevant Foreground IP to it or its nominee. Any assignment would include a licence back to the relevant Foreground IP for research purposes.

Non-UK Commercialisation

- 16.3 Save as set out in the Future Proofing our Climate and Weather Intellectual Property Pledge, to avoid any restriction on commercialisation, no consent is required from ARIA for any Non-UK commercialisation or any sale of Foreground IP to a Non-UK Entity. However, ARIA is set up to create value for the UK and therefore you must secure a fee payable to ARIA (**ARIA Non-UK Fee**) in each of the following circumstances:
- (a) where you are a Non-UK Entity;
 - (b) where you become a Non-UK Entity;
 - (c) where you assign or Commercially License any Foreground IP to a Non-UK Entity; or
 - (d) where you have assigned or Commercially Licensed any Foreground IP to a UK Entity that subsequently becomes a Non-UK Entity.
- 16.4 In order to avoid any unnecessary complexity, the ARIA Non-UK Fee will be based on the terms that you agree with any person to which you assign or Commercially License the relevant Foreground IP. This ARIA Non-UK Fee will amount to an additional twenty-five per cent (25%) of the value of the consideration (including upfronts, licence fees, milestone payments, royalties, shares or other securities, buyouts, exit fees and other consideration) that you receive from the exploitation of the relevant Foreground IP during any period that the above circumstances exist.
- 16.5 For example, if you would receive £100 (via royalty or royalty buyout), you must ensure your contractual mechanism enables you to collect an additional £25 and pay that additional amount to ARIA.
- 16.6 The ARIA Non-UK Fee is payable within 90 days after the end of each relevant Financial Year for receipts related to that calendar year. You are encouraged to use the clauses in Annex 1 in your Commercialisation Licences of Foreground IP.

Crown Body customers

- 16.7 You must ensure that any Crown Body is able to procure any products and services that are covered by, use or incorporate the relevant Foreground IP within a reasonable time period at prices that are no

higher than those offered to or agreed with any other customer for equivalent quantities, and in suitable quantities for the Crown Body's requirements.

Spin-outs

- 16.8 ARIA seeks to maximise future investment of entrepreneurial talent and capital in start-up companies commercialising the Results of its funded activities. To that end, having funded the full economic cost of the research, ARIA places restrictions on the level of equity stakes and royalties that you may negotiate in exchange for the assignment or Commercialisation Licence of any Foreground IP.
- 16.9 If you or your technology transfer company assign or licence any Foreground IP to any third party or to a start-up established for the purpose of commercially exploiting the Results (a NewCo) you together with any connected person (including any investment fund to which you may transfer any part of your stake) shall be entitled to:

EITHER

- (a) hold or have the right to hold no more than 10% in fully-dilutable shares or equity (pre investment) in the third party or NewCo (with no other preferential subscription rights), not including any shares or equity subscribed for cash on arm's length terms alongside other investors;

OR

- (b) charge a royalty, with no upfront payments, annual fees, milestone payments or minimum royalties, payable by the third party or NewCo under any licence or assignment of the Foreground IP at no more than the relevant rate, and on the other terms, set out in Schedule 3.

- 16.10 The provisions of clauses 16.9(a) and 16.9(b) shall not apply to any equity taken or royalty charged in consideration of:

- (a) IP other than Foreground IP licensed or assigned to the third party or NewCo; or
(b) facilities, equipment, personnel or other material support or services provided to the third party or NewCo independent of the Project Activities,
with such equity or royalty limited to the proportion that reflects the contribution made by IP that is not Foreground IP.

- 16.11 You must notify ARIA in writing before any transaction completes of the overall equity stake or royalty percentages agreed under clause 16.8 (and any impact of clause 16.9, if relevant).

17. ASSETS

- 17.1 You must keep a register during the Funding Period and for up to 7 years after the end of the Funding Period of all Assets, with all relevant details about each Asset. You must use any Assets purchased with Grant monies for the Project Activities.

- 17.2 At the end of the Funding Period all equipment purchased for use on the Project with funds provided by ARIA shall remain your property.

18. INSURANCE

- 18.1 You must maintain Adequate Insurance (including public liability insurance) either as a self-insurance arrangement or with an insurer of good repute to cover all insurable claims and liabilities under or in connection with the Grant Agreement. You must provide evidence of that insurance to ARIA on request.

19. ASSIGNMENT AND SUBCONTRACTING

- 19.1 You may not transfer, assign, novate or otherwise dispose of the whole or any part of the Grant Agreement or any rights under it, to another organisation or individual, without ARIA's prior written consent.
- 19.2 You shall not subcontract any of the Project Activities to a Third Party except to the extent permitted, and to the person or persons identified, in Schedule 2 Part 1. You must seek ARIA's prior consent to appoint any new Sub-Contractors not identified in Schedule 2 Part 1. You shall (i) be responsible for the acts and omissions of any Sub-Contractor as though they were your own, and (ii) enter into a written agreement with each Sub-Contractor on terms that are at least as protective of ARIA's rights and interests as the terms of this Grant Agreement and which contains all other provisions as are necessary to ensure that the Sub-Contractor complies with your obligations under this Grant Agreement.

20. BORROWING, LOSSES, GIFTS, SPECIAL PAYMENTS

- 20.1 You must obtain ARIA's prior written consent before:
- (a) borrowing or lending money from any source in connection with the Grant Agreement;
 - (b) giving any guarantee, indemnity, security over any Asset or letter of comfort in relation to the Grant Agreement;
 - (c) making any gift or writing off any debt or liability in connection with the Grant, and must keep a record of all gifts given and received in connection with the Grant.

21. PUBLICITY

- 21.1 The parties will agree the text of a press release or other announcement to publicise the award of the Grant and all such publicity must comply with ARIA's accreditation and branding guidelines. Neither party may make any other press release or announcement about the Grant or publicise details of the Grant Agreement without the other's consent, except as required by Law.
- 21.2 You must comply with all reasonable requests from ARIA to facilitate visits and provide reports, statistics, photographs (with consent of your personnel if required) and case studies that will assist ARIA in its promotional and impact assessment activities relating to the Project Activities.

22. EVENTS OF DEFAULT AND TERMINATION

Events of Default

22.1 ARIA may exercise its rights set out in clause 22.2 if any of the following events occur:

- (a) you fail to comply with any of your obligations under clauses 2.2, 7.2, 9.1, 11, 12, 13, 15.5 or 25, or commit a material breach of any other term of the Grant Agreement in the reasonable opinion of ARIA;
- (b) you do not commence the Project Activities within 30 days after the Commencement Date unless an extension is agreed with ARIA;
- (c) you fail to improve the performance of the Project Activities, notwithstanding your having undertaken the remedial activity agreed with ARIA in the remedial plan under clause 6.2(d);
- (d) you or the researchers involved in the Project Activities obtain any funding from a Third Party that, in the opinion of ARIA, undertakes activities that are likely to bring the reputation of the Project Activities or ARIA into disrepute;
- (e) you provide ARIA with any materially misleading or inaccurate information in your grant application or in subsequent related correspondence;
- (f) you commit a Prohibited Act or fail to report a Prohibited Act to ARIA, whether committed by you or a Third Party, immediately upon becoming aware of it;
- (g) you are subject to an Insolvency Event;
- (h) the Grant or any part of it is held by a court or competent authority to be a prohibited subsidy under the Subsidy Control Act 2022 or an illegal state aid;
- (i) you undergo a Change of Control which will, in the reasonable opinion of ARIA:
 - (i) be materially detrimental to, or result in fundamental changes to, the Project Activities;
 - (ii) result in your being unable to receive the Grant; and/or
 - (iii) raises national security concerns.

Rights reserved for ARIA in relation to an Event of Default

22.2 If an Event of Default has or may have occurred, ARIA may by written notice to you take any one or more of the following actions:

- (a) suspend the Project Activities and payment of the whole or any part of the Grant for such period as ARIA may determine, acting reasonably;
- (b) reduce the Maximum Sum, in which case the payment of Grant will thereafter be made in accordance with the reduction and notified to you; and/or
- (c) subject to clause 22.4, terminate the Grant Agreement with immediate effect as from the date of service of the notice of that termination.

22.3 Where this Grant Agreement is terminated for an Event of Default described in clause 22.1(f) or 22.1(h), ARIA may require you to repay the entire amount of the Grant previously paid to you.

Opportunity for you to remedy an Event of Default

22.4 If ARIA wishes to exercise any right under clause 22.2 in connection with an Event of Default which is capable of remedy:

- (a) ARIA will provide reasonable notice to you specifying particulars of the Event of Default, how it must be remedied and the timescales for its remedy; and
- (b) following receipt of a notification under clause 22.4(a), you will be given a reasonable opportunity to remedy the Event of Default before ARIA exercises the relevant right under clause 22.2.

22.5 Without prejudice to any other provision of the Grant Agreement, you may terminate the Grant Agreement on written notice to ARIA if ARIA commits a material breach of the Grant Agreement which is either not capable of being remedied or, if the breach is capable of being remedied, ARIA fails to remedy such breach within 30 (thirty) days of receiving written notice requiring it to do so.

General Termination Rights

22.6 Notwithstanding ARIA's right to terminate the Grant Agreement under clause 22.2(c), either party may terminate the Grant Agreement (in whole or in part) at any time by giving at least 60 days' prior written notice to the other party.

22.7 You must promptly notify ARIA in writing if at any time the principal investigator or any key researcher(s) named in Schedule 2 working on the Project Activities is unable or unwilling to continue to be involved in the Project Activities or is moving to a new organisation without the desire to continue the research. Within 60 days after the date of that notice, you must either:

- (a) nominate one or more successors, subject to ARIA's approval; or
- (b) agree that the Grant is transferred to another organisation subject to your and the new organisation's agreement in writing and ARIA's approval of the transfer

If ARIA is unwilling to accept the nominated successor(s) or does not approve a request for transfer, it may terminate the Grant Agreement by at least 30 days' written notice to you.

Consequences of Termination

22.8 If the Grant Agreement is terminated you must return any Unspent Monies to ARIA within 30 days after the date of the termination notice, save where ARIA gives written consent to their retention.

22.9 Where ARIA terminates the Grant Agreement in accordance with clause 22.6, ARIA will be liable to pay any Unavoidable Costs subject to:

- (a) you taking all reasonable steps to mitigate such loss; and
- (b) the Unavoidable Costs being:
 - (i) proven, reasonable, and not capable of avoidance or recovery;
 - (ii) incurred under arrangements or agreements that are directly associated with this Grant Agreement;
 - (iii) supported by full particulars, including a fully itemised and costed list of such costs, with supporting evidence and copies of any relevant Sub-Contracts, and such information has been provided to the reasonable satisfaction of ARIA;

- (iv) costs not relating to Sub-Contracts with an entity which directly or indirectly controls you, is controlled by you, or is under direct or indirect common control with you;
- (v) costs that would not have been incurred had this Grant Agreement continued until the end of the Funding Period as set out in the Grant Funding Letter (or, if it has been extended, the expiry of such additional period).

- 22.10 You shall ensure that any Sub-Contract, or the part of the Sub-Contract which relates to the Services, over £250,000 will terminate automatically and immediately upon termination of this Agreement.
- 22.11 If requested by ARIA from time-to-time, you must (acting in good faith) provide ARIA with a reasonable estimate of the Unavoidable Costs which would be payable under this Grant Agreement in the event that the Grant Agreement was terminated (calculated on the basis described in clause 22.8).
- 22.12 ARIA's total liability under clause 22.9 shall be limited to the Maximum Sum under the Grant Agreement (or relevant part), including any sums paid, due or becoming due to you at the date of termination.
- 22.13 If the Grant Agreement is terminated or expires ARIA will not be liable to pay any of your costs or those of any of your contractors or suppliers related to any transfer or termination of employment of any employees engaged in the provision of the Project Activities, unless they have been hired for the purpose of the Project Activities, are specified personnel in the Grant Funding Letter and are normal statutory or contractual requirements. You must at ARIA's request promptly prepare a written exit plan to provide for the cessation or seamless transfer to a Third Party of the Project Activities following expiry or termination of the Grant Agreement.

23. DISPUTE RESOLUTION

- 23.1 The parties must use all reasonable endeavours to resolve in good faith any dispute that arises during the term of the Grant Agreement.
- 23.2 All disputes and complaints must be referred in the first instance to the Grant Manager and the Project Representative.
- 23.3 If the dispute cannot be resolved between the Grant Manager and the Project Representative within a maximum of 15 Working Days, then the matter will be escalated to a formal meeting between the parties' Escalation Contacts.

24. LIMITATION OF LIABILITY

- 24.1 Neither party's liability for any of the following shall be subject to the limitations or exclusions of liability otherwise provided for in this clause:
- (a) fraudulent misrepresentation or any other fraudulent act or omission;
 - (b) payment of sums properly due and owing to the other in the normal course of performance of this Grant Agreement;
 - (c) a breach of clause 13;

- (d) liability arising under any indemnity in this Grant Agreement; or
- (e) liability which may not lawfully be excluded or limited.

24.2 Subject to clause 24.1, ARIA accepts no liability for any consequences or Losses (except, for clarity, as set out in this Grant Agreement or for ARIA's breach of this Grant Agreement), whether arising directly or indirectly, that may arise in connection with:

- (a) your carrying out the Project Activities;
- (b) the use of the Grant by any person;
- (c) any reduction, suspension, withdrawal or request for repayment of the Grant in accordance with this Grant Agreement; or
- (d) termination of the Grant Agreement in accordance with this Grant Agreement.

24.3 Subject to clause 24.1, neither party will be liable to the other party, whether for breach of contract, tort (including negligence) or otherwise, for:

- (a) loss of profit, sales or turnover;
- (b) loss of contracts or business opportunities;
- (c) loss of anticipated savings;
- (d) loss of goodwill or damage to reputation; or
- (e) any indirect, special or consequential loss or damage;

in each case arising out of or relating to the Grant Agreement, whether or not such loss or damage was foreseeable or the other party was advised of its possibility.

24.4 Subject to clause 24.1, each party's total aggregate liability arising out of or relating to the Grant Agreement or its subject matter or anything which it has done or not done in connection with the Grant Agreement or its subject matter (whether for breach of contract, tort, including negligence, or otherwise), will not exceed the amount of the Maximum Sum.

24.5 You shall under no circumstances in connection with this Grant Agreement be entitled to recover damages, or obtain payment, reimbursement, restitution or indemnity more than once in respect of the same loss, shortfall, damage, deficiency, breach or other event or circumstance.

24.6 ARIA shall be entitled to set off any of your outstanding liabilities against any amounts that are payable by it pursuant to this Grant Agreement.

25. RESEARCH ETHICS AND CODE OF CONDUCT

25.1 As a recipient of a Government grant you must operate in accordance with the Concordat.

25.2 All research data:

- (a) must be generated using sound scientific techniques and processes;
- (b) must be accurately recorded in accordance with good scientific practices by the people conducting the research; and

(c) must be analysed appropriately, without bias and in accordance with good scientific practices.

25.3 The Results must be stored securely and be easily retrievable with document trails that allow reconstruction of key decisions and conclusions of the Project.

25.4 You must comply with the Code of Conduct and ensure that your Representatives undertake their duties in a manner consistent with the principles set out in the Code of Conduct. You must immediately notify ARIA if you become aware of any actual or suspected breaches of the principles contained in the Code of Conduct.

26. VARIATIONS

26.1 Any variation to the Grant Agreement will only be valid if it is agreed in writing and signed by an authorised representative of each party.

27. GENERAL

27.1 Notices: All notices and other communications in relation to this Grant Agreement must be in writing and will be deemed to have been duly given if personally delivered, e-mailed, or mailed (first class postage prepaid) to the address of the relevant party as stated in clause 2.1 of the Offer Letter. If personally delivered or if e-mailed all such communications will be deemed to have been given when received (except that if received on a non-working day or after 5.00 pm on any Working Day they will be deemed received on the next Working Day) and if mailed all such communications will be deemed to have been given and received on the third Working Day following such mailing.

27.2 Change of control: You must notify ARIA as soon as practicable in writing of any arrangements that are in progress or in contemplation that if completed will result in a Change of Control, and must provide to ARIA sufficient details about the circumstances surrounding the proposed Change of Control and the identity of the proposed acquiror to allow ARIA to assess whether clause 22.1(i) is likely to apply.

28. GOVERNING LAW

28.1 This Grant Agreement (including any non-contractual disputes or claims arising in connection with this Grant Agreement) will be governed by and construed in accordance with the laws of England and Wales and the parties irrevocably submit to the exclusive jurisdiction of the courts of England and Wales.

29. NOT USED

30. DEFINITIONS AND INTERPRETATION

30.1 Where they appear in these Conditions or the Grant Agreement:

Adequate Insurance means the insurance requirements and amounts set out in the Grant Funding Letter.

Asset means any asset that is purchased, improved or developed using the Grant including equipment and fixed assets;

Background IP means IP that is:

(a) owned by or licensed to a party prior to the Commencement Date; or
(b) developed by or on behalf of a party during the Funding Period but not in connection with the Project Activities,

and is in either case used in connection with the Project Activities;

Bribery Act means the Bribery Act 2010 and any subordinate legislation made under that Act from time to time together with any guidance or codes of practice issued by the relevant government department concerning this legislation;

Change of Control means the sale of all or substantially all your assets; any merger, consolidation or acquisition of you with, by or into another person, or any change in the ownership of more than fifty percent (50%) of your voting capital in one or more related transactions;

Code of Conduct means the Code of Conduct for Recipients of Government General Grants published by the Cabinet Office in November 2018 which is available (at the Commencement Date) at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/754555/2018-11-06_Code_of_Conduct_for_Grant_Recipients.pdf

including any subsequent updates from time to time;

Commencement Date means the date set out in the Grant Funding Letter;

Commercialisation Licence means a licence of IP other than a research or evaluation licence and/or subcontract manufacture (and **Commercially License** means to license under a Commercialisation Licence);

Commercialisation Hypothesis means the exploitation plan approved by ARIA and set out at Schedule 2 Part 2, as may be amended by agreement between the parties during and after the Funding Period;

Completion Date means the date set out in the Grant Funding Letter;

Concordat means the Concordat to Support Research Integrity which can be found at <https://ukrio.org/about-us/the-concordat-to-support-research-integrity/>

Conditions means these ARIA Grant Conditions;

Confidential Information means any information (however conveyed, recorded or preserved) disclosed by or on behalf of a party to the other party, whether before or after the date of the Grant Agreement, that ought reasonably to be considered to be confidential (whether or not it is so marked), (a) including: (i) information relating to the business, affairs, customers, clients, suppliers or plans of the disclosing party; (ii) the operations, processes, product information, know-how, designs, trade secrets or software of the disclosing party; (iii) any information developed by the parties in the course of carrying out the Project Activities; (iv) Personal Data supplied by either party to the other for the purposes of, or in connection with, the Grant Agreement; and (v) and any information derived from any of the above,

(b) but not including information which: (i) was public knowledge at the time of disclosure (otherwise than by breach of clause 11); (ii) was in the possession of the receiving party, without restriction as to its disclosure, before receiving it from the disclosing party; (iii) is received from a Third Party (who lawfully acquired it) without restriction as to its disclosure; or (iv) is independently developed without access to the Confidential Information; and (v) the content of this specific version of the Grant Agreement, save in respect of any information which is exempt from disclosure under the Information Acts as they apply to the relevant party;

Crown Body means the government of the United Kingdom (including the Northern Ireland Assembly and Executive Committee, the Scottish Executive and the National Assembly for Wales), including, but not limited to, government ministers and government departments and particular bodies, persons, commissions or agencies from time to time carrying out functions on its behalf;

Data Protection Legislation means all applicable laws from time to time in force in England and Wales on data protection, including but not limited to, the Data Protection Act 2018, the retained EU law version of the GDPR and the Privacy and Electronic Communications (EC Directive) Regulations 2003, SI 2003/2426, and any national laws or regulations implementing Directive 2002/58/EC (as updated by Directive 2009/136/EC) and any judicial or administrative interpretation of any of the above, and any guidance, guidelines, codes of practice, approved codes of conduct and approved certification mechanisms issued by any relevant supervisory authority as applicable;

Duplicate Funding means funding provided to you by a Third Party which is to fund the same activities as the Project Activities;

EA means the Equality Act 2000 and any subordinate legislation made under that Act from time to time together with any guidance or codes of practice issued by the relevant government department concerning the legislation;

EIR means the Environmental Information Regulations 2004 or Environmental Information (Scotland) Regulations 2004;

Eligible Expenditure means the payments made by you during the Funding Period for the purposes of carrying out the Project Activities which comply with clause 5 and ARIA's published eligibility rules (which provide for full economic cost reimbursement) and as agreed in the Grant Funding Letter;

Escalation Contact means the escalation contact appointed by ARIA or by you (as the case may be), which at the Commencement Date will be the individuals listed as such in the Grant Funding Letter;

Event of Default means any of the events or circumstances set out in clause 22.1;

Financial Year means 1 April to 31 March;

FOIA means the Freedom of Information Act 2000 and the Freedom of Information (Scotland) Act 2002, any subordinate legislation made under those Acts from time to time together with any guidance or codes of practice issued by the relevant government department concerning the legislation;

Foreground IP means any IP in the Results;

Funding Period means the period commencing on the Commencement Date and ending on the Completion Date or such later date as may be agreed between the parties unless otherwise determined in accordance with the terms of the Grant Agreement;

Future Proofing our Climate and Weather Intellectual Property Pledge means the pledging system for patents relating to approaches for intentionally altering the Earth system through solar radiation modification, modification of ocean circulations, modification of cloud properties, surface engineering works, or weather modification (operated by ARIA or by a third party), in the form set out at Annex A;

GDPR means Regulation (EU) 2016/679;

Go/No-Go Milestone means a decision point for ARIA to determine whether it wishes to proceed with or terminate the Project Activities (any decision regarding a Go/No-Go Milestone will be made at ARIA's sole discretion, following a Grant Review as outlined in Clause 6);

Grant means the sum or sums ARIA will pay to you up to the amount set out in the Grant Funding Letter, in accordance with clause 4 and subject to the provisions set out at clause 22.

Grant Agreement has the meaning given in the Grant Funding Letter;

Grant Claim means a request submitted by you to ARIA for payment of the Grant;

Grant Funding Letter means the letter from ARIA to you to which these Conditions are annexed;

Grant Manager means the individual who has been nominated by ARIA to be your day-to-day point of contact in relation to the Grant;

Grant Review means the process for reviewing the grant outlined in clause 6;

HRA means the Human Rights Act 1998 and any subordinate legislation made under that Act from time to time together with any guidance or codes of practice issued by the relevant government department concerning the legislation;

Ineligible Expenditure means expenditure incurred by you which is not Eligible Expenditure as set out in clause 5 and ARIA's published eligibility rules;

Information Acts means the Data Protection Legislation, FOIA and the EIR, as amended from time to time;

Insolvency Event means:

(i) where you pass a resolution, or the court makes an order that you be wound up (otherwise than for the purpose of a bona fide and solvent reconstruction or amalgamation); or (ii) a receiver, manager or administrator on behalf of a creditor is appointed in respect of all or part of your business or assets; or (iii) circumstances arise which entitle a court or creditor to appoint a receiver, manager or administrator or which entitle the court (otherwise than for the purpose of a solvent and bona fide reconstruction or amalgamation) to make a winding up order; or (iv) you cease to trade or are unable to pay your debts within the meaning of the Insolvency Act 1986 or any similar event occurs under the law of any other jurisdiction;

Intellectual Property Rights or **IP** means copyright, rights related to or affording protection similar to copyright, rights in databases, patents and rights in inventions, semi-conductor topography rights, trade marks, rights in internet domain names and website addresses and other rights in trade names, designs, know-how, trade secrets and any modifications, amendments, updates and new releases of the same and all similar or equivalent rights or forms of protection which subsist or will subsist now or in the future in any part of the world;

Law means any law, statute, bye-law, regulation, order, regulatory policy, guidance or industry code, judgement of a relevant court of law, or directives or requirements of any regulatory body, delegated or subordinate legislation;

Losses means all losses, liabilities, damages, costs, expenses (including legal fees), disbursements, costs of investigation, litigation, settlement, judgement, interest and penalties whether arising in contract, tort (including negligence), breach of statutory duty, misrepresentation or otherwise;

Maximum Sum means the maximum amount of the Grant stated in the Grant Funding Letter;

Milestones means the outputs of the Project Activities described in paragraph 3.2 of Schedule 2;

NewCo has the meaning given in clause 16;

Non-UK Entity means a legal entity that is not a UK Entity;

Personal Data has the meaning given to it in the Data Protection Legislation as amended from time to time;

Prohibited Act means:

(a) directly or indirectly offering, giving or agreeing to give to any servant of ARIA or the Crown any gift or consideration of any kind as an inducement or reward for (i) doing or not doing (or for having done or not having done) any act in relation to the obtaining or performance of the Grant Agreement; and/or (ii) showing or not showing favour or disfavour to any person in relation to the Grant Agreement;

(b) committing any offence: (i) under the Bribery Act; (ii) under legislation creating offences in respect of fraudulent acts; and/or (iii) at common law in respect of fraudulent acts in relation to the Grant Agreement; and/or

(c) defrauding or attempting to defraud or conspiring to defraud ARIA or the Crown;

Project means the Project Activities together with the Results;

Project Activities means the activities to be carried out by you that are described in the Grant Funding Letter and in Schedule 2 Part 1;

Project Representative means the representative appointed by you, who at the Commencement Date will be the individual listed as such in the Grant Funding Letter;

Representative means any of the parties' duly authorised directors, employees, officers, agents, professional advisors and consultants;

Results means all information, data, techniques, inventions, discoveries, works, software and materials generated in the course of the Project Activities;

Secure Innovation and Trusted Research Guidance means the best practice for the implementation of basic protective security measures guidance provided by NCSC and NPSA which can be found on ARIA's website;

Sub-Contract means any contract or agreement or proposed contract or agreement between you and any Third Party whereby that Third Party agrees to provide to you the Project Activities or any part thereof or facilities or services necessary for the performance of the Project Activities or any part thereof or necessary for the management, direction or control of the Project Activities or any part thereof, and **Sub-Contractor** shall be construed accordingly;

Third Party means any person or organisation other than you or ARIA;

UK Entity means a legal entity whose ultimate parent company has its headquarters and principal establishment in the United Kingdom;

Unavoidable Costs means the amounts paid or payable by you to your Sub-Contractors or other third parties in respect of the termination of Sub-Contracts as a direct result of the early termination of this Grant Agreement and which are not capable of recovery;

Unspent Monies means any monies paid to you which remain unspent at the end of the Funding Period because of termination or breach of the Grant Agreement. Unspent Monies do not include non-cancellable costs incurred prior to termination; and

Working Day means any day other than a Saturday, Sunday or public holiday in England and Wales.

30.2 In these Conditions and the Grant Agreement, unless the context otherwise requires:

- (a) references to "party" and "parties" are to the parties to the Grant Agreement;
- (b) the singular includes the plural and vice versa;
- (c) references to a person include an individual, company, body corporate, corporation, unincorporated association, firm, partnership or other legal entity or Crown Body;
- (d) references to clauses and Schedules are to the clauses of these Conditions and to the Schedules to the Grant Agreement;
- (e) a reference to any Law includes a reference to that Law as amended, extended, consolidated or re-enacted from time to time;
- (f) the words "including", "other", "in particular", "for example" and similar words will not limit the generality of the preceding words and will be construed as if they were immediately followed by the words "without limitation"; and
- (g) the headings in the Grant Agreement are for ease of reference only and will not affect the interpretation or construction of the Grant Agreement.

PART 1 - PROJECT ACTIVITIES

1. Background

Marine Cloud Brightening (MCB) and Marine Sky Brightening (MSB) are two of the most significant opportunities to increase the average planetary albedo and provide a mechanism for cooling the earth. The reduction of global ship emission of sulphur for the purposes of improving global air quality has been demonstrated to lead to a significant reduction in cloud albedo providing clear evidence at scale that intervention could be viable. The biggest technical barriers for the development of MCB are associated with the ability to produce aerosols at a high enough rate in an energetically efficient way and at the 'correct' size in a real world environment. Without field testing at a limited scale, it is not possible to examine the technology, nor the predictive capability of model tools to accurately assess the impact of any perturbation.

2. Aims and objectives of the Project Activities

REFLECT will develop and test spray technologies to deliver sea salt aerosol particles; their application for Marine Cloud Brightening (MCB) and Marine Sky Brightening (MSB); and a robust framework for testing both their effectiveness and wider environmental impacts through a stepwise, consultative and inclusive approach.

3. Project Activities

3.1 **Phase 1 - Work package A (WPA): Effective Spray Generation of Aerosols (UoC, Archipelago, UoM)**

The focus is to research promising novel droplet generation methods for MCB/MSB that may prove more optimal than current effervescent spraying technology. We aim to develop at least two of the following emerging spray techniques into efficient field ready prototypes: 1) superheated atomisation^{3,4}; 2) electrospraying^{5,6}; 3) Rayleigh jets^{5,6,7}; 4) bubble bursting atomisation^{8,9}; 5) Powercloud spray system from inkjet technology developer Archipelago Technology. Only the superheated approach is developed elsewhere, by a close collaborator, Southern Cross University (SCU).

Spray technology development will proceed in three stages. *Stage A1* will develop each of the five methods in parallel at the laboratory scale with single nozzle testing including combinations so that the findings from one method can be applied to others. The methods that show most promise will progress to *Stage A2* where arrays of nozzles will be tested within wind tunnel facilities at UoC and the Manchester Ice Cloud Chamber (MICC). These experiments will examine whether aerosol particle size distributions change as a result of coagulation before scaling the technology further. *Stage A3* will scale up at least two of the technologies into prototypes for field testing. Prior to a stage gate review at M36 or any outdoor trials, the prototypes will be tested indoors, in a large controlled environment such as a hangar or warehouse. This is a low risk approach to verify correct and safe operation of the entire spray generation system, including droplet dispersal and filtration before going out into the field.

The progression of each spray technology is dependent on evaluation against the following metrics: spray generation rate, droplet size range, overall power consumption and unit cost to achieve the target spray rates, filtration requirements, spatial requirements, robustness to marine environments, and

manufacturability. The latest results from our chamber experiments and parcel modelling will provide metrics to evaluate and improve sprayer performance during laboratory scale development. Spray technologies that show no improvement over existing spray technology will not progress to the next stage; however, the risk of not producing new applications is low since we are pursuing multiple approaches. Impacts of sprayer performance will be tested in WPC.

Methods 1-4 will involve the use of engineering design consultants (UoC currently liaising with a potential subcontractor) for prototype(s) design. The design scale-up for method 5 will be undertaken by Archipelago and the manufacturing of a prototype for all methods will involve outsourcing to fabrication companies. We are working closely with SCU who have suppliers with relevant experience in engineering for marine environments willing to share knowledge to streamline development. We have already identified suppliers with capacity for manufacturing some of the main components for each technology, including for silicon-based nozzles.

Key outcomes: KO1: Single nozzle tests and stage one technology evaluations completed for at least two methods (M6) and for three further methods (M18); KO2: Multi-nozzle tests and stage two technology evaluations completed for at least one technique (M18) and for the remaining techniques (M30); KO3: First field trial capable prototype designed, built and fully tested indoors (M30) KO4: Second prototype tested indoors (M36); KO5: Continued testing (indoors) and refinement of prototypes and final design recommendations for what future MCB/MSB testing would require (M60).

Whether injecting sea salt (NaCl) particles into the base of marine clouds will give the desired cloud response depends on how aerosol particles of different sizes and compositions compete for water vapour. If too many small particles are generated they may not be capable of growing into cloud droplets, on the other hand, large particles require a lot of water to grow and this can suppress clouds forming on smaller particles, and may also lead to drizzle. We will experimentally test this for the first time by comparing our process models, ACPIM¹¹ and PARSEC¹², to results from the UoM cloud and aerosol chamber. Findings will be directly fed into the multi-scale modelling framework (WPC), since PARSEC is embedded in the UK Met Office Unified Model (UM) via UKESM1 (WPC).

During the first 6 months we propose necessary upgrades to the indoor Manchester Ice Cloud Chamber (MICC) by fitting new state-of-the-art probes using customised inlets fabricated at the UoM. We will also build a standalone spray system for aerosol generation, based on known technology (Palas UGF2000) and ultrasonic atomisation that can generate realistic background aerosol size distributions with mode diameters in the range 40 to 250 nm. This relatively low-tech development does not have the same potential for scale-up as the spray technology, but it can produce variable particle size distributions and allows experiments to commence quickly. We propose to use two simple, single component aerosols for background activation experiments such as $(\text{NH}_4)_2\text{SO}_4$ and fulvic acid, which span observed atmospheric aerosol hygroscopicity. Aerosols will be generated inside the MICC, and we will perform cloud formation experiments, measuring the cloud drops. Experimental data will be used to drive the UoM cloud parcel model, ACPIM¹¹, developed to evaluate competition effects. We will experiment with external mixtures of both background aerosol and NaCl aerosol, evaluating against ACPIM and correcting biases. Findings from the experiments will be transferred to the spray testing so that the correct droplet sizes and concentrations can be targeted. As the spray systems mature they will be installed in the MICC to test their performance in competition with a background aerosol population.

Key outcomes: KO6: MICC upgrades (M06); KO7: MICC experiments evaluating single component aerosol ($(\text{NH}_4)_2\text{SO}_4$, organic acid) at 3 different mode sizes compared to ACPIM simulations using

approximately 5 cooling rates (M10) KO8: addition of external mixtures of NaCl particles of different sizes with feedback to spray development (M18); KO9: external mixture evaluation using new spray technology in MICC (M24); KO10: refinement of spray technology during MICC tests (M30).

Work Package B (WPB): Field Trials (UoM, UoC, UoL)

We will develop an experimental test bed that will be used to validate (i) spray performance in real world conditions and (ii) model tools that predict aerosol mixing through the boundary layer, impacts on the surface albedo and responses of the cloud. The WP is deliberately cautiously staged, with a formal stage gate review at M30 to externally evaluate the effectiveness, safety, and risks before any field experiments are carried out. It will develop in close synergy with our responsible research and innovation¹³ (RRI) framework (WPD) and be regularly examined by our management team and key stakeholders (Part 2: Governance). A second stage gate at M42 is possible to allow re-evaluation after the initial experiment.

Stage B1 (M1-M30): identification of field location, safety and risk management framework development:

Identification of an optimum field location will be made in year 1 based on the likelihood of representative conditions and operational considerations. A coastal, land-based location will: reduce cost; allow ready access to technical support for ease of servicing/modifying; facilitate space and power for sprayers and instrumentation. In the case of the second field experiment, the background CCN concentration should be as close to 100 cm^{-3} as possible to represent clean, marine conditions¹⁴ where cloud albedo response is sensitive¹⁵ and ideally an airfield for small aircraft within range.

A Technical, Safety and Risk Management Framework will be developed synergistically with the RRI Framework (WPD), guided by the technical consideration decision tree and funding approval decision tree in the ARIA Programme Thesis. Our framework will be a living document that, alongside a technical progress report and the RRI Framework (WPD), will form the basis of the Stage Gate review (M30) and acceptance via the ARIA evaluation process ahead of any field trials. This will include the plans, safety documentation and technical, regulatory and environmental assessments of risk and mitigation plans.

We will begin with low emission rates ($\sim 10^{14} \text{ s}^{-1}$) lasting only a few minutes, evaluating outcomes and risks at each stage as we scale in a stepwise manner to approach target rates of $\sim 5 \times 10^{16} \text{ s}^{-1}$ lasting up to one hour to examine cloud interactions. Our experiments involve real time monitoring so that they can be rapidly terminated. Our Framework documentation will include wider safety assessments such as near field exposure, discussions with landowners, and government compliance (eg Environment Agency, SEPA). A risk assessment and Environmental Impact Assessment will be carried out, though we anticipate risks are very low given that the volumes of filtered seawater are of the order of 5-6 l/min or 300-400l over an hour long experiment and spraying will be done in offshore wind conditions. Drafts of the framework will be regularly presented to ARIA, our Advisory Board, and to Key stakeholders (see WPD) and recommendations incorporated into the document which will be made publicly available online.

Key outcomes: KO11: Locations selected for the two field trials (M12) KO12: Technical, Safety and Risk Management Framework developed (Draft M21; Acceptance Stage Gate M30)

Stage B2 (M32-M48): Testing Effective Distribution of Spray Aerosols in the Atmospheric Boundary Layer - This Stage B2 forms part of Phase 2 and is subject to para 3.3 below.

Generation of large aerosols or near-field coagulation may produce giant CCN that may preferentially activate, suppressing activation of background aerosol¹⁶ and/or initiating drizzle¹⁷. Rapid evaporation of water from the spray may inhibit mixing¹⁸, and although initial experiments¹⁹ and modeling²⁰ suggest this effect may be

modest, confirmation via field observations is necessary. Spray generation and mixing will be tested in this first field trial. Field scale spray systems (WPA) will be installed alongside the current SCU spray system for comparison in a 40 day field experiment, although spraying will be limited to a few short periods on any given day (M38). Atmospheric monitoring of the marine boundary layer will include use of radiosondes, a wind profiler, radiometers and a ceilometer as well as in-situ observations of the background aerosol, temperature and humidity. Operational models (Met Office's Unified Model (UM) and Numerical Atmospheric-dispersion Modelling Environment (NAME)) will forecast plume direction, altitude and dispersion width. Plume evolution will be observed by scanning aerosol and Doppler lidars. A UAV mounted aerosol instrument will examine the aerosol size distribution development in the plume (100 nm-10 μ m diameter) and UAV borne radiometers will monitor any resulting changes in the local planetary albedo. These observations will constrain and validate our models of physical and thermodynamical plume evolution, mixing and impact on albedo. Large Eddy Model (LEM) simulations will be used to interpret the observations (WPC).

Key Outcomes: KO13: Assessment of performance of spray technologies (WPA) in real world conditions to inform final stage-gate review (M42). KO14: Data stored in a publicly available repository (M42).

Stage B3 (M42-M60): Determination of Clear Sky Albedo and Cloud Responses to Aerosol Injection into the Boundary Layer - This Stage B3 forms part of Phase 2 and is subject to para 3.3 below: Responses of clouds to changes in aerosol are highly uncertain. Introduction of aerosol into a cloud system may change drizzle, cloud thickness, entrainment and diurnal cycle of cloud, all of which interact with each other in complex ways. LEM and Cloud Resolving Model (CRM) tools have been used to investigate these interactions but critically have yet to be tested against observations of an aerosol injection on a scale large enough to assess cloud responses. The second 40 day field study (M48), will seek to investigate cloud responses and test the LEM and CRM cloud simulations (WPC). A new Frequency Modulated Continuous Wave (FMCW) mobile cloud radar and micro rain radar will be added to the Stage B2 observations. The FMCW radar is capable of high resolution scanning and retrieval of droplet size distributions and so offers a powerful way of examining the plume interaction with cloud. These observations will deliver the necessary constraints to validate model predictions and target improvements. At the scales envisaged, large aircraft fly too fast to adequately resolve the plume features though small, slower aircraft may be used.

Key Outcomes: KO15: Public report on field trial outcomes (M60); KO16 Publicly available data archive (M60).

Work Package C (WPC): Modelling (UoE, FMI)

In WPC we will assess the regional dynamical and climate scale responses and impacts of a large-scale implementation of spray technology for MCB and MSB. Models will be used to extend the necessarily limited number of observations at local scales (WPA, WPB) to additional meteorological regimes and to larger spatial scales. This will be achieved through a seamless multiscale-framework. We will utilise:-

i) *Parcel models*: The UoE cloud parcel model (PARSEC)¹², and the UoM bin microphysics model (ACPIIM)¹¹ are state-of-the-art size dependent cloud models that serve as the benchmarks for the development of droplet activation parameterisations in climate models. PARSEC is already operational within the UM, and whilst too computationally expensive for decadal simulations, can be used for shorter (up to 1 year) process-orientated UM simulations. PARSEC can track aerosol growth and evaporation for specific bin sizes explicitly in global climate simulations allowing competition effects to be quantified for regions with different background aerosol and updraft regimes for comparison against idealised chamber experiments (WPA).

ii) *LES models*: The Met Office NERC Cloud model (MONC)²¹ multi-moment bulk microphysics model and the UCLA Large-Eddy Simulation (UCLALES) coupled with the Sectional Aerosol module for Large-Scale Applications (SALSA)²² bridge the gap between microphysical processes and larger scale models.

iii) *Nested models*: The Nested Unified Model with Aerosol and Chemistry (NUMAC)²³ can be used to assess the impact of plume concentrations at surface level, visibility, deposition etc. that cannot be resolved with climate models. iv) *Earth System Models*: UKESM1 is a well-respected climate model that can be used to assess the dynamical impacts of MCB/MSB²⁴.

MONC and UCLALES simulations will be performed using the observed aerosol size distribution from the sprayers and appropriate meteorological boundary conditions to simulate the aerosol plume and impacts on cloud development, microphysical and radiative properties (see WPB). Synergistic NUMAC model simulations and UKESM1 coupled simulations will investigate a number of scaled up experiments. These will include centring the NUMAC grid on i) the UK, ii) the Namibian stratocumulus cloud deck, iii) the Caribbean ocean, iv) the N. Atlantic Ocean, and v) the Indian Ocean. These simulations will use the sprayer-derived aerosol size distribution (WPA/WPB) which can be explicitly modelled in terms of emissions and will use the standard activation scheme¹⁹ and that developed from emulation of the PARSEC model to facilitate accurate simulation of cloud droplet number response to spray injection on climate timescales.

UKESM1 simulations, which are fully coupled to a dynamical ocean, will allow assessments of dynamical feedbacks, and the local and remote cooling impacts for each of the regions where sea-salt aerosol is applied. This is critical in understanding climate impacts should any large-scale use be successful in cooling a limited area of the ocean as inhomogeneous spray scenarios have been shown to lead to very inhomogeneous climate responses^{24,25}. Particular foci will be on the effectiveness of MCB/MSB in ameliorating climate extremes, tipping points and climate change-induced wildfire, hurricane development, Amazon die-back, sea-ice loss, and changes in the Indian monsoon as appropriate. Other areas may be investigated.

NUMAC simulations are unable to provide climate projections, but the superior resolution provides a realistic and more detailed representation of the impacts on cloud properties and precipitation for any potential large-scale use. Air-quality (sea-spray contributes to the PM_{2.5} and PM₁₀ pollution targets adopted by the UK and internationally) will be impacted by extensive sprayer use and could lead to some deleterious impacts if installed around populous regions. Similarly, visibility could be very strongly impacted²⁴. Simulations can adjust use strategies to take account of e.g. location, time of year, meteorological conditions etc. Time-slice NUMAC simulations will be run for future scenarios through to the end of the century utilising various future Shared Socioeconomic Pathways (SSP) and GeoMIP scenarios.

Key Outcomes: KO17: Spray characteristics embedded into models (M30; M42) KO18: Simulations of aerosol plume and impacts on cloud evolution and radiative properties (M30; M48); KO19: Reports on impacts of sprayer use if applied to key regions optimised in WPA for MCB and MSB on simulations of cloud, visibility, air-quality and further optimisation/improvement (M30; M48) KO20: impacts of optimised sprayer used for MCB and MSB under various future climate scenarios (UKESM1-climate) (M30; M48).

Work Package D (WPD): Responsible Innovation and Societal Engagement (UoM)

We build on well-established imperatives for science and innovation that it is socially desirable and undertaken in the public interest, by seeking to (i) “anticipate” the impacts of MCB/MSB field

experiments; (ii) “reflect” on the uncertainties and ambiguities of research; (iii) “engage” in meaningful two-way engagement with society; and (iv) “act” on its findings to inform the trajectory of MCB/MSB research and innovation in the project and more broadly^{13,26}. We will facilitate “upstream” societal engagement to address these aspects in advance of significant research activities to help avoid sociotechnical lock-in to undesirable pathways. WPD will elicit perceptions of, and preferences for, MCB/MSB experimentation pathways through (1) semi-structured interviews with diverse experts and stakeholders from across academia, government, civil society, and industry (M1-18), (2) qualitative deliberative workshops with socio-demographically diverse members of the public²⁷ (M15-30), and (3) a quantitative nationally representative survey of the public (M27-41). The work will include consideration of key ethical concerns known to pervade SRM research, including ‘moral hazard’ or ‘mitigation deterrence’ (the pursuit of MCB/MSB may distract from efforts to reduce greenhouse gas emissions) and ‘slippery slope’ (research and experimentation may lead to undesirable deployment)²⁸.

In tandem with the project’s technical stage-gate process (see WPB), WPD will develop and apply a social stage-gate process to ensure that responsible innovation is addressed prior to MCB/MSB field experiments taking place (M30, M48). Building on earlier frameworks, this will include consideration of risk management, regulatory compliance, clear communication, impacts review, and stakeholder and public engagement¹³. This forms part of our wider commitment to the ARIA Programme Oversight and Governance measures, which will include regular engagement with the Independent Oversight Committee (IOC) and your own independent oversight and advisory group (IOAG). These tasks will be carried out by a dedicated responsible innovation and societal engagement Postdoctoral Research Associate and supported by the work package lead.

Key outcomes: KO21 Synthesis of the stakeholder interviews and public workshops and survey on the responsible conduct and societal preconditions for MCB/MSB field experiments (M30), that are peer reviewed (M41); KO22 a social stage-gate process for ensuring that responsible innovation is addressed prior to MCB/MSB field experiments taking place (M30, M42).

3.2 The following Milestones will be used to monitor your delivery of the Project. The costs associated with completing these Milestones are estimated in the [REDACTED] (note these costs include an estimate for the use of the NERC facilities these costs are subject to agreement with NERC):

Phase 1 Milestones:

ID	Milestones	Measure	Date
1	Initial nozzle testing process validated	Single nozzle tests and stage one technology evaluations completed for at least two methods	Commencement Date + 8 months

2	Field Sites Selected and Outline Engagement Plan for review	<p>Suitable field sites identified and initial technical feasibility study conducted.</p> <p>Outline engagement plan available.</p> <p>Report on both of these to be submitted to the programme team and oversight committee.</p>	Commencement Date + 14 months
3	Engagement for outdoor experiments underway	Initial mapping of stakeholders complete. First community engagement/codesign event held.	Commencement Date + 20 months
4	Technical, safety, risk and Responsible Innovation Framework drafted	<p>Draft technical, safety and responsible innovation framework, identifying the key risks and mitigation measures and describing the plan for experiment delivery available for sharing with local community, ARIA and oversight committee.</p> <p>Available for sharing with local communities, ARIA and oversight committee and independent risk assessors.</p>	Commencement Date + 23 months
5	<p>Demonstration that one or more of the single nozzle and lab-scale technologies can reproduce the desired particle size distribution</p> <p>This is a Go/No Go Milestone</p>	Demonstrate cloud activation model prediction using chamber experiments and use this to assess effectiveness of sprayers to meet target distributions.	Commencement Date + 26 months
6	Independent risk assessment	Risk and impact assessment by independent environmental consultant complete	Commencement Date + 26 months

7	<p>Final submission for funding for outdoor experiment</p> <p>This is a Go/No Go Milestone</p>	<p>Indoor demonstration of spray systems, at least one spray system can be demonstrated to be operable in the field at scale.</p> <p>Full technical and Responsible Innovation Framework submitted, with evidence that the field trials can be conducted in a safe manner, compliant with regulation, with effective control measures and that key stakeholders, the local population and the wider public have been effectively consulted.</p>	Commencement Date + 32 months
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3.3 The following Phase 2 Milestones are provided for indicative purposes only. Progression to these Milestones, and any associated scope described in the Project Activities above, is subject to a "Go" decision at Milestone 7. The costs associated with the Phase 2 Project Activities and Milestones are not included within the Maximum Sum and Funding Period. Any additional costs shall be subject to prior agreement by ARIA. In any case agreement to proceed with the following Phase 2 Milestones will be at ARIAs sole discretion and subject to a Variation in accordance with Clause 26 of the Grant Conditions set out in Schedule 1.

Phase 2 Milestones:

8	<p>Report on outcomes of first outdoor experiment, showing that effects are measurable. This is a Go/No Go Milestone</p>	<p>Demonstrating that a limited scale field trial can deliver spray at a scale that is detectable and the spray plume characteristics can be predicted with appropriate size distributions and number concentrations (of the order of $10^{15}s^{-1}$) and are controllable within the safety and risk criteria.</p> <p>Report on ongoing community engagement and codesign/codelivery</p>	Commencement Date + 44 months
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9	Final Report on model simulations and integration with experimental data	Final outcome of model simulations of sprayer use on local, regional and global scales.	Commencement Date + 50 months
10	Final report on outcomes of outdoor experiments to demonstrate impact of sprayer on MSB and MCB	Final report demonstrating (or not) the effectiveness of a field scale spray system in affecting the clear sky albedo and the cloudy sky albedo at a scale of 10 km by 10 km. The report will include an examination of key risks and remaining uncertainties, recommendations for next steps and learnings from the community engagement and codesign/codelivery process	Commencement Date + 62 months

In addition to the above Milestones, the following project plan will be used to track progress throughout the project and may be updated from time to time: [REDACTED]

3.4 The intended long-term outcomes are summarised below:

- Spray systems for generation of sea spray with rates and size ranges optimised for marine cloud brightening and marine sky brightening
- Operational UK based field test facility for MCB and MSB limited area research
- Model systems for prediction of MCB and MSB effects optimised using real world data from limited area field trials
- A responsible innovation framework for MCB and MSB research

4. Project Reporting requirements

You will complete, submit and attend the following reporting/meeting requirements at the frequency set out below:

Frequency	Requirement
Planning	<ul style="list-style-type: none"> • Roles and responsibilities

	<ul style="list-style-type: none"> • External communications • Vision • Project details • Code and data management • Project plan + project management
Quarterly	<p>Reporting:</p> <ul style="list-style-type: none"> • Technical status - Red/Amber/Green • Delivery status - Red/Amber/Green • The latest progress against milestone(s) from last quarter • Key Learning, discoveries and decisions • Stories to highlight • Priorities for the next quarter • Challenges • Changes to team and new collaborations • Invoicing and cost reporting <p>Optional:</p> <ul style="list-style-type: none"> • technical evidence saved to drive e.g. report or presentation as requested by PD • review meeting slide deck saved to drive as requested by PD
Annual	<ul style="list-style-type: none"> • ARIA impact metrics • Attendance at annual ARIA event
Ad hoc	<ul style="list-style-type: none"> • As required, Programme Director/ Programme Team may request additional information and evidence • Workshops - potential to be invited to ARIA workshops
Project closure	<ul style="list-style-type: none"> • Project closure report

5. Payment

5.1 Subject to your compliance with the terms of this Grant Agreement, ARIA will make Grant payments quarterly in arrears.

For quarterly payments, the cadence of payments will align with ARIAs financial year beginning 1st April e.g Quarter 1 Grant Claims will be for the period of 1st April to 30 June, Quarter 2 Grant Claims will be for the period of 1st July to 30 Sept and so on.

5.2 Before paying any Grant Claim, ARIA must be satisfied that the Project Activities have been carried out during the Funding Period (or that part of the Funding Period to which the claim for Grant

relates).

5.3 Grant Claims must be submitted to ARIA by the 15th Working Day of the month following the end of the relevant period.

5.4 Payment of the Grant Claim will be made within 30 days after ARIA approves your Grant Claim.

6. Principal investigator/key researchers

6.1 For the purposes of clause 22.7, the following principle investigators or key researchers have been identified:

Name	Role	Organisation
Hugh Coe	PI, lead WPB	University of Manchester and NCAS
[REDACTED]	[REDACTED]	University of Manchester
Rob Bellamy	Lead WPD: Responsible Innovation and Societal Engagement	University of Manchester
[REDACTED]	[REDACTED]	NCAS, University of Manchester
[REDACTED]	[REDACTED]	NCAS, University of Manchester
[REDACTED]	[REDACTED]	University of Manchester
Shaun Fitzgerald	Lead WPA	University of Cambridge
[REDACTED]	[REDACTED]	University of Cambridge
Dan Mace	WPA spray development	Archipelago Technology
James Haywood	WPC lead	University of Exeter
[REDACTED]	[REDACTED]	University of Exeter
Sami Romakkaniemi	WPC Large eddy modelling lead	Finnish Meteorological Institute
Lindsay Bennett	WPB NCAS Observations	NCAS, University of Leeds
[REDACTED]	[REDACTED]	NCAS, University of Leeds
[REDACTED]	[REDACTED]	NCAS, University of Leeds

7. Sub-Contractors

7.1 For the purposes of clause 19, the following Sub-Contractors have been agreed:

Name	Description of activity	Location or organisation
University of Cambridge	Development, evaluation and testing of spray technologies	Cambridge
University of Exeter	Delivery of regional and global model simulations, analysis and interpretation	Exeter
University of Leeds	Provision of radar and other NCAS Atmospheric Measurement Observing Facility (AMOF) instruments and Project Communications	Leeds
Finnish Meteorological Institute	Delivery of Large Eddy Simulations using UCLALES-SALSA, analysis and interpretation	Finland
Archipelago Technology	Development of Archipelago Powercloud Technology for MCB and MSB application	Cambridge

PART 2 - GRANT APPLICATION

Application titled "A Responsible innovation Framework for assessing NOvel Spray Technology Research to examine local AlbeDo changes from Marine brightening and its mUlti-Scale impacts. (NOSTRADAMUS)" submitted 9 December 2024.

SCHEDULE 3

Royalty Percentages

Royalties on the sale or supply of products or services that are covered by, use or incorporate the Foreground IP licensed to the NewCo will only become due on aggregate net sales derived from the Foreground IP exceeding £50 million.

The maximum headline percentage royalty rate (i.e. before any royalty stacking, step-down or other reduction and excluding any ARIA Non-UK Fee) for products or services that are covered by, use or incorporate the Foreground IP, and of sublicensing income, shall be one of the following:

Type of product	Applicable headline royalty percentage (up to)
Low margin	0.5% of net sales
Medium margin	1% of net sales
High margin	2% of net sales
Sublicensing royalty	10% of net receipts

ANNEX 1

Clause for inclusion in licences of Foreground IP

[] **ARIA NON-UK FEE**

[].1 In this clause:

"ARIA" means the Advanced Research and Invention Agency;

"Crown Body" means the government of the United Kingdom (including the Northern Ireland Assembly and Executive Committee, the Scottish Executive and the National Assembly for Wales), including, but not limited to, government ministers and government departments and particular bodies, persons, commissions or agencies from time to time carrying out functions on its behalf;

"UK Entity" means a legal entity that has or whose ultimate parent company has its headquarters and principal establishment in the United Kingdom.

[].2 The Foreground IP was developed with funding from ARIA. As a condition of its funding ARIA requires that a benefit is returned to the United Kingdom where the Foreground IP is licensed by the Licensor to any person that is not a UK Entity. Accordingly, in addition to any other sums payable by the Licensee to the Licensor under this Agreement, the Licensee shall pay to the Licensor within 90 days after the end of each calendar year during the Relevant Period (as defined below), and within 90 days after the end of the Relevant Period, a fee (**ARIA Non-UK Fee**) on all amounts (including upfronts, licence fees, milestone payments, royalties, shares or other securities, exit fees, buyout or other consideration) payable by the Licensee to the Licensor under this Agreement in relation to the exploitation of any Foreground IP (**Relevant Amount**) that accrues during, or relates to, any period of time that the Licensee is not a UK Entity (**Relevant Period**). The amount of the ARIA Non-UK Fee is 25% of the Relevant Amount, and is payable by the Licensee to the Licensor in addition to the amounts that would otherwise be payable under this Agreement. For example if the Relevant Amount is £100 the ARIA Non-UK Fee is an additional £25, which the Licensee shall pay to the Licensor and the Licensor shall remit to ARIA.

Crown Body customers

[].3 You must also ensure that any Crown Body is able to procure any products and services that are covered by, use or incorporate the relevant Foreground IP within a reasonable time period at prices that are no higher than those offered to or agreed with any other customer for equivalent quantities and in suitable quantities for the Crown Body's requirements.

[].4 ARIA shall have the right to enforce this clause [] under the Contracts (Rights of Third Parties) Act 1999. Neither party may amend this Agreement in a way that detracts from ARIA's right to enforce its rights under this clause without ARIA's prior written consent.

- [1] When using this clause you may substitute the relevant defined terms used elsewhere in the agreement to capture the concept of "Foreground IP". Where the clause refers to the "Licensor" and "Licensee" please use the appropriate defined terms to include the licensor, licensee, assignor and assignee of the Foreground IP. This clause is not suitable for assignments of the Foreground IP in consideration of the payment of one or more lump sum payments. In those cases the Licensor needs to be informed, and potentially make an additional payment, if the Foreground IP is subsequently assigned to a non-UK Entity or if the Assignee ceases to be a UK Entity.

SCHEDULE 4: Data Protection

1. DEFINITIONS

The following definitions apply in this Schedule.

Controller, Processor, Data Subject, Personal Data, Personal Data Breach and Processing: have the meanings given to them in the Data Protection Legislation.

Data Protection Legislation all applicable data protection and privacy legislation in force from time to time in the UK including the UK GDPR; the Data Protection Act 2018 (DPA 2018) (and regulations made thereunder) and the Privacy and Electronic Communications Regulations 2003 (SI 2003/2426) as amended and all other legislation and regulatory requirements in force from time to time which apply to a party relating to the use of Personal Data (including, without limitation, the privacy of electronic communications); and the guidance and codes of practice issued by the Information Commissioner or other relevant regulatory authority and applicable to a party.

Domestic Law: the law of the United Kingdom or a part of the United Kingdom.

UK GDPR: has the meaning given to it in section 3(10) (as supplemented by section 205(4)) of the Data Protection Act 2018.

2. GENERAL OBLIGATION

- 2.1. Both parties will comply with all applicable requirements of the Data Protection Legislation. This paragraph 2.1 is in addition to, and does not relieve, remove or replace, a party's obligations or rights under the Data Protection Legislation.

3. DATA PROCESSING

- 3.1. The parties acknowledge that for the purposes of the Data Protection Legislation, ARIA is the Controller and you are the Processor when performing its obligations under this Grant Agreement (the scope, nature and purpose of processing by the Provider, the duration of the processing and the types of Personal Data and categories of Data Subject are set out in paragraph 3.7, as updated from time to time).
- 3.2. Without prejudice to the generality of paragraph 2.1, ARIA will ensure that it has all necessary appropriate consents and notices in place to enable lawful transfer of the Personal Data to you [and/or lawful collection of the Personal Data by [the Provider] on behalf of ARIA] for the duration and purposes of Grant Agreement.
- 3.3. Without prejudice to the generality of paragraph 2.1, you shall, in relation to any Personal Data processed in connection with the performance by the Provider of its obligations under Grant Agreement:
 - 3.3.1. process that Personal Data only on the documented written instructions of ARIA unless you are required by Domestic Law to otherwise process that Personal Data. Where you are

relying on Domestic Law as the basis for processing Personal Data, you shall promptly notify ARIA of this before performing the processing required by the Domestic Law unless the Domestic Law prohibits you from so notifying ARIA;

- 3.3.2. ensure that it has in place appropriate technical and organisational measures, reviewed and approved by ARIA, to protect against unauthorised or unlawful processing of Personal Data and against accidental loss or destruction of, or damage to, Personal Data, appropriate to the harm that might result from the unauthorised or unlawful processing or accidental loss, destruction or damage and the nature of the data to be protected, having regard to the state of technological development and the cost of implementing any measures (those measures may include, where appropriate, pseudonymising and encrypting Personal Data, ensuring confidentiality, integrity, availability and resilience of its systems and services, ensuring that availability of and access to Personal Data can be restored in a timely manner after an incident, and regularly assessing and evaluating the effectiveness of the technical and organisational measures adopted by it);
- 3.3.3. ensure that all personnel who have access to and/or process Personal Data are obliged to keep the Personal Data confidential; and
- 3.3.4. not transfer any Personal Data outside of the UK unless the prior written consent of ARIA has been obtained and the following conditions are fulfilled:
 - 3.3.4.1. ARIA or you have provided appropriate safeguards in relation to the transfer;
 - 3.3.4.2. the Data Subject has enforceable rights and effective legal remedies;
 - 3.3.4.3. you comply with your obligations under the Data Protection Legislation by providing an adequate level of protection to any Personal Data that is transferred; and
 - 3.3.4.4. you comply with reasonable instructions notified to you in advance by ARIA with respect to the processing of the Personal Data;
- 3.3.5. assist ARIA, at ARIA's cost, in responding to any request from a Data Subject and in ensuring compliance with its obligations under the Data Protection Legislation with respect to security, breach notifications, impact assessments and consultations with supervisory authorities or regulators;
- 3.3.6. notify ARIA without undue delay on, and in event within 24 hours of, becoming aware of a Personal Data Breach;
- 3.3.7. at the written direction of ARIA, delete or return Personal Data and copies thereof to ARIA on termination of Grant Agreement unless required by Domestic Law to store the Personal Data; and

- 3.3.8. maintain complete and accurate records and information to demonstrate its compliance with this Schedule and allow for audits by ARIA or ARIA's designated auditor and immediately inform ARIA if, in the opinion you, an instruction infringes the Data Protection Legislation.
- 3.4. [[ARIA does not consent to you appointing any sub-Processor of Personal Data under this Schedule.] OR [ARIA consents to your use of sub-Processors engaged in the processing of Personal Data by way of general authorisation in respect of all sub-Processors as at the date of this Schedule. You shall make a list available to ARIA upon request. You shall give ARIA not less than 15 days' prior written notice of a change in the list of sub-Processors to give ARIA an opportunity to object to such change. ARIA must notify you in the event that it does not agree to a proposed change within 15 days of receiving a notification from you , specifying its grounds for such objection (acting reasonably). If you receive such an objection, then you may (at its option):
- 3.4.1. cancel its plans to change the affected sub-Processor;
- 3.4.2. offer an alternative which is acceptable to ARIA; or
- 3.4.3. take corrective steps to remove the objection identified by ARIA to ARIA's reasonable satisfaction, after which you may proceed with the appointment of the relevant sub-Processor.
- 3.5. If none of the above options resolve the objection, then without liability for either party, either party may terminate Grant Agreement by providing written notice of termination with immediate effect where such notice of termination is served within 30] days of you informing ARIA of the proposed change.
- 3.6. You confirm that it has entered or (as the case may be) will enter with its sub-Processors into written agreements incorporating terms which are substantially similar to those set out in this Schedule and which you confirm reflects and will continue to reflect the requirements of the Data Protection Legislation. As between you and ARIA, you shall remain fully liable for all acts or omissions of any sub-Processor appointed by it pursuant to this paragraph 3.4 to 3.6.]
- 3.7. Scope, Nature, Purpose of Processing, Types of Personal Data and Categories of Data Subjects.

Scope and purpose of Processing:	Provision of the Project Activities by you under this Grant agreement.
Nature of Processing:	[Here you should describe what the Processor will be doing with the Personal Data, for example collecting it, storing it, retrieving it, consulting it, disseminating it or destroying it, etc.

	Note the definition of processing in the UK GDPR: <i>"any operation or set of operations which is performed on personal data or on sets of personal data, whether or not by automated means, such as collection, recording, organisation, structuring, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, restriction, erasure or destruction"</i>]
Duration of Processing:	Duration of this Grant Agreement (and any post termination processing that is permitted / required).
Types of Personal Data:	[Describe here the types of data relating to the individuals concerned, e.g. names, addresses, email addresses, financial details, date of birth, place of birth, photographs, nationality, gender, signature, health records, work appraisal records, disciplinary processes, references, job applications, CVs, notes of interviews, etc. If so-called "special categories" of personal data (currently known as sensitive data) are being processed describe them here. Note the definition of special categories of personal data in the UK GDPR: <i>"data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership, and the processing of genetic data, biometric data for the purpose of uniquely identifying a natural person, data concerning health or data concerning a natural person's sex life or sexual orientation"</i>]
Categories of Data Subjects:	[Describe here the individuals whose data will be processed, by reference to their relationship with the company and its business, e.g. employees, directors,

	clients, prospects, suppliers, sub-contractors, consultants, job applicants, advisors, key opinion leaders, etc.]
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4. INDEMNIFICATION

- 4.1. You shall indemnify and keep ARIA indemnified against all losses, claims, damages, liabilities, fines, interest, penalties, costs, charges, sanctions, expenses, compensation paid to Data Subjects (including compensation to protect goodwill and ex gratia payments), demands and legal and other professional costs (calculated on a full indemnity basis and in each case whether or not arising from any investigation by, or imposed by, a supervisory authority) arising out of or in connection with any failure by you or your employees, subcontractors or agents to comply with any of its obligations under this Schedule or the Data Protection Legislation.
- 4.2. Any limitation of liability set out in this Grant Agreement will not apply to this Schedule's indemnity or reimbursement obligations.

Annex A - Future Proofing our Climate and Weather Intellectual Property Pledge

1. Submission of Pledged Patents and Experimental Data
 - 1.1 The Pledgor undertakes to submit relevant details of all Pledged Patents to the operator of the Pledge Repository in accordance with the Submission Guidelines.
 - 1.2 The Pledgor undertakes to:
 - (a) submit (or provide a link to a publicly available digital copy of) all Experimental Data to the operator of the Pledge Repository in accordance with the Submission Guidelines; and
 - (b) publish such Experimental Data in accordance with the Submission Guidelines.
2. Experimental Data Licence
 - 2.1 Subject to Clause 6.1, the Pledgor hereby grants a royalty-free, non-exclusive licence under the Experimental Data to any party that wishes to accept it ("Experimental Data Licensee") solely for the purpose of carrying out research in the Field.
 - 2.2 The licence granted under Clause 2.1:
 - (a) is non-transferable and non-sublicensable;
 - (b) permits research activities but does not permit development, manufacture, sale or other exploitation of products or services under the Experimental Data.
 - 2.3 The Experimental Data Licensee may conduct relevant research activities itself or in collaboration with a third party, provided that the Experimental Data Licensee must ensure that such third party agrees to comply with the terms of Clause 2.4 as if such third party were the Experimental Data Licensee.
 - 2.4 The Experimental Data Licensee must:
 - (a) at all times when using the Experimental Data comply with all Laws; and
 - (b) to the extent that any data relating to the Field is generated by or on behalf of the Experimental Data Licensee in the course of carrying out research activities based on or using the Experimental Data or the Pledged Patents, make such data available on the terms of this Pledge (and such data shall be deemed to be Experimental Data pursuant to this Pledge).
3. Research Licence
 - 3.1 Subject to Clause 6.1, the Pledgor grants a royalty-free, non-exclusive licence under the Pledged Patents to any party that wishes to accept it ("Research Licensee") solely for the purpose of carrying out research in the Field.
 - 3.2 The licence granted under Clause 3.1:
 - (a) is non-transferable and non-sublicensable; and
 - (b) permits research activities but does not permit development, manufacture, sale or other exploitation of products or services under the Pledged Patents.
 - 3.3 Subject to Clause 6.1, the licence granted in accordance with Clause 3.1 shall subsist until the expiry of the final Pledged Patent.

3.4 The Research Licensee may conduct relevant research activities itself or in collaboration with a third party, provided that the Research Licensee must ensure that such third party agrees to comply with the terms of Clause 3.5 as if such third party were the Research Licensee.

3.5 The Research Licensee must:

- (a) at all times when using the Pledged Patents comply with all Laws; and
- (b) to the extent that any patents relating to the Field are filed by or on behalf of the Research Licensee covering data generated in the course of carrying out research activities based on or using the Pledged Patents or Experimental Data, make such patents available on the terms of this Pledge (and such patents shall be deemed to be Pledged Patents pursuant to this Pledge).

4. Commercial Licence

4.1 The Pledgor undertakes to grant a non-exclusive licence on reasonable terms under the Pledged Patents and/or Experimental Data to any Signatory that requests it ("Commercial Licensee") for the purpose of carrying out commercial activities (including development, manufacture, sale or other exploitation of products or services) in the Field.

4.2 The Pledgor must grant the licence set out Clause 4.1 in good faith and in a timely fashion following such a licence being requested by the Commercial Licensee.

4.3 The Commercial Licensee must at all times when using the Pledged Patents and/or Experimental Data comply with all Laws.

5. Pledgor Know-How

At the request of a Licensee, the Pledgor undertakes to negotiate in good faith with any Licensee regarding a non-exclusive licence in the Field under any Know-how owned by such Pledgor that is necessary for a Licensee to use the technology covered by the Pledgor's Pledged Patents. Such licence may be for research or commercial purposes as agreed between the Pledgor and Licensee.

6. Termination

6.1 The Pledgor may terminate any licence it grants to an Experimental Data Licensee and/or Research Licensee under this Pledge in the event that such Licensee:

- (a) materially breaches the terms of such licence or this Pledge; or
- (b) breaches any Laws in its use of the Experimental Data or Pledged Patents (as applicable).

7. Transfers of Pledged Patents and/or Experimental Data

The Pledgor undertakes to make any future assignment of the Pledged Patents and/or Experimental Data to any other party (the "Recipient") conditional on the Recipient (and any successor in title) agreeing to be bound by the terms of this Pledge.

8. No Warranty

The Pledgor provides the Pledged Patents and the Experimental Data on an "as is" basis. The Pledgor makes no express or implied warranty or representation concerning the Pledged Patents or Experimental Data including but not limited to non-infringement or to the accuracy or completeness of the Pledged Patents or Experimental Data.

9. Compliance with Laws

For the avoidance of doubt, nothing in this Pledge operates to require a Pledgor, Licensee or Signatory to do any acts or grant any rights that do not comply with Laws.

10. Further Publication or Licensing

For the avoidance of doubt, nothing in this Pledge operates to restrain a Pledgor from publishing or licensing any Experimental Data or Pledged Patents more widely or on more permissive terms than those described herein.

11. Governing law and jurisdiction

This Pledge (including any non-contractual disputes or claims arising in connection with this Pledge) will be governed by and construed in accordance with the laws of England and Wales and the parties irrevocably submit to the exclusive jurisdiction of the courts of England and Wales.

Part 1 of Annex A: Definitions

1. In this Pledge, unless the context otherwise requires, the following definitions shall apply:

Experimental Data	means data generated by or on behalf of the Pledgor relating to the Field and identified by the Pledgor for inclusion in the Pledge pursuant to Clause 1.2;
Field	means approaches for intentionally altering the Earth system through solar radiation modification, modification of ocean circulations, modification of cloud properties, surface engineering works, or weather modification;
Know-how	means the information, methods, formulae, processes and/or applications which may or may not be documented and which enable the use of the technology covered by the Pledged Patents;
Law(s)	means any applicable law, statute, bye-law, regulation, order, regulatory policy, guidance or industry code having the force of law, rule of court, delegated or subordinate legislation in force from time to time;
Licensee	means any Commercial Licensee, Research Licensee or Experimental Data Licensee;
Pledge	means the commitments in relation to patents, know-how and data set out in this pledge document;
Pledge Repository	[TBC]
Pledged Patents	means patents or patent applications owned by the Pledgor relating to the Field and identified by the Pledgor for inclusion in the Pledge pursuant to Clause 1.1;
Signatory	means any party who has agreed to be bound by the terms of this Pledge; and
Submission Guidelines	means the guidelines governing the submission of Experimental Data and details of the Pledged Patents to the Pledge Repository, as amended from time to time.