



AO Title/Call Name: Changing the Environment	
Closing date	05 November 2020 at 16:00 hours
Funding available	Total £20M funding from NERC - 2 awards up to £10M (80% FEC) over 5 years
Funding mode/stream	Strategic Programmes
NERC Core or UKRI/Collective Fund budget	NERC Core
Project duration	5 years
Funding partners (if applicable)	NA
Start date requirements (if applicable)	NA
Call aims and objectives	<p>The programme will provide funding for research organisations to identify a tractable challenge or topic and a programme of work that can lead to tangible outcomes and environmental solutions at an appropriate scale through a whole system approach.</p> <p>Target challenges and solutions will not be pre-determined for this call but should be proposed by the research organisation and be aligned with both the research organisation’s strategy and capability and that of NERC and the funding scheme. The challenge should be clearly articulated - with a clear pathway from discovery through translation to solutions (impact) i.e. an ambition to deliver ‘environmental solutions’.</p> <p>Each NERC investment will be centred on an individual organisation that can:</p> <ul style="list-style-type: none"> • Bring demonstrable excellence and skills across a breadth of environmental science capabilities plus other disciplines that are relevant to the whole-system challenge(s)/topic(s) to be addressed. • Demonstrate, or have the ambition to create, a critical mass of capability within the research organisation across the relevant disciplines to address the challenge(s) in question. • Demonstrate that the contribution of the research organisation and project partners to the programme award (be that in-kind or financial) adds value to the funding sought from NERC with an ambition to build over time. • Fully articulate how awards will leverage and/or integrate with existing research and innovation capacity within the research organisation, e.g. CDT awards, major research programmes, large scale impact orientated activities, in order to gain the maximum impact from the investment.

	<ul style="list-style-type: none"> • Bring strong and successful partnerships relevant to the scale of the challenge identified i.e. niche skills and capabilities not present in the lead organisation. These may include relevant external non-academic organisations as project partners: private industry, public bodies (such as government departments, local government, regulatory authorities, etc.) who can co-design and apply solutions across systems or supply chains; NGOs and other civil society. Standard UKRI/NERC eligibility criteria will apply. • Provide governance, leadership and coordination to manage and deliver a cohesive inter- disciplinary programme across the research organisation and clearly justified external partners. • Propose an integrated approach managed at the organisational level, which delivers whole of system approaches and does not divide funding into disaggregated activity across departments. • Articulate how they support the strategic ambitions of the research organisation(s) involved while understanding and gaining benefit from the opportunities offered by the scheme and to the UK. • Set out how the programme will be evaluated, including performance and success criteria and measures and expected outcomes.
Eligibility criteria	Standard eligibility criteria see NERC Grants Handbook.
Call specific requirements	NA
Studentship or Training Opportunities	Associated studentships can be applied for as part of the Changing the Environment programme
Contact	CtE@nerc.ukri.org

Announcement of Opportunity

NERC 'Changing the Environment' Programme

1. Summary

NERC invites eligible research organisations to submit proposals for large scale inter-disciplinary research and innovation funding to provide whole system solutions to major environmental challenges. This call will provide up to £20M funding in total over 5 years to support 2 research organisation awards of a maximum £10M each at 80% FEC (i.e. a maximum £2M per annum, per award over 5 years)

The 'Changing the Environment' Programme will focus on developing solutions to critical environmental challenges through supporting and encouraging working across disciplines within successful organisations. The research and innovation programmes delivered through this funding will be expected to look across a system bringing together a wide range of disciplines (for example, physical and biological sciences, social sciences, economics, medical sciences, technology, engineering, law, business and economics) to drive solutions in the selected area of environmental focus.

The funding will create a critical mass of inter-disciplinary expertise stemming from the activity in the research organisation, with the ability to leverage a wide range of inputs from other stakeholders and partners as required by the environmental challenge, and to access other funding opportunities.

Proposals for this call are invited from eligible UK researchers and research organisations (see NERC Grants Handbook for standard eligibility criteria).

There will be a two stage (outline and full) assessment process for this programme and closing date for outline proposals is **16:00 on 5 November 2020**. Details for the requirements for the full proposal stage will be published in due course and no later than 5 November 2020.

2. Background

Environmental Solutions

The strategic context for this programme is the Environmental Solutions pillar of [the NERC delivery plan](#). Environmental research plays a vital role in identifying environmental problems and their cost to the economy and society. This knowledge provides opportunities for development of solutions and interventions that reduce environmental damage and avoid the associated costs. In recent years the scale and complexity of these problems has increased, impacting on and threatening livelihoods and environments in the UK and globally. The government has released a number of strategies with relevance to this agenda including the Industrial Strategy, the Clean Growth Strategy, the Green Finance Strategy and the 25 Year Environment Plan, and these in turn reference intergovernmental

ambitions including the UN Global Goals and the climate commitments enshrined in the United Nations Framework Convention on Climate Change (UNFCCC).

Most recently following the COVID-19 pandemic, the UK Research and Development Roadmap outlines the Government's ambition to 'build a future which is greener, fairer, healthier and more resilient and innovative than before' and outlines the critical importance of research and innovation in achieving this.

The strength of research and innovation capability in the UK should put our communities in a leading position not just to articulate environmental problems, but to devise and propose the whole system solutions to these problems. These solutions will be reliant on drawing from a diverse range of expertise across academic disciplines including but not limited to physical and biological sciences, social sciences, medical sciences, engineering, law, business and economics. A step change in the way that academic communities work will be required.

3. Objectives and Scope

Programme objectives: NERC, as a Council of UKRI, aims to support the development of expertise in collaborating across disciplines and organisational structures to build a research community that transcends traditional boundaries. The programme will stimulate and support new connections across disciplines to help realise the full potential of the UK contribution to environmental challenges and delivery of associated government objectives. These new communities should develop activities, processes and governance structures that facilitate the leveraging of other sources of funding and collaboration with wider inter-disciplinary expertise.

Proposals will drive innovative environmental solutions supporting the delivery of UK and global strategies, for example, new research addressing decarbonisation of energy, creation of a circular economy, reversing biodiversity decline, socially and environmentally sustainable supply chains, and cleaner air. It is expected that proposers will outline the environmental area and challenge(s) they will focus on and the approaches to drive solutions.

The programme design should create new communities to deliver solutions for these challenges, taking a whole of system approach to the challenge(s), drawing across the breadth of appropriate UKRI disciplines. The programme will nurture a generation of researchers who take this approach as the norm.

Programme Scope

The programme will provide funding through open calls for eligible research organisations to identify a tractable challenge or topic and a programme of work that can lead to tangible outcomes and solutions at an appropriate scale through a whole system approach.

Target challenges and solutions will not be pre-determined for this call but should be proposed by the research organisation and be aligned with both the research organisation's strategy and capability and that of NERC and the funding scheme. The challenge should be clearly articulated - with a clear pathway from discovery through translation to solutions (impact) i.e. an ambition to deliver 'environmental solutions'. While not all elements of this pathway are likely to be known at application stage, and full realisation of the solution may not be achieved within the limits of this

funding, demonstration of engagement with the user community, including (potential for) leveraging support (financial and otherwise), will be required to deliver successful outcomes.

Noting limitations around scale of funding and the desire to create substantial critical mass around the chosen challenge area, the primary ambition of these awards is to build capability within a single research organisation to address a clearly defined environmental challenge or set of challenges. The programme is expected to create an intra-organisational, solutions orientated, community working towards common goals. Other organisations may be included and/or identified to make specific contributions to the challenge, but their participation must be justified.

The proposing organisation must be able to demonstrate internationally competitive research and/or innovation capacity in all disciplines across the research organisation that contribute to the identified challenge. The proposal may initiate new cross-departmental capability or result in a significant step change in existing capability. This is not restricted to the traditional NERC community and may include any research/innovation discipline which is relevant to and required to address the target environmental solution.

Private, public or third sector organisations with a remit that can contribute to the programme of work are eligible to be considered as project partners. These include private industry, public bodies (such as government departments, local government, regulatory authorities, etc.) and non-government organisations or charities.

4. Programme requirements

Programme Funding

This call will provide up to £20M funding in total over 5 years to support 2 research organisation awards of a maximum £10M each at 80% FEC (i.e. a maximum NERC investment of £2M per annum, per award over 5 years)

Proposal requirements

Each NERC investment will be centred on an individual organisation that can:

- Bring demonstrable excellence and skills across a breadth disciplines that are relevant to the whole-system environmental challenge(s)/topic(s) to be addressed.
- Demonstrate, or have the ambition to create, a critical mass of capability within the research organisation across the relevant disciplines to address the challenge(s) in question.
- Demonstrate that the contribution of the research organisation and partners to the programme award (be that in-kind or financial) adds value to the funding sought from NERC with an ambition to build over time.
- Fully articulate how awards will leverage and/or integrate with existing research and innovation capacity within the research organisation, e.g. Centre for Doctoral Training (CDT) /Doctoral Training Partnership (DTP) awards, major research programmes, large scale impact orientated activities, in order to gain the maximum impact from the investment.
- Bring strong and successful partnerships relevant to the scale of the challenge identified i.e. niche skills and capabilities not present in the lead organisation. These may include relevant external non-academic organisations as project partners: private industry, public bodies (such as government departments, local government, regulatory authorities, etc.) who can co-design and apply solutions across systems or supply chains; NGOs and other civil society.

- Demonstrate leadership in Equality, Diversity and Inclusion (EDI) issues at an institutional level and provide evidence of how this will be implemented as part of any Changing the Environment award.
- Provide governance, leadership and coordination to manage and deliver a cohesive inter-disciplinary programme across the research organisation and clearly justified external partners.
- Propose an integrated approach managed at the organisational level, which delivers whole of system approaches and does not divide funding into disaggregated activity across departments.
- Articulate how they support the strategic ambitions of the research organisation(s) involved while understanding and gaining benefit from the opportunities offered by the scheme and to the UK.
- Set out how proposals for how the programme will be evaluated, including performance and success criteria and measures and expected outcomes.

NERC welcomes applications from all sections of the community and promotes equality of opportunity in accordance with the Equality Act 2010. Applicants to the fund will be expected to have strong track records across the range of disciplines that a whole system approach demands. These discipline strengths will relate to the challenge area chosen by the proposer, will align with the overarching strategic ambition of the research organisation and be enhanced by their work with user communities to identify and address complex environmental problems. The focus of the challenge need not be limited to the region in which the eligible Research Organisation is located and could span UK and globally relevant issues.

At the outline stage, applicants are expected to have assembled the majority of the core interdisciplinary team covering a diverse range of experience and expertise. Applicants will be able to add to the team if successfully invited to submit a full proposal

What activity can be included

The programme is designed to be flexible to encourage applicants to be innovative in their approach. Proposed activity can therefore be broad and diverse but should represent a coherent, focused, co-designed and co-delivered solution-orientated research and innovation programme, aimed at achieving outcomes that deliver high impact. Applicants must propose an integrated approach managed at the organisational level, which does not divide funding into disaggregated activity across departments.

The types of activity that would be considered eligible include, but are not limited to:

- New inter-disciplinary research to progress towards the environmental solution that is proposed.
- Support to develop researcher capability in line with the programme objectives. Noting the potential for alteration or cessation of funding at review points within the award term, ROs must also indicate how they will ensure both continued financial support and independent career development of staff and any associated students in the event of cessation of NERC funding.
- Dedicated training and community building activities to develop the required community culture and solutions focus. Associated studentships may be requested as part of this call.

Applicants must justify why the proposal is also a priority for training/capacity building and detail how the investment meets the UKRI Statement of Expectations for Doctoral Training, available on the UKRI website. Applicants requesting PhD positions must demonstrate that the organisation has in place, or plans to develop in a timely fashion, the skills and capacity to provide a full training experience across the range of required capabilities and disciplines and for the full duration of the PhD programme. Additional review criteria and conditions will be included at full proposal stage to ensure that this is achieved – see the [NERC Research Programme Associated Success Criteria](#) for more details.

- Translation of existing data, knowledge and/or expertise into tools, solutions and approaches that meet the needs of the challenge e.g.
 - Decision-support tools incorporating data, knowledge and know-how
 - Model synthesis, merging and manipulation that addresses specific challenges, needs or opportunities

Leadership, management and governance

The Research Organisation is required to exercise budgetary control and be responsible for directing and delivering the programme. Each award will need to have clear and effective leadership and management. Appropriate management and governance arrangements and full transparency for the use of funds is mandatory.

A centralised management structure should be proposed and implemented, for example through the appointment of a lead operational manager and an executive board structure. The executive board will have overall responsibility for the effective governance of the award, will be expected to have a strong relationship with NERC Head Office, and may draw on other related stakeholders (e.g. non-academic partner organisations) for advice. The executive board and operational manager must demonstrate that the allocation of funding delivers a whole of system approach to driving towards environmental solutions.

The applicants must be able to demonstrate that robust and transparent governance arrangements are in place, which may include formal partnership agreements, communication plans and systems for monitoring overall progress and success.

The Research Organisation should demonstrate leadership in Equality, Diversity and Inclusion (EDI) issues at an institutional level and provide evidence of how this will be implemented as part of any Changing the Environment award. Those organisations invited to submit a full bid to the programme will be required to complete an equality impact assessment for the proposed activity as part of the application.

Measuring performance and reporting

Lead applicants will be required to devise and report against key performance indicators (KPIs) that track progress and key success measures (KSMs) that demonstrate achievements. An outline of the evaluation and reporting approach will be requested at full proposal stage. The range and complexity of KPIs and KSMs may ramp up in proposals over the five years to reflect the programme of work and anticipated outcomes. In preparing KPIs and KSMs applicants are asked to consider the following:

- User engagement: evidence that user-informed and involved activity is being undertaken and that the programme has delivered outputs and outcomes appropriate to users
- Measures required to assess research and innovation performance that could include:
 - scale, depth and additionally of activity
 - breakthrough research that addresses the proposed solution approach
 - funds and investments attracted/leveraged
 - enhancement of skills base relevant to the challenge and the user community for the solution approach
 - new innovative solutions, tools, processes, services or policies.

It is fully anticipated that as well as use of information based on metrics, narrative evidence, including case studies, testimonials etc., will be collected and used by programmes to demonstrate progress and success.

All programmes will report at least biannually to a NERC appointed Programme Executive Group. Programmes will be required to implement a regular and robust process for monitoring and evaluation throughout the award and to alert NERC to any of areas of concern as and when they arise. NERC will maintain regular contact with the PI of each programme, requiring short updates on progress at least biannually, raising issues to the Programme Executive Group as appropriate.

The proposed programme of work which sets out key milestones and metrics will be a key tool for monitoring performance and achievement of individual programmes. NERC will put in place an assessment process at defined gateways through the award period and reserves the right to stop a programme or vary the funding at any time if significant issues arise that cannot be resolved.

The Programme Executive Group will support NERC to monitor and evaluate the initiative on an on-going basis and informing adjustments to future calls.

Programmes will be expected to participate in or provide input to meetings to raise awareness of the programme of activity, publicise the innovative outputs resulting from the award and to promote co-ordination between awards.

Eligibility

Applicants must be from eligible research organisations, which include Higher Education Institutions and NERC Research Centres. Applicants should refer to the [NERC Research Grants Handbook](#) and the [UKRI website](#) for eligibility requirements.

Applications should be led by a single research organisation. Only one application per organisation is permitted and the principal applicant should be Pro-VC research or equivalent. Other eligible Research Organisations may be included to make specific contributions to the challenge or area of focus, but their participation must be clearly justified; the primary aim of this initiative is to build capability across a single research organisation rather than to develop broader collaborations.

Private, public or third sector organisations with a remit that can contribute to the programme of work are eligible to be considered as project partners. These include private industry, public bodies (such as government departments, local government, regulatory authorities, etc.) and non-government organisations or charities. However, any commitment of funds or in-kind contribution

from these partners should be guaranteed for the duration of their proposed engagement and letters of support should reflect this commitment at the full proposal stage. Project partners should not receive funding from the grant beyond minor incidental expenses.

Investigators may be involved in no more than one proposal submitted to this call.

5. How to Apply

Submission of proposals is via a two-stage process: Outline and Full Proposal. One outline proposal submission is required for each proposed project; this should be submitted by the lead Principal Investigator and cover all research organisations and project partners.

Outline proposals must be submitted using the Research Councils' Joint Electronic Submission system (Je-S). Applicants should select Proposal Type - 'Outline Proposal' and then select the Scheme – 'NERC Outline' and the Call – 'Changing the Environment Outline 2020'.

The call will close on JeS at 4pm on 5 November 2020 and it will not be possible to submit to the call after this time. Applicants should leave enough time for their proposal to pass through their organisation's Je-S submission route before this date. Any proposal that is incomplete or does not meet NERC's eligibility criteria or follow NERC's submission rules (see NERC Grants Handbook), will be rejected and will not be considered. Applicants are advised to read the full guidance on applications available on the NERC website before developing their application.

The Je-S outline proposal form must be accompanied by a Case for Support as one attachment. The Case for Support should include brief information on the following:

- A short statement from Pro-VC or equivalent of Lead Organisation [1 side A4].
- The proposed research, and how it addresses the proposal requirements and assessment criteria;
- A track record demonstrating expertise and institutional and research relationships with the stakeholders identified.
- The contribution of project partners, where applicable.

The Case for Support must not exceed 7 sides of A4 (including VC statement) in total in single-spaced typescript of minimum font size 11 point (Arial or other sans serif typeface of equivalent size to Arial 11), with margins of at least 2cm. Please note that Arial narrow, Calibri and Times New Roman are not allowable font types and any proposal which has used either of these font types within their submission will be rejected. References and footnotes should also be at least 11- point font and should be in the same font type as the rest of the document. Headers and footers should not be used for references or information relating to the scientific case.

Applicants referring to websites should note that referees may choose not to use them.

Do not upload any other attachments. If submitted, they will not be sent to the panel. Please note that this is not intended to restrict detail in the final submission as minor changes will be allowed.

Applicants should ensure that their proposal conforms to all eligibility and submission rules, otherwise their proposal may be rejected. More details on NERC's submission rules can be found in the NERC research grant and fellowships handbook and in the submission rules on the NERC website.

Please note that on submission ALL non-PDF documents are converted to PDF, the use of non-standard fonts may result in errors or font conversion, which could affect the overall length of the document.

Additionally, where non-standard fonts are present, and even if the converted PDF document may look unaffected in the Je-S System, when it is imported into the Research Councils Grants System some information may be removed. We therefore recommend that where a document contains any non-standard fonts (scientific notation, diagrams etc.), the document should be converted to PDF prior to attaching it to the proposal.

Associated studentships may be requested as part of this call. Applicants must justify why the proposal is also a priority for training/capacity building and detail how the investment meets the [UKRI Statement of Expectations for Doctoral Training](#) and the [NERC Associated Studentship Success Criteria](#).

Programme Funding is generally at 80% FEC so for example NERC will fund up to £10m of a £12.5m programme.

The following exceptions apply:

- The costs for the stipend and fees for any associated studentships would be funded at 100% of the cost (under exceptions on the full proposal form). Costs for studentship project related costs (travel, consumables) would be funded at 80%.
- Research organisations may apply for equipment as part of this call and are required to make a contribution towards the cost of any equipment and this is expected to be at least 50% of the full cost.

The total cost to NERC must not exceed £10m.

A Justification of Resources attachment is not required, but it is the responsibility of applicants to undertake sufficient planning at the outline proposal stage to determine that the full costs of research proposed (including any facility costs) can be accommodated within the fixed financial limits of the scheme. The Resources indicated at the outline proposal stage are considered as estimates only and may be amended in any subsequent full proposal, within the financial limits of the scheme.

6. Assessment

Process

Outline proposals will be considered by an assessment panel taking into account the ambition of, and assessment criteria for the call. Applicants will be given brief feedback summarising the reasons why the application was successful/unsuccessful. No further feedback will be provided.

Only applicants successful at the outline stage will be eligible to submit a full proposal. Applicants will be informed by the end of December 2020 if they are to be invited to proceed to the Full Proposal stage, where there will be a further selection process involving a panel interview and additional criteria as appropriate to the review process.

Assessment criteria

Outline proposals will be assessed against the following criteria:

1. Fit to Scheme – including consideration of:
 - i. Timeliness and strategic fit: rationale for the focus of the programme illustrating;
 - o fit to the programme objectives and requirements
 - o fit to the strategic ambitions of the research organisations involved
 - o timeliness of the opportunity paying particular attention to organisational strengths, potential for leverage and exploitation of outcomes and;
 - o well-articulated anticipated outcomes aligned with NERC strategy
 - ii. Track record: relevance of experience of applicants to the proposal, including a demonstrable portfolio of relevant research;
 - iii. Leadership, governance and management:
 - o Evidence of credible and effective leadership and management, particularly within and across the lead institution;
 - o Evidence of leadership in equality, diversity and inclusion (EDI) issues at an institutional level and how these policies will be implemented as part of any Changing the Environment award.
 - o Outline of work plan exemplifying how the programme will deliver on objectives;
 - o Evidence of credible performance management and evaluation plan.
 - o Evidence of the potential for a lasting legacy and long-term sustainability: a long-term outlook to continuing beyond NERC’s investment.
 - iv. Added value of partnership: strength of any co-applicants and project partners and the added value brought by their participation;
 - v. User engagement: demonstration of substantial and sustained involvement of users in design and delivery;
2. Potential for Excellence – including assessment of:
 - i. Quality, innovation and impact: innovativeness of programme of work and its potential impact, including how this represents a step change appropriate to the scale of the opportunity;
 - ii. A clear pathway and processes in place to facilitate the trajectory from aims to anticipated outcomes and impact of the project. This could, for example, be in the format of a Theory of Change for the programme combined with a description of pathways which will be put in place to deliver the intended outcomes.

Please note that there is a checklist for outline proposals at the end of this AO.

7. Timetable

DATE	EVENT
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w/beg 27 July 2020	Call announced
18 August 2020	Call opens on JeS
05 November 2020	Outline proposal call closes
w/beg 7 December 2020 (tbc)	Outline assessment panel
w/beg 14 December 2020	Successful outline proposal applicants informed and invited to submit full proposals
w/beg 12 April 2021 (tbc)	Deadline for submission of full proposals
August 2021	Full proposal interviews
September 2021	Awards announced
By 31 December 2021	Programmes start

The deadline for receipt of outline proposals is 16.00 on 05 November 2020.

8. Contacts

For further information on the ICP Programme please contact:

Liz Rowse: CtE@nerc.ukri.org

Checklist – Have you included these in your outline?

- The environmental solution that your programme will address and how this aligns with NERC strategy – state this first.
- Strategic aims of the research organisation and the strengths it can bring.
- National strategies that augment this proposal.
- How it will fit with the strategic aims of any other organisations included as part of the proposal?
- Why now?

Content of the Programme

- The most significant impact of this programme – alongside evidence of addressing research gaps, you may wish to include figures such as market values, GVA, costs avoided.
- Strengths of NERC funded science that will be brought into the programme.
- Strength of complementary discipline research that will be brought into the programme
- Social, political and economic outcomes.
- What would happen without this programme

Partnership involvement in the design of the programme

- How have the users/partners/beneficiaries been involved in the design of your proposal?
- How will the key partner organisations benefit?
- How will you seek to engage more widely with industry/users?
- What will happen at the end of your proposed programme of work?

Management and Resources

- What will be your approach to managing this programme?
- Would you like to emphasise any particular resources that this programme will benefit from?

Monitoring and Evaluation including performance measurement

- Where are the risks in your proposal and how will you manage these?
- How will you evaluate the programme during and after its lifetime?