

TFS Helpdesk KnowledgeBase

Opportunity: Innovation in Environmental Monitoring

Summary

Link to pre-announcement (if applicable):	n/a
Link to apply:	https://funding-service.ukri.org/OPP244/apply/253
Link to Opportunity Guidance (Funding Finder):	Innovation in environmental monitoring – UKRI
No. of expected Applications:	60
Total Fund Amount:	£7,000,000
Opportunity Leads:	Simon Gardner (Head of Digital Environment, DEID) Emma Morgan (SPM, DEID)
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Timeline

Event	Date	Time
Opening date	24 August 2023	9:00am UK time
Closing Date	7 November 2023	4:00pm UK time
Applicant webinar date (if applicable)	30 August 2023	11:00am to midday UK time
Applicants informed of decisions	~ 2 months post call closure	
Full Opportunity Opening date	(as above)	

Opportunity: Innovation in Environmental Monitoring FAQs

Theme	Question	Response
Collaboration	Is this a consortium-driven funding opportunity, or for individual applicants? Is a collaboration with other entities required/preferred?	There is no requirement for applications to be collaborative or with a consortia of any set size, nor are there any requirements on the composition of the consortium. However, we would encourage you to reach out to relevant end-users to build consortia and/or provide details on how you will involve end users. Any collaborative applications are encouraged from across the environmental science, environment-focused informatics and wider data science communities, or other relevant end-users including, but not limited to, industry or commercial partners, policy-related bodies or research organisations.
Collaboration	This is a collaborative project, what are requirements for project lead?	The project lead must be based at an eligible research organisation (higher education institution, research council institute, approved independent research organisation, public sector research establishment or catapult), as well as meeting the individual eligibility requirements. More details can be found on the NERC website .
Eligibility/Collaboration	How can organisations like Wildlife Trusts contribute most effectively to and/or benefit most from collaborative applications to the IEM programme? How might we engage most effectively?	We would encourage charities and environmental organisations to collaborate with eligible researchers with shared interest submitting (or having the potential to submit) an application to this funding opportunity. The webinar chat contents, and contact details of registrants has been shared to help facilitate collaborations.
Eligibility/Networking	How can I be involved as another government body (arms-length) with shared challenges?	We would encourage other UK government arms-length bodies to reach out and collaborate with eligible researchers submitting an application to this funding opportunity, or with shared interests. The webinar chat contents and contact details of registrants has been shared with other registrants to help aid collaborations.
Collaboration	I am interested to know if we are able to collaborate with existing companies providing this type of data and analysis.	Yes, this will be a collaborative programme and you are encouraged to form partnerships with companies where they have relevant expertise. Please note this is a capital funding opportunity and there are limits on the nature of activities that

		can be funded under this grant - do check the full call text for further details.
Collaboration	I'd like to understand the guidance/restrictions for collaborative arrangements.	Bidding consortia are expected to work in partnership with real world users of sensing systems and capabilities, within Defra Group or the UK private sector or both. Applicants should clearly set out how the proposed approach will address the needs of these real-world users responsible for environmental monitoring work and meaningfully interact with the Innovate UK-led element of the programme in order to deliver overarching programme objectives and share lessons learned.
Eligibility	Will you fund 100% of project partners who are NGOs?	On research grant applications the project lead may also name formal project partners, who will not receive funding directly from the award, but will have an integral role in the proposed research. Minor directly incurred costs may be requested to facilitate collaboration. Named project partners may include UK or overseas research or user organisations, but an organisation should only be named as a project partner if it is providing specific contributions (either in cash or kind) to the project. There is no limit to the number of project partners. Project partners must be separate research organisations to those submitting the application. NGOs may be eligible to be subcontractors. Subcontractors would be funded at 100% for work directly associated with preparation of assets, or at 80% FEC for aspects falling under resource costs. The inclusion of subcontractors should be justified and will be subject to peer review. Please check the NERC research grants and fellowship handbook for further details on eligibility.
Eligibility	Are SMEs allowed to apply?	Proposals for this NERC-led element can be led by eligible higher education intuitions, research institutes, NHS bodies, public sector research establishments, independent research organisations and Catapult centres. Businesses cannot be project leads on this funding opportunity, but they can be project partners. Individual organisations should check their eligibility. Check if you are eligible for research and innovation funding – UKRI .

		Eligibility for the Innovate UK-led element opening later this year will differ, as this is a business-led call. Further details will be published this winter.
Eligibility	Can the Agri Food & Biosciences Institute (AFBI) of Northern Ireland be the lead institute in preparing the proposal, since we are a potential PSRE, or otherwise eligible to be e.g. a subcontractor or partner?	The Agri-Food and Biosciences Institute (AFBI) are listed as a potential eligible establishment . This does not make the AFBI eligible to lead on an application, but it is possible to apply for eligibility . AFBI would be eligible as a project partner or subcontractor.
Eligibility	Is subcontracting permitted such as in the case of costs associated with the development of the equipment?	Subcontracting is permitted, although the case needs to be made for the subcontractor's involvement. The subcontractor needs to be providing a specific service to the project, if for example, the appropriate expertise is lacking in eligible institutions.
Eligibility – external to UK	Is it limited to projects in the UK?	Project leads and project co-leads based outside the UK are not permitted. International collaborators can be project partners, but must fund their own involvement. Applications must have UK relevance, although wider applicability to other geographical regions is welcome. Please note that UKRI has a ' Trusted research ' policy and there are now 17 areas of National Security (which includes artificial intelligence, advanced robotics and data infrastructure) which covers the use or transfer of technology (assets, IP and knowledge) outside of the UK.
Eligibility – external to UK	Is it possible to have overseas partners? Can or should the project be in collaboration with international partners?	Project leads and project co-leads must be based inside the UK, but you may include international partners who will need to be self-funded. Please check UKRI eligibility as an individual .
Eligibility – external to UK	If belonging to at least one British organization is required, is it possible to apply together with already committed consortium partners even if they don't belong to an officially registered organization yet?	Consortia are welcome to apply, but the project lead and project co-lead must be based at an eligible UK research organisation . As this is a capital funding opportunity, international collaborators can be project partners but must fund their own involvement (except for some minor costs to help facilitate collaboration).
Eligibility – external to UK	Can partners from lower income countries be involved in the development/testing of technologies?	We cannot fund international partners through this opportunity, but they can be involved if they self-fund. Technologies developed from this opportunity need to have UK relevance but can also have wider applicability in other countries.

Eligibility – external to UK	Will the funding cover non-UK activities? If the project lead is from UK then is it possible for the project to be conducted outside UK?	Applications must have UK relevance, although wider applicability to other geographical regions is welcome i.e. the technology must be deployed in the UK even if it is also deployed elsewhere. International project partners can be based outside of the UK, but these must self-fund.
Eligibility – Defra group	Are Defra part-funding it and if so: 1) which PSREs are eligible to apply? 2) is Defra in a position to act as a customer for environmental monitoring devices and services generated from this funding award?	<p>1) This funding opportunity is open to all organisations eligible for UKRI funding, including some public sector research establishments (PSREs). This funding opportunity is in partnership with Defra, and where Defra Group organisations are eligible PSREs, they can apply for funding through this opportunity.</p> <p>If in doubt, individual organisations should check the relevant UKRI eligibility guidance.</p> <p>2) As Defra is co-funding this programme, we (the core department) would not be able to act as the customer within a consortium.</p> <p>However, our arm's length bodies within the wider Defra group might be appropriate end users (among others), and Defra group PSREs are eligible to apply for this programme.</p>
Funding	When will be funding become available?	The assessment panel aims to meet in December 2023 and decisions will be communicated shortly after in the New Year. Programme activities must commence by 1 March 2024.
Funding	Can we include costs for sensor maintenance (labour and consumables)?	Routine replacement and, or, repair of assets, such as: building repairs, maintenance or scheduled replacement of standard equipment are not in scope for UKRI capital funding .
Funding	Will funding be made available for strategy, implementation and policy advice to facilitate adoption of monitoring technologies?	A maximum of 20% of the overall project budget will be available for resource costs not directly related to the creation, production, preparation and testing of the proposed sensing system or capabilities. This may include activities such as strategy, implementation and policy-related activities to facilitate adoption of monitoring technologies. Resources and cost justification are not core assessment criterion but will be considered by the panel.
Funding	Will there be multiple rounds of this funding opportunity?	There is no expectation that grants which are awarded will be renewed through this programme.

		<p>However, the NERC Digital Strategy sets out our vision for digitally enabled environmental science. Partnership development and collaborative delivery has been a key focus in delivering on our digital aspirations. This co-funded programme on Innovation in environmental monitoring is likely to be one of many collaborative funds to help deliver this ambition for 2030.</p>
Funding	Is this a "match funding" opportunity?	<p>Defra and UKRI are "match funding" the Innovation in environmental monitoring programme, with both organisations equally contributing to the overall £12M programme fund.</p> <p>The important detail for applicants is that this NERC call is a capital funding opportunity. We will fund 100% for equipment only (which includes all costs directly related to development of the sensing systems or capabilities), and 80% FEC for other resources.</p>
Funding/Eligibility	We have been successful with an Innovate UK grant for a different project. Will that affect our chances?	<p>Your application will be assessed by the panel using the criteria set out in the funding opportunity details. Applications for the same research project cannot be submitted to more than one Research Council. Any support sought or received, in the last three years, from any source for research in the same field as the application must be detailed in the "Related Applications" or "Other Support" sections of the application form. Please check the NERC research grants and fellowship handbook for further guidance.</p>
Funding	Can the grant funds be used to pay subcontractors on the project (for example, drone pilots or industrial partners)?	<p>Subcontracting is permitted, although the case needs to be made for the subcontractor's involvement. The subcontractor needs to be providing a specific service to the project, where the appropriate expertise is lacking in eligible institutions. Any costs relating to the direct development of the sensing system or capability should be included under the 'equipment' heading, and will be funded at 100%. Any costs not directly related to the asset development can be costed under the relevant resource heading (DI - other) at 80% FEC.</p>
Funding	Could we embed (and/or second) a PDRA within the industrial partner?	<p>For the capital aspects of this funding opportunity (i.e. associated with the sensor system and capabilities development), labour costs will be listed as 'equipment' (rather</p>

		<p>than DI equipment because of the fixed percentages) as this is the way to fund at 100% on TFS.</p> <p>Staff resources costs not directly related to the creation, production and preparation of the proposed sensing system or capabilities, such as attending meetings at NERC HO, collaborative workshops, the development of policy-focussed reports and any commercialisation processes, for example, should be listed under the relevant DI and DA headings.</p>
Funding	Is there any bias to PDRA/PhD funding?	<p>For this opportunity we will not fund associated studentship costs, including PhD studentships. Please check the specific guidance on eligibility. In the new role descriptions, postdoctoral research assistants are now referred to as research and innovation associates. Research and innovation associates involved in the development of the application can be included as a researcher co-lead. Please check the guidance on roles in funding applications.</p>
Funding	Can we include research technical professionals on the team?	<p>We encourage the inclusion of digital research technical professionals such as research software engineers and data scientists in applications. We encourage successful applicants to foster knowledge exchange and collaborative working between the research technical professionals involved in the delivery of projects.</p>
Funding	If a member of staff spent part of their time directly working on the development of the asset, and part of their time writing a policy report, would they cost their time under both funding headings?	<p>Yes, the same staff member can be funded at 100% for capital costs as well as being funded at 80% FEC under the resource costs section, as the activity they are doing determines how their time is charged to the grant. The time spent on each type of activity needs to be costed correctly.</p>
Funding	Can expenditure include staff mobilization costs as well as equipment capital costs?	<p>We suggest you get in touch with more specific information about what you mean by 'staff mobilization costs'.</p>
Funding	Should field installation/field testing of instrumentation be costed within the 'capital funding' of a bid, or does it come within 'resource'?	<p>Any activities directly related to the sensing system development, installation or testing (including field installation and field testing) should be costed as capital costs.</p>
Funding	Is there a limit on how funding can be allocated to the staff time working on development?	<p>There is not a set limit on how much staff time can be allocated to the sensing system development, although any costs should be justified. Eligible applications will be assessed</p>

		by an independent panel of experts against the criteria to assess the quality of your application. Resources and cost justification are not core assessment criterion but will be considered by the panel.
Funding	What is the total fund available, what is the largest grant size? Is it £750K at the 80% level?	The total fund available is £7,000,000. The largest individual grant size is £750,000 – of this, the capital costs will be funded at 100%. Any resource costs will be funded at 80% FEC and should make up no more than 20% of the overall project budget.
Funding	What is the proportion of funding that should be directed at the 4 objectives?	There is no set level of funding that should be directed at the four objectives.
Funding	What activities fall under capital funding and what other resources can be requested in applications?	<p>The focus of this opportunity is on the development of new sensing systems and monitoring capabilities, therefore most costs should be capitalisable and funded at 100%.</p> <p>NERC's capital funding covers the creation or purchase of an asset, or in this case, the sensing system or capabilities being developed, that costs more than £10,000 and has a useful life exceeding one year.</p> <p>It covers the equipment costs as well as the labour and development costs directly associated with its creation (this does not include supervision of the project or other staff members). This may include costs for transport, delivery, installation; or testing, benchmarking and verification of the kit against existing assets or data sets, in order for it to become operational. More detail on NERC's capital funding can be found on NERC's website here.</p> <p>However, up to 20% of the overall budget can be requested for non-capital costs. These may include activities such as attending two meetings at NERC HO, Swindon (which may be expected), as well as any collaborative workshops, commercialisation activities or policy-focussed activities. We will fund 80% FEC for these activities.</p>
Funding	Can you clarify what is meant by "capitalisable" costs from this sentence: "As a result of this focus on sensing systems and capabilities,	The majority (no less than 80%) of the overall budget for each application should be capital costs. See NERC's definition of

	development costs are expected to be primarily capitalisable."	capital costs for more information, and further details in the funding opportunity under the heading 'Capital costs'.
Funding	I would be interested in details of how it could be synergistic with existing funding/ongoing project work for example by the water sector where I work to leverage existing learning but amplify benefits.	Collaboration and synergies with other ongoing projects in order to amplify benefits would be acceptable. However, the grant holder should not have already received competitively obtained research or support funding from any sources for the same research project the grant by UKRI has been awarded to support. Please check the standard terms and conditions of UKRI grants .
Funding	What are the comparable schemes that do cover marine environment that are running at the moment?	Some UKRI funding opportunities that cover the marine environment include: Competition overview - Improving Observation Capabilities of Biodiversity in UK Waters - Innovation Funding Service (apply-for-innovation-funding.service.gov.uk) Competition overview - Improving Observation Capabilities of Biodiversity in UK Waters: Phase 2 - Innovation Funding Service (apply-for-innovation-funding.service.gov.uk) Resilient UK coastal communities and seas Network Plus Equitable nature-based climate resilience in Sub-Saharan Africa https://consult.defra.gov.uk/marine/updated-uk-marine-strategy-part-two-marine-monitor/ https://www.ukri.org/news/nerc-launches-scoping-project-for-net-zero-oceanographic-capability/ https://noc.ac.uk/projects/oceanids
Funding	Does NERC have any plans to continue to include new sensing and measurement technology within scope for its wider remit, for example in standard grants? This has been outside scope for a number of years, but if included in the future it could promote an ongoing healthy research base in this area.	Realising the opportunity to support whole systems thinking about data and digital technologies (including the development of new technologies for sensing, measurement, and modelling) is the core goal of NERC's Digital Strategy . One of the strategic themes is next-generation environmental sensing systems, and this represents a 10-year vision for NERC, so we hope to provide continued support in this area.

Funding	Will I be able to request a no-cost extension if needed?	We would like projects to run for a maximum of 36 months, so the latest end date should be 28 February 2027.
Innovate UK	How will the two parts of the programme be integrated and who will organise the collaborative workshop and interaction mentioned?	UKRI and Defra intend to bring together the grant holders from both funding opportunities to develop a broad UK community in innovative environmental sensing and monitoring. Successful applicants are expected to engage with community building activities such as collaborative workshops, and we expect that successful applicants will be committed to working as part of the national landscape of IEM investments. The funders, or by agreement, the award holders, will organise the collaborative workshops, and further details will be made available to successful applicants in due course.
Innovate UK	To our understanding NERC funding is generally more targeted at Universities. How can businesses and SMEs engage in this programme? Will it fund purely private sector collaborators, or does it have to involve an academic institution?	Proposals can be led by eligible higher education institutions, research institutes, NHS bodies, public sector research establishments, independent research organisations and Catapult centres. Businesses and industry cannot be project leads on this funding opportunity, but they can be project partners. Project partners will not receive funding directly from the award, but will have an integral role in the proposed research. NERC grant holders are permitted to sub-contract aspects of their work to non-eligible institutions (including start-up companies). Eligible industry can be lead on proposals on the Innovate UK-Defra funding opportunity due to be opened later this year. Please check the full eligibility details . For business-led applications, the Innovate UK element of this programme will open this winter.
Innovate UK	Is the subsequent Innovate bid only available to groups applying for this call? Do the two bids (NERC, Innovate) have to be interlinked, and if they are how do we choose how to focus each bid?	No, the subsequent Innovate UK-led funding opportunity is a separate opportunity and eligibility to apply may differ. If applicants are involved in applications to both, they do not need to be interlinked.
Logistics – apply	How long will the programme last?	The programme will last for a maximum of 36 months. Projects for this funding opportunity must start by 1 March 2024.
Logistics – apply	What are the requirements for submitting a proposal?	The full requirements can be found on the funding opportunity webpage , including eligibility, scope and assessment criteria.

Logistics – apply	When do the program activities start, in 2023 or 2024?	Programme activities will start in 2024.
Logistics – apply	What time period ca/should projects be?	Projects should last for up to 36 months.
Logistics – apply	When is the deadline for this round of applications?	The deadline for this opportunity is 4pm on 7 November 2023.
Logistics – apply	Will there be any institutional caps or expected internal sifts to limit applications?	You, as an individual, may be involved in no more than two applications submitted to this funding opportunity. Only one of these can be as project lead. There are no limits on bids at an institutional level for this opportunity.
Logistics – apply	Will it be a 2 stage application process?	It will be a one-stage application process. Eligible applications will be assessed by an independent panel of experts against the criteria to assess the quality of your application and rank it alongside other applications, after which the panel will make a funding recommendation.
Logistics – apply	Will there be a strand within this funding for early career researchers?	For this opportunity funding is not available for associated studentship costs. Other early career researchers are welcome to be part of project teams but please check the specific guidance on eligibility . In the new role descriptions, postdoctoral research assistants are now referred to as research and innovation associates.
Logistics – apply	Any preference for strong Co-supported proposals (which might be tricky due to the short lead time)?	Applications will be assessed by an independent panel of experts against the assessment criteria set out in the funding opportunity details. There is no requirement to include any certain number of project co-leads (previously known as co-investigators).
Logistics – apply	On the website, the "Vision" and "Approach" word counts seems to be 10 words - is that correct?	The vision and approach should be uploaded as a document not more than six sides of A4 long, single line spacing in 11-point Arial (or equivalent sans serif font) with margins of at least 2cm. Further details are provided in the funding opportunity text. The 10 words can be used to enter “document uploaded” or equivalent.
Logistics – apply	Are we required to be full time?	There is no requirement of a set amount of staff time that should be spent working on the project.
Logistics – apply	Is there any teaching buyout time?	Teaching buyout time will not be funded by this opportunity.
Logistics – apply	What are the restrictions on research time?	There is no requirement of a set amount of staff time that should be spent working on the project.
Logistics – after	How many projects will be funded? What is the expected success rate?	With a total fund of £7,000,000 and award limits set at £450,000 to £750,000 we expect to fund between nine to 15

		projects. It is not known how many applications are likely to be received for this opportunity.
Logistics – after	How long is the assessment period? When will the result be announced?	The assessment panel is likely to be held in December 2023 and awards are likely to be announced a few weeks after that.
Logistics – after	It would be nice to go through the criteria of how the proposals will be reviewed in some detail. Particularly, is it prioritised on higher risk technology or systems thinking to delivering long term monitoring programme of suits of parameters?	The criteria against which your application will be assessed are: <ul style="list-style-type: none"> • purpose • vision • approach • applicant and team capability to deliver • ethics and responsible research and innovation (RRI) • data management and sharing Further details can be found in the funding opportunity text.
Logistics – after	Will there be a monitoring officer?	If you are successful in getting funding, you will need to report your research outcomes through a service called Researchfish. This is required annually and continues for up to five years after funding ends. Find out about UKRI reporting requirements . Additionally, biannual reporting to NERC will be expected.
Logistics – after	What occurs if new IP is generated, is the IP shared between all the applicants? Will Defra and UKRI support? Can commercial partners retain IP from the projects or is the objective for outcomes to be public domain?	It is NERC's policy that any such intellectual property generated from NERC supported research should be exploited. However, NERC's policy requires that intellectual property rights be properly conferred on all parties. It is the responsibility of project leads to respect the intellectual property of others when used in their research (e.g. models) and to accord it all appropriate recognition. Further guidance on exploitation and intellectual property is covered in the NERC Grants Fellowship Handbook and the programme Grant Terms and Conditions . Please read UKRI's trusted research policy .
Logistics – after	I would like to understand more about requirements for sharing data collected under this funding opportunity.	Please check NERC's Data Sharing Policy for more information, which includes detailed guidance notes.
Networking	It would be nice to have a list of potential UK commercial partners, centrally coordinated by NERC.	Contact details of those signing up to the webinar, and giving consent, has been shared with other registered attendees via email, as well as the webinar chat entries.

Networking	How can social science researchers become involved if specialising in the process of innovation and financing?	<p>We welcome collaborative and multidisciplinary applications from across the environmental science, environment-focused informatics and wider science communities (including social scientists).</p> <p>The registration list (if permission was granted) and chat entries from the webinar have been shared via email to help facilitate collaborations between attendees.</p>
Networking	The call mentions the end-users of the environmental monitoring data (e.g. Defra family), how do applicants engage with these users - are there specific contact points within the organizations?	<p>Applicants are encouraged to reach out to any environmental monitoring end-users whose needs will be met by the proposed sensing system or capability. The registration list (if permission was granted) and chat entries from the webinar have been shared via email to help facilitate collaborations between attendees. The funders will help facilitate contact points to Defra group, please direct timely enquires to IEM@nerc.ukri.org with subject line "Defra group contact" setting out which Defra group organisation you wish to contact and a justification/ summary of the ask. Please utilise any pre-existing networks you have to Defra group before contacting the funders or see Contact Defra - GOV.UK (www.gov.uk).</p>
Policy	What environmental monitoring problems does Defra need solutions for?	<p>We welcome applications on one or more of the four terrestrial monitoring challenge areas: biodiversity and natural capital, soil health (including measuring soil carbon sequestration), freshwater or estuarine water quality (not marine), and monitoring greenhouse gas emissions. The funding opportunity provides more details on the suggested scope of these four challenge areas.</p>
Policy	Who are the intended primary end users for the instrumentation? Policy, land managers, researchers etc.?	<p>Environmental monitoring has many applications and therefore there are a wide range of end-users. Some examples include landowners and farmers monitoring environmental outcomes to secure payments for public goods; environmental regulators or land managers seeking improved insight on the impact of their policies, and citizen scientists looking to contribute to conservation of the natural environment.</p>
Policy	Interested to know Defra's strategic interests in sensing of soils that are often challenging but much needed.	<p>The funding opportunity provides several suggested areas of interest in relation to soil carbon and soil health. These areas are not intended to be exhaustive or exclusive but if proposing a different area of interest, you must provide a strong rationale.</p>

Scope	BBSRC are listed as a co-funders, does this mean we should focus on biotechnology and biological science approaches? Is there a role for social scientists and computer scientists?	This fund is technology agnostic, and we welcome multidisciplinary applications from all disciplines, provided proposals address at least one of the four challenge areas and consider real world use for environmental monitoring.
Scope	Is it open to non-NERC led proposals, e.g. from Computer Science?	Applications are encouraged from across the environmental science, environment-focused informatics and wider data science communities, including computer scientists.
Scope	Can plant data be collected alongside environmental data?	Plant data can be collected if the scope of the proposal is within one of the four challenge areas.
Scope	Will you fund monitoring for disaster risk reduction purposes?	There are many motivations and end-users of environmental monitoring capabilities. Provided the technology falls within one of the four challenge areas and has relevance to the UK, it would be within of scope of the call.
Scope – marine	Freshwater and estuarine monitoring is explicitly mentioned but would marine ecology/biodiversity also be within scope?	<p>The scope of this programme is focused on terrestrial applications, with marine out of scope for this call. Near shore regions in transitional and some coastal waters, such as estuaries and salt marshes, are within scope, provided that can be accessed from land. This geographical limitation is applied across the four challenge areas.</p> <p>For further details see the definition of Transitional and coastal waters as defined in The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (legislation.gov.uk). If there is any doubt, please contact the funders before continuing with your application.</p>
Scope – marine	Would heavy metals and other legacy contaminants be of interest, and what sort of focus might be placed on higher trophic level organisms?	Heavy metal contaminants would likely be outside the scope of this call, particularly if this is the sole focus. No particular emphasis is placed on any group of organism over another.
Scope – marine	Is understanding ecological impacts in marine protected areas due to anthropogenic noise within the remit of the call?	Near shore regions in transitional and some coastal waters, such as estuaries and salt marshes, are within scope, provided that can be accessed from land. Any 'inshore' marine protected area that meets this definition could be in scope. This geographical limitation is applied across the four challenge areas.
Scope – marine	Will this funding include monitoring of nearshore coral reef ecosystem for multiple years to build	The nearshore coral reef ecosystems would need to be located in an area meeting the following definition: near shore

	regional scale networks of in situ sensors with community engagement?	region in transitional and some coastal waters, such as estuaries and salt marshes, are within scope, provided that can be accessed from land. For further details see the definition of Transitional and coastal waters as defined in The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (legislation.gov.uk) . If there is any doubt, please contact the funders before continuing with your application. Community engagement aspects are welcomed.
Scope – air	Funding for Carbon and water fluxes from agri-environments?	Yes, this would be in scope.
Scope – air	Is there funding for research in the field of vehicular emission and air quality?	The scope of this programme is focused on four terrestrial monitoring challenge areas, which includes monitoring greenhouse gas (GHG) emissions, provided it is from Defra sectors, such as: landfill, wastewater treatment and agriculture. Therefore, vehicle emissions and air quality beyond GHGs is out of scope of this call.
Scope – air	Does this programme fund work that seeks to develop a new approach to analytical and analysis of atmospheric data captured using network approach?	Yes, new capabilities are in scope, provided the application is in one of the four challenge areas.
Scope – air	Are there any specific strategic aims of this capital funding (i.e. long-term measurements of GHGs)?	The funding opportunity sets out a number of Defra policies that are related to the four challenge areas, for example see the Outcome Indicator Framework for the 25 Year Environment Plan .
Scope – air	Will consideration also be given to the monitoring of embedded carbon?	No, embedded carbon is out of scope, unless you mean soil carbon content (organic and inorganic) and soil carbon fluxes.
Scope – air	Is this research question under the scope of this funding "How can businesses monitor and improve their carbon footprint?"	This question may be in scope if the business is within a Defra sector, such as: landfill, wastewater treatment and agriculture. Also, a technology which is developed for Defra sectors may have application to other businesses.
Scope – air	How much emphasis is placed on NOx Emissions vs. CO2 Emissions?	NOx would only be in scope if the emissions are from a Defra sector, such as: landfill, wastewater treatment and agriculture. Applicants should make the case for their choice of emission type.
Scope – air	Regarding the 'monitoring greenhouse gas (GHG) emissions' challenge area - does it focus on climate-altering greenhouse gases	Applications must be in scope of the four challenge areas, which includes monitoring greenhouse gas emissions from Defra sectors, such as: landfill, wastewater treatment and

	specifically, or does it also include air pollution that causes adverse public health effects more generally?	agriculture. Air quality beyond GHGs is out of scope of this call.
Scope – air	You mentioned CO2 and CH4 measurements being in scope – what about GHG N2O?	Yes, N2O is in scope, provided it is being monitored from Defra sectors such as: landfill, wastewater treatment and agriculture. This definition can be used as a guide: The 7 direct GHGs under the Kyoto protocol plus the other 4 indirect ones as included in NAEI.
Scope – air	Will there be any funding opportunity for air quality monitoring?	No, not through this call, but other opportunities are available. Please search the UKRI funding finder.
Scope – air	Is forestry and/or agroforestry in scope for work area 4) GHG emissions?	Yes, despite these two not being specifically cited as examples of Defra sectors, if there is a case for monitoring from these sectors, they can be in scope.
Scope – air	Is vertical profiling of cloud-forming particles (aerosol-cloud interactions and climate impacts) out of scope?	It is unlikely that this would be in scope as currently framed. Monitoring of greenhouse gases must be applied in the context of Defra sectors.
Scope	Are the monitoring requirements limited to the examples given: biodiversity and natural capital, soil carbon and soil health, freshwater and estuarine water quality, and monitoring greenhouse gas emissions?	Detail on the suggested scope of these four challenge areas is set out in the announcement of opportunity text. These are areas of interest developed across Defra policy teams to illustrate the scope of this funding opportunity. They are not intended to be exhaustive or exclusive. You may choose to address one, multiple or none of the areas of interest below. If proposing a different area of interest, you must provide a strong rationale.
Scope	Does this funding cover the agricultural research (crop protection)?	Crop protection is out of scope but there are other Defra and UKRI opportunities such as Farming Innovation Programme – Farming Innovation Programme (ukri.org) . Search the UKRI funding finder for other opportunities.
Scope	Can this opportunity fund a) better measurement instruments? b) experimental "cow-barn installable" methane destruction systems?	It looks like both are in scope if the focus of the project is on monitoring an emission source from a Defra sector, such as: landfill, wastewater treatment and agriculture. However, if the project aims to develop mitigating solutions then it would be out of scope. Other opportunities are available, such as the Farming Innovation Programme – Farming Innovation Programme (ukri.org) . Search the UKRI funding finder for other opportunities.

Scope	Is RTC (real-time communications) based on data driven water quality in scope?	The project must focus on monitoring the water quality itself, if the project is only developing a generic communications system, it would be out of scope.
Scope	Does the funding apply to urban and local environments?	This is an environmental monitoring call, so projects that are not relevant to the four challenge areas would be out of scope. However, monitoring of a river flowing through an urban area is an example of a project that would be in scope.
Scope	Could the scope of 'sensor or systems-based' in the context of the call be defined?	'Sensor or systems-based approaches' to maximise value from the data generated. For example, a proposal could include how monitoring data can be more efficiently processed, analysed or visualised.
Scope – existing	Can this be used to fund existing innovation projects?	We will not fund applications that have also been submitted to other award schemes during the same time frame, or projects for which a grant or fellowship has already been awarded (including all UKRI grant schemes). Further guidance on the specifics of what we will and won't fund is available on the announcement of opportunity with further information available in the links to NERC capital funding and the NERC research grants and fellowships handbook .
Scope – existing	Are new sensor networks a prerequisite, or do new data products from existing sensors count?	<p>The objectives of this programme are to support the development of new sensing systems and monitoring capabilities that will either improve existing approaches or introduce new ones, including improving the sustainability and connectivity of data collection, analysis and reporting. Both research conducted on sensor development and deployment, and systems-based approaches focussed on improving how monitoring data can be more efficiently processed, analysed or visualised, are equally valid.</p> <p>Eligible applications will be assessed by an independent panel of experts against the criteria to assess the quality of your application and rank it alongside other applications, after which the panel will make a funding recommendation.</p> <p>When making the final funding decisions, NERC and Defra will consider the recommendations of the panel, along with the overall funding opportunity requirements and the available budget. We reserve the right to take a portfolio approach, for example to allow us to fund a variety of projects across the</p>

		challenge areas. NERC and Defra will jointly make the final funding decision.
Scope – existing	Will this call support novel uses of extant sensor infrastructure or only the development of new sensor networks?	Novel use of existing technology is within scope.
Scope – existing	I am interested to understand the anticipated balance of funding allocated to new sensor development vs environmental sensing network applications	There is no preference. Please refer to the opportunity text for more information on the aims of the programme and how applications will be assessed.
Scope – existing	Are non-conventional sensing platforms eligible for this call? Some hardware components of the system may need to be researched and redesigned to increase the information content of the measured data.	The fund is technology agnostic so we encourage innovation in a way that is most suitable to the end users and their environment.
Scope – existing	Can this system integrate routine monitoring (e.g. satellite observations) with high resolution bespoke data (e.g. UAVs)?	Yes, integrated technologies are in scope, especially if they can be combined or applied in novel ways.
Scope – existing	What are the possibilities for calibration and validation of sensors or systems performance in different natural environments within this funding?	That type of activity should be in scope, provided it fits with the four challenge areas and is focussed on the needs of end users.
Scope – development stage	Should the projects include scoping of or development of commercialisation strategies for the technology?	Commercialisation strategies can be a part of it (up to 20% of budget), but are not a requirement.
Scope – development stage	Is this opportunity open to sensors/instruments at the conceptual stage?	We expect applicants to work in partnership with real world users, for example with public sector and/or UK private sector. For specifics of what activities can be funded under this programme see the guidance on capital funding .
Scope – development stage	What Technology Readiness Levels (TRLs) are in scope?	This integrated programme spans multiple TRLs, through sensor development and testing, to allow robust and effective deployment of sensing systems in the real world to address environmental challenges. It includes explicit connectivity to industry and the growing UK environmental monitoring sector, ensuring that new sensing capabilities are developed in partnership between the public and private sectors and commercialisation is accelerated. This NERC element of the programme is researcher-led. The Innovate UK element of this programme will be business-led and will naturally sit at higher TRLs.

Scope – non-hardware	Does the fund cover developing software, digital infrastructure and cloud platforms processes?	In general, this funding opportunity does not fund projects that are solely digital or focused on e-infrastructure. There may be some examples where software is developed which is to be combined with other technologies (such as algorithms to help identify specific species from camera data) that are in scope. We suggest you get in touch with more specific information.
Scope – non-hardware	The call states that it will not fund digital or e-infrastructure – could this be clarified please as it is not clear how this can be separated from monitoring infrastructure?	It will not fund projects that are solely digital or focused on e-infrastructure.
Scope	Does the funding extend to developing monitoring strategies as well as sensors etc?	We suggest you get in touch with more specific information about what you mean by ‘monitoring strategies’.
Scope – external to UK	Must sensor deployment be in the UK?	The focus of the monitoring systems or capabilities being developed should be in the UK and relevant to UK end users. Some deployment must be in the UK, even if it is also deployed elsewhere. However, transferability of technology to additional geographical areas is welcomed. Please note funding constraints for international partners and UKRI capital funding .
Scope/Policy	The objectives include "the effective development and real-world deployment...". Part of this could include social-licence (to use these new technologies). Is research into public acceptance something that this funding opportunity could support?	This is out of scope. This funding opportunity is focused on developing new technology or systems, optimising existing technology or applying technology in new ways to improve environmental monitoring.
Scope/Policy	Where is the core focus of the instrumentation located?	The focus of the monitoring systems or capabilities being developed should be in the UK and relevant to UK end users. Please refer to the opportunity text for further detail on the four challenge areas and UK deployment.
Technology	We received multiple questions around specific technologies and approaches (AI, drones/UAVs, sensors, networks, satellite observations software etc.). Are there any preferences for technologies, or technologies that are out of scope of this call?	The fund is technology agnostic, so we encourage innovation in a way that is most suitable to the end users and their environment.
Technology	Are low-cost sensors (for example, for citizen science) one of the priorities?	Yes, we have stated in the announcement of opportunity that ‘Developing lower cost sensors and sensor networks which maintain accuracy and precision.’ is desirable. Lower cost

		products would appeal to multiple types of end user, including citizen scientists.
Technology	Can the funding be used to gather data to produce an environmental monitoring device that can potentially be commercialised?	Capital funding can be used for labour and development costs associated with the creation of the asset (sensing system or capability). If gathering data is directly required for the development of the environmental monitoring device, then it is fundable.
Technology	Is there an expectation for the outputs of the project to be commercialised at the end of the project? Should the projects include scoping of or development of commercialisation strategies for the technology?	Projects will be expected to have a clear pathway to further development, to commercialisation or deployment, although scoping of or development of commercialisation strategies is not compulsory. A maximum of 20% of the overall budget can fund resource costs, which can include commercialisation processes.