

## Announcement of Opportunity

### NERC Challenge for UKERC Phase 3 - Valuing Natural Capital in Low Carbon Energy Pathways

Call published: 21<sup>st</sup> July 2014 in conjunction with Ideas Brokerage Workshop held on 21<sup>st</sup> and 22<sup>nd</sup> July, Scarman House, Warwick  
Call closes: 2<sup>nd</sup> October 2014 at 4 p.m.

**Revised version (29<sup>th</sup> August 2014): Process for co-funded Associated Studentships**

Please note that this Announcement of Opportunity is the basis on which proposals will be assessed. Applicants should also read the programme Science Plan for background on the science goals:

<http://www.nerc.ac.uk/research/funded/programmes/valuingnaturalcapital/vnc-science-and-implementation-plan.pdf>

Outputs from Ideas Brokerage Workshop:

<http://www.nerc.ac.uk/research/funded/programmes/valuingnaturalcapital/>

#### 1. Summary

NERC invites proposals to the new research programme, Valuing Natural Capital in Low Carbon Energy Pathways (VNC), which will form a challenge for phase 3 of the UK Energy Research Centre (UKERC)<sup>1</sup>. Proposals should also include links to the new NERC Valuing Nature Programme.<sup>2</sup> This call is for consortium projects (minimum of 3 Research Organisations) of up to £1.9m (80% FEC). Projects should be of 5 years in duration and start no later than March 2015. It is expected that one multidisciplinary consortium project will be funded with 4-5 Associated PhD studentships that should start in October 2015.

The overarching aim of this research programme is to understand the implications for natural capital and the provision of ecosystem services of a range of future energy scenarios, including scenarios that are compatible with the UK's energy policy goals of maintaining energy security, keeping energy affordable and cutting greenhouse gas (GHG) emissions by 80% by 2050.

<sup>1</sup> <http://www.ukerc.ac.uk/support/tiki-index.php>

<sup>2</sup> <http://www.nerc.ac.uk/research/funded/programmes/valuingnaturalcapital/>

## 2. Background and Objectives

The UK Government is committed to ensuring that the value of our natural assets (ecosystems and their living/non-living, renewable/non-renewable components) and the flow of goods and services from them is properly understood and reflected in the economy and policy-making. The value of a particular good or benefit derived from natural capital and/or ecosystem services needs to be expressed in a specific context (e.g., of decision-making) usually in terms of something that can be counted, often money, but also through methods and measures from other disciplines (e.g., sociology, ecology etc.).

Natural capital includes the elements of nature that produce value (directly and indirectly) to people, including living aspects of nature as well as non-living, such as minerals and resources. The pursuit of the low carbon agenda holds unusually profound implications for the provision of these ecosystem services going far beyond the protection of the climate. So far, the scientific community and the policy world have given little attention to the low carbon/natural capital nexus. Unless evidence regarding this nexus is generated, unnecessary degradations in wider ecosystem service provision may result and opportunities to exploit synergies may be missed.

The **Valuing Natural Capital in Low Carbon Energy Pathways (VNC) programme** will form part of the NERC contribution to the wider RCUK Energy Programme and falls under NERC's 'Benefiting from natural resources' strategic theme. The programme will generate scientific evidence in the environmental domain to inform the development and management of low carbon pathways

### 2.1 Programme Priorities

The programme will be expected to advance a framework for integrating the analysis of energy systems and technologies with natural capital considerations and exemplify this with specific case studies. Research should be new but complementary (based around existing concepts but filling important gaps) and draw communities together whilst respecting existing concepts.

Elements of the programme could include:

- Integrating energy systems, considering all components including construction, generation, end-use demand, decommissioning, storage and supply, into the ecosystem services framework;
- Undertaking whole-system assessment of consequences for natural capital of adopting different patterns of energy development, exploring potential trade-offs and synergies with other ecosystem services and mitigation strategies where appropriate;
- Exploring implications for natural capital value through the enhancement and integration of existing models alongside the development of UKERC's Phase 3 energy pathways and/or using existing energy/NEA scenarios,
- Ensuring full scope of energy system impacts on natural capital (spatial and temporal) are considered, bearing in mind that, depending on the energy mix selected, the impacts on ecosystem services could extend beyond UK borders, with potential impacts around the globe;

- Developing the concept of ecosystem services embedded in the trade of goods and services, in a vein similar to embedded carbon or water, associated with energy system; and/or
- Examining the scope and benefits of spatial and temporal targeting of the energy system to make use of heterogeneity in natural capital stocks and other ecosystem services.

The outcomes of the Programme will include:

- a better integration of the hitherto separate energy and valuing nature communities; the establishment of energy services as key “provisioning” ecosystem services;
- a more comprehensive view of the linkage between natural capital and the decarbonisation agenda;
- the achievement of a genuinely whole systems approach encompassing the ecological system as a whole and energy systems rather than individual energy chains; and
- help for decision makers by allowing meaningful comparisons between alternative energy and ecological and system pathways and options.

## **2.2 Science priorities**

Four inter-related programme goals have been identified. Goals 1 and 2 are spatially differentiated, with Goal 1 focused on the UK and Goal 2 taking a wider global perspective (which includes local and regional impacts outside the UK). Goals 3 and 4 are cross-cutting in nature, Goal 3 addressing the cumulative and indirect impacts of energy activities on ecosystem services and Goal 4 addressing the wider energy-land-water nexus.

The successful consortium will encompass all of these goals:

1. to characterise the impact pathways of specific energy chains and energy infrastructure development in the UK’s marine, aquatic, coastal margin and terrestrial environments under a range of decarbonisation scenarios;
2. to understand how different means of sourcing energy from outside the UK would impact ecosystem services from a global perspective and to identify options for managing these impacts;
3. to understand the cumulative and indirect effects of energy technologies/ infrastructure over time on the full range of ecosystems services – underpinning, regulating, cultural and provisioning, addressing both economic and non-economic values; and
4. to understand better the nexus between energy, land and water and the trade-offs and synergies associated with different patterns of energy development.

These research goals were developed further in the programme Science Plan by an Advisory Group (AG) which was convened to refine the scope of the VNC programme..

### **2.3 Programme Funding**

The funding available for VNC is relatively modest and thus proposals should not be directed towards major infrastructure investment, but as much use as possible should be made of existing national and international facilities where appropriate.

The NERC funding contribution will be 80% of the full economic cost (FEC) (with the standard exceptions paid at 100% FEC).

**Up to £1.9M is available for this call and the programme aims to support *one* consortium proposal (including student costs) within that budget.**

***NERC reserves the right to assemble a balanced portfolio of research from the fundable proposals to optimise delivery of programme objectives.***

## **3. Programme Governance and Management**

In order to prevent duplication of effort it is anticipated that the Challenge Programme will be governed by the UKERC Funders Group, which will be the governance mechanism for the UKERC Phase 3 “Hub”. However, the Challenge will also report to the Programme Executive Board of the Valuing Nature Programme.

Representatives from NERC, EPSRC and ESRC as co-funders of the UKERC Phase 3 Hub.

## **4. Data management**

NERC requires that research programmes implement a data management scheme which covers practical arrangements during the programme and subsequent long-term availability of the data set. In line with the [NERC data policy](#) the data from the programme will be lodged with the appropriate NERC Designated Data Centre. NERC puts an obligation upon PIs to ensure that data management is undertaken in a suitable way.

This challenge will build on two existing programmes: the UKERC Phase 3 Hub and the NERC Valuing Nature Programme, and therefore the funded PIs will be required to work with the NERC designated data centre and both programmes to produce fully costed data management plans.

Applicants are required to submit an outline Data Management Plan (ODMP) as a separate mandatory attachment, to identify the data sets likely to be available to NERC Data Centres for archiving and reuse at the end of the grant. Guidance on completing this is available in the [Research Grants Handbook](#).

There will be no charge to the project for a NERC Data Centre to accept and manage the agreed data sets at the end of the grant but any in-project data management activities should be costed and included within the proposals.

## **5. Knowledge Exchange and Impact**

Knowledge Exchange will facilitate the communication of the science delivered from this challenge to a variety of users including policy makers and industry, and exchange of views and knowledge from these stakeholders with a view to achieving the paradigm shift required. There will be two levels of KE, at the project level through Pathways to Impact and at the programme level via UKERC and the Valuing Nature Programme. KE is intrinsically linked to both the multi-/interdisciplinary partnerships and to associations with these other investments.

All research proposals submitted to NERC should be accompanied by a Pathways to Impact document. There will be a requirement to identify the target communities/stakeholders, consider how these various groups/individuals are likely to benefit from (or be affected by) the research, and create a plan to engage with them which is appropriate and goes beyond communication, timely and happens early in the design stage.

Due to recent changes in NERC relating to Pathways to Impact, applicants are advised to read the guidance at:

<http://www.nerc.ac.uk/funding/application/howtoapply/pathwaystoimpact/>

At this early stage in the process, where the research scope is not yet fully defined, the optimal range of KE activities at the programme level is unclear. It is clear, however, that this activity should support activities to stimulate innovation and new collaboration, avoid duplication of effort and allow effective project alignment and interaction. This will foster programme integration, achieve added-value and the production of high-quality deliverables.

In summary, in the Pathways to Impact applicants should consider what will be done during and after the project to increase the likelihood of the research reaching the intended beneficiaries and maximise the likelihood of identified benefits being achieved.

Applicants are expected to request funds to support project-specific activities and these should be included in the grant proposal and fully justified in the Justification of Resources statement.

Applicants are encouraged to present ideas for the programme-wide knowledge exchange activities as well as the project specific ones. At the post-award stage the applicants will be expected to work with the UKERC Hub and the VNP to develop programme wide Knowledge Exchange and Impact activities.

## **6. Collaboration**

This programme should follow on from, contribute toward, and will benefit from, a number of potential collaborations. The proposed research should complement but not duplicate research being done elsewhere; some examples of which are given in the Science Plan.

It is a requirement of the programme that the successful consortium will have formal links to the UKERC Phase 3 Hub team and the Valuing Nature Programme Science Coordination Team. In particular one of the work packages in the UKERC Phase 3 Hub (Project 1.3: Analysis of Impacts of Ecosystem Services) is linked to this Challenge call.

It is expected that proposals will be developed in conjunction with UKERC Research Director and the Valuing Nature Programme Coordination Team, and will include researchers from the UKERC Hub and VNP.

## **7. Reporting requirements**

As with all NERC grant holders, there will be a requirement to report through the RCUK reporting system; this is required annually and continues for up to five year post grant end. Reporting at the programme level will be required biannually through the programme level KE and Coordination (process to be determined).

## **8. Facilities**

Applicants can apply for access to any of the NERC services or facilities. Prospective applicants must first seek the advice of the appropriate facility contact before any formal proposal is submitted. For most facilities and schemes, the notional costs of using the facility should be included in the grant proposal. For some facilities the costs will then be removed from the grant and awarded notionally (where NERC provides the funding directly to the facility). Further details on how to apply to use facilities can be found: <http://www.nerc.ac.uk/research/sites/facilities/apply/>.

## **9. Associated Studentships**

Funding is available for 4-5 PhD Associated Studentships which must be tied to the main consortium project. Funding requested for an Associated Studentship must include the student's maintenance grant and university fees, which should be requested on the proposal form as an Exceptions cost and will be paid at 100% FEC. Additional costs should also be requested on the research grant proposal form for items such as fieldwork expenses, conferences and consumables. These should be requested as a Directly Incurred cost and will be paid at 80% FEC. Applicants may request funding for up to 48 months. No further funding is available for Associated Studentships beyond that requested on the grant.

Co-funded Associated Studentships are encouraged and will be accepted to the programme call. The co-funding can be through industrial partners or other appropriate funders (not Research Council training grants such as Doctoral Training Partnerships or Centres for Doctoral Training) and applicants must include details of these arrangements in the proposal (on the Je-S proforma, as explained in Section 10 below), along with details of the training and supervision to be provided.

All studentships will be assessed against the following NERC Success Criteria:

- **Research excellence:** the training and training environment must include scientifically excellent and original research within NERC's remit.
- **Training excellence:** students are managed as a cohesive group and acquire both research and transferable skills. There is a strong and active community of students that are able – and encouraged – to integrate, work and learn together.
- **Multidisciplinary training environments:** the training is embedded in multidisciplinary training environments to enrich the student experience and to encourage the knowledge-sharing and interconnectivity, which benefits research within the environmental sciences. This does not mean that individual PhD topics are required to be multidisciplinary.
- **Excellent students:** attracting the right student. Procedures are in place to ensure NERC funding goes to the right or 'best-fit' student: the individual whose previous training, experience and skills best suit the type of training being undertaken.

Examples of good practice under each of these headings can be found <http://www.nerc.ac.uk/funding/available/postgrad/focused/associated/>.

Applicants should demonstrate within their proposal how these success criteria will be met.

Should the Associated Studentships be considered unsuitable for funding, this decision will not alter the funding decision for the parent grant. All costs associated with the Associated Studentships will be removed from the proposal, however, before award.

The aim of providing this studentship funding is for NERC to support an effective and active cohort of students benefiting from training associated with working in this large integrated programme, in conjunction with generic doctoral training within their host institutions.

## 10. Application Procedure

### 11.1 Submission of proposals

**Closing date: 4 pm (GMT) on 2 October 2014**

Eligibility to apply for this funding is restricted to individuals eligible to apply for NERC grants. Please refer to the [NERC Research Grants Handbook](#) for details.

Individuals are limited to involvement in no more than two proposals submitted to this call; only one of these may be as lead Principal Investigator.

Grant proposals must be submitted using the Research Councils' Joint electronic-Submission system (Je-S). To use this system, the applicant's research organisation must be Je-S registered, see <http://www.nerc.ac.uk/funding/application/> for further details. The call will be listed under Scheme 'Directed' and Call 'Valuing Natural Capital' and will utilise the standard Je-S pro forma. Guidance on the application process, including details of eligible costs, is available in the [NERC Research Grants Handbook](#).

NERC's normal grant terms and conditions will apply, and these are also outlined in the handbook. An additional condition for this programme is that it is a requirement that proposals have formal links to the UKERC Phase 3 Hub team and the Valuing Nature Programme Science Coordination Team. 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 received after the closing date, is incomplete, or does not meet the eligibility criteria of this call, will be returned to the applicant and will not be considered.

All documents should be completed in single-spaced typescript of minimum font size 11 point Arial font, with margins of at least 2 cm including references. Applicants referring to websites should note that referees may choose not to use them.

In addition to the standard Je-S pro forma, the **lead** component of each proposal should include the following documents:

1. **Case for Support** comprising:
  - **a) a common Previous Track Record** incorporating all Research organisations involved (up to three sides of A4);
  - **b) a common Description of the Proposed Project** (up to 16 sides of A4 including all necessary tables, references and figures) to include:
    - Underlying rationale and scientific issues to be addressed.
    - Specific objectives of the project, including their relevance to the Research Programme goals that will be addressed.
    - Methodology and approach.
    - Risks and mitigation strategies.
    - Programme and/or plan of research.
  - **c) Management Plan** (up to 2 sides of A4). The management plan should include a description of the proposed management structures and plans, participant responsibilities and a scheduling chart.
2. **Outline Data Management Plan (ODMP, up to 1 side of A4).** (See Data Management section above; to include any relevant costings. Note that the Outline plan should now be submitted as a separate document of the type 'Data Management Plan', rather than as part of the case for support.)
3. **Justification of Resources** (up to 4 sides of A4 for all Research Organisations in the proposed grant) submitted as a separate attachment in the Je-S system. It should include justification for all Directly Incurred Costs, Investigator effort, use of pool staff resources, any access to shared facilities and equipment and for capital costs. No justification for Directly Allocated Estates and Indirect Costs is required.

For all items of equipment costing over £10,000 (including VAT) applicants are advised to read the [NERC Research Grants Handbook](#) and further guidance can be found on the [RCUK website](#).



**4. Pathways to Impact** (up to 2 sides of A4). This should include an outline of:

- those who may benefit or make use of the research;
- how they might benefit and/or make use of the research; and
- methods for disseminating data/knowledge/skills in the most effective and appropriate manner.

**5. Project Partner Letter(s) of Support** (up to 2 sides of A4 each). A Letter of Support is required from each named Project Partner. This letter should confirm that the support and facilities required to enable the associated collaborations will be made available. No other letters of support should be attached.

**Each component** proposal (including the lead) will additionally require the following attachments, where applicable:

- **Associated (project-linked) Studentships** must be justified fully in the studentships sections. All costs for the student's travel and subsistence, consumables etc. must be itemised in the grant proposal form at 80% FEC under the appropriate Directly Incurred Cost heading. The system will automatically populate the stipend at 100% FEC based on the duration selected. Further information on Associated Studentships can be found in the NERC Research Grants Handbook.
- For **Co-funded Associated Studentships**, the system will populate the stipend at 100% FEC as (it does not currently accept part-funded students. You must add the co-funding partner as a formal Project Partner and attach an associated letter of support to the proposal. The details of the co-funding for the student(s) must be included within the Justification of Resources. At the award stage if the proposal is successful the co-funded costs will be removed.
- A **CV** of up to two sides of A4 for each named PI, Co-I, research staff post and visiting researcher.
- **Price quotations** for equipment costing more than £25k.
- Where applicable a **Business Case** of up to two sides A4 per item, for items of equipment above the OJEU threshold. Further guidance regarding capital costs can be found in the NERC Research Grants Handbook.
- **Facility forms** (including aircraft).
- PIs wishing to use **NERC facilities** will need to submit a mandatory 'technical assessment' with their proposal (including aircraft but excluding ships and HPC). For NERC, this means a quote for the work which the facility will provide. (See facilities section above for full details)

## **10.2 Ideas Brokerage Workshop**

**21<sup>st</sup> 22<sup>nd</sup> July 2014, Scarman House, Warwick**

The [Valuing Natural Capital in Low Carbon Energy Pathways Ideas brokerage workshop](#) aims to provide the background to the programme and call, act as a networking opportunity by bringing together the various academic and energy communities to uncover innovative solutions and discuss ideas for research proposals to build up an understanding of and approaches as to how to address the programme goals.

The outputs from the workshop and details of who attended the workshop will be available after the workshop on the programme website:

<http://www.nerc.ac.uk/research/funded/programmes/valuingnaturalcapital/>

**It is not a pre-requisite of this call for proposals that the principal or co-investigators attend this event; the call will be open to all those eligible to receive research council funding.**

## 11. Assessment procedure

Proposals will be subject to international peer review. Final assessment will be by a Moderating Panel of independent experts. Applicants will be given the opportunity to provide a written response to peer review comments prior to the moderating panel meeting. Applicants will also be invited to give a presentation at the Moderating Panel and will be notified of this well in advance of the meeting. The date of the meeting is still to be confirmed, but is expected to be in January 2015.

All proposals will be assessed against the following research criteria:

- **Research Excellence:** a proposal that demonstrates excellence can be characterised by terms such as: novel, ambitious, timely, exciting, at the international forefront, adventurous, elegant or transformative, but need not demonstrate all of them.
- **Fit to Programme Objectives:** a proposal will be assessed against the extent to which they address the programme's scope and scientific requirements as detailed in this AO.

Further information on assessment criteria can be found on the NERC website at

<http://www.nerc.ac.uk/funding/application/howtoapply/forms/programmeguidance.pdf>

Pathways to Impact are no longer scored by reviewers and are no longer used as a secondary criterion for ranking proposals. The moderating panel will discuss any reviewer comments on Pathways to Impact plans and any proposals within the funding frame will **not** be allowed to start unless unacceptable Pathways to Impact plans are enhanced to an acceptable level within 2 months of notification of the panel outcome.

The Moderating panel will make a recommendation to NERC about funding based on the criteria outlined above and the potential for the project to deliver against the programme objectives. In making its recommendation to NERC on which project to fund, the Moderating panel will take into account the degree to which it will address the four programme goals outlined earlier in the Announcement of Opportunity and in more detail in the Science Plan. NERC reserves the right to withhold programme funding if the full extent of the programme objectives are not covered in this call or the recommended project does not fulfil the programme objectives. NERC also reserves the right to weight Fit to Programme Objectives appropriately to achieve the strategic aims of the programme.

Feedback on the successful and unsuccessful proposals will be provided automatically.

## 12. Timetable

AO to be published:	21 <sup>st</sup> July 2014
Ideas Brokerage Workshop:	21 <sup>st</sup> /22 <sup>nd</sup> July 2014
Call opens on JeS:	21 <sup>st</sup> July 2014
Deadline on JeS:	2 <sup>nd</sup> October 2014
PI response:	w/c 1 <sup>st</sup> December 2014
Review:	Sept - Dec 2014
Moderating Panel:	January 2015
Grants awarded:	February 2015
Grant start date:	March 2015
PhD studentships start:	October 2015

Dates are provisional and are subject to change.

## 13. Contact information

For further information about the programme please contact Michelle Truman or Sally Reid at [vnc@nerc.ac.uk](mailto:vnc@nerc.ac.uk).

For:

- [UK Energy Research Centre \(UKERC\)](#), contact Professor Jim Watson (Science Director) [jim.watson@ukerc.ac.uk](mailto:jim.watson@ukerc.ac.uk)
- [NERC Valuing Nature Programme \(VNP\)](#), contact Science Coordination team contact [valuingnature@nerc.ac.uk](mailto:valuingnature@nerc.ac.uk)

Further information on the Je-S system can be found on the Je-S website <https://ie-s.rcuk.ac.uk> or be obtained by contacting the Je-S Helpdesk by email at [JeSHelp@rcuk.ac.uk](mailto:JeSHelp@rcuk.ac.uk) or by telephone on 01793 444164.