



Urban Atmospheric Science - Announcement of Opportunity

NERC Theme: Environment, Pollution & Human Health

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The Natural Environment Research Council invites proposals for a three-year collaborative research award that will constitute the Urban Atmospheric Science Programme.

The overall aim is to generate new knowledge and predictive capacity of key environmental processes governing the distribution, transport, and transformation of atmospheric pollutants in urban areas, that is informed by, and informs, research on pollutant exposure and risk to human health.

The programme will deliver innovative environmental science with strong links to health research and the required infrastructure in an urban environment. The successful consortium will be required to identify and justify the science questions to be addressed and the infrastructure investments required to deliver the science programme.

The research programme would be expected to commence October 2009, for a period of three years, completing in October 2012. Proposals should not exceed £2.75m (cost to NERC).

Please see the following specification for full details of the call.

Queries should be directed to:

Nicola Lewis (nile@nerc.ac.uk)
Tel: 01793 411739

Amy Foxtton (afox@nerc.ac.uk)
Tel: 01793 442594

Specification

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1 Summary

This document specifies the requirements for a new research programme activity on 'Urban Atmospheric Science', which forms part of the Environment, Pollution and Human Health Theme of the NERC Strategy. Proposals not exceeding £2.75 million (cost to NERC) are invited for a collaborative research grant to address this topic, which will deliver innovative environmental science with strong links to health research, and the required infrastructure investments.

The overall goal is to generate new knowledge and predictive capacity of key environmental processes governing the distribution, transport, and transformation of atmospheric pollutants in urban areas, that is informed by, and informs, research on pollutant exposure and risk to human health.

This document defines the scope and requirements of the activity being commissioned, the procedures that will be followed during the commissioning process and the requested format of responses to this specification.

2 Introduction and Scope

2.1 Introduction

This document specifies the requirements for a new research programme activity on **Urban Atmospheric Science** that will deliver aspects of the NERC strategy: *Next Generation Science for Planet Earth*. It has been developed as part of the Environment, Pollution and Human Health theme: <http://www.nerc.ac.uk/research/themes/health/>

Research in the Environment, Pollution and Human Health theme is directed at elucidating key environmental processes that form part of a causal pathway between an environmental hazard and disease outcome, and providing a predictive capability of the risk to human health and well-being posed by environmental factors.

This research programme directly addresses three of the major challenges in the Environment, Pollution and Human Health theme, specifically at the scales relevant to the urban environment:

- To improve measurement and monitoring of the distribution of pollutants and pathogens at required time and space scales;
- To improve knowledge of processes and models of the dynamics of transport and transformation of pollutants and pathogens in the environment;
- To improve assessments of pollutant and pathogen exposure and risk to humans.

The research programme will contribute to several of NERC's strategic objective related to knowledge exchange, collaborative working, and strategic partnerships, specifically:

- Establish a culture of knowledge exchange between NERC and stakeholders and ensure knowledge generated from NERC-funded science, and data and information holdings, are communicated and used;
- Promote collaborative research and a vibrant community throughout the environmental science, engineering & technology base;
- Strategic partnerships with key UK and international organisations are supporting research delivery.

As part of the LWEC (www.lwec.org.uk) accredited Environment and Human Health programme, the Urban Atmospheric Science programme was designed with the input of several LWEC partners, including EPSRC, MRC, and Environment Agency (along with valuable advice from others, including the Health Protection Agency). It contributes to the delivery of Objective D, 'to protect human, plant and animal health from diseases, pests, and environmental hazards', by improving the predictive capability for urban air pollution and climate, and hence facilitating the development of cost effective abatement and mitigation strategies, with the ultimate benefit of reducing the burden of human disease linked with environmental causes. The outputs from the programme may also relate to objectives E (urban and transport systems) and B (ecosystem services in the sense of clean air).

The research programme may also contribute to the cross-council programme on Global Uncertainties - Security for all in a Changing World, by enabling a better understanding of the likely development of various threat and risk scenarios.

2.2 Scope

NERC wishes to support a single collaborative research grant award that will constitute the research programme. Proposals should not exceed £2.75 million (cost to NERC).

The research programme would be expected to commence October 2009, for a period of three years, completing in October 2012.

Throughout this document, the term pollutant is used to collectively describe particulate matter and chemicals, including ozone and nitrogen dioxide. These are priority pollutants for consideration under this programme, but given suitable justification, the study of other pollutants of relevance to human health is welcomed. Scientific excellence will be a major factor in the assessment of proposals.

Indoor air pollution is not considered within the scope of this research programme.

This research programme aims to increase understanding of the environmental controls on the distribution, transport, and transformation of atmospheric pollutants potentially hazardous to human health in urban areas. Studies on the medical aspects of pollutant and human health research are outside the scope of this research programme, but should inform its development and applicants should demonstrate their links to health-related research.

Although the impact of pathogens on human health is not within the scope of this research programme, relevance of the outputs (such as modelling results) for movement of pathogens released in urban settings could be considered.

3 Background

3.1 Rationale

Air pollution is a major environmental risk to health and is estimated by the World Health Organisation to cause approximately 2 million premature deaths worldwide per year¹. Closer to home, air pollution is currently estimated to reduce the life expectancy of every person in the UK by an average of 7-8 months, with estimated equivalent health costs of up to £20 billion each year².

Urban areas are a focus for both people and for the pollution generated by human activity. Pollution in urban centres arises from a variety of sources, including traffic and industry, and some potentially important air-quality situations relevant to human health occur towards the edge of urban areas, where residential housing is juxtaposed with industrial-scale processes and major infrastructure developments (e.g. airports or ports).

Cities also act as urban heat islands, which have the potential to directly affect the health and welfare of residents through elevated temperatures and heat waves. Urban heat islands also indirectly affect the distribution and concentration of pollutants through secondary effects on local meteorology. It is not known whether urban heat islands are growing or how they might affect frequency or intensity of high pollution episodes (e.g. winter stagnant episodes, summer photochemical episodes) under climate change, and how these might impact on human health.

Understanding how pollutants relevant to human health are dispersed in the urban environment is a challenge. Wind flow and turbulence vary across the region in space and time, and people live within the roughness element. Hence, although traditional methods to measure dispersion are available, they do not really apply rigorously. A result of this is that the distribution and concentrations of some pollutants in urban areas, such as particles, are not well characterised or mapped, and there is potential for exposure misclassification in epidemiology studies and studies of risk. Although time-series epidemiology studies tend to use a small number of sites as exposure indicators, these studies would be enhanced by understanding how monitoring sites act as indicators of exposure.

In urban environments, pollutants are not only generated and dispersed at street level; they are mixed up into the urban canopy and wider boundary-layer to be transported from one part of the city to another and mixed with air containing pollution advected from urban, industrial and background sources, and potentially returned to the street level through downwelling of the plume, where people can be exposed to mixtures of pollutants. Although the top of the urban canopy where the mixing takes place is therefore a key interface, there are relatively few records of air-quality in this environment. The structure of the canopy interface, and the basic processes affecting pollutant distribution here and fluxes across it are not well characterised.

Further scientific challenges arising in understanding the behaviour of certain pollutants are related to the fact that some can arise from both primary and secondary sources, and the contributions of individual source types and secondary pollutant precursors are difficult to quantify. Research is needed to understand the nature and rates of chemical processes in the urban atmosphere and in downwind urban plumes to enhance our ability to distinguish the sources of pollution. Currently, we have a limited ability to track the performance of pollution-control policies in urban areas or predict the potential behaviour of the urban atmosphere in episode situations of air-pollution and heat waves, and hence this limits our ability to protect people.

By reducing severity of air pollution episodes, we can help countries reduce the burden of disease from respiratory infections, heart disease, lung cancer, and other illnesses, but the links in the causal pathways between environmental hazard and disease outcome are complex.

¹ World Health Report 2002. Reducing risks, promoting healthy life. Geneva, World Health Organization, 2002.

² Defra 2007. The air quality strategy for England, Scotland, Wales and Northern Ireland.

The UK is a world leader in studying both the atmospheric science and human health aspects of airborne particulate matter and is a major contributor to ozone research. By focussing this expertise into providing new knowledge and predictive capacity of key environmental processes governing the distribution, transport, and transformation of atmospheric pollutants in urban areas, we can improve assessments of pollutant exposure and risk to humans and a number of urgent issues can be addressed. These include:

- the design of better pollutant abatement strategies, especially for particulate matter, for which current strategies are proving ineffective;
- enhanced capability to predict the risks posed by accidental or deliberate harmful releases;
- better knowledge of the urban heat balance to allow improved urban planning/design to mitigate the effects of increased temperatures.

3.2 Critical existing investments

Sampling platforms exist in urban areas, but are far inferior to those available for airborne or marine atmospheric measurements. The spatial coverage of air pollutant monitoring by national (DEFRA-led) and local authority networks is generally good, but the measurements are limited to a few classical air pollutants, and further investment is needed to advance research work. However, due to the limitations on space in cities, it is highly likely that any infrastructure investment will be in the form of enhancing instrumentation or negotiating access agreements with existing network stations, rather than equipping new observatories.

The joint Environment and Human Health programme will strengthen the UK's capacity for multidisciplinary studies into environment and human health issues. It supports a number of exploratory projects investigating the physicochemical characteristics of particles in the air and their respiratory health effects (<http://www.nerc.ac.uk/research/programmes/humanhealth>).

Applicants should show awareness of other activities funded elsewhere that relate to this proposed new investment, and explain how it will complement and enhance existing effort.

3.3 New investment required

A collaborative research programme of up to three-year duration is needed to provide new knowledge and predictive capacity of key environmental processes governing the distribution, transport, and transformation of atmospheric pollutants in urban areas, to improve assessments of pollutant exposure and risk to humans. The programme will deliver both research and infrastructure, using London and the southeast as the study site.

The successful consortium will need to identify and justify the infrastructure investments required to deliver the work. Previous discussion with the NERC community has recognised a need for infrastructure investment for urban atmospheric research, the details of which may be found in section 3.4. The infrastructure listed there are suggestions, and the investments funded by the programme will be based on excellence and their potential to deliver the research objectives.

3.4 Consultation outcomes

A meeting with members of the NERC community in March 2008 revealed a perceived need for infrastructure investment to enhance the range and type of long-term measurements carried out in urban atmospheric research and to facilitate the mounting of intensive experiments. The infrastructure needs were summarised as:

- a central urban background laboratory to house measurement instruments for both long-term data generation, and for short campaign-based studies;
- incorporation of instruments at a kerbside location, both for long-term measurements and campaigns and increased meteorological instrumentation;

- better air quality climatology of the rural background, which would facilitate cross-sectional studies;
- installation of measurement instruments on an elevated platform, which at different times will be both within or above the urban boundary layer.

The meeting recommended that, where possible, remote sensing instruments are preferable to allow measurement of vertical profiles from rooftops through the boundary layer to the free troposphere.

4 Requirements

4.1 Science and implementation requirements

Scientific requirements

The overall goal is to generate new knowledge and predictive capacity of key environmental processes governing the distribution, transport, and transformation of atmospheric pollutants in urban areas, that is informed by, and informs research on pollutant exposure and risk to human health.

The research project is required to:

- Propose and test innovative hypotheses that will advance our knowledge of the transport and dynamics of key chemicals and particles of different sizes and compositions in urban areas.
- Undertake and integrate high quality environmental research on atmospheric composition and urban meteorology that is informed by the latest medical and epidemiological understanding of how atmospheric pollutants in urban areas impact human health. This research should contribute to resolving pressing issues in understanding steps along the causal pathway from hazard to health impact.
- Be innovative and consider research informed by human health issues that are gaining prominence. An example of such an issue could be the health effects of interactive mixtures of pollutants, chronic exposures of toxins leading to long-term and trans-generational toxicity, and factors that influence inter-individual susceptibility, as highlighted by the collaborative interdisciplinary [Environment and Human Health](#) capacity building programme.
- Include work that will advance the following scientific problems, relevant to the challenges of the Environment, Pollution and Human Health theme:
 - Understanding how to attribute signals of pollutants relevant to human health to individual sources or sectors and the contribution of secondary pollutant precursors
 - Understanding chemical transformations in the urban atmosphere and downwind urban plumes
 - Understanding the vertical and horizontal transport mechanisms for pollutants and heat in urban areas
 - Upscaling the understanding of the detailed dynamical flow of pollutants and heat at street level, to allow understanding of pollutant exposure at a city-scale
- Take an approach that considers the drivers for atmospheric chemistry and physics on an urban mesoscale and links these to behaviours on the microscale. Avoid detailed modelling and validation of conditions that are not replicated elsewhere in the urban environment.
- Apply appropriate case-based or statistical techniques to draw practical generalisations that will aid interpretation and application and enable methods and rules to be transferable to other urban areas.

Implementation requirements

The research project is required to:

- Focus on London and the southeast
London and the southeast have been identified as the preferred urban environment in which to undertake this work. This is due to London's importance as a major urban centre experiencing high levels of air pollution, coupled with a large and rapidly growing population exposed to the pollution. A further reason for a focus on London is the opportunity to greatly enhance the research and characterisation that has already taken place utilising the national (DEFRA-led) and local authority networks.
- Deliver the infrastructure requirements needed to supply the science programme.
At the proposal stage, details of planned sites and instrumentation required to deliver the science programme, with evidence of partnerships in place to deploy and operate the instruments is sufficient, but an early milestone of the programme should be a detailed plan for the infrastructure investment. The successful consortium is expected to procure, manage, maintain, and operate the infrastructure, in addition to negotiating agreements with site owners and managers.
- Give careful thought to the choice of the monitoring sites and the equipment proposed, for both scientific reasons and for the longer-term future of the infrastructure investment beyond the lifetime of the research programme.
- Take advantage of the new technologies arising that allow data to be collected from cheap, robust field-based sensors and instruments, and explore the potential use of mobile wireless and remote-sensing technologies.
- Include a combination of long-term continuous measurements complemented by shorter intensive campaigns or case-studies. The measuring strategy should enable the statistical distribution of key parameters and their relation to the large-scale flow to be established, whilst also measuring as many variables as possible over short periods.
- Provide opportunities for additional groups to interact with the project, both to increase the numbers of measurements and broaden the UK participation in urban atmospheric science. The consortium is required to publicise details of planned campaigns well in advance and invite expressions of interest from other groups to participate in ways that would add value to the programme. Modest sums should be made available to participants to cover travel and subsistence, and some data processing and interpretation.
- Bring together experts in atmospheric composition, meteorology and health issues. The Engineering and Physical Sciences Research Council has stated that it is willing to consider co-funding successful proposals where they include significant engineering challenges, such as urban design solutions to reduce pollutant exposure. Such proposals should engage relevant engineering research expertise.
- Engage with users to ensure that the improved understanding can be used to develop better practical strategies for protecting people, and hence, produce a key outcome of an improved ability to assess pollutant exposure and risk to humans. Proposals specifically engaging with UK air-quality managers should also consider how the research can help to deal with the impact of proposed legislation such as the "Exposure Reduction" approach to "no-threshold" pollutants like particulate matter, which may come into force during the duration of the research programme.

4.2 Governance requirements

The programme is required to set up a Programme Executive Board to oversee activities. This Board will involve:

- Senior Responsible Owner: The Principal Investigator from the lead organisation who is accountable for the delivery of the project;
- Senior Supplier(s): Lead researcher(s) from partner organisations;
- Senior User(s): Representative(s) from those with an interest in using the final outputs from the programme, such as policy makers or industry. Preferably the users will have been involved in the planning and development of the programme;
- Corporate User: The Corporate User is a representative from NERC Swindon Office, representing NERC as the funding organisation.

The Programme Executive Board is accountable to the NERC Director of Science Delivery, or nominated delegate, and may convene such advisory groups as are appropriate to ensure adequate advice on the strategic direction and operation of the programme. Further details of NERC's policy on governing and managing research programmes may be found at <http://www.nerc.ac.uk/about/delivery/processes/investments>

4.3 Performance management requirements

In order for NERC to manage performance against its Strategic Objectives and Delivery Plan and report to DIUS and NERC Council, we need our suppliers of strategic research to report regularly on the outputs and outcomes that they have been commissioned to deliver. The programme will be required to provide:

- Periodic progress reports (frequency and format to be agreed) and exception reports via the Programme Executive Board. These should also capture any key achievements or highlights and any additional required performance management information specified by NERC;
- Output and Performance Measures (OPMs). Currently collected annually, through the NERC Research Outputs Database (ROD);
- Final Report.

4.4 Other requirements

Data Management

NERC believes that data generated from the research it funds is a valuable long-term, public-good resource. To ensure the data can be fully exploited in support of the activities that they were collected for, and to enable them to be available for effective, longer-term, post-programme exploitation, it is NERC's policy that data must be managed effectively from the time of generation onwards (<http://www.nerc.ac.uk/research/sites/data/policy.asp>). The Consortium is required to discuss data management needs with the appropriate NERC Designated Data Centre and include provision for these needs in the proposal. In particular, the Consortium should consider the following points:

- What data are planned for collection and which of these data are perceived of having long-term value? When is it estimated that these data will be made available to the data centres?
- What, if any, existing data will be required? Who will supply these data and will there be a cost?
- Which is the most appropriate of the NERC data centres to provide data management support and guidance during the programme, and what level of data management support is going to be required from the data centre?

- How will data collected as part of the programme be managed during the life of the programme? Is this best done by the programme team, or should a NERC data centre be involved in the within programme data management?
- What specialist data and informatics skills will be required by the programme and from where will these be obtained?

Knowledge Exchange

Knowledge exchange (KE) is vital to ensure that environmental research has wide benefits for society, and should be an integral part of any research. NERC believes that all researchers should carry out KE and the Consortium is required to develop and submit a KE plan as part of the application. The KE plan will identify those who may benefit from 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. Carrying out the activities in the KE plan will allow potential users and beneficiaries to better understand and benefit from the research and will, in some cases, enable greater involvement in the research.

The maximum funding that can be sought for activities within the KE plan should not exceed 5% of the total full economic cost of the research grant application. NERC will pay 80% of the full economic cost of the KE plan, if funded.

5 Procurement procedure

5.1 Eligibility & Funding

This call is open to individuals and organisations eligible for NERC research grant funding. Please refer to the Research Grants Handbook for details (<http://www.nerc.ac.uk/funding/application/researchgrants>). Potential applicants should contact NERC well in advance of the submission deadline if they have any doubts concerning their eligibility to apply for a research grant from NERC.

Should the proposal contain multiple eligible Research Organisations, each Research Organisation will be separately awarded funds. The Consortium will retain ownership and management of the science programme, and NERC will expect a lead Research Organisation to act as co-ordinator.

The standard NERC research grant terms and conditions will apply to the award.

Applicants may bid for up to £2.75 million over three years for a single large collaborative research grant award. This limit applies to the **total cost to NERC** of the project (**not** the full Economic Cost). The total cost includes the KE plan, any project studentships and major facility costs (e.g. FAAM), but excludes the cost of high performance computing.

The funds are available to support both research costs and infrastructure investments; it is expected that no more than half of the available funds will be used to provide enhancements to sampling sites and new instrumentation. Applicants are encouraged to build on the facilities and equipment already available within the research community to maximise the science delivered.

5.2 How to Apply

Applicants may submit no more than one application as the lead Principal or a Co-Investigator, and one further application as a Co-Investigator at a lead Research Organisation or non lead Principal Investigator at a component Research Organisation in a joint application. However, it is our intention to fund only a single project.

Applications must be submitted using the Research Councils Joint Electronic Submission system (Je-S). To use this system, the applicant's Research Organisation must be registered as a Je-S user. Full

details are available on the Je-S website at <http://www.rcuk.ac.uk/je-s/>. Further information can also be obtained by contacting the Je-S Helpdesk by email at JeSHelp@rcuk.ac.uk or by telephone on 01793 44 4164.

Applicants must ensure that their application is received by NERC by 4pm on Tuesday 7 April 2009. Applicants should leave enough time for their application to pass through their organisation's Je-S submission route before this date. Any application that is received after the closing date, is incomplete, or does not meet NERC's eligibility criteria, will be returned to the applicant and will not be considered.

5.3 Assessment

In selecting a proposal for funding, NERC is seeking to meet a number of strategic objectives including:

- Fit to Specification
- Excellence – Science
- Excellence – Infrastructure
- Cost-Effectiveness
- Risk-Reward
- Standard of KE Plan

5.4 Timetable

Call published:	22 January 2009
Closing date for proposals:	4pm 7 April 2009
Funding decision communicated to applicants:	July 2009
Programme commences:	October 2009
Programme ends:	October 2012

6 Format and content of response

The Principal Investigators must submit form Je-SRP1 (NERC), together with the Case for Support.

The Case for Support will comprise:

- A. Previous Track Record** for each Research Organisation, not exceeding 2 sides of A4 for each Institution, covering the following points:
 - Provide a summary of the results and conclusions of recent work in the technological/scientific area that is covered by the research proposal. Include reference to both NERC and non- NERC funded work. Details of any relevant past collaborative work with other beneficiaries should also be given;
 - Indicate where the group's previous work has made an impact, such as contributions to the UK's competitiveness or to improving quality of life;
 - Outline the specific expertise available for the research at the host organisation and that of any associated organisations and beneficiaries. This may include the type of information for Principal Investigators and Co-Investigators that would normally be shown on CVs.
- B. a common Description of the Proposed Research**, not exceeding 16 sides of A4 (including all necessary tables, references and figures), addressing the following points:
 - Underlying rationale, scientific and technological issues to be addressed;

- Relevance to users and the potential scientific, practical and socio-economic benefits;
 - Specific objectives of the project, including their potential relevance to UK and international research work in the field, relevance to the call, and anticipated achievements and outputs, including datasets;
 - Methodology and approach;
 - Programme and/or plan of research;
 - Outline plan for the delivery of the required infrastructure, including proposed locations of sampling platforms and evidence of agreements for negotiating site access and enhancement, and details of new instrumentation required. An indicative budget of £500K for site enhancement and £750K for new instrumentation has been proposed. This should not be exceeded without strong justification, and where possible, applicants should seek to build on existing facilities and equipment;
 - Identification of data sets that the research will produce which will be of potential long-term value and which the NERC data centres will need to manage and make available to enable re-use after the end of the research. An indicative budget for data management activities should be included;
- C. **Justification of Resources** for all Directly Incurred Costs, Investigator effort, use of pool staff resources and any access to shared facilities and equipment being sought. It should also include full justification of all facility costs included as estimates on applications, and the costs of the Knowledge Exchange Plan. Up to an additional 1 side of A4 for each Research Organisation may be used for this purpose;
- D. a detailed **Description of Proposed Management Structures** and plans (for project, resource and data management), participant responsibilities, and scheduling chart (e.g. Gantt chart). Training and career development opportunities for personnel working on the project should also be identified in this section. This should not exceed 2 sides of A4;
- E. for each named research staff post and Visiting Researcher, a **CV** of up to 2 sides of A4 may be attached. CVs are not required for Principal or Co-Investigators;
- F. **Letters of Support** from each Project Partner to confirm that support and facilities will be made available for associated collaborations and co-funding (up to 2 sides A4 each). This is particularly important for proposed and secured partnerships to deliver the infrastructure component of the programme;
- G. Forms for any **NERC Facility** requested;
- H. **Price quotations** for equipment costing more than £25,000;
- I. a **Knowledge Exchange Plan** (up to 2 sides A4), detailing:
- Those who may benefit or make use of the research
 - How they might benefit and/or make use of the research
 - Methods for disseminating data/knowledge/skills in the most effective and appropriate manner

Full details of the requirements for KE Plans, and a suggested template, can be found on the NERC website at: <http://www.nerc.ac.uk/funding/application/keplans.asp>. The costs of knowledge exchange activities in the plan should not exceed 5% of the full Economic Cost of the grant and should be fully integrated into the proposal costings and justified in the

Justification of Resources section. This is a departure from current NERC policy for responsive mode where the KE Plan is costed separately to the proposal.

Where support is requested for a project studentship, the project studentship must be justified fully in the case for support. All costs for the student's travel and subsistence, consumables etc. must be itemised on the grant application form.

All attachments submitted through the JeS system, including the Case for Support, must be completed in single-spaced typescript of minimum font size 11 point, Arial font with margins of at least 2cm. References can be presented in a smaller font size provided it is sufficiently clear to ensure good quality reproductions. Applicants referring to websites should note that referees may choose not to use them. Any proposal in which the Case for Support does not comply with these specifications will be rejected. Applicants should avoid the use of colour graphs or pictures, which NERC cannot guarantee will be reproduced in colour for referees.

For a summary of which attachments should be common to all Research Organisations and submitted by either the lead only, or all components, please refer to section 253 (Summary of Requirements for Consortium Grant Applications) of the Research Grants Handbook (<http://www.nerc.ac.uk/funding/application/researchgrants/grantshandbook.pdf>).

7 Contact information

The contact points for queries are:

Nicky Lewis	nile@nerc.ac.uk	01793 411739
Amy Foxton	afox@nerc.ac.uk	01793 442594
Dr Caroline Culshaw	ccul@nerc.ac.uk	01793 442597

Natural Environment Research Council
Polaris House
North Star Avenue
Swindon
SN2 1EU

For queries about Je-S registration or technical submission of proposals, please contact the Je-S Helpdesk by email at JeSHelp@rcuk.ac.uk or by telephone on 01793 44 4164.