FOI Office	
From: Sent: To: Subject:	@nerc.ac.uk> 18 November 2014 09:44 Paul Younger RE: Request to review NERC Valuing Natural Capital in Low Carbon Energy Pathways Programme Grant -
Thank you – just let me kn	ow if you any have problems.
With best wishes,	
Sent: 17 November 2014 To: Subject: RE: Request to r	to:Paul.Younger@glasgow.ac.uk] 21:38 eview NERC Valuing Natural Capital in Low Carbon Energy Pathways Programme Grant - very busy at present, but still have this programmed for completion towards the end of
this week.	
From: [mailst Sent: 17 November 2014 To: Paul Younger Cc: Subject: RE: Request to r	
Dear Paul,	
	e review that you kindly agreed to do for me on the above grant application is next week, twanted to check with you that everything is okay and that you have access to everything
Please let me know if you	will have any problems meeting this date.
With best wishes,	
Sent: 14 October 2014 16	to:Paul.Younger@glasgow.ac.uk] :27 review NERC Valuing Natural Capital in Low Carbon Energy Pathways Programme Grant -

Best wishes

That's fine – no problem at all, and glad to be able to help the process,

From: mailto: @nerc.ac.uk]

Sent: 14 October 2014 13:39

To: Paul Younger Cc:

Subject: RE: Request to review NERC Valuing Natural Capital in Low Carbon Energy Pathways Programme Grant -

Importance: High

Dear Paul,

I know you were at the VNC workshop this summer and had to leave early. I hope you don't think it inappropriate that I sent you this review request as I see you did not submit a bid.

Let me know if you can help, if not I would welcome any alternative suggestions.

With best wishes,

From:

Sent: 14 October 2014 13:35

To: Paul.Younger@glasgow.ac.uk

Cc:

Subject: Request to review NERC Valuing Natural Capital in Low Carbon Energy Pathways Programme Grant -

Importance: High

Dear Professor Younger,

I am writing to you on behalf of the Natural Environment Research Council of the UK to ask for your help in the review process of a grant submitted to our **Valuing Natural Capital in Low Carbon Energy Pathways** research programme.

Natural capital includes the elements of nature that produce value to people, directly and indirectly, 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.

To address this, NERC is commissioning a £1.9m, five-year research programme - Valuing Natural Capital in Low Carbon Energy Pathways - with a consortium project planned to run between 2014-19. The programme will generate scientific evidence in the environmental domain to inform the development and management of low carbon pathways.

Further information on this programme can be found on our website: http://www.nerc.ac.uk/research/funded/programmes/valuingnaturalcapital/



If you agree to provide a review, you will receive electronic access to the application papers and referee guidance. This will consist of the scientific case for support and a summary of the finance requested by each institution involved in the application.

Your comments on the application as a whole, or on aspects relevant to your expertise would be welcomed. Please respect the applicants' confidentiality and intellectual property rights by not copying, quoting or otherwise using material from the application.

We would need you to send us your completed review by 24th November 2014. If you cannot make this deadline, but would be able to provide a review at a later date, please inform us as it may be possible to extend the deadline.

I would be most grateful if you could let me know as soon as possible whether or not you will be able to carry out this review. If you are unable to provide a review at this time, we would very much welcome your suggestions of alternative referees we could approach.

Thank you in advance for your help.

Best wishes,

Science and Innovation
Natural Environment Research Council
Polaris House
North Star Avenue
Swindon SN2 1EU
United Kingdom
Tel 01793
Home 01792
Fax 01793

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From: Sent:

Paul Younger 17 November 2014 21:38

To: Subject:

RE: Request to review NERC Valuing Natural Capital in Low Carbon Energy Pathways Programme Grant -

So far so good this week.

- I am very busy at present, but still have this programmed for completion towards the end of

Paul Y

From:

Paul Younger

Sent:

06 October 2014 15:42

To:

UPGro

Subject:

RE: UPGro 2014 Assessment Panel 22nd & 23rd October 2014

The obvious folk I used to know at Cranfield have since retired ... if I think of anyone else I'll let you know.

Paul

From: UPGro [mailto:upgro@nerc.ac.uk]

Sent: 06 October 2014 15:41

To: Paul Younger

Subject: RE: UPGro 2014 Assessment Panel 22nd & 23rd October 2014

Dear Paul,

Thank you for getting back to me so quickly, I appreciate that's its very short notice so I completely understand. Unfortunately s a Co-I on one of the applications. I shall go back to the drawing board

Kind regards



From: Paul Younger [mailto:Paul.Younger@glasgow.ac.uk]

Sent: 06 October 2014 15:38

To: UPGro

Subject: RE: UPGro 2014 Assessment Panel 22nd & 23rd October 2014

Dear

Unfortunately I am teaching on the Wednesday and committed to an Innovate UK project progress meeting on the Thursday, so can't help you I'm afraid. Not knowing who gas applied, I'm not sure who else to suggest, as clearly applicants can't sit in judgement. Perhaps

From: UPGro [mailto:upgro@nerc.ac.uk]

Sent: 06 October 2014 13:57

To: Paul Younger

Subject: UPGro 2014 Assessment Panel 22nd & 23rd October 2014

Dear Professor Younger,

I am writing on behalf of NERC to invite you to be a member of the Peer Review Moderating Panel for the DFID/NERC/ESRC programme on Unlocking the Potential of Groundwater for the Poor which will be meeting in London on Wednesday 22nd & Thursday 23rd October 2014 to consider the Full proposals submitted on Thursday 19th June 2014. I appreciate that this invite is very last minute, however we have been let down by another panel member at short notice.

The submission of full proposals is the final stage in an application process for major UPGro projects, following on from outline bids. The Moderating panels role will be to grade and rank the full proposals, with the top proposals being presented to the Programme Executive Board with recommendations to fund or reject.

The projects should address at least two of the three UPGro research themes: Understanding the Resource; Governance, Institutions and Access; and Impacts of Future Trends; and include a strong focus on both physical science and social aspects. The primary focus of the research is in Low Income Countries in SSA but research may be undertaken in Middle Income Countries (MIC) in SSA where there is a clear impact of the research on the poor and applicability to low-income countries. It is a requirement for the current call that linkages with SSA institutions are established. This should include both research institutions and the institutions where the intended users of the outcomes of the research, such as decision- and policy-makers. There should be a strong and clear role for developing country partners in the projects.

The meeting will be held over 2 days on Wednesday 22nd & Thursday 23rd October 2014, please let me know if you are available to attend the UPGro 2014 Moderating panel. There will be a maximum of 14 proposals being moderated at panel. I would be very grateful if you could respond to this invite as soon as possible.

If you are involved in any of the current UPGro 2014 proposals then please let me know.

Kind regards

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

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From:

Paul Younger

Sent:

11 September 2014 16:02

To:

Subject:

RE: NERC: Invitation to join the Moderating Panel for the Security of Supply of Mineral

Resources Programme

Dear

Unfortunately I teach on Tuesdays and Wednesdays in autumn term, so would not be able to attend the panel meeting.

Best wishes

Paul Younger

Professor Paul L Younger FREng Rankine Chair of Engineering, and Professor of Energy Engineering School of Engineering James Watt Building (South) University of Glasgow GLASGOW G12 8QQ, Scotland

Tel. 0141 330 5042 Mob. 07711 391 066

Email: paul.younger@glasgow.ac.uk

Web: http://www.gla.ac.uk/schools/engineering/staff/paulyounger/

From: [mailto: @nerc.ac.uk]

Sent: 10 September 2014 16:09

To: Paul Younger

Subject: NERC: Invitation to join the Moderating Panel for the Security of Supply of Mineral Resources Programme

Dear Professor Paul Younger,

I am contacting you on behalf of the Natural Environment Research Council (UK) to invite you to join the moderating panel which will meet to consider proposals submitted to the Security of Supply of Mineral Resources Programme (SoS Minerals).

As you will recall, In November 2013, thirteen groups were awarded 'catalyst grant' funding, following an open competition to submit proposal to the programme. The thirteen groups used the catalyst grants to develop their projects and build partnerships with industry for the next phase where we will fund large consortium grants of ~£2-3million. The catalyst grant holders have now submitted their proposals and they are currently being sent out for peer review. The next step will be for the moderating panel to meet on 11th and 12th November to moderate the proposals, interview the applicants and make recommendations about which grants to fund.

There is more information about the programme on our website: http://www.nerc.ac.uk/research/funded/programmes/minerals/ and I have attached the announcement of opportunity of the research grant call for your information.

Details:

Papers sent to panel: week starting 27th October 2014
Panel meeting and interviews: 11th and 12th November 2014

Venue: Best Western Hotel, London Heathrow

I hope that you will consider attending the panel and do get in touch if you need any further information.

Kind regards,





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From: Sent: Paul Younger 25 July 2014 13:06

To:

UPGro

Subject:

RE: Invitation to be a reviewer for UPGro (Unlocking the Potential for Groundwater for the

Poor)

Perhaps

or

From: UPGro [mailto:upgro@nerc.ac.uk]

Sent: 25 July 2014 12:24

To: Paul Younger

Subject: RE: Invitation to be a reviewer for UPGro (Unlocking the Potential for Groundwater for the Poor)

Dear Paul

Thank you for letting us know. If you have any suggestions for alternative reviewers that we could approach they would be gratefully received.

Best wishes,



From: Paul Younger [mailto:Paul.Younger@glasgow.ac.uk]

Sent: 24 July 2014 21:47

To: UPGro

Subject: RE: Invitation to be a reviewer for UPGro (Unlocking the Potential for Groundwater for the Poor)

Dear

I have checked and double-checked and have no record of this arriving before. I presume our over-zealous spam filters blocked it. I'm afraid I am just about to enter a period in which holidays and work-related travel in intertwine until the end of the first week in Sept, so I doubt I would be able to deal with this in the available time

... sorry.

From: UPGro [mailto:upgro@nerc.ac.uk]

Sent: 24 July 2014 08:50

To: Paul Younger

Subject: Invitation to be a reviewer for UPGro (Unlocking the Potential for Groundwater for the Poor)

Dear Professor Younger,

I am writing to follow up on a request to provide a review for the one of the proposals for the NERC Unlocking the Potential for Groundwater for the Poor (UPGro) programme. I would be happy to extend the deadline for the review until 15 August.

I would be very grateful if you could let me know if you are willing to provide a review.

Best wishes,

From: UPGro

Sent: 04 July 2014 11:44

To: 'Paul.Younger@glasgow.ac.uk'

Subject: Invitation to be a reviewer for UPGro (Unlocking the Potential for Groundwater for the Poor)

Dear Professor Younger,

I am writing to you on behalf of the Programme Executive Board (PEB) for the Unlocking the Potential for Groundwater for the Poor (UPGro) programme, to invite you to review one of the proposals for the latest UPGro grants call. The UPGro-2014 Grants call is for consortium research projects designed to deliver the evidence and innovative tools to enable developing countries in SSA, and their partners, to use groundwater resources in a sustainable way that can benefit the poor.

Full information about this grants call can be found at http://www.nerc.ac.uk/research/funded/programmes/upgro/news/ao2014full/.

If you are able to provide a review then please reply to this email and I shall arrange for the proposal to be sent to you electronically.

PI: Title:

Review deadline: 25th July 2014 (if this is a problem, please discuss with us directly)

If you would like to review this proposal via email rather than through JeS please let us know and we can email you the relevant documents.

As a reviewer, you have been selected as an expert in your field, and you are invited to use your professional experience and knowledge to assess the strengths and weaknesses of the proposal. These proposals are consortium grants, and it is critical for the programme that we have proposals reviewed by individuals of the highest possible calibre.

Due to the interdisciplinary nature of these proposals, you may only feel comfortable reviewing a specific aspect of the proposal. This is not a problem, and can be done by completing a partial review, and would still be incredibly valuable to us.

Attached to this email is the reviewer guidance for this call. Please read this carefully, and should you have any queries regarding undertaking this review, then please contact a member of the UPGro Secretariat by return to this email.

PLEASE NOTE: This Reviewer Guidance is specific to this call - if you are sent any alternative guidance from the Automated system please disregard it, and adhere to the guidance provided in the document attached to this email.

Please accept our thanks in advance for the time you are investing in the review process. If for whatever reason you wish to decline this invitation, then please discuss this first with the UPGro Secretariat in case there is anything we can do to allay your concerns, or facilitate your participation in reviewing. Additionally, if you are unable to review the proposal we would be very grateful if you could recommend any alternative reviewers.

Best Wishes,

Unlocking the Potential for Groundwater for the Poor (UPGro) Secretariat

+44(0)1793

Natural Environment Research Council (NERC) Polaris House North Star Avenue Swindon SN2 1EU UK

http://www.nerc.ac.uk/research/funded/programmes/upgro/

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1 Of Office	
From: Sent: To: Subject:	Paul Younger 22 July 2014 10:17 RE: Valuing Natural Capital Ideas Brokerage Workshop, 21/22 July 2014, Warwick AGENDA
Follow Up Flag: Flag Status:	Follow up Completed
Thanks	
Best wishes	
Paul Younger	nati
Professor Paul L Younger Rankine Chair of Engineer and Professor of Energy Engin School of Engineering Room 623c, James Watt B University of Glasgow Glasgow G12 8QQ SCOTLAND	eering
Tel. +44(0)141 330 5042	
Sent: 22 July 2014 09:57 To: Paul Younger Cc:	egow.ac.uk @nerc.ac.uk] ral Capital Ideas Brokerage Workshop, 21/22 July 2014, Warwick - AGENDA
Dear Paul,	
With best wishes,	
Sent: 21 July 2014 21:04 To:	.Younger@glasgow.ac.uk] ral Capital Ideas Brokerage Workshop, 21/22 July 2014, Warwick - AGENDA

Best wishes

Paul Younger

From: [mailto @nerc.ac.uk]

Sent: 16 July 2014 17:06

Subject: Valuing Natural Capital Ideas Brokerage Workshop, 21/22 July 2014, Warwick - AGENDA

Dear all,

Please find attached the agenda for the Valuing Natural Capital in Low Carbon Energy Pathways Ideas Brokerage Workshop next week in Warwick, 21/22nd July 2014.

For more information on the programme please visit the NERC website: http://www.nerc.ac.uk/research/funded/programmes/valuingnaturalcapital/

The Science and Implementation Plan can be downloaded on the 'Resources' section of this webpage. It would be very useful in advance of the workshop if you could read this and familiarise yourself with the programme's four science goals.

The meeting will take place at Scarman, Warwick Conferences: http://www.warwickconferences.com/our-venues/scarman

Please note that the nearest train station to the venue is Coventry, not Warwick.

If you have any questions in advance of the meeting please get in touch.

4My-mobile number is: should you have any difficulties travelling on the day.

See you next week.

With best wishes,

NERC Science Directorate

@nerc.ac.uk<mailtc @nerc.ac.uk>

Office: 01793 Home: 01792

www.nerc.ac.uk<http://www.nerc.ac.uk/>

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4

From:

Paul Younger

Sent:

16 July 2014 14:04

To: Subject:

RE: Valuing Natural Capital workshop 21/22nd July - information request



I'm drowning in deadlines this week, and this one slipped by me. If you are happy to go with the info from my form, that's fine by me – not least because I am in effect representing a triumvirate anyway.

Best wishes

Paul Y

From:

[mailto:

@nerc.ac.uk]

Sent: 10 July 2014 10:20

Subject: Valuing Natural Capital workshop 21/22nd July - information request

Importance: High

Dear all,

We aim to provide the workshop delegates with a booklet containing a brief summary of 'delegate information' from each of the attendees, please refer to the proforma attached. This is the first section of the expression of interest form that you used to apply to attend the workshop. We would like to offer you an opportunity to edit the information you provided in view of this different use. If you could please submit your revised EoI or the attached proforma by close of play next **Monday**, 14th July 2014. Alternatively we will use the information you provided on your original form.

Please do not submit more than one side of A4 in a reasonably readable font. Anything over the page limit will not be included.

A reminder that the workshop is taking place on 21/22nd July 2014 at Scarman, Warwick Conferences, Coventry: http://www.warwickconferences.com/our-venues/scarman

I will be sending the agenda for the meeting out next week but in the meantime please plan for a 10:00 start on the 21^{st} , finishing at 15:00 on the 22^{nd} .

With best wishes,

.

NERC Science Directorate

@nerc.ac.uk Office: 01793

Home: 01792

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FOI Off ce

From:

Sent:

To:

Paul Younger

Cc: Subject:

RE: Request to review NERC Valuing Natural Capital in Low Carbon Energy Pathways

Programme Grant -

Importance:

High

Hello Paul,

Thank you, this is really helpful. I have added you to the electronic system for this application and you will be contacted in the next day or so with details of how to access the system.

I have given a return due date of Friday 21st November but the following Monday would be fine. Please let me know if you have any problems.

With best wishes,

From: Sent: To: Subject: UPGro <upgro@nerc.ac.uk>
06 October 2014 16:22
Paul Younger
RE: UPGro 2014 Assessment Panel 22nd & 23rd October 2014

Thank you

Kind regards

From:

@nerc.ac.uk>

Sent:

10 September 2014 16:09

To:

Paul Younger

Subject:

NERC: Invitation to join the Moderating Panel for the Security of Supply of Mineral

Resources Programme

Attachments:

Minerals Research Grant AO.pdf

Dear Professor Paul Younger,

I am contacting you on behalf of the Natural Environment Research Council (UK) to invite you to join the moderating panel which will meet to consider proposals submitted to the Security of Supply of Mineral Resources Programme (SoS Minerals).

As you will recall, In November 2013, thirteen groups were awarded 'catalyst grant' funding, following an open competition to submit proposal to the programme. The thirteen groups used the catalyst grants to develop their projects and build partnerships with industry for the next phase where we will fund large consortium grants of ~£2-3million. The catalyst grant holders have now submitted their proposals and they are currently being sent out for peer review. The next step will be for the moderating panel to meet on 11th and 12th November to moderate the proposals, interview the applicants and make recommendations about which grants to fund.

There is more information about the programme on our website: http://www.nerc.ac.uk/research/funded/programmes/minerals/ and I have attached the announcement of opportunity of the research grant call for your information.

Details:

Papers sent to panel: week starting 27th October 2014

Panel meeting and interviews: 11th and 12th November 2014

Venue: Best Western Hotel, London Heathrow

I hope that you will consider attending the panel and do get in touch if you need any further information.

Kind regards,





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Security of Supply of Mineral Resources Announcement of Opportunity – Call for Research Proposals

Call open: 22nd May 2014

Closing date: 16:00 GMT on 17th July 2014

Summary

Proposals are invited for submission to the Security of Supply of Mineral Resources research programme (SoS Minerals).

This call is for Large grant proposals to address the two scientific objectives of the programme:

- 1. Understand E-tech element cycling and concentration in natural systems
- 2. Understand how to predict and mitigate the environmental effects of extraction and recovery of E-tech elements.

The focus of the Programme is on the following E-tech elements: cobalt, indium, gallium, heavy rare earth elements, neodymium, selenium and tellurium.

Proposals are invited from holders of SoS Minerals Catalyst Grants only.

The closing date for proposals is 16:00 GMT 17th July 2014

Background

The consumption of most minerals and related metals has increased steadily since World War II, and it is likely that demand will continue to grow in response to the burgeoning global population and the inexorable spread of prosperity across the world especially in the BRIC economies. At the same time, global action to protect the environment and to mitigate and adapt to increased atmospheric CO_2 is demanding significant changes in the way we generate and use energy. These include an increase in the amount of energy produced from renewable resources, including wind and solar; a growth in the use of electric and hybrid vehicles; and increasing energy efficiency of electronics in both industrial and domestic use. However, the environmental technologies and applications that will allow for cleaner energy and more efficient energy usage depend on a range of raw materials (Etech elements, e.g. cobalt, indium, gallium, heavy rare earth elements, neodymium, selenium and tellurium) that are primarily provided by mining. This initiative will provide the research capacity and evidence base to reduce, not increase, supply risk of these minerals and elements, governed by the imperative to decrease environmental impact.

The variety and amount of E-tech elements needed in the future is difficult to predict accurately, given rapid developments of environmental technologies, but already some elements are in short or disrupted supply for various reasons: scarcity at economically recoverable grades; difficulty of recovery; environmental impacts of mining; political/strategic control of exports; and rapid growth in demand. Furthermore, the EU is almost wholly dependent on imported supplies, from a small number of sources, and this is currently compounded by low substitutability and recycling rates (commonly <1%). Unlike the major industrial metals, such as iron and copper, only in the last two decades have widespread applications for many of the E-tech elements become important.

Historically, therefore, less attention has been paid to their exploration, mining, processing, recycling and substitution.

The global security of supply of E-tech elements can be significantly improved by locating new resources, better understanding the abundance and distribution of E-tech elements in existing ore deposits and by improving the processes that recover them from primary ore. Recovery of the E-tech elements will require new mines, or new processes at existing mines, and this will generate additional environmental impacts, including greenhouse gas emissions. Thus, in order for the E-tech elements to be environmentally beneficial, in production as well as use, the full impacts of their exploitation must be understood. In many cases, E-tech elements are by-products of more abundant commodities within an ore body; therefore, reducing the environmental impact of extracting the entire ore body is needed.

In order to maintain a secure, environmentally and socially sustainable supply of E-tech elements, research is needed now to improve our understanding of how they are transported, concentrated and deposited into potentially exploitable resources. This will lead to a broader and larger resource base, resulting in a greater and more flexible supply of raw materials. In addition, research is needed to quantify and mitigate the environmental impacts of the exploitation of new and existing resources of E-tech elements, both as primary and by-products. Although the technologies they support may be environmentally benign, the production of those technologies may contain significant "embedded" negative environmental impacts. Improving extraction and processing is vital to the sustainability of environmental technologies.

To tackle the challenges presented, the SoS Minerals Expert Group developed two overarching scientific goals:

- 1. Understand E-tech element cycling and concentration in natural systems;
- 2. Understand how to predict and mitigate the environmental effects of extraction and recovery of E-tech elements.

The programme will deliver evidence that will inform decision makers on ways to minimise the impact on the environment of exploring for and exploiting E-tech element resources, as well as ameliorating the extraction process. This will be achieved through coordinated research projects targeting novel research into high priority E-tech elements, their environmental context and wider implications of their extraction and recovery. The programme will develop an interdisciplinary community building on UK strengths, linking to industry and related international initiatives.

Strategic Context

Environmental technologies are an attractive route to reducing carbon dioxide emissions to the atmosphere and developing the global green economy. However, these new technologies are significantly and rapidly increasing our use of a range of elements – the E-tech elements – which, coupled with limited availability of material for recycling, are generating a new set of technological, commercial, political and environmental challenges concerning their supply. These challenges are recognised to be international in dimension and have generated a number of high-level investigations into the relationship between economic importance of an element or mineral and its vulnerability to supply disruption.

These studies have identified a range of elements/minerals that may be at risk of supply disruption. These have been variably termed critical/strategic metals/minerals/materials. Though there may be some debate over what is the correct terminology to use and the preferred methodology for assessing supply risks, all reports identify these as a set of elements that include the lanthanides (Rare Earth Elements), some speciality and transition metals, plus several semi-metals in groups IV, V and VI of the periodic table.

On a broader scale, refining ores generates a globally important carbon footprint, e.g. over 4% of global greenhouse gas emissions arise from iron ore production and refining. Innovative and cross-disciplinary science is needed to address the environmental challenges that will result from increasing mineral exploitation in a low-carbon context. The SoS Minerals programme will build in the rising demand for E-tech elements into strategies to foster the environmental optimisation of extraction methods to limit the risks of a consequent rise in CO_2 emissions. It would be self-defeating if winning the elements cost more environmentally than their subsequent utility.

Innovation and cross-disciplinary science is needed to address the environmental challenges that will result from increasing mineral exploitation in a low-carbon context. NERC's SoS Minerals programme has been developed to elucidate and meet these challenges.

Transport and concentration of E-tech elements in the Earth's crust have not received the attention of the major industrial metals: their geoscientific research base is relatively low, and the environmental impacts of their exploitation poorly known. In addition, reduction of environmental footprint, including becoming more energy and resource efficient, is a key aim for the wider mining community.

The SoS Minerals programme was commissioned to deliver research to address some of the key challenges within the NERC Sustainable Use of Natural Resources (SUNR) strategic theme, one of the seven science themes within the previous NERC Strategy 'Next Generation Science for Planet Earth' (2007-2012). For the SUNR theme, the strategic objective was to provide the science to optimise the use of renewable and non-renewable natural resources whilst living within the Earth's environmental limits. To deliver this, investment in science was targeted to bring together and advance understanding of the entirety of processes and consequent outcomes of natural resource use on terrestrial, freshwater and marine systems and on feedbacks to the atmosphere.

The first phase of the SoS Minerals programme was funded jointly by NERC and EPSRC. It funded Catalyst Grants and the Mineral Resources Network (run by the Environmental Sustainability Knowledge Transfer Network). The second phase will fund up to £7 million in Research Grants in the UK. In addition, for projects that are developed with researchers in São Paulo there will be matching funds, available from the São Paulo Research Foundation (FAPESP), to fund the Brazilian component of the project. The research will involve interdisciplinary teams, working in partnership with industry and enabling international exchange of research ideas, personnel and activities. The direct involvement and contribution of industrial partners will be a requirement.

Scope of the call

Up to £7m (80% FEC) is available for this call from NERC and EPSRC to fund 3-4 projects. There will be matching funds available from FAPESP for bilateral research undertaken with researchers in São Paulo. The NERC and EPSRC funding contribution will be 80% FEC. Indexation at the prevailing rate will be applied at the time of award. FAPESP will match funds, excluding the amount directed to the payment of salaries on the UK side and considering the balance of the research effort on both sides. Payment of salaries is a counterpart of the Higher Education and Research Institutions in the State of São Paulo.

All applications must address the science priorities and **both** of the goals stated in the programme's Science and Implementation plan¹:

¹ See the full Science and Implementation Plan under 'Background & objectives' at http://www.nerc.ac.uk/research/funded/programmes/minerals/

- 1. Understand E-tech element cycling and concentration in natural systems.
- 2. Understand how to predict and mitigate the environmental effects of extraction and recovery of E-tech elements.

All applications must be **interdisciplinary** and must involve at least one **project partner from industry**. Each partner must make a significant financial or in-kind contribution and applications must include a letter of support from each project partner, specifying the contribution.

Proposals may request funding for up to 4 years.

Eligibility

This call is only open to SoS Mineral Resources Catalyst Grant holders. NERC reserves the right to open a second call to the wider community if the applications do not meet the excellence and fit to scheme criteria or do not cover the scope of the programme satisfactorily.

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.

International collaboration

In addition to any individual international collaborations secured during the catalyst phase of the programme, applicants should consider international partnerships through, for example, working with researchers funded by CSIRO, Australia and with Brazilian researchers through the RCUK lead agency agreement with FAPESP.

FAPESP

Collaborative proposals between UK and Brazilian (São Paulo) researchers through the lead agency agreement RCUK has with FAPESP will be accepted on this call. To FAPESP, submissions must fall in the realms of the Thematic Project Awards conditions (find examples <a href="https://examples.ncbi.nlm.nc

The conditions for the lead agency agreement may be found at:

http://www.rcuk.ac.uk/international/funding/collaboration/rcukfapespmou/or

http://www.fapesp.br/en/5339

(See the Application Process section for how to apply with FAPESP collaborators.)

National Capability

NERC has significant infrastructure and expertise in its National Capability². Applicants must explore whether their proposal has links or relevance to any of the NERC Research Centres, Services and Facilities. From 2013 onwards, use of NERC Facilities in Research Grants must be formally costed in the application, in consultation with the relevant Facilities.

² http://www.nerc.ac.uk/research/sites/facilities/ and http://www.nerc.ac.uk/research/sites/centres/

Capital Equipment costs

The threshold for individual items to be classed as equipment is £10,000 (inclusive of VAT). For items of equipment costing between £10,000 and the OJEU threshold value (for Schedule 1 Services), additional information is required in the Justification of Resources, including evidence of an evaluation of the use of existing relevant capital assets. Proposals requesting single items of equipment costing more than the OJEU threshold value (for Schedule 1 Services) must be accompanied by a business case (up to 2 sides of A4 outlining the strategic need for the equipment). All applicants intending to include a business case for equipment in a research grant proposal must notify NERC at least 1 month prior to proposal submission. The current OJEU threshold value (for Schedule 1 Services) at the time of application applies and can be found at: http://www.ojeu.eu/Threshholds.aspx. The thresholds apply to individually capitalise-able assets, rather than by accumulating the value of a number of assets, except where individual assets are clearly intended to be used together as a combined asset. These thresholds apply during the application process as the trigger to determine which application process needs to be followed. They do not impact the procurement process when organisations will need to conform to the OJEU tendering limits that apply to their organisation.

Research Organisations are required to make a contribution towards the cost of any equipment and this is expected to be at least 50% of the full cost. Proposals should cite the full cost of the equipment, confirm the % being required from NERC and provide confirmation that the remaining funds have been secured in the Justification of Resources or business case. The previous situation, where equipment valued up to £50,000 was funded at 80%, with any equipment above £50,000 funded at 100%, no longer applies.

The requirement for additional justification or a business case will not apply to equipment to be used for instrument development. A proposal or group of proposals forming a single project will be classed as instrument development where it is wholly or mainly focussed on creating a novel instrument, or will substantially improve research capability not available using any existing instrument, or will substantially improve research capability beyond what currently exists, in a way that opens up significant new scientific opportunities. Instrument development might involve the construction of a wholly new instrument from its basic components or it might involve substantial modification of an existing instrument. Finally it might involve the integration of two or more existing instruments into a new combined one. In this latter case the proposed integration would need to be technically non-trivial and lead to a capability significantly beyond that of using the component instruments independently. The expectation is for the Research Organisation to contribute at least 50% of the cost, NERC will consider funding up to 100% of instrument development where the potential for Research Organisations to contribute to the costs of instrument development is limited.

The procurement of equipment, consumables and services, including maintenance, must comply with all relevant national and EU legislation and the Research Organisation's own financial policy and procedures. Accepted best practise in the higher education sector must be observed. For all equipment and services where the contract value is more than £25,000 (excluding VAT), professionally qualified procurement staff must be consulted before the procurement process begins and, where appropriate, at the market research stage. They must approve the order/contract

before it is placed with a supplier. Additional documentary evidence for the estimated cost (e.g. supplier's written quote, specialist advice) should be included. For all items of equipment requested with a value over the OJEU threshold value, three equipment quotations must be provided. Where you believe that there are less than three potential suppliers for an item you should explain this in the Justification of Resources attachment and upload 2 blank documents as equipment quotes. For items of equipment which cost less than the OJEU threshold but more than £25k, at least one quotation and up to three can be uploaded.

Data Management

The Research Councils believe that data generated from the research they fund is a valuable long-term, public-good resource³. 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 Research Council policy that data must be managed effectively from the time of generation onwards. Grant-holders are also required to lodge with NERC a copy of the data resulting from the supported research when it is completed, together with documentation/metadata describing these data.

Applicants are required to submit an outline data management plan as part of the case for support, to identify the data sets likely to be made available to NERC Data Centres for archiving and reuse at the end of the grant. Guidance on completing this is available at http://www.nerc.ac.uk/research/sites/data/

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 proposal.

The delivery of the overall programme objectives necessitates effective exchange of data between the teams involved and this will be facilitated by the National Geosciences Data Centre. Well-defined protocols for the exchange of data will therefore be required at the start of the programme, with agreement on data formats and timely delivery by Principal Investigators.

Studentships

All proposals must include 4-5 Associated Studentships. NERC will fund 50% of each studentship and applicants must include these costs as part of their total requested funds. The remaining 50% must be match-funded 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), along with details of the training and supervision to be provided.

Studentships do not need to address both goals of the programme. Each studentship should constitute a distinct project providing added value to the parent large grant. The main large grant research should still be viable without the studentships and should have distinct objectives that are not reliant on any of the requested studentships.

The student is expected to be able to develop novel research ideas while benefiting from working in a group environment and as part of a student cohort. NERC will not accept proposals where a

³ http://www.nerc.ac.uk/research/sites/data/policy/

student is the only dedicated research/staff member on a grant, including individual component grants of joint proposals.

An Associated Studentship includes the student's maintenance grant and university fees. These must be requested on the proposal form as an Exceptions cost and will be paid at 100% fEC. All students must receive the minimum research council stipend (http://www.rcuk.ac.uk/skills/training/) but we would encourage this figure to be increased from other funding sources. Additional costs should be requested for items such as fieldwork expenses, conferences and consumables, as Directly Incurred costs and will be paid at 80% fEC. Applicants may request funding for up to 42 months. No further funding is available for associated studentships beyond that requested on the grant.

All studentships must meet 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 knowledgesharing 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. NERC funding goes to the right of 'best-fit' student: the individual whose previous training, experience and skills best suit the type of training being undertaken.

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

As part of the programme there will be summer schools and/or training events for PhD students to enhance the training experience and encourage knowledge exchange. Applicants must plan to host at least one summer school for the entire student cohort within the Minerals programme, and allocate appropriate resources within their proposal to support such training as well as the development activities of their own studentships (including attendance at annual summer schools held by other consortia). All costs requested by each project to run summer schools should be justified and claimed within the project budget.

The aim of these activities is to support an effective and active cohort of students benefitting from training associated with working in this large integrated programme, and also from generic doctoral training within their host institutions. Applicants are therefore also encouraged to seek and identify additional studentships, funded from outside the programme, to augment the student cohort associated with the programme. The Science Coordination Team (see **Reporting, Governance and Programme integration** section below) will be responsible for overseeing the student cohort and ensuring that students do not become isolated. It will also be the Science Coordination Team's responsibility to coordinate summer schools to avoid duplication or clashes of activities.

Reporting, Governance and Programme Integration

All successful applicants will be expected to interact with the programmes' Science Coordination Team (SCT) and the Minerals Network throughout their projects and to be involved in programme-level activities. There will be regular programme-level meetings during the term of the grants (a kick-off meeting at the beginning of the grants, annual progress meetings over the active years of the grants, summer schools (one run by each consortium) for the entire student cohort and a finale at the end of the grants). The SCT will organise the kick-off meeting, finale and the annual progress meetings but applicants will organise the summer schools. Applicants should allocate funds in their

proposals for travel and subsistence to all of these meetings and for organising and holding one summer school for all students funded through the SoS Minerals Programme.

All proposals must include milestones and deliverables to ensure that the SCT can monitor project progress and programme delivery. The SCT will request regular project updates, including information about studentships and partnerships to enable programme reporting.

In order for NERC to manage performance against its Strategic Objectives and Delivery Plan and report to the Department for Business, Innovation and Skills (BIS) and NERC Council, suppliers of strategic research are required to report regularly on the outputs and outcomes they have been commissioned to deliver. The PI will therefore be required to:

- keep their outputs and outcomes updated through inputs to the RCUK Research Outcomes
 System (ROS)
- complete additional reporting requested by the SCT and Programme Executive Board (PEB) –
 for example, reports on progress against milestones and deliverables.

Knowledge Exchange and Impact

Knowledge Exchange (KE) is vital to ensure that environmental research has wide benefits for society, and should be an integral part of any research. All proposals are required to identify their impact activities through the Pathways to Impact section, with associated delivery costs. The plan should identify those who may benefit from or make use of the research, how they might benefit or make use of the research, and methods for disseminating data, knowledge and skills in the most effective and appropriate manner.

The SCT will be responsible for impact activities at the programme level, and projects should consider how their proposal might contribute to impact at this level.

Consortium agreements

Principal Investigators from funded proposals will be required to submit a consortium agreement within six months of receiving the award letter. The agreement must be signed by all partners and must detail how and when data and other outputs arising from publically funded research will be made publically available.

Application Process

Closing date: 16:00 GMT 17th July 2014

The format for grant applications is the same as the NERC's 'Large Grants proposals' under the Discovery Science funding mode and applicants should refer to details in the NERC Grants Handbook before applying⁴.

Full proposal applications must be submitted using the Research Councils' Joint Electronic Submission system (Je-S).

To use the Je-S system, the applicant's Research Organisation must be registered as a Je-S user. Full details are available on the <u>Je-S website</u>. Further information can also be obtained by contacting the Je-S Helpdesk by email at <u>JeSHelp@rcuk.ac.uk</u> or by telephone on 01793 444164.

⁴ http://www.nerc.ac.uk/funding/application/howtoapply/forms/grantshandbook.pdf

Applicants must ensure that their application is received by NERC by 16:00 GMT on the closing date. Applicants must therefore 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 the eligibility criteria as outlined in this document, will be returned to the applicant and will not be considered.

All attachments submitted through the Je-S 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.

Note that on submission to council all non PDF documents are converted to PDF and the use of non-standard fonts may result in errors or font conversion, which could affect the overall length of the document. Additionally where non-standard fonts are present, and even if the converted PDF document may look unaffected in the Je-S System, when it is imported into the Research Councils Grants System some information may be removed. We therefore recommend that where a document contains any non-standard fonts (scientific notation, diagrams etc), the document should be converted to PDF prior to attaching it to the proposal

Proposals involving multiple research organisations may be submitted as joint proposals and there is no limit on the number of components. NERC will expect the lead institution to act as co-ordinator

Each component of each application should include the documents detailed below.

- 1. The Proposal Form the proforma provided in Je-S (see the grants handbook⁵ for details of which parts of the form are completed for all components and which only need to be submitted by the lead component of the proposal).
- 2. CV a CV should be attached for named research staff (including Principal investigator, Co-Investigators, Researcher co-investigators and Visiting researchers, up to 2 sides A4 each).
- 3. **Facility Form** for use of NERC facilities (Ship-time/Marine Equipment, Antarctic Logistic Support, HPC use over 38MAU in one year.)
- 4. **Technical Assessment** for use of other NERC facilities, to include a quote from the relevant facility. See the following link for a list of facilities for when this form is required. http://www.nerc.ac.uk/research/sites/facilities/apply/facilities-requiring-technical-assessment.pdf
- 5. **Equipment** Any equipment costing over £25,000 must be supported by three quotations and, for equipment over the OJEU limit, a business case (up to 2 sides A4) must also be submitted.

The lead component of the proposal should also submit the documents listed below.

6. Case for Support, which comprises 3 parts:

PART A – a common **Previous Track Record** (up to 3 sides of A4 in total across all research organisations involved) to cover the following points:

 provide a summary of the results and conclusions of recent work in the technological/scientific area that is covered by the proposal, including reference to both NERC and non-NERC funded work and giving details of any relevant past collaborative work with other beneficiaries;

- indicate where your previous work has contributed to the UK's competitiveness or to improving the quality of life;
- outline the specific expertise available for the research at the host organisation and that of any associated organisations and beneficiaries.

PART B – a common **Description of the Proposed Research** (up to 16 sides of A4 including any necessary tables, figures and references) to cover the following points:

- title of proposal;
- the principal aims and objectives and how they fit the objectives of the programme as described in the Science and Implementation plan;
- interdisciplinary collaborations and industrial partnerships involved in the project, end user and stakeholder engagement and how all these associations will contribute to achieving the objectives.

PART C - a description of the proposed **Management Structure and Plan**, including participant responsibilities and scheduling chart (up to 2 sides A4).

- 7. Outline Data Management Plan (up to 1 side 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.)
- 8. Justification of Resources (up to 4 sides of A4 in total, covering all research organisations involved).
- 9. Pathways to Impact up to 2 sides A4 addressing:
 - which users/stakeholders will benefit from the proposed research strategy developed by the partnership/network; and what benefits would be delivered;
 - how they might benefit and/or make use of the research;
 - methods for disseminating and translating the outputs of the partnership/network activities and proposed research strategy to target audiences and stakeholders.
 - suggestions for programme-level impact activities that can be implemented by SCT
- 10. **Project Partner Letter(s) of Support** a letter of support should be included for each named project partner (dated within last 6 months, up to 2 sides A4 each). (Select 'Project Partner Letter of Support' in Je-S; other letters of support are not required).
- 11. **Proposal Cover Letter** This is not mandatory and will not be seen by reviewers. It can be used to flag up any significant issues to NERC.

12. Non UK Components - FAPESP

The application should be submitted to NERC as a single proposal through Je-S but costs being requested from FAPESP should not be entered into the finance fields on the Je-S form. Instead, the Brazilian researchers must complete a FAPESP proposal form and consolidated costs form which the UK PI should then submit to NERC as 'other attachments' with the proposal through Je-S. NERC will then forward the entire proposal to FAPESP after the closing date. They will check the eligibility of Brazilian researchers, confirm the availability of funds should the proposal be recommended for

funding and supply NERC with the names of potential peer reviewers. The forms are available on the FAPESP website: http://www.fapesp.br/en/5339.

Assessment process

Full proposals will be internationally peer-reviewed and final funding recommendations made by a moderating panel, consisting of independent experts and members of the NERC Peer Review College. Applicants will be given the opportunity to provide a written response to peer review comments prior to the moderating panel and will be invited for an interview and presentation as part of the panel meeting.

The assessment criteria to be used for the full proposals will be as follows:

- Research Excellence
- Fit to Programme Requirements

Pathways to Impact plans will be considered by the moderating panel and graded as either 'Acceptable' or 'Unacceptable'. If the Pathways to Impact plan of a fundable proposal receives an 'Unacceptable' grade, the plan will have to be revised.

Feedback on proposals will be available on request.

Indicative Timetable:

Research Grant AO published

Closing date for applications Peer review

PI responses

Moderating Panel and interviews

Grants offered Grants start

Studentships start

Grants End

22nd May 2014

16:00 GMT 17th July 2014

18th July – 26th Sept 2014

1-17th October 2014

10-14th November 2014 (2 days)

December 2014 March 2015

October 2015

March 2019

Contacts

For queries regarding the application and assessment process please contact:

01793 @nerc.ac.uk

For queries regarding FAPESP participation please contact:

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