

EPSRC

Engineering and Physical Sciences
Research Council



Sandpit: Water Energy Food Nexus 19 – 23 January 2015

Location to be Confirmed

Call for Participants in a five-day Sandpit focused on the Water Energy Food Nexus

Closing date for applications: Midnight, 04 November 2014

Introduction

Securing a sustainable supply of water, energy and food is a key global issue. An increasing demand for land/food/energy/water, urbanisation and the need to limit exploitation of these resources in a move towards a more sustainable economy will increase the strain on local, national and international resources.

Our water, energy and food systems are interconnected. The nexus seeks to define the interdependencies between the different systems and improve our understanding and hence ability to effectively predict and manage them. This complex area presents multi-dimensional research challenges that require a multidisciplinary/interdisciplinary approach to addressing them.

In response to these challenges EPSRC, with input from other research councils, is running a sandpit in the water energy food nexus in order to try to engender a radical change in the research undertaken in this field in the UK.

This Sandpit is being led by EPSRC with the support of three RCUK cross-council programmes: Living with Environmental Change, The Energy Programme and the Global Food Security Programme; and the UK cross-government /industry UK Water Research Innovation Partnership.

We hope that this sandpit will enable UK researchers to perform transformative research on the water energy food nexus, potentially taking revolutionary approaches to the complex challenges in this area.

It is expected that £4 - 5 million of Research Council funding will be made available to fund research projects arising from this sandpit with additional computational modelling support from STFC.

The Research Challenge

The challenge identified for the sandpit is the **Water Energy Food Nexus**.

The sandpit will focus on understanding the interdependencies between water, energy and food security in the context of a more sustainable economy and changing environment.

Thinking at the Sandpit is expected to span a broad range of disciplines within a number of fields including, but not limited to, the engineering, mathematical, computational, economics, social, environmental and life sciences.

The broad aims of the sandpit are to generate research proposals which can:

- Build a better understanding of the problems and challenges posed by the water energy food nexus and allow these to be framed in a clearer way.
- Address the key research challenges that are identified.
- Identify a common language between disciplines.
- Facilitate interactions between key researchers and users in water energy food.

The nexus spans a broad range of research themes including, but not limited to; Complexity science; models, modelling and visualisation; infrastructure and interdependencies; food system resilience; multifunctional land use for food security; landscape scale to earth system modelling; data assimilation; ecosystem services; tipping points for exploitation of natural resources, natural capital and valuation, trade-offs and process studies.

It is not expected that these themes will operate in isolation as there are many issues which may be seen to cut across these themes.

Achieving the Sandpit aims will require the participation of leading researchers from a broad range of disciplines. Participants should be able to apply their knowledge, skills and experience across discipline areas to develop innovative research with the potential to deliver practical solutions to the challenges around the water energy food nexus.

It is expected that a number of cross-disciplinary research projects will be funded and will complement and link-in other activities in the area such as the ESRC Nexus Network and the NERC call on Valuing Natural Capital.

A Sandpit for Ideas

The concept of the IDEAS Factory is to organise interactive workshops (sandpits) on particular topics, involving 25-30 participants. The focus for this sandpit is the

Water Energy Food Nexus. Anyone eligible to apply for funding from Research Councils UK can apply.

The Sandpit Event

The sandpit will run over **five days** starting mid-morning on 19 January and finishing mid-afternoon on 23 January 2015.

As the sandpit progresses, participants will build up thoughts on how the identified 'challenges' may be addressed and develop their innovative ideas and activities into research projects. Projects will contain genuinely novel and speculative investigations that address new approaches to the water energy food nexus. The sandpit will include inputs from a variety of sources.

We are not defining the disciplines that should be represented at this sandpit; rather we are asking potential participants to indicate how their expertise can address the challenge of the **water energy food nexus**.

Applications are encouraged from diverse research areas across engineering, mathematical, economics, social, environmental and life sciences and need not have worked on the problem before. The emphasis will be placed on working across disciplines to foster new collaborations and bring new thinking to the problem.

Those selected to attend will receive further briefing before the event.

Approximately £4 -5 million has been allocated to fund collaborative research projects arising from the sandpit.

How will the Sandpit Work?

The sandpit is an intensive, interactive and free-thinking environment, where a diverse group of participants from a range of disciplines and backgrounds get together for five days, away from their everyday worlds, to immerse themselves in collaborative thinking processes in order to construct innovative approaches.

The process can be broken down into several stages:

- Defining the scope of the challenges
- Evolving common languages and terminologies amongst people from a diverse range of backgrounds and disciplines
- Sharing understandings of the challenges, and the expertise brought by the participants to the sandpit
- Taking part in break-out sessions focused on the challenges, using creative thinking techniques
- Capturing the outputs in the form of highly innovative research projects
- A funding decision on those projects at the sandpit using "real-time" peer review.

The sandpit will be an intensive event. For the well-being of participants, the venue offers opportunities for relaxation, and the timetable will include networking and other activities to allow a break from the detailed technical discussions.

The sandpit will be led by a Director, who will be supported by a team of mentors. We are pleased to announce that Professor David Butler of the University of Exeter will be acting as Director at this sandpit. The Director, mentors and a small number of stakeholders will attend the sandpit, but will not be eligible to receive research funding. Instead, their role will be to assist participants in defining and exploring challenges in this area. Furthermore, the Director and mentors will act as independent reviewers, making a funding recommendation on the projects emerging from the process through a “real-time” peer review process.

Who Should Attend?

Attendance of participants from an appropriate mix of relevant disciplines and backgrounds is crucial to the success of a Sandpit event.

Researchers from a diverse range of domains are encouraged to apply to attend this Sandpit, and we are not defining the disciplines which should be represented; rather we are asking potential participants to indicate how their expertise can address the challenge of the **water energy food nexus**. Applicants are not required to have current EPSRC funding, and we would welcome relevant expertise from people who traditionally apply to other Research Councils.

As a Sandpit is predicated on an ethos of innovative collaborative working, applicants must demonstrate both enthusiasm and appropriate personal attributes for cross-disciplinary collaborative research. Furthermore, the ability to develop and pursue a new approach will also be a key criterion in selecting attendees. Applicants should not feel limited by conventional perceptions of research performed in this field; the sandpit approach is about bringing together people who would not normally interact.

Participants are welcomed at any stage of their research career as long as they meet Research Council eligibility requirements to receive grant funding. This is an opportunity to share ideas and develop future collaborations.

This is an opportunity to share ideas and develop future collaborations, to define, understand and address some of the issues and problems around the water energy food nexus.

Location and Date

The date for this sandpit is **19 – 23 January 2015** at a UK location to be arranged.

An application will be taken to indicate participant availability for these dates and their commitment to attend if short-listed. Please be advised attendance for the full week is mandatory.

The environment will encourage free and open-minded thinking, vital for the purposes of this event and to the future of this area. Full details of the venue, how to get there and the accommodation arrangements will be sent to participants once they are confirmed.

It should be noted that all accommodation, refreshments, breakfast, lunch and dinner costs will be met by EPSRC. However, all travel expenses and incidental costs incurred while at the event must be met by the participant.

Applying to Participate in the Sandpit

Applications are invited from individual eligible academic researchers who feel that they can contribute to the Challenges in this research area. Approximately 25-30 participants will be selected to take part in the sandpit. In order to participate, the person applying must be available to attend for the full five day duration of the sandpit.

Applicants should complete an expression of interest (EoI) through smart survey by following this link:

<http://www.smartsurvey.co.uk/s/128789GIKJM?preview=true>

Your answers to these questions will be used to assess your application and convince a panel that you have the suitable skills and attitude to participate in this sandpit. No further documentation will be accepted.

Please note that we are not looking for your academic publication or research track record, but rather how you might approach multidisciplinary problems in this area.

The deadline for applications is **Midnight on 04 November 2014**. Applications should be submitted electronically. Please note that late submissions will not be considered.

Applicants will be informed of their selection for the sandpit event by the end of November 2014.

Assessing Applications to Attend

Applications to attend will be assessed by a Selection Panel consisting of the sandpit Director and mentors (including an organisational psychologist) looking to ensure a mix of disciplines and experience.

Their assessment will be based on the following criteria:

- The ability to develop new, adventurous and highly original research ideas;
- The potential to contribute to research at the interface between disciplines;
- The ability to work in a team;
- The ability to explain research to non-experts.

It is therefore important to give evidence of your fulfilment of these criteria in your application. Please ensure you fully complete the EoI survey form, as this is the **only** information on which potential sandpit attendees will be selected.

Please note that because of the large number of applications expected, we will not be able to give individual feedback to unsuccessful applicants.

If you have applied to or attended a sandpit previously you are not barred from applying or attending again. At the selection panel EPSRC will identify those applicants that have applied to sandpits previously and also those that have attended sandpits. These applications will be assessed against the selection criteria in the same way as all of the others. However, if in the last resort, two applicants are equivalent in terms of their technical expertise and personal qualities, preference will be given to the applicant that has not applied to or attended a sandpit before.

Post Sandpit Proposal Assessment

Following the sandpit, investigators involved in those projects recommended for funding will be tasked with writing a full proposal covering their intended activities as identified at the sandpit. The deadline for submission of full proposals is expected to be the **end of February 2015**. Proposals will be submitted via the Research Councils Joint Electronic Submission System (JeS). Further guidance on this part of the process will be available at the sandpit event.

The primary criteria used throughout the process of developing and assessing the final proposals will be how well proposals address the vision of the call.

We seek to support those that show:

- Novel, highly multidisciplinary research projects, clearly reflecting the distinctive opportunity for creating such projects that the sandpit provides.
- Clear evidence that the team have the capability to deliver their project as a high quality multidisciplinary activity, provided both through the presentation and their activity during the sandpit.
- Clear relevance to and the potential to make a distinctive and novel contribution to addressing the research challenges in this area.

It is planned that participants will be provided with funding decisions prior to departure from the sandpit, although these will be conditional upon the subsequent receipt of full, worked up proposal documentation. Final funding decisions will be made by **March 2015**.

Any collaborative project funded through this programme must have a signed Collaborative Agreement between the partners before the start of any grant. The Sponsors of the Programme attach great importance to the dissemination of research findings and the publishing of information about the research they support in the public domain. However, all dissemination and publication must be carried out in the manner agreed in the projects collaboration agreement.

For more information please see:

<http://www.epsrc.ac.uk/funding/managing/collabagreements/>

Please note that attendance at the Sandpit does not guarantee Research Council funding.

Key Dates

Call launched	03 October 2014
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Call close (expressions of interest)	Midnight, 04 November 2014
Participant Selection panel:	Expected mid-November 2014
Sandpit:	19 – 23 January 2015
Funding Application Deadline:	End of February 2015
Funding Announcement:	Expected End of March 2015

Equal Opportunities

EPSRC are committed to a policy of equal opportunities for our applicants for funding. No eligible applicant should receive less favourable treatment on the grounds of disability, sex or gender re-assignment, marital status, sexual orientation, pregnancy, race, colour, nationality, ethnic or national origin, religion or belief, or contractual and work roles.

If anybody has any concerns regarding our equal opportunities policies or any other aspect of the sandpit application process then please contact us to voice these issues. We constantly strive for absolute equality within our organisation, and we make every attempt to make the sandpits available to as many people as possible.

To help us achieve our aim of equality and fair treatment, an equal opportunities monitoring form is supplied at the end of this Call document. This form is OPTIONAL however; it will help us to monitor the effectiveness of our policy. The form will be removed from your application and the information you have provided will be used for statistical monitoring purposes ONLY.

Contacts

For further information, advice or queries regarding the application procedure please contact:

Dr Robert Felstead
 Senior Portfolio Manager for Infrastructure and the Environment
robert.felstead@epsrc.ac.uk
 01793 444051

or

Dr David Holtum
 Portfolio Manager for Living with Environmental Change Theme
David.holtum@epsrc.ac.uk
 01793 444441

Any queries regarding the submission of proposals through Je-S should be directed to:

The Je-S helpdesk
 Tel: 01793 444164
JeSHelp@rcuk.ac.uk

Please contact your university research office for help and advice on writing your proposal and allow enough time before the closing date for your organisation's submission process.