



## **Energy Programme – NSFC call for Collaborative Research between UK and China in Grid Scale Storage for Intermittency**

**Call type: Invitation for proposals**

**Closing date: 16.00 Tuesday 2 July 2013**

**Related themes: Energy**

### **Summary**

EPSRC, as part of the Research Councils UK Energy Programme, wishes to support collaborative research projects between the UK and China, in partnership with the National Natural Science Foundation of China (NSFC) in the field of “Grid Scale Storage for Intermittency”. A scoping workshop was held in China in April to identify the following themes as priority areas for this call:

- Advanced thermal and mechanical large scale energy storage from materials to devices
- Advanced electrochemical large scale storage from materials to devices
- Management, diagnosis and control of grid scale storage technologies
- Economics, policy and business models for grid scale storage
- Operation and control for balancing and stability of power systems with grid scale storage.

Proposals are invited from leading UK researchers wishing to develop contacts and joint projects with leading researchers eligible for NSFC support in China.

Up to £5M is available from EPSRC with matched equivalent resources from NSFC (up to 3M RMB per project). We expect to fund up to 5 projects through this call. The costs of the UK institutions will be met from EPSRC funds, and those for the Chinese partners will be met by NSFC.

**To be eligible for this call principal applicants must be the principal investigator or co-investigator of a current research council research grant** (current at the closing date of 2 July 2013). For each project application UK proposers must submit one joint form covering all the UK partners.

### **Background**

EPSRC, as part of the Research Councils UK Energy Programme, wishes to support collaborative projects in the field of Grid Scale Storage for Intermittency

as a key component of its strategy to foster closer scientific, technological and engineering links with China.

A joint UK-China workshop was held in Guangzhou, China in April 2013. At the workshop UK and Chinese academics learned about each others' research activities and identified potential priority areas for this call.

## **Funding available and call remit**

Proposals are invited focusing on grid scale storage for intermittency which address one or more of the following themes:

- Advanced thermal and mechanical large scale energy storage from materials to devices
- Advanced electrochemical large scale storage from materials to devices
- Management, diagnosis and control of grid scale storage technologies
- Economics, policy and business models for grid scale storage
- Operation and control for balancing and stability of power systems with grid scale storage.

The costs of the UK institutions will be met from EPSRC funds, and those for the Chinese partners will be met by NSFC.

Up to £5M is available from EPSRC with matched equivalent resources from NSFC (up to 3M RMB per project). We expect to fund up to 5 projects through this call.

Proposals should be for up to 3 years in duration, and may start from 1 January 2014. Proposers are encouraged to request resources to enable mobility of the investigators and researchers (travel and subsistence costs).

Applications including equipment should follow the EPSRC equipment process: <http://www.epsrc.ac.uk/research/ourportfolio/themes/researchinfrastructure/subthemes/equipment/>.

## **Call criteria**

In addition to the usual requirements proposals must:

- Demonstrate a true integrated, active and balanced partnership between research groups from both the UK and China.
- Show how the project will build new or substantially stronger links between UK and Chinese research groups.
- Involve personnel exchange between the UK and Chinese partners.
- Demonstrate transfer of knowledge between partners both ways throughout the project.
- Demonstrate the adventure and novelty of the research and its relevance to the broader relevant sustainable energy agenda.

- Demonstrate how the outputs of the project will be communicated to stakeholders in academia, industry and government, in both the UK and China.

## Eligibility

### UK eligibility

Standard eligibility requirements apply for this call. In addition:

**Principal applicants must be the principal investigator or co-investigator of a current research council research grant (current at the closing date of 2 July 2013).**

For information on the eligibility of organisations and individuals to receive EPSRC funding, see the EPSRC Funding Guide:

<http://www.epsrc.ac.uk/funding/guidance/fundingguide/>

As this call is a targeted funding opportunity provided by EPSRC, higher education institutions, and some research council institutes and independent research organisations are eligible to apply. A list of eligible organisations to apply to EPSRC is provided at:

<http://www.rcuk.ac.uk/research/Pages/Eligibilityforrcs.aspx>

### Chinese eligibility

Please contact NSFC for full details about their eligibility requirements for the Chinese partners for this call.

## How to apply

As this is a joint application to EPSRC and NSFC applicants must ensure that identical proposals are submitted by the closing date to both EPSRC and NSFC. The UK application should be submitted through the Research Councils' Joint electronic Submission (Je-S) System as detailed below. The NSFC application should follow the instructions in their call document.

A **UK based lead partner** and a **China based lead partner**, should be identified each of whom will lead on interaction with the funding agency in their respective countries.

The **UK based lead partner** should ensure the application is submitted via the Je-S system. If the UK application comes from multiple institutions then the application should be made on a single Je-S form from the UK based lead partner's host institution.

The **China based lead partner** will submit the identical proposal using the same common proposal format to NSFC by the stipulated closing date.

Proposals involving industrial collaborators are welcomed but costs for these partners will not be covered by NSFC/ EPSRC through this call.

**Please note:** We **do not** require full CVs, supporting technical annexes or separate lists of publications. Any excess material will be removed from your application. If you wish to refer to additional supporting information, please use a web link in your case for support but we cannot guarantee that the reviewers will

consider additional web material. Papers for the prioritisation panel (see further detail below) are converted and copied in greyscale/black and white, therefore colour material will not be accurately reproduced.

**Both applications should feature an identical case for support written in English.**

## **Submitting your application**

You should prepare and submit your proposal using the Research Councils' Joint electronic Submission (Je-S) System (<https://je-s.rcuk.ac.uk/>).

When adding a new proposal, you should select:

- Council 'EPSRC'
- Document type 'Standard Proposal'
- Scheme 'Standard'
- On the Project Details page you should select the 'UK China Grid Scale Storage' call.

Note that clicking 'submit document' on your proposal form in Je-S initially submits the proposal to your host organisation's administration, not to EPSRC. Please allow sufficient time for your organisation's submission process between submitting your proposal to them and the call closing date. EPSRC must receive your application by 16:00 on Tuesday 2 July 2013.

Guidance on the types of support that may be sought and advice on the completion of the research proposal forms are given on the EPSRC website (<http://www.epsrc.ac.uk/funding/guidance/>) which should be consulted when preparing all proposals.

## **Guidance on writing your application**

For each collaborative project proposal, the UK and Chinese investigators should prepare a single case for support in English that should be submitted to both EPSRC and NSFC as detailed above. This common case for support will allow for EPSRC and NSFC to obtain reviews of the same document, coming together in a single joint panel decision meeting. Applicants to EPSRC will also need to include a pathways to impact plan, a work plan, a justification of resources and a joint proposal form.

The submission to EPSRC should provide full budget information for the UK costs and must have a single proposal form covering all UK partners. The submission to NSFC should include full budget information for the Chinese costs. We expect that each nation will request for travel and subsistence only for their own investigators and researchers.

Proposals should follow the standard EPSRC format and guidelines on proposal preparation, but should also include information tailored to this call as specified below.

**Previous Track Record** (maximum 2 sides of A4). Please ensure you also outline the specific expertise of all the UK and Chinese applicants in this subject area, and the expertise available at the UK and China host organisations.

**Proposed Research and its Context section** (maximum 6 sides of A4). Please prepare according to the standard guidance but you should ensure that the case covers the whole project and team such as:

- Introduce the topic of research and explain its academic and industrial context, demonstrating how it relates to leading research in the UK, in China and worldwide;
- Detail why the research proposed is of national importance to both the UK and China.
- Describe the overall programme of work, indicating the research to be undertaken, and the milestones that will be used to measure its progress. You should describe the roles of each member of the research teams in the UK and China;
- Detail how the proposed project will be managed across the two countries, with particular demonstration of the added benefits to each party due to the collaboration.

**Pathways to Impact Plan** (up to two sides of A4). In this section you should describe how the potential impacts of the proposed research will be realised and this should cover the project as a whole.

**Work Plan** (one page diagrammatic work plan, for example, a PERT or Gantt chart). This should cover the project as a whole, detailing significant milestones and showing how different aspects of the project will link together and be managed.

**Justification of Resources** (up to two sides of A4). This should detail the resources requested for the UK-China project as a whole. You should justify everything requested on both proposals, so that peer reviewers have enough information on the project as a whole to understand why the resources requested are necessary for your proposed project.

**CVs** (up to 2 sides of A4 each) for named researchers, visiting researchers and researcher co-investigators

**Statements of support** from any project partners (no page limit).

**Joint proposal form** detailing the funding requested from NSFC and other details on the Chinese partners; this is available on both NSFC and EPSRC's website. This document enables reviewers to have an overview of the complete project. The form should be uploaded as an 'additional document' within Je-S.

For advice on writing proposals see:

<http://www.epsrc.ac.uk/funding/guidance/preparing/>

## **Assessment**

### **Assessment process**

The common case for support across the whole UK-China project allows for a joint peer review and a single panel process for this call.

Proposals will be reviewed using postal reviewing, carried out by EPSRC and NSFC, and those that receive supportive responses from the reviewers will then be considered by a single joint UK-China assessment panel. The reviewers and panel will be asked to assess the proposals against the fit to the call and the usual EPSRC assessment criteria. For those proposals going forward to the panel applicants will have the opportunity to respond to the UK reviewers before the panel meeting. The panel will rank the proposals using the assessment criteria and only the top ranked proposals will be funded. Please note that if two or more proposals are received in the same research area EPSRC and NSFC reserve the right to fund only the highest ranked of those proposals in order to avoid duplication of effort. Funding decisions will be made by December 2013.

### **Assessment criteria**

The proposals will be assessed on their fit to the scope of the call and to the standard EPSRC criteria as follows:

#### **Quality**

- The novelty, relationship to the context and timeliness
- The ambition, adventure, and transformative aspects identified
- The appropriateness of the proposed methodology

#### **Importance**

- National importance of this research on a 10-50 year timescale
- Contribution to other research areas, societal challenges, success of the UK economy, emerging industries

#### **Impact**

- The relevance and appropriateness of any beneficiaries or collaborators
- Whether appropriate routes and resources have been identified for dissemination and knowledge exchange

#### **Applicants' ability to deliver the proposed research**

- Appropriateness of the track record of the applicants
- Balance of skills of the project team, including academic and non-academic partners

#### **Resources and management**

- The effectiveness of the proposed planning and management
- Appropriateness and justification of the requested resources

#### **Fit to the call**

- Addressing one or more of the priority areas identified within the call.

- Demonstrated a true integrated, active and balanced partnership between research groups from both the UK and China.
- Showing how the project will build new or substantially stronger links between UK and Chinese research groups.
- Involving personnel exchange between the UK and Chinese partners.
- Demonstrated transfer of knowledge between partners both ways throughout the project.
- Demonstrated how the outputs of the project will be communicated to stakeholders in academia, industry and government, in both the UK and China.

## Guidance

### Guidance for reviewers

Reviewers should use the standard call review forms and in addition to assessing proposals against the EPSRC standard criteria also assess on how well the proposal fits the call based on the call criteria detailed above. Reviewers are asked to assess the project in its entirety and not just the research to be undertaken by the UK investigators.

Information about the EPSRC peer review process and guidance for reviewers can be found at: <http://www.epsrc.ac.uk/funding/peerrev/review/>

### Key dates

Activity	Date
Call opens	9 May 2013
Call closes	16.00 (UK time) Tuesday 2 July 2013
Panel meeting	October/November 2013
Awards issued	December 2013
Projects start on or after	1 January 2014

## Contacts

If you have any enquiries please contact:

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 Phone: 01793 444405

For queries or issues dealing with JeS please contact JeS helpdesk at [JeSHelp@rcuk.ac.uk](mailto: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.

## **Change log**

<b>Name</b>	<b>Date</b>	<b>Version</b>	<b>Change</b>
Jacqui Williams	May 2013	1	Initial version
Jacqui Williams	12 June 2013	1.01	Change of contact