Energy Programme – NSFC Call for Collaborative Research with China on Smart Grids and the Integration of Electric Vehicles

Call type: Invitation for proposals

Closing date: 16:00 Tuesday 22 January 2013

Summary
The Research Councils UK Energy Programme wishes to develop collaborative projects between the UK and China in partnership with the National Natural Science Foundation of China (NSFC) in the field of ‘Smart Grids and the Integration of Electric Vehicles’ under the following themes.

- Planning and Economics
- The Operation and Management of Networks with Electric Vehicles
- Battery Characterisation and Management
- Interface and Network Technologies

Further details on these themes can be found under ‘funding available’ below. Consortia should consider how their proposal makes the best use of available expertise in the UK, how it networks the UK community and how it positions UK activities against other international opportunities.

Up to £4M is available across the theme areas from the Energy Programme with matched equivalent resources from NSFC (up to 3M RMB per project). It is expected that between 3-4 proposals will be funded.

Proposals should include leading UK researchers wishing to develop contacts with leading researchers from NSFC institutes in China. Proposals will be assessed through expert Panel meeting which will take place in March 2013.

Background
The Research Councils UK Energy Programme wishes to develop collaborative projects in the field of Smart Grids and the Integration of Electric Vehicles as a key component of its strategy to foster closer scientific, technological and engineering links with China.

A joint UK-China workshop on Smart Grids was held in Xiamen, China in October 2012. At this workshop UK and Chinese academics to learnt about each others’ research activities and identified potential priority themes in this area for a proposed joint call by EPSRC and NSFC. Participants gave presentations on their
research and then discussed possible topics for joint projects. From these project topics a number of themes were developed as detailed under ‘funding available’.

**Funding available**

With an overarching focus on smart grids and the integration of electric vehicles, collaborative proposals are invited which address one of more of the following themes.

- **Planning and Economics**

With a focus on network planning for electric vehicle integration or on business models for electrical energy systems that include electric vehicles.

- **The Operation and Management of Networks with Electric Vehicles**

With a focus on the coordinated dispatch and control of power systems that combine electric vehicles and renewable energy sources. Or research into the provision of ancillary services from electric vehicles.

- **Battery Characterisation and Management**

With a focus on optimal battery charging strategies for the benefit of electric vehicles and the network. Or on battery life management for electric vehicle systems.

- **Interface and Network Technologies**

With a focus on reducing the network impacts of electric vehicles through the use of power electronics. Or research into devices for smart charging and system control.

The Energy Programme and NSFC expect to support projects from this call which address the ‘Challenges’ set out above. In addition to the usual academic requirements for a research project a successful application must:

- Be a joint activity involving research groups from both the UK and China.
- Involve personnel exchange between the Chinese and the UK partners.

Proposals should show a true joint partnership between UK and Chinese researchers. The added benefit of the collaboration to each party should be clearly demonstrated in the proposal.

Proposals must demonstrate the adventure and novelty of the research and its relevance to the broader relevant sustainable energy agenda. Proposals should also outline the applicants’ longer-term plans for working together with overseas partners and demonstrate how the outputs of the project will be communicated to stakeholders in academia, industry and government, in both the UK and China.

It is important to note that a key goal for this funding opportunity is that transfer of knowledge between partners occurs both ways and continues throughout the project.

Up to £4M is available across the theme areas for UK researchers from the Energy Programme with matched equivalent resources (up to 3M RMB per
project) from NSFC to support collaborative research opportunities with their eligible researchers. It is expected that between 3-4 proposals will be funded.

Proposals should be up to 3 years in duration, and must start on July 1st 2013. Resources requested can include mobility of the investigators (travel and subsistence costs), as well as those costs normally permitted such as investigator and research staff salary costs, equipment (subject to usual equipment rules, see http://www.epsrc.ac.uk/ourportfolio/themes/researchinfrastructure/subthemes/equipment/guidance/process/Pages/default.aspx) and consumables costs.

Eligibility

UK eligibility

Standard eligibility requirements apply for this call. In addition;

**Principle applicants must be the principal investigator or co-investigator on a current research council award (at the closing date of 22 January 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/apprev/basics/Pages/fundingguide.aspx

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 on Chinese eligibility.

How to apply

As this is a joint application to NSFC and EPSRC, applicants should ensure that identical applications are submitted by the closing date to NSFC and EPSRC. The UK application should be submitted through the UK Research Councils grant submission system which is known as ‘Je-S’ (further details on this below). The NSFC application should follow instructions listed in their call document. Applicants are to ensure that all documents are submitted to both NSFC and Je-S. For further details see the Je-S submission guidance below. The costs of the UK Institutions will be met from Research Councils funds, those for the Chinese partner institutions will be met by the NSFC. 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** will 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 partners host institution. The application must comply with current Research Council guidelines on format and content. Further information is available on the Je-S website (‘About Je-S’ on this page https://je-s.rcuk.ac.uk/Jes2WebLoginSite/Login.aspx) and in the EPSRC Funding Guide on
The EPSRC website
http://www.epsrc.ac.uk/funding/apprev/basics/Pages/fundingguide.aspx.

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 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 Smart Grids and Electric Vehicles’ call.

Details of which research organisations have registered to use Je-S are available from http://www.so.stfc.ac.uk/jes/jes1/RODetails(Web).pdf.

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 (UK time) on 22 January 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/apprev/Pages/default.aspx) which should be consulted when preparing all proposals.

Guidance on writing application
EPSRC is managing the proposal assessment process on behalf of the Energy Programme. For each collaborative project proposal, the UK and Chinese investigators should prepare a single case for support in English. This should be sent to both EPSRC and the NSFC. The UK lead researcher should submit the proposal to EPSRC using the standard Je-S process. The Chinese lead researcher should submit the proposal to the NSFC. This common case for support will allow
for separate peer review of the same document, coming together in a single joint panel decision meeting. Applicants to EPSRC will also need to include an impact plan, a diagrammatic work plan, and a Justification of Resources.

The submission to EPSRC should provide full budget information for the UK costs and should have a single proposal form. 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, research assistants and PhD students.

UK applicants are invited to submit a full application to the EPSRC by 16:00 (UK time) Thursday 22 January 2013. All proposals must show a balanced partnership between the UK and China. UK researchers should submit the common case for support, along with accompanying standard paperwork via Je-S to EPSRC. Chinese partner researchers should apply to the NSFC.

Proposals should follow the standard EPSRC format. The Case for Support is a self-contained description of the proposed research and contains two parts: ‘Previous Track Record’, and ‘Proposed Research and its Context’.

In the Previous Track Record (maximum 2 sides of A4) you should provide a summary of the results and conclusions of recent work in the technological/scientific area covered by your research proposal. Please also outline the specific expertise of the applicants in this subject area, and the expertise available at the UK and China host organisations.

In the Proposed Research and its Context section (maximum 6 sides of A4) you should include information on the background, programme and methodology, relevance to beneficiaries, and dissemination. In particular you should:

- 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;

- Identify the overall aims of the project and the individual measurable objectives against which you would wish the outcome of the work to be assessed;

- Detail the methodology to be used in pursuit of the research, and justify this choice;

- Explain why the proposed project is of sufficient timeliness and novelty to warrant consideration for funding;

- Detail why the research proposed is of national importance to both the UK and China.

- Describe the 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;
• Identify the potential impacts of the project and show who will be the likely beneficiaries of the proposed research;

• Indicate the proposed dissemination and technology transfer routes that will be used, and explain how the transfer of knowledge will take place to beneficiaries and the general public.

• Identify what mechanisms will be in place to identify, protect and eventually exploit any exploitable results which may arise from the research (include details of any specific collaborative agreement, where relevant).

• You should include any illustrations and lists of references within the 6-page limit of this section. They should not be submitted as separate annexes.

Along with your Case for Support you should also submit an 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.

You should also submit a 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.

You will need to include a Justification of Resources (up to two sides of A4) through the Je-S System. 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.

You should also include CVs (up to 2 sides of A4 each) for named researchers, visiting researchers and researcher co-investigators, and letters of support from any project partners (no page limit).

The joint proposal form detailing the funding requested from NSFC; This is available on both NSFC and EPSRC’s website. The lead partner(s) in China should be indicated on this document. This should be uploaded with under 'statements of support' within Je-S.

For advice on writing proposals see:
http://www.epsrc.ac.uk/funding/apprev/preparing/Pages/default.aspx

Please note:

Each proposal must have a single common case for support covering both the Chinese and UK partners. This should also include a brief summary of the resources in terms of people/consumables/time being put into the research by both partners. The common case for support will allow for a joint peer review and a single decision panel process for this call.
Assessment

Assessment process

Applications submitted to this call will undergo the following peer review process.

Once a joint application has been received at EPSRC and at NSFC the documentation will be sent to expert panel members which will have been chosen jointly by both funding bodies. Expert panel members will receive the complete proposal, guidance and a form that they will complete with their comments ahead of the joint panel meeting.

At the panel meeting the panel members will discuss their comments of the proposals and agree a ranking and recommendation for all proposals. Panel members will be drawn from the EPSRC College and NSFC. The panel will consider only the English language version of the case for support during this process.

A rank ordered list will be produced by the prioritisation panel and EPSRC and NSFC will then fund as far down the list as either quality or funds permit.

Funding decisions will be made by April 2013.

Assessment criteria

The proposals will be assessed following a procedure mutually agreed by EPSRC and NSFC. In particular, the proposals should demonstrate:

- That they promise excellent and innovative research.
- That the research proposed is nationally important to both the UK and China.
- How the project will build new or substantially stronger links between UK and Chinese research groups.
- Projects should aim to be true joint partnerships between the UK and China. This is an important feature of the call; where the project is judged to be one-sided this should be seen as a weakness.
- Projects should be formulated to demonstrate the added value of active collaboration between partner countries and not be potentially stand-alone: both sides of the project must be fundable in order for either side to provide funding.

Guidance

Guidance for Expert Panel members

Projects to be supported by EPSRC through this call should be assessed against the criteria on the EPSRC Standard Research Proposal Reviewer Form. **Expert panel members are asked to assess the project in its entirety and not just the research to be undertaken by the UK or Chinese investigators.**
In addition to assessing proposals against the standard criteria, reviewers are asked to comment on whether the following are addressed in the proposals:

- Projects should aim to be **true joint partnerships** between the UK and China. This is an important feature of the call; where the project is judged to be one-sided this should be seen as a weakness.

- Projects should be formulated to **demonstrate the added value of active collaboration with China**, and not be potentially stand-alone: both sides of the project must be fundable in order for either side to provide funding.

### Key dates

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<thead>
<tr>
<th>Activity</th>
<th>Date</th>
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<tr>
<td>Call open</td>
<td>15 November 2012</td>
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<tr>
<td>Call close</td>
<td>16:00 (UK time) Tuesday 22 January 2013</td>
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<tr>
<td>Panel</td>
<td>March 2013</td>
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<td>Projects start on</td>
<td>1st July 2013</td>
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**Contacts**

Any enquiries related to this call should be directed to:

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For queries or issues dealing with JeS please contact JeS helpdesk.  
Email: JeSHelp@rcuk.ac.uk  
Phone: +44 (0) 1793 44 4164

### Change log

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