

## Quick Reference

Please note that you must read the full Call document for guidance before submitting your proposal

### EPSRC-NSFC Call in Sustainable Power Supply

Call type: Invitation for proposals

Closing date for intent-to-submit: 23 July 2019 (UK time)

Closing date for full proposals: 16:00 on 10 September 2019 (UK/China time)

**Funding Available:** up to £4.0 million is available from EPSRC, with up to 3M RMB available per project from Chinese applicants from NSFC. A maximum of £800,000 (80% FEC) can be requested from EPSRC per proposal.

**How to apply:** UK Applicants must submit an intent-to-submit via the online form on the EPSRC website call page by 23 July 2019. Full proposals must be submitted by 10 September 2019, via Je-S in the UK.

**Assessment Process:** Proposals will undergo postal peer review and an assesment via a joint UK-China prioritisation panel, details below. Proposals need to be competitive on the UK and China side during the peer review process.

#### Key Dates:

Activity	Date
Call opening date	2 July 2019
Intent to Submit deadline	23 July 2019
Full Proposals deadline	16:00 on 10 September 2019
UK-China Prioritisation Panel	w/c 25 November 2019
Funding decision	Early December 2019
Grant start date	January 2020

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Engineering and Physical Sciences  
Research Council

## **EPSRC-NSFC Call in Sustainable Power Supply**

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**Related themes: Energy, Engineering, ICT**

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## Summary

This call is to fund proposals in the area of creating a sustainable power supply via intelligent and resilient control for smart urban energy systems, and grid scale storage at the city scale, **not** individual household or industries. This programme builds on a successful history of collaboration between EPSRC and NSFC across a range of topics.

The programme contributes to a broader strategic portfolio of energy research, including the UKRI Energy Programme and EPSRC's ambition to develop the next generation of technologies for the safe, secure, cheap and efficient provision of clean energy. Similarly NSFC supports a range of energy research both nationally and internationally and supports basic research that meets the objectives of the NSFC 13th five-year plan, including promoting innovation and economic development through research.

A scoping workshop was held in the UK on 03 and 04 June, that focussed on identifying the research challenges associated with creating a Sustainable Power Supply, which are of national importance to both the UK and China.

Up to **£4.0 million** is available to support UK researchers for approximately eight awards of three year duration, with up to 3M RMB available per project from Chinese applicants from NSFC. A maximum of £800,000 (80% FEC) can be requested from EPSRC per proposal.

All proposals must be received via **both** the NSFC e-submission system by **16:00 Beijing time**, and the Research Councils' Joint e-System (Je-S) by **16:00 GMT on 10 September 2019**.

The Intent to Submit must be submitted to EPSRC before **16:00 GMT on 23 July 2019**.

Please note that significant interest in this call is expected. Please bear this in mind and think very seriously when considering how and whether to develop your proposal, and only take it forward if you are very sure that it will be competitive at this level.

## Background

Proposals are invited between UK and Chinese research groups which form a collaborative and coherent programme of work across the two countries. Proposals must constitute a joined-up interdisciplinary and international programme of work.

This work builds on the excellent collaborative work carried out through a number of joint research activities by EPSRC and NSFC over the past few years. A workshop was held on 03 and 04 June 2019 to scope out the significant research challenges in the area of sustainable power supply, with the intent of steering the direction of this research call. Following on from discussions with EPSRC and NSFC, the research areas below were identified as priorities.

## Research Challenges

Proposals must consider issues at the city scale, **not** individual household or industries. Proposals should include at least **two** of the following seven research challenge areas (those markets i to vii) and applicants must be able to justify why their programme of work is of importance to UK and China:

### a) Intelligent and resilient control for smart urban energy systems

- i) Interconversion, flexible power conversion and control systems
- ii) Methods of handling and processing high volumes of energy data
- iii) Integration of energy systems, integration with legacy systems, and impact of locally decentralised systems
- iv) Smart system protection and fault restoration

### b) Grid scale storage

- v) Multivector distributed storage
- vi) Storage system performance, e.g. safety, efficiency, lifetime, reliability, fault tolerance
- vii) Energy storage “cloud” hardware (not software)

The following subject areas may only be included as a minor part of a broader package of research: heating and cooling, transportation, materials for energy efficiency and storage and digital technology for energy efficiency. This is due to these topics being funded extensively by a number of other recent calls at EPSRC.

The following subject areas will not be covered by this call: circular economy, robotics, cloud software for energy storage, markets and policy. This is due to these topics being funded extensively by a number of other recent calls at EPSRC or being out of the Energy theme’s scope.

It is worth noting that EPSRC has a number of existing major research investments relevant to this research area. This activity aims to build on these investments and advance UK-Chinese collaboration in this important research area. Proposals submitted to the call following this workshop should aim to collaborate with existing projects where appropriate, but should not duplicate research already underway through these or other projects.

For more information about EPSRC’s portfolio and strategies, see our website: <https://epsrc.ukri.org/research/ourportfolio/>

## Governance and networking

Each UK application must put aside at least £65K in their proposal earmarked to work with the other successful grant PIs to assemble a network. This network will help to develop the interface between researchers and the user community in government and businesses outside the programme membership, and to share research outcomes, data resources and best practice between the grants – all designed to maximise impact. This pot will also be used to fund a kick-off event

in year one and an impact event towards the end of the grants. These events should include key UK and Chinese stakeholders and the successful PIs should work with the EPSRC / UKRI China team for press coverage.

Once funded, the successful PIs must assemble a joint, independent, High Level Board. This will function to oversee the programme activities, offer an advice stream and to ensure maximum impact. Membership of this board must be approved by funders (EPSRC / NSFC) and funders must be invited to meetings.

Each project will need to provide a brief two-page report to this board, annually (kick-off, midterm and impact) and will be asked to provide case studies at the end of the project.

These will be grant conditions on successful proposals.

## **Funding available**

Up to **£4.0 million** is available from EPSRC for this call, with up to 3M RMB available per project from Chinese applicants from NSFC. It is expected that approximately eight projects will be funded. A maximum of £800,000 (80% FEC) can be requested from EPSRC per proposal. UK projects may be up to 36 months in duration. For each project there should be a single Je-S form submitted although the project can be multi-institutional. Each project must include at least one UK and Chinese academic.

Guidance on the types of support that may be sought from EPSRC is given on the EPSRC website (<https://epsrc.ukri.org/funding/howtoapply/>) which should be consulted when preparing all proposals.

Each UK application must put aside at least £65K in their proposal earmarked to work with the other successful grant PIs to assemble a network. (See Governance and networking).

## **Equality, Diversity and Inclusion**

The long term strength of the UK research base depends on harnessing all the available talent and the Research Councils have together developed the ambitious UK Research and Innovation Equality, Diversity and Inclusion Action Plan <https://www.ukri.org/files/legacy/skills/action-plan-edi-2016/>

In line with the UK Research and Innovation Diversity Principles, EPSRC expects that equality and diversity is embedded at all levels and in all aspects of research practice. We are committed to supporting the research community in the diverse ways a research career can be built with our investments. This includes career breaks, support for people with caring responsibilities, flexible working and alternative working patterns. With this in mind, we welcomes applications from academics who job share, have a part-time contract, need flexible working arrangements or those currently committed to other longer, large existing grants. Please see our Equality and Diversity webpages <https://epsrc.ukri.org/funding/equalitydiversity/> for further information.

## Equipment

Equipment over £10,000 in value (inc. vat) is not available through this call. Smaller items of equipment (individually under £10,000) should be requested in the Other Directly Incurred Costs heading.

For more information on equipment funding, please see:  
<https://epsrc.ukri.org/research/facilities/equipment/>

## Eligibility

All applications must be collaborations between UK and Chinese researchers. The UK team on a joint proposal may consist of researchers from more than one eligible UK research organisation.

In order to focus effort applicants are only permitted to be involved in a maximum of two proposals; as a Principle Investigator (PI) on one proposal and a co-investigator on another proposal or as a co-investigator on a maximum of two proposals.

Please ensure sufficient time to create Je-S accounts for Investigators who do not currently have one.

For information on the eligibility of organisations and individuals to receive EPSRC funding, see the EPSRC Funding Guide:  
<https://epsrc.ukri.org/funding/applicationprocess/fundingguide/>

A list of eligible organisations to apply to EPSRC is provided at:  
<https://www.ukri.org/funding/how-to-apply/eligibility/>

For the eligibility of the Chinese researchers, please refer to NSFC's guidelines and call document.

## How to apply

As this is a joint application via EPSRC and NSFC, applicants must ensure that joint 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.

The UK-based lead partner must complete an "intent to submit" form via the EPSRC's call page by **16:00** on 23 July 2019. This will require inputting the title, a brief description of the project, cost at 80% FEC, UK and Chinese investigators involved in the grant, and what sections from i to vii the project will cover.

**A UK-based lead partner and a China-based lead partner** should be identified in the case for support – 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 apply through NSFC's system and follow NSFC's proposal format. The NSFC application should follow the instructions in the NSFC version of this call document and received through the NSFC e-submissions system. The NSFC application must use the correct application subject code in order to be eligible for this call.

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

The documents required by NSFC for the Chinese applicants can be found via the following link (<http://bic.nsf.gov.cn/Show.aspx?CI=30>).

Both applications should feature an identical Case for Support written in English attached in each system.

## Submitting an 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 'EPSRC-NSFC Call in Sustainable Power Supply' 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 10 September 2019**.

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 (<https://epsrc.ukri.org/funding/applicationprocess/>) which should be consulted when preparing all proposals.

## Guidance on writing an application

Applications must be made through Je-S. As well as the Je-S form, the following documents should be submitted:

- Case for Support (max 8 pages): should be up to eight pages in total, to include:
  - Track Record (max 2 pages): should detail the relevant expertise that each investigator will bring to the research.
  - Proposed Research and its Context (max 6 pages): to include the background, national importance, academic impact, research

hypothesis and objectives, programme and methodology. Ensure that each section covers both the UK and China, how the proposed project will be managed across both countries, and the added benefits to each party for the collaboration.

- Joint Proposal Form: detailing the funding requested from NSFC and other details on the Chinese partners; this is available on EPSRC's website. This document enables reviewers to have an overview of the complete project. The form should be attached to the end of the case for support and uploaded as a single document. The pages used for the Joint proposal form will be additional to the eight-page limit for the case for support.
- Pathways to Impact (max 2 pages): should be up to two pages and is primarily for detailing the activities which will help develop potential economic and societal impacts. Please detail how the proposed research project will be managed to engage beneficiaries and increase the likelihood of impacts.
- Work Plan (max 1 page): 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 (max 2 pages): this should be a narrative description of the need for the resources requested.
- CVs (max 2 pages of A4 each): for named researchers, visiting researchers and researcher co-investigators.
- Project Partner Letters of Support (no max): should detail how the partner is contributing to the project and a quantification of the value of this support.
- Cover Letter (optional): which is not seen by peer reviewers. Please highlight any information which may be pertinent to the processing and peer review of the proposal.

For advice on writing proposals see:

<https://epsrc.ukri.org/funding/howtoapply/preparing/>

Applicants should use the Ethical Information section on the Je-S form to demonstrate to peer reviewers that they have fully considered any ethical issues concerning the material they intend to use, the nature and choice, current public perceptions and attitudes towards the subject matter or research area. EPSRC will not fund a project if it believes that there are ethical concerns that have been overlooked or not appropriately accounted for. All relevant parts of the Ethical Information section must be completed. If the research will involve human participation or the use of animals covered by the Animals (Scientific Procedures) Act 1986 it is recommended that applicants pay particular attention to the guidance highlighted below. EPSRC reserves the right to reject applications prior to peer review if the Ethical Information sections are not completed correctly.

Further guidance on completing the Je-S form can be found at <https://je-s.rcuk.ac.uk/Handbook/pages/GuidanceonCompletingaStandardG/EthicalInformation.htm>. Other relevant guidance includes: EPSRC's policy on animal use in research (<https://www.epsrc.ukri.org/about/standards/animalresearchpolicy/>)



and the Responsible Innovation Framework (<https://epsrc.ukri.org/research/framework/>).

Please note that on submission to EPSRC **all** non-PDF documents uploaded onto Je-S are converted to PDF, the use of non-standard fonts may result in errors or font conversion, which could affect the overall length of the document.

For advice on writing proposals see:

<https://epsrc.ukri.org/funding/howtoapply/preparing/>

## Assessment

### Assessment process

The common Case for Support including the Joint Proposal Form across the whole UK-China project allows for a joint peer review via the process below. Please be aware that information will be shared with the Chinese funding body.

Proposals will undergo postal peer review within the country they were submitted. The Joint UK-China Prioritisation panel will be asked to assess the proposals against the fit to the call and the standard EPSRC assessment criteria, which are available on our website and described below.

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 November 2019.

The call is for full proposals but an Intent to Submit must be completed by 23 July 2019. The Intent to Submit form is available on the call page on the EPSRC website. The Intent to Submit is to help EPSRC plan the postal peer review and the panel and is not for any assessment purpose.

The Full Proposal will be assessed by postal peer review. Proposals which do not receive sufficiently supportive reviews to be competitive at panel will be rejected. A PI response to the reviews will be requested for the sufficiently supported proposals. The panel will consider generating three separate lists – proposals from research challenges listed in a) intelligent and resilient control for smart urban energy, b) grid scale storage, and those from both combined – see section: Research Challenges for further details. It should be noted that proposals need to be competitive on both the UK and Chinese sides throughout the peer review process.

### Assessment criteria

The proposals will be assessed on their fit to the scope of the call and the standard EPSRC criteria as outlined in the reviewer form on the EPSRC website here:

<https://epsrc.ukri.org/funding/assessmentprocess/review/formsandguidancenotes/standardcalls/>

- **Quality/excellence (primary criterion)** Reviewers are asked to comment on the degree of research excellence of the proposal making reference to:

- The novelty, relationship to the context and timeliness.
- The ambition, adventure, and transformative aspects identified.
- The appropriateness of the proposed methodology.
- **Importance (secondary major criterion)** How the research:
  - Contributes to, or helps maintain the health of other disciplines contributes to addressing key UK/Chinese societal challenges and/or contributes to future UK/Chinese economic success and development of emerging industry(s).
  - Meets national needs by establishing/maintaining a unique world leading activity.
  - Complements other UK/Chinese research funded in the area, including any relationship to the EPSRC/NSFC portfolio will be addressed.
  - The appropriateness and strength of the collaboration between the UK and Chinese research.
- **Pathways to Impact (secondary criterion)** Reviewers will comment on the pathway to impact identified for this work particularly:
  - How complete and realistic are the impacts identified for this work.
  - The effectiveness of the activities identified to help realise these impacts, including the resources requested for this purpose.
  - The relevance and appropriateness of any beneficiaries or collaborators.
- **Applicant (secondary criterion)** Reviewers will comment on the applicants' ability to deliver the proposed project making reference to:
  - Appropriateness of the track record of the applicant(s).
  - Balance of skills of the project team, including academic partners.
- **Resources and Management (secondary criterion)** Reviewers will comment on:
  - The effectiveness of the proposed planning and management.
  - Appropriateness and justification of the requested resources.
- **Fit to the call (secondary)**
  - The relevance of the proposal to the priority areas identified.
  - The appropriateness and strength of the collaboration between the UK and Chinese research.

## Feedback

There will be no feedback from the Intent to Submit stage.

Feedback on the Full Proposal is provided by the reviewer's comments and, unless sifted prior to the meeting, the rank order list information published on EPSRC's Grants on the Web (GoW) system shortly after the meeting. Occasionally there is specific feedback from the prioritisation meeting which will be passed to the applicant.

## Guidance for reviewers

Information about the EPSRC peer review process and guidance for reviewers can be found at: <https://epsrc.ukri.org/funding/assessmentprocess/review/>

Guidance for reviewing standard grants can be found here:

<https://epsrc.ukri.org/funding/assessmentprocess/review/formsandguidancenotes/standardgrants/>

## Additional grant conditions (AGCs)

Grants will be subject to the standard UK Research and Innovation grant conditions however the following additional grant conditions will be added to this call: a fixed start date of 01 January 2020, the requirement for at least £65K allocated for networking activities, and the formation of a high level advisory board.

## Moving forward

Submissions to this call will count towards the Repeatedly Unsuccessful Applicants Policy. Further information about the policy can be found at: <https://epsrc.ukri.org/funding/howtoapply/basics/resubpol/rua/>

## Key dates

Activity	Date
Call opening date	02 July 2019
Intent to Submit deadline	23 July 2019
Full Proposals deadline	16:00 on 10 September 2019
UK-China Prioritisation Panel	w/c 25 November 2019
Funding decision	Early December 2019
Grant start date	January 2020

\*EPSRC aims to adhere to the key dates as published, however there may be exceptions where the sift, prioritisation or interview meeting may have to change due to panel member availability.

## Contacts

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## Change log

Name	Date	Version	Change
Ruhina Miller	12/06/2019	1	N/A

## Appendices (includes Attachment Checklist and Fund Headings)

### Je-S attachments Check List

#### Standard:

Attachment Type	Maximum Page length	Mandatory/Optional	Extra Guidance
Case for Support	Eight pages	M	Comprising up to two A4 sides for a track record, and six A4 sides describing proposed research and its context.
Pathways to Impact	Two pages	M	
Workplan	One page	M	
Justification for Resources	Two pages	M	
CVs	Two pages each	As Required by EPSRC	For named and visiting researchers, and researcher co-investigators only.
Project Partner Letters of Support	No page limits	As Required by EPSRC	Must be included from all named project partners. Must be on

			headed paper, and be signed and dated within six months of the proposal submission date.
Letters of Support	No page limits	As Required by EPSRC	In exceptional circumstances a maximum of three letters can be submitted.
Technical assessment	No page limit	As required by EPSRC	
Proposal Cover Letter	No page limit	Optional	The cover letter can be used to highlight any important information to EPSRC. This attachment type is not seen by reviewers or panel members.
Joint Proposal Form	No page Limit	As requested by EPSRC	Submit by combining with the case for support
Other attachment	No page limit	As required, at EPSRC request only	This can be used for a document that does not fit under any of the headings above. This attachment type is not seen by reviewers or panel members.

Please ensure you adhere to the above attachment requirements when submitting your proposal. Any missing, over length or unnecessary attachments may result in your proposal being rejected.