

## Call Announcement to select Indian consortia for UK-India Joint Virtual Centre for Clean Energy

**Closing date: 15<sup>th</sup> September, 2015**

Department of Science and Technology invites proposals from Indian consortia for UK-India Joint Virtual Centre for Clean Energy focussing on the objectives of the Centre. The Research Council UK has nominated Supergen Hubs as UK Partners to submit joint proposal in partnership with Indian Consortium selected by DST. ***This Call is limited only to Indian researchers.***

### 1. Background:

Department of Science and Technology (DST), New Delhi, and the Research Council, UK together has agreed to establish UK-India Joint Virtual Centre for Clean Energy. Research relating to integration of clean energy sources with energy storage is considered to be of importance to both countries. The contours of centre were agreed upon through a dialogue between the UK Research Councils' Energy programme and the Government of India's Department of Science and Technology (DST) in the EPSRC-DST Expert Meeting for UK India Joint Virtual Centre for Clean Energy held at Indian National Science Academy, New Delhi during 10-11 June, 2015.

### 2. Overarching Goals for Centre:

***To solve the integration of intermittent renewable energy with energy storage for grid and isolated communities in India and UK with a view to grid integration.***

**3. Specific Challenges:** The identified specific challenges to pursue above goal include:

- Integration (Grid and off-Grid) and need to consider generation, distribution and demand
- Network and Energy Management including demonstration of grid-ready systems (to avoid the problem of stranded assets). Demonstrate sub-1MW systems and research/modelling for larger islands.
- Solar PV research on systems and future solar technologies and their performance. Land 'neutral' solar deployment e.g. on canals, rooftops, buildings etc,
- Storage on different timescales for different requirements and appropriate technologies e.g. redox flow batteries, super-capacitors, storage batteries, pumped storage, potential thermal storage etc.
- Networking and exchange of researchers and PhD students.
- Importance of engaging with end users (industry, policy makers and communities).

#### 4. Objectives:

- Demonstrator on renewable energy (solar) and storage and eventual grid connectivity for a current grid isolated community (25 to 50 kW mini-grid system) and scalability challenges
- Identify and address the challenges of integration of large amount of intermittent renewable generation on the Indian and UK grid (up to GW level)
- Coordination and further development of existing RCUK-India portfolio of research and innovation on solar, grids and network and energy storage
- Build and sustain a community of researchers, innovators and end users related to clean energy and especially other sources of clean energy
- Training and capacity building

#### 5. Governance of Centre:

Management structures for proposed research centre should be clearly articulated from the outset, to allow the programme to achieve the stated research objectives. Such structures must pay particular attention to the challenges of managing a single research programme between UK and Indian institutions. Consortium has to work out internal governance models with lead PI in UK and other participating research groups.

#### 6. Funding for Centre

EPSRC and DST expect to **commit up to £5M each** on single research programmes of **up to four years in length**. The actual funding is expected to vary in size according to the demands of the proposed research and will involve both UK and Indian researchers.

#### 7. Who Can Apply:

This call invites Indian applicants (in multidisciplinary consortium only) to submit a preliminary proposal for Virtual Centre in participation with SUPERGEN. Prospective Indian consortia are advised to interact with SUPERGEN for formulating the proposal. The identified contact points of SUPERGEN are indicated in this Call. It is expected that SUPERGEN contact points would provide uniform access of information to all (approaching) Indian consortia in a transparent manner. EPSRC/RCUK will devise appropriate system to meet this requirement. DST will be kept in loop both by approaching consortia as well as SUPERGENS.

Applications are to be submitted by consortia of Faculties/Scientists working in regular position in recognised Academic Organisation/Public funded R&D institution/Laboratories etc. Participation of industry is desirable. The roles and responsibilities of each partner should be clearly delineated in the proposal. The industrial partner should have proven standing and R&D capability in the area of Clean Energy. All proposals must be for consortia, with equal or proportionate participation from UK and Indian researchers.

#### 8. How to Apply:

Submit following documents in an Envelope marked "JVCCE 2015: Name of Lead Investigator".

- A. 3 hard copies of project proposal and proposed summary in prescribed format with all enclosures (1 marked original+ 2 hard copies). The total number of pages including CVs and enclosures should not exceed 20.

B. Soft copy in CD.

- i. Complete proposal (MS word/PDF)
- ii. Proposal Summary as given in proposed proposal format (in MS word document only)

The complete set of documents is to be addressed to: Dr. Sanjay Bajpai, Sc-F & Associate head, Old TIFAC Block, Room No. 1 A, Technology Mission Cell, Department of Science and Technology (DST) before the closing date of the call. Soft copy of project proposal and the Proposal Summary is also to be e-mailed (subject Captioned: JVCCE Call 2015/Name of the Principal Investigator) to [sbajpai@nic.in](mailto:sbajpai@nic.in) and [tsd@nic.in](mailto:tsd@nic.in)

## **9. Evaluation Process:**

In the first stage, the proposal will be assessed by an Indian Standing Committee in which the consortium will be required to make a presentation. The Standing Committee will be assisted by expert peer review. The selected proposers may be required to modify the proposal in line with the observations of the committee. A single joint proposal would be required to be submitted by selected Indian Consortium in partnership with Supergen for evaluation in second stage.

## **10. SUPERGEN Contact Points:**

Supergen Solar - SuperSolar - Professor Ralph Gottschlag ([R.Gottschalg@lboro.ac.uk](mailto:R.Gottschalg@lboro.ac.uk))  
<https://connect.innovateuk.org/web/supersolar-hub>

Supergen Networks - HubNet - Prof Tim Green - Tim Green ([t.green@imperial.ac.uk](mailto:t.green@imperial.ac.uk))  
<http://www.hubnet.org.uk/>

Supergen Energy Storage -SuperStore- Prof Peter Bruce  
[peter.bruce@materials.ox.ac.uk](mailto:peter.bruce@materials.ox.ac.uk);

India Contact Paul Jennings - [Paul.Jennings@warwick.ac.uk](mailto:Paul.Jennings@warwick.ac.uk) (no website available)

## **11. Assessment Criteria:**

The relevance of proposal to call objectives need to be conclusively established. The proposal relevant to call objectives will be evaluated based on following criteria:

- a. Need assessment and demand for proposed work.
- b. Scientific appropriateness of deliverable of proposed approaches and technical merit.
- c. Expertise, facilities and track record of team. Appropriateness of industrial partner competence of each member facilities available to conduct research.
- d. Proposal formulation. Literature/patent review, qualified objectives, methodology and work plan, clear and well defined deliverable.
- e. Potential to proliferate clean energy deployment, competitiveness of performance and cost goals.

## 12. Contact Points:

**DST** : Dr. A. Mukhopadhyay

Email: [tsd@nic.in](mailto:tsd@nic.in)

Dr. Sanjay Bajpai

Email: [sbajpai@nic.in](mailto:sbajpai@nic.in)

**RCUK** : Dr. Nafees Meah

Email: [Nafees.Meah@rcuk.ac.uk](mailto:Nafees.Meah@rcuk.ac.uk)

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**EPSRC**: Dr. Jacqui Williams

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