



## **Transforming Energy Demand through Digital Innovation (TEDDI)**

**Call for Outline Research Proposals  
Closing date for outlines: Thursday 17th September 2009**

### **Introduction**

The Research Councils' Energy and Digital Economy programmes are seeking to support joint research projects concerned with the application of digital technologies to transform energy demand reduction. This call specifically excludes single discipline research directed at a single sector e.g. improving energy efficiency of computers, servers and electronic devices.

There is up to £7M available for research projects funded under this call and the call is in two parts:

1. Smaller proposals that are feasibility studies, speculative or that involve a new collaboration between digital technologists and other research disciplines. The proposals for this part of the call should be of duration of no more than 2 years. About 40% of the available funds will be directed to this part of the call.
2. Proposals of any size and duration from multidisciplinary groups (involving digital technologists) that can demonstrate that a route exists for the research to lead to energy demand reduction. About 60% of the available funds will be directed to this part of the call.

This call is open to researchers based at any institution eligible for EPSRC managed mode funding.

### **Timetable**

Information and Networking meeting: July 21 2009

Closing date for the submission of outline proposals: 4pm Wednesday 17th September 2009.

Invitation to full proposals: October 2009

Decision on successful proposals: March 2009

## 1. Background

The UK government highlights two major goals for UK Energy policy:

- tackling climate change by reducing carbon dioxide emissions both within the UK and abroad; and
- ensuring secure, clean and affordable energy as we become increasingly dependent on imported fuel.

Efficient use of energy in all sectors will be a major factor in achieving these goals and the Research Councils Energy Programme is committed to growing the research portfolio in energy efficiency and demand reduction to help improve this.

The Digital Economy programme is aimed at realising the transformational impact that novel digital technologies can have on all aspects of business, society and government.

The use of technology to capture, share and manipulate information is an established cornerstone of our society and the economy. The research that underpins this capability is well established and the UK has a world leading ICT research capacity.

Increasingly, the novel, innovative and in some cases subversive design and use of new technologies can affect an individual's life choices, change the way society interacts, offer new modes of interaction for government, revolutionise existing business processes or create new business paradigms. The early involvement of the user community is vital if new technologies are to be integrated successfully into technical solutions, products and processes.

The ability to understand, model and implement rapidly these new opportunities requires a multidisciplinary approach to research, understanding *why* the change is needed, *who* will be using the outputs and *what* the impact will be.

The Digital Economy and Energy programmes are two of the six major priority areas coordinated by RCUK. Both are topics that are embedded in all aspects of people's lives and amongst the synergies between the two is that between demand reduction/energy saving and digital technologies. Research in these areas can be driven by social, economic or technical need.

In March 2009 EPSRC convened an advisory group to help scope a possible research activity in the application of digital technologies to Energy Efficiency and Energy Demand Reduction. The conclusion of this panel was that digital technologies could be deployed in innovative ways to reduce energy demand in many areas, including domestic energy use, but that there were many unaddressed research challenges in this area.

In July 2009 a workshop was held with the following objectives in mind:

- To provide input and guidance to help scope a call for proposals

- To provide researchers with the opportunity to network with those in other disciplines and sectors, with the aim of developing collaborations and joint proposals

It was clear from the workshop that Digital Technologies can facilitate Energy Demand Reduction at a number of levels of interaction between Society and the Energy System. Some of the emerging themes were:

- Presentation of information to influence individual and community decision making;
- How to use digital technologies to change and help understand individual and collective behaviour;
- Whole systems integration;
- Efficient data and information management (and choice of data);
- Energy implications of working practices.

It was emphasized at the workshop that this was a strongly multidisciplinary area. Amongst the disciplines that were thought to be required were:

Social science, interface design, computing, energy system expertise, visualisation, systems modelling, energy use in buildings expertise, behavioural psychology, economics, education theory and transport research.

This list does not represent all of the themes discussed and the call is not confined to these areas.

## **2. Research Scope**

Important general features that research in this area requires are:

- An awareness of how people might live in the future;
- A global perspective;
- Consideration of the interaction between complex systems;
- The multidimensional nature of the problems and the interdisciplinary nature of the research required to address them;
- Ethical considerations;
- The need to include users in the research loop.

It was recognised both by the advisory group and at the workshop that there are already communities of researchers from the Digital Technology, Social Science and Engineering disciplines (particularly in the Buildings and Transport sectors) who were in a position to respond immediately to an open call for research proposals in this area. There were, however, also individual researchers and research groups, particularly in the Digital Technology community, that possessed skills that could be applied to energy demand reduction in other sectors. In response to this there are two parts to this call:

Smaller proposals that are feasibility studies, speculative or that involve a new

collaboration between digital technologists and other research disciplines. The proposals for this part of the call should be of duration of no more than 2 years. About 40% of the available funds will be directed to this part of the call.

Proposals of any size and duration from multidisciplinary groups (involving digital technologists) that can demonstrate that a route exists for the research to lead to energy demand reduction. About 60% of the available funds will be directed to this part of the call.

Proposed research must be within the Research Councils' remit and excludes activities such as single case studies and policy and technology development which are more appropriately funded by Defra, the DfT, TSB, other central and local government departments and industry.

### **3. Assessment of the research proposals**

Selection of successful proposals will follow a two stage process: (i) Outline proposal and (ii) Full proposals.

#### **(i) Outline proposals**

Outline proposals should be accompanied by a case for support (up to three sides of A4) and will be assessed against the following criteria:

- Fit of the outline proposal to the research scope described in this document. The balance of the research in any proposal submitted should be within the remit of Research Councils UK.
- Potential quality of the proposed research with defined outputs and deliverables.
- Strength of the research team. (Collaborations with overseas partners are allowed as per normal research grants via Visiting Fellowships and Overseas travel grants included in the consortia application).
- Active and effective collaboration with users of the research and defined dissemination mechanisms. Proposals which require user collaboration must contain relevant non-academic expertise through appropriate and meaningful collaboration. An indication of the project partners to be engaged and their contribution to the project should be provided. Where possible, details of funding (cash or in-kind) expected to be secured should also be provided. Letters of support are not required at this stage.
- Management structures – a brief outline of management arrangements is required. A project plan is not required at this stage.

Outline proposals will be reviewed by a peer review panel and shortlisted against the criteria above. Research Councils UK reserves the right to reject proposals that are

substantially outside the remit of Research Councils UK without reference to peer review. Shortlisted proposals will be invited to submit full grant proposals.

## **(ii) Full proposals**

In addition to the above assessment criteria, those invited to submit full proposals will be asked to provide evidence of:

- Detailed arrangements for project management in terms of milestones and deliverables.
- Full details of the involvement of project partners (e.g. industrial collaborators, local authorities, charities and other user groups), including cash or in-kind contributions being provided by these organisations and their role in transfer of research outputs into policy and practice. Letters of support should be included as appropriate.

Full proposals will be assessed by anonymous peer review and a prioritisation panel.

Applicants successful at the outline stage will receive further guidance on submission of full proposals.

## **4. Who can apply?**

As this call is a targeted funding opportunity provided by EPSRC, higher education institutions, research council institutes and some independent research organisations are eligible to apply. A list of organisations eligible to apply to EPSRC is provided at: <http://www.rcuk.ac.uk/research/eligibility.htm>

## **5. Application procedure**

You should 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 'Outline Proposal' and the 'Outline' Scheme. On the Project Details page you should select the '**Transforming Energy Demand by Digital Innovation Call**'.

You should indicate immediately beneath your title which of the two parts (by typing Part 1 of the call or Part 2 of the call) of the call you are applying to.

**Part 1:** Smaller proposals that are feasibility studies, speculative or that involve a new collaboration between digital technologists and other research disciplines. The proposals for this part of the call should be of duration of no more than 2 years. About 40% of the available funds will be directed to this part of the call.

**Part 2:** Proposals of any size and duration from multidisciplinary groups (involving digital technologists) that can demonstrate that a route exists for the research to lead to energy demand reduction. About 60% of the available funds will be directed to this part of the call.

Details of which Research Organisations have registered to use Je-S are available from [http://www.pparc.ac.uk/jes/jes1/RODetails\(Web\).pdf](http://www.pparc.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 remember to 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 4.00 pm on Thursday 17th September 2009**

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/ResearchFunding/HowToApply/default.htm>) which should be consulted when preparing all proposals.

## **Contacts**

For further details or to discuss your outline proposal, please contact:

Dr David Holtum  
Research Council Energy Programme  
Polaris House, North Star Avenue  
Swindon SN2 1ET  
Tel: 01793 444441  
[david.holtum@epsrc.ac.uk](mailto:david.holtum@epsrc.ac.uk)

Dr Pamela Mason  
Digital Economy Manager,  
Research Council Digital Economy Programme  
EPSRC,  
Polaris House, North Star Avenue,  
Swindon SN2 1ET  
01793 444268  
[Pamela.mason@epsrc.ac.uk](mailto:Pamela.mason@epsrc.ac.uk)