

Multi-disciplinary low carbon fuels

Call type: Invitation for proposals

Closing date: 16:00 on 28 April 2015

Related themes: Energy

Summary

EPSRC, as part of the Research Councils UK (RCUK) Energy Programme, invites proposals for collaborative research projects to undertake fundamental research that will advance low carbon fuels generation toward deployment. Proposals submitted to this call must be multi-disciplinary in nature and seek to solve the issues outlined below.

This call is aimed to address low carbon fuel generation. EPSRC expects bids to be cross-cutting and involve several disciplines, technology areas and fuel types. Bids that do not sufficiently work across technology areas will be rejected.

There should be a single submission from a single principal investigator (PI) for each proposal, though bids can be multi-institutional. In order to focus effort applicants are only permitted to be involved in a maximum of two proposals; as a PI on one proposal and a co-investigator on another proposal or as a co-investigator on a maximum of two proposals.

Applicants wishing to submit a proposal must register their intent to submit before **16.00 on 10 March 2015**. Applicants must submit the names of researchers, institutions, project partners, the approximate cost of the grant and the technology areas to EnergyTeam@epsrc.ac.uk. Applicants who do not register their intent to submit before the deadline will have their applications rejected. This stage is used to help us identify reviewers and panel members.

The call **closes at 16.00 on 28 April 2015** with **up to £6M** available from EPSRC for this call. Projects may be for **up to 4 years**. EPSRC expects to support 3 or 4 proposals. This call will be assessed by postal peer review followed by an interview panel meeting. Successful applicants will be informed of the outcome at the earliest opportunity.

Background

In order to meet the UK's ambitious carbon emission targets, there will have to be a drastic change in the UK's energy mix. Carbon emissions associated with transport contribute toward roughly 20% of the UK's emissions (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/295961/20140204_2012_UK_Greenhouse_Gas_Emissions_Final_Figures_-_revised_27_March_2014.pdf). In order to contribute to lowering the UK's

carbon emissions, fuels with a lower embodied carbon footprint must be generated. Drop-in fuel replacements for transport and other sectors within the UK economy can help the UK successfully transition to a low carbon future. Successful generation of alternative fuels can also contribute to the UK's security of energy supply which is a crucial element for research in this area.

This call is intended to allow proposers to bid for resource to undertake research into low carbon fuel generation. Typical managed calls from the RCUK Energy Programme tend to focus on the challenges associated within a particular technology area (e.g. solar challenges, challenges in carbon capture and storage, bioenergy, etc.). The remit of this call, described below, is deliberately broad to allow researchers to work outside of their traditional technology areas in order to encourage ambitious, innovative multidisciplinary consortia focusing on low carbon fuels generation.

A workshop to scope the challenges facing low carbon fuels generation was held in Birmingham in January 2015.

For more information about EPSRC's portfolio and strategies, see our website: <http://www.epsrc.ac.uk/research/ourportfolio/>

Funding available

Up to £6M will be made available for funding. EPSRC expects to fund 3 or 4 projects. Projects may be for **up to 4 years**. For each project there should be a single Je-S form submitted although the project can be multi-institutional. In order to focus effort applicants are only permitted to be involved in a maximum of two proposals; as a PI on one proposal and a co-investigator on another proposal or as a co-investigator on a maximum of two proposals. Applicants who submit more than one proposal as PI will have to choose which proposal to be rejected.

Remit

Proposals are welcome in the following:

- Generation of low carbon fuels for use in one or more of the following:
 - Transport (air, road, shipping)
 - Distributed energy generation (excluding large scale generation such as power plants)
 - Heating of buildings

Proposals should be cross-cutting and include research from a minimum of two technology areas such as bioenergy, solar, carbon capture and utilisation, and hydrogen.

Suggested topics which arose at the workshop included:

- Production of synthetic hydrocarbon fuels e.g. from hydrogen and carbon dioxide
- Utilisation of carbon dioxide, waste and/or biomass to produce fuels

Fuels generated using renewable energy sources and fuels generated from waste came across as strong themes at the workshop. All proposers should consider the need to address these within the scope of their project.

There was felt to be particular value in including the following research strands in submitted proposals where appropriate:

- Catalysis
- Rigorous life cycle assessment
- Process integration

Applicants are not expected to include all technology areas, however due to the relatively large size of the projects, applicants must submit proposals that are multi-disciplinary in nature, and include research strands that cover a minimum of two technology areas. EPSRC will welcome ambitious proposals, which cut across a number of themes for this call.

Policy, public engagement and regulation were identified as important issues at the workshop. Although projects focusing entirely on these aspects are not invited in this call, all proposers should consider the need to address them and whether participation by a social scientist or economist is appropriate as part of the scope of their project. The majority of the proposal should be within EPSRC's remit but consortia can include a minority portion (<10%) of research which falls outside of EPSRC's remit.

Where appropriate, applicants should seek to link with major EPSRC investment in their research area such as the Supergen Hubs, UK Energy Research Centre, End Use Energy Demand Centres, etc.

Resources requested

We wish to foster collaboration and knowledge-sharing across the projects we support through this call. Each project team should therefore be prepared to host at least one workshop during the lifetime of the grants to foster synergies and share learning. Please include sufficient funds in your proposal to host one workshop to which all the funded project teams will be invited, and to cover travel costs for your project teams to attend the other teams' events.

Equipment

Where possible, researchers are asked to make use of existing facilities and equipment, including those hosted at other universities. If equipment is needed as part of the research proposal, applicants must follow EPSRC's rules for requesting equipment over £10,000 in value. Individual items of equipment up to the current OJEC (Official Journal of the European Communities) procurement threshold can be included on research proposals submitted through this call, but research organisations will be expected to make a contribution to the cost. All requests for single items of equipment above the current OJEC threshold will need to go through a separate process which will assess the strategic need for the equipment and how to ensure maximum usage. These proposals will be assessed through the separate Strategic Equipment peer review process.

For more information on equipment funding, please see:

<http://www.epsrc.ac.uk/research/ourportfolio/themes/researchinfrastructure/subthemes/equipment/>.

The current OJEC threshold can be found at:

<http://www.epsrc.ac.uk/research/facilities/equipment/>

Eligibility

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

<http://www.epsrc.ac.uk/funding/howtoapply/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/funding/eligibilityforrcs/>

How to apply

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 'Multi-disciplinary fuels' 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 28 April 2015

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/howtoapply/>) which should be consulted when preparing all proposals.

Guidance on writing application

Case for support

The case for support should be 10 pages in total, to include:

- Two page track record, which should detail the relevant expertise that each investigator will bring to the research programme. For the Principle Investigator, there should be sufficient evidence of leadership and management skills.

- Eight-page description of the proposed programme of research, and a brief statement of the research vision, as well as the details of the methodology proposed. The research strands should demonstrate good complementarity and each of the work packages should link up appropriately.

Management structure

Applicants will be expected to submit a separate 2-page management document, which will outline:

- Management structure, including day-to-day management strategy as well as strategy to ensure a coherent research strategy.
- Details of external advice streams, including potential users of the technology being developed
- Monitoring strategy, including how the direction of the research programme will be assessed.

On Je-S the management structure document should be uploaded as an "additional document".

If the attachments are uploaded as Word documents, please be aware that once the application has been submitted to the Council/Funder, all the attachments will be converted and held as an Adobe Acrobat file (PDF). Also please note, that whilst we support a wide range, **we do not support all MS Word font types**. Therefore if an unsupported font type is used a different font type may be substituted which may result in changes to the layout of the document. For this reason we recommend that the documents are converted to PDF files before uploading.

Also, please note that on submission to council **all** non-PDF documents 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.

In addition, where non-standard fonts are present, and even though the converted PDF document may look unaffected in the Je-S System, when it is imported into the Research Councils Grants System some information may be removed. We therefore recommend that where a document contains any non-standard fonts (scientific notation, diagrams etc), the document is converted to PDF prior to attaching it to the proposal

For advice on writing proposals see:

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

User Engagement Strategy

Successful applicants will be required to develop and execute a strategy for engaging with potential users of the research funded in the project (resources for this activity can be requested as part of the Pathways to Impact and must be justified in the application). This strategy should be reviewed and updated regularly as part of the formal management of the grant.

The strategy should cover:

- how and when potential users have been / will be identified;

- what form the engagement will take;
- what steps will be taken to ensure that outputs of the research are made available to potential users;
- suitable metrics for determining the success of the strategy in delivering value to users.

Assessment

Assessment process

The proposals will be judged against the standard criteria outlined below with scientific quality being the primary criterion. **Applicants with sufficiently strong reviews will be sent to an interview panel** to be held in Swindon in August/September 2015.

Assessment criteria

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

Quality

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

Importance

- Other research areas
- Societal challenges (including EPSRC challenge themes)
- The success of the UK economy
- Emerging Industry

Impact

- 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

Applicants' ability to deliver the proposed research

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

Resources and Management

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

Guidance

Guidance for reviewers

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

Key dates

Activity	Date
Call opens on Je-S	17/02/2015
Call closing	16:00 on 28/04/2015
Interview panel meeting	August/September 2015
Decisions announced	October 2015
Grants start	01 January 2016

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Change log

Name	Date	Version	Change
Justin O'Byrne	15/12/2014	1	N/A
Justin O'Byrne	12/02/2015	2	Revised wording on definition of multi-disciplinary