

# EPSRC NETWORK+ DECARBONISATION OF HEATING and COOLING

## Flexible Funding – Call for Expressions of Interest

### First Call July 2021

1. Call Headline Details.....	1
2. About H+C Zero Network.....	1
3. About this Flexible Funding Call.....	2
4. Eligibility.....	3
5. Equality, Diversity and Inclusion.....	4
6. Expression of Interest Process.....	4
7. Evaluation Process .....	4
8. Call Guidance .....	4
9. Point of Contact for Queries.....	5

## 1. Call Headline Details

Maximum proposal value	£50,000 at full economic costing (fEC)
Funding level	<b>80% of fEC</b>
Number of awards available in this call	Funding for 2-3 projects
Total available funding across this call	£100,000 (fEC)
Call opens	ASAP
Closing date for submissions	27 <sup>th</sup> July 2021
Deadline for notification of outcome	w/c 9th August 2021
Invitation for full Application	w/c 16 <sup>th</sup> August 2021
Closing date for full application	17 <sup>th</sup> September 2021
Notification of Award	29 <sup>th</sup> September 2021
Project duration	6 months
Anticipated project start date	1 <sup>st</sup> November 2021
Anticipated project end date	30th April 2022

## 2. About H+C Zero Network

The Network for Heating and Cooling Research to Enable a Net-Zero Carbon Future (H+C Zero Network) has been established by UK Research and Innovation (UKRI) to maximise the impact of UK-funded research and innovation. It is formed by a research partnership between Durham University, Oxford University, Brunel University London, Heriot-Watt University, University of Leeds and Northumbria University.

This is underpinned by our wider stakeholder group of partners: AGFW (Energy Efficiency Association), Agility Eco Services Ltd, Association for Decentralised Energy, CIEMAT (Centre for Energy, Env & Tech Res), Confederation of Paper Industries, Department for Business, Energy & Industrial Strategy (BEIS), Durham County Council, E.ON Energy Solutions Ltd, Energy Networks Association, Energy Systems Catapult, Euroheat & Power, European Energy Research Alliance (AISBL), GE (General Electric Company), GT Energy UK Ltd, Heat Pump Association, Institute of Materials Kensa Group Ltd, Leuphana University, Mineral Products Association, Nanyang Technological University, Narec Distributed Energy, National Institute of Technology Karnataka, Nestle UK Ltd, NMAM Institute of Technology, North East Process Industry Cluster (NEPIC), Power Roll Royal Academy of Engineering, Shanghai Jiao Tong University, SINTEF Energi AS, Star Refrigeration Ltd, Tata Steel UK Limited, The Chartered Institute of Building, The Committee on Climate Change and University of Sheffield.

The aim of the Network is to facilitate researchers, technology developers, managers, policymakers and funders to come together to share their progress, new knowledge and experiences. It also offers seed funding to address key technical, economic, social, environmental and policy challenges.

The Network will focus on the following five themes which are essential for decarbonising heating and cooling:

- Theme 1 Primary engineering technologies and systems for decarbonisation
- Theme 2 Underpinning technologies, materials, control, retrofit and infrastructure
- Theme 3 Future energy systems and economics
- Theme 4 Social impact and end users' perspectives
- Theme 5 Policy Support and leadership for the transition to net-zero

### 3. About this Flexible Funding Call

H+C Zero Network invites Expressions of Interest to this Flexible Funding Call for a project focusing on one of the two following priority areas:

#### 1. The economics of the future heating and cooling sector.

The decarbonisation of heating and cooling is expected to require significant changes to UK's established energy infrastructure from generation/production, distribution and use. It is expected to have an impact on every industry, business and home. This transition is expected to have a positive impact on jobs, skills, manufacturing capacity *etc.* across the wider supply chain including into the service sectors. This project should aim to assess and quantify the wider economic benefits of building a net-zero compatible heating and cooling sector out to 2050. Based on the Investigator's choice of a published state-of-the-art net-zero energy strategic plan for our net-zero transition, it should consider the opportunity for local and national wealth creation by estimating the corresponding number of jobs that would be created in implementing this plan. It should determine the skills required for these jobs, regions/locations, timings *etc.* It should quantify the size of the opportunity for the UK as a whole, UK-based technology installers, manufacturers, research and development organisations (including academia) for the UK and for export. *(Note: Quantifying the economic impact in terms of environmental or other factors is considered out of scope).*

## 2. Tackling fuel poverty in a net-zero world.

A portfolio of heating technologies is expected to be deployed to deliver on net-zero emission targets in the 2030-2050 timescales. Mass-scale heat decarbonisation of existing residential buildings is likely to involve a significant scale-up in the demand for hydrogen and electricity-based heating systems in our homes. Nevertheless, it is widely considered that the total cost of ownership (installed heating system, additional insulation costs *etc.* plus operating costs) of future heating systems is likely to be greater than that of an existing fossil-based system. This brings forward the likelihood that an increasing number of households will be pulled into fuel poverty. Based on this scenario, this project should aim to put forward a practical model of how fuel poverty could be minimised in the UK whilst simultaneously delivering upon net-zero targets. It should bring forward solutions/interventions which are practical (technically and within the frameworks of governance/regulation), are compatible with the political environment, can be communicated effectively to policymakers and can be used to shape future policy in this area. The strategy should ensure a just transition towards heat decarbonisation across the communities and regions.

Expressions of Interest will be reviewed against the criteria stated in Section 7 below, and successful applicants will be asked to submit a full application by 17<sup>th</sup> September. It is expected that at least one project will be awarded in each of the above areas, dependant on the proposal funds requested.

Given the scale of the funding offered, creation of sophisticated models or evaluation / trial of real-life interventions is not expected.

## 4. Eligibility

Who is eligible to apply?

- (1) Academics based at a UK institution when carrying out the project.
- (2) We strongly encourage applications from Early Career Researchers (ECR). We define an ECR as any academic who has been awarded a PhD but has not yet held a research grant of £100,000 or more.
- (3) Furthermore, we actively encourage applications from groups that are under-represented in decarbonisation research.
- (4) Network- H+C wishes to broaden the academic research engagement and therefore current Network Co-Investigators are not able to be the Principal Investigator for a project proposal. However, they could be Co-Investigators on a project.

For this call, standard UKRI eligibility rules apply relating to the status of the organisation and the employment status of individuals applying. Co-Investigators from all disciplines supported by UKRI are welcomed and encouraged to apply.

For information on the eligibility of organisations and individuals to receive EPSRC funding, see the [EPSRC Funding Guide](#).

## 5. Equality, Diversity and Inclusion

The Network is committed to EDI and this is at the heart of the Network's activities at all levels. The Network recognises the importance of EDI and that the link between diversity and research productivity is well established. It also understands the benefits that can be achieved through building an inclusive partnership within a multidisciplinary collaboration with representatives, both academic and industrial.

## 6. Expression of Interest Process

- (1) Read the call guidance below.
- (2) Complete the Expression of Interest form [linked here](#) and submit your proposal by no later than 17:00 (UK time). Your EOI must clearly indicate which of the **priority areas** you intend to address. Any applications received after this deadline will not be considered.
- (3) Your application will be reviewed by Network H+C's Support Team for compliance with the call guidance and will be checked against the UKRI eligibility criterion.
- (4) If eligible, your application will be considered for evaluation. We will notify you of the result by 9<sup>th</sup> August 2021.

## 7. Evaluation Process

Applications will be evaluated by Network H+C's Management Board based on the following main criteria:

- (1) Novelty/transformational potential.
- (2) Methodology.
- (3) Overall quality and fit across the theme of this call.
- (4) Clear plans for potential impact.
- (5) Ability to deliver the project in the timescales.

## 8. Call Guidance

### Costing

Prospective applicants must discuss their applications with their local research office and, if invited, obtain project costings **for the full application** using the institutions standard UKRI template.

Funding is offered at 80% full economic cost (fEC) and may be used to cover any research related activity. UKRI funding rules will be applied to the final proposal.

Eligible costs must be in line with UKRI [terms and conditions](#).

Please note large equipment cannot be supported by this call.

### Reporting and Dissemination

- (1) You will be required to provide monthly progress updates.
- (2) A final report will be required within one month of the end of the project covering the project outcomes, publications and any future plans.
- (3) A final expenditure statement will be required within one month of the end of the project noting the actual costs at 100% and 80% fEC.
- (4) Following the end of the project you will:

- (i) deliver an oral presentation at one of the Network's events.
- (ii) provide a summary of the project for a general audience, to be published on Network's website, summarising activities and key findings.
- (iii) Have submitted a journal publication.

The project will receive the agreed funding upon completion of these requirements.

#### **Further requirements**

- (1) Advocacy:** You must be willing to contribute to the overall aims of Network, disseminating your findings via our project website and at our network events, as well as through other appropriate means, and engaging in building Network's ethos into your project.
- (2) Webinars:** Successful applicants will be required to participate in at least 1 webinar relating to the project funded by this scheme; One where they will present and receive supportive feedback on their project, and two where they will participate and provide supportive feedback to the PIs of the other projects.
- (3) Collaboration Agreement:** Where the grant is associated with more than one research organisation, the lead institution will be required to put in place a collaboration agreement with all other parties. In order for funds to be released, a copy of the fully executed agreement must be shared with Network.

## **9. Point of Contact for Queries**

If you have any questions, please do not hesitate to contact us by emailing [Jacki.Bell@durham.ac.uk](mailto:Jacki.Bell@durham.ac.uk)