

CALL FOR EXPRESSION OF INTEREST

RESEARCH COLLABORATION PROJECTS – LOW CARBON TECHNOLOGIES

1.0 Introduction

The construction of the Energy House 2.0 facility at the University of Salford was recently completed. Part-funded by the European Regional Development Fund (ERDF), this £16m unique innovative research facility has the following features:

- Two large environmental chambers capable of having two family homes built in each one (four homes in total)
- Temperature controlled from -20°C to $+40^{\circ}\text{C}$ with an accuracy of $\pm 0.5^{\circ}\text{C}$
- Wind, rain, solar radiation, and snow can be replicated

This range of conditions covers the climatic conditions experienced by over 95% of the global population. More details can be found at www.energyhouse2.com

2.0 Research Collaborations

The construction of Energy House 2.0 was completed in February 2022 and following a call for Expressions of Interest that was launched in 2021, three principal research partners were selected who will each construct a domestic property inside Energy House 2.0. Construction of the first property will commence May 2022, with testing and research programmes due to start in September 2022 running through to spring 2023. The three properties that will be constructed are:

- Two detached houses of modular construction (one from Barratt Developments/Saint Gobain and one from Bellway Homes); these will be built to high standards of insulation and air tightness and heated using heat pumps.
- Muse Developments will construct a one-bedroom apartment to Passivhaus design standards.

Each property will be equipped with a comprehensive array of sensors (temperature, humidity, heat flux, electricity, etc) and their baseline thermal properties will be accurately assessed by the University of Salford team. Throughout the research programme, their thermal performance will be measured under a variety of climatic conditions.

There is scope for additional smaller research projects within the Energy House 2.0. This presents a unique opportunity for Greater Manchester based businesses to research and test their energy saving/low carbon technologies within the Energy House 2.0 at **no cost**. We are seeking two categories of project:

1. Energy saving technologies that can be quickly and easily installed into the dwellings described above without significant impact on the building fabric. Examples of suitable technologies could be heating control systems, low energy lighting, EV charge points, etc.
2. Within Chamber No. 2 there is some available space (approx. 9x5m) which could be used to site a small portable building, mobile home, caravan, etc. This would then be the basis for a suitable test and research programme around the energy performance under a variety of climatic conditions.

We are seeking expressions of interest from companies with suitable technologies:

- That have the potential to save significant carbon emissions from buildings
- Preference will be given to small and medium sized companies based in Greater Manchester
- Projects must comply with the requirements of the definition of ‘Enterprises Cooperating With Research Entities (C26)’¹
- The University contribution to the research collaboration (principally the access to the Energy House2.0) is provided as ‘de minimis’ aid and in order to comply with EU State Aid rules, industrial partners must be able to declare that they have received no more than €200,000 of de minimis aid in the previous three years
- Successful applicants must be willing to share the project results through marketing, events, academic papers, articles, conference presentations, etc.
- Successful applicants must agree to undertake joint publicity activities with the University of Salford and adhere to ERDF branding requirements in any marketing activities²

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https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/719940/ESIF-GN-1-002_ERDF_Output_Indicators_Definition_Guidance_v6.pdf

² European Regional Development Fund and European Social Fund Branding and Publicity Requirements August 2019

(https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/836956/ESIF-GN-1-005_ESIF_Branding_and_Publicity_Requirements_v8_updated.pdf)

3.0 Application Process

Interested companies should submit a brief (max two sides of A4) outline of their proposed research project including the following information:

- Description of the technology and how it results in greater energy efficiency and/or carbon savings
- Proposed testing/research programme and how this will advance the technology and/or its market penetration
- The proposed timescales
- Anticipated input from the university of Salford academic/technical team

Deadline for submission is 27 May 2022.

Informal discussions prior to submission of any proposal are welcome, please contact Joe Flanagan, Project Manager (j.m.flanagan@salford.ac.uk; 0161 295 4776) or Professor Will Swan, Director of the Energy House Labs (w.c.swan@salford.ac.uk; 0161 295 2585).

Annex 1: Technical Specifications Of Energy House 2.0 Facility

The sites within the Energy House 2.0 chambers will have the following technical specifications and limitations. The submission should clearly identify that the team have understood these issues and are able to deliver.

- Chambers are approximately 19m x 20m; 11m height
- Sub soil: The pit for the house to be constructed in will be filled to a depth of 1m 6N Graded Fill
- Size of access door 4.96m wide, 5.0m high
- The services to the homes are as follows:
 - Mains gas
 - Mains electricity
 - Solar PV can be replicated and input into an inverter
 - Telephone line (can be used for broadband)
 - Mains water
 - Foul and rainwater outlets