

Call for Expression of Interest

Research Collaboration – Low Carbon Buildings for Energy House 2.0

1.0 Introduction

The University of Salford is seeking industrial partners to participate in collaborative research projects that will use the Energy House 2.0 facility. Part-funded by the European Regional Development Fund, this £16m innovative research facility will be unique and one of the most advanced of its type globally. Construction of Energy House 2.0 is currently underway, and it is due for completion early 2022. It will have the following features:

- Two large chambers capable of having two family homes built in each one (four homes in total)
- Temperature controlled from -20°C to +40 °C with an accuracy of ± 0.5 °C
- Wind, rain, solar radiation, and snow can be generated

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

2.0 Research Collaborations

The ERDF grant that is supporting the construction of the Energy House 2.0 is also providing funding for collaborative research projects between the University of Salford and suitable industry partners. The grant funding will cover the cost of using the Energy House 2.0 facility and the required technical support. All projects must comply with the requirements of the definition of 'Enterprises cooperating with research entities (C26)'; refer to p49 of Output Indicator Definitions Guidance for the European Regional Development Fund for England VERSION 9¹.

The University is seeking industry partners for collaborative research projects:

- That explore whole dwelling approaches to low carbon and energy efficient buildings.
- Where industrial partners will be expected to construct a suitable dwelling within the Energy House 2.0 facility. Note: industry partners are expected to bear the full construction (and decommissioning) costs of dwellings.
- That are likely to lead to significant Greenhouse Gas Savings.

¹https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/933011/ESIF-GN-1-002_ERDF_Output_Indicators_Guidance_v9.pdf

- That are up to three months duration, but multiple different projects that utilise the same dwelling are also possible.

There may be more than one industry partner involved in the research collaboration but at least one partner must be based in Greater Manchester and preferably be a small or medium sized business.

A wide variety of approaches are encouraged which could include technologies such as novel insulation systems or materials, Passivhaus type approaches, integrated management systems (e.g., incorporating smart control, battery storage, small scale renewables etc), modelling techniques, retrofit technologies.

3.0 Timescales

It is anticipated that Energy House 2.0 will be available from March 2022 with projects completed by 30 September 2022. It is expected that between four and eight projects will be completed over the period March to September 2022. The following process will be used to select projects:

Stage 1 – Expressions of Interest

Industrial partners will be expected to submit expressions of interest that describe the proposed projects. Informal discussions prior to the submissions are welcome and partners should contact either Prof Will Swan (w.c.swan@salford.ac.uk) or Joe Flanagan (j.m.flanagan@salford.ac.uk). Expressions of interest should not exceed 1000 words and should cover the following:

- Description and background of industry partner(s)
- Aims and objectives
- Description of the research
- Timescales
- Anticipated input from University of Salford academic team
- Industrial partners must be willing to share the project results through marketing, events, academic papers, articles, conference presentations
- To undertake joint publicity activities with the University of Salford and adhere to ERDF branding requirements in any marketing activities²

² [European Regional Development Fund and European Social Fund Branding and Publicity Requirements August 2019](#)

A full technical specification of the plot available in Energy House 2 is given in Annex 1.

Note that the University contribution to the research collaboration 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 3 years.

Date for submission of expression of interest: 5.00pm, Friday 16 July 2021, and should be submitted to energyhouse2@salford.ac.uk.

Stage 2 – Prioritisation

Should demand exceed the capacity of the Energy House 2.0 facility, the University reserves the right to rank projects and develop a priority list. Rankings will be based upon the following criteria:

- Potential Greenhouse Gas reduction
- Involvement of Greater Manchester based companies
- Involvement of small and medium sized enterprises
- Speed at which houses within Energy House 2.0 can be constructed and decommissioned
- Novelty of proposed technologies

At this stage the University of Salford will also carry out the necessary due diligence to check that industry partners have the financial capacity of deliver their contribution to the collaboration and present no reputational risk to the University.

Stage 3 – Interviews

A shortlist of approximately 12 projects will be announced. During July 2021, more detailed discussions will be undertaken between the University of Salford and potential partners to further explore the proposed projects and a shortlist of six to eight projects will be developed. The remaining shortlisted projects will be placed on a reserve list.

Stage 4 – Full project work up and formal agreement

The successful projects will work with the University of Salford to develop a comprehensive programme of work. Industrial partners will be expected to formalise

the research collaboration by signing a research collaboration agreement, Memorandum of Understanding, or other suitable agreement.

Stage 5 – Project commences

The projects will commence with the timelines as agreed with each of the successful consortia or partners. It is expected that the construction of the houses within the Energy House 2.0 chambers will take place between December 2021 and March 2022.

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 has understood these issues and are able to deliver.

- Size of plot: 10.7m x 6.46m
- 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
- Height of chamber: 10.8m
- There will be access to a rear storage yard for temporary storage of plant and materials
- Services. 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