

Test facility for hygrothermal performance of building materials

Call for proposals

August 2014

1. Introduction

The Department of Energy and Climate Change (DECC) is responsible for all aspects of UK energy policy, and for tackling global climate change on behalf of the UK.

Around 27% of dwellings in the current English housing stock are of solid wall construction (approximately 7.7 million). As most of these are currently un-insulated and solid walls have a poor thermal performance, there is the potential for large energy, carbon and fuel cost savings. To capitalize on these savings, DECC's Green Deal and Energy Company Obligation (ECO) policies incentivise the installation of solid wall insulation (SWI). However there are a number of challenges which may hinder widespread adoption: SWI is expensive to install, the energy savings obtainable through SWI may be less than previously thought, and there is evidence to suggest that if not installed correctly there is a risk of moisture, damp and mould problems occurring.

The need to consider moisture and condensation when constructing and renovating buildings is widely recognised and Building Regulations are already in place. However, the current regulations and standards are largely written for more modern, non-traditional, construction methods and are not always suitable for traditionally constructed buildings. In addition, the building physics of traditional constructions is not fully understood by the academic community, and there is an even more limited knowledge of these issues within the SWI supply chain. DECC are doing a number of things to try to mitigate the risk of moisture problems occurring when SWI is installed and this project intends to help build understanding and evidence on solid walls and materials for their insulation by creating a facility that can investigate their hygrothermal performance.

2. Required outcomes of competition

DECC require the following outcomes:

- Design and construction of a test facility for research into the hygrothermal performance of full-scale wall assemblies under carefully controlled dynamic boundary conditions, and specifically to study the transfer of heat and moisture. The test facility must be open for access to a wide stakeholder community.

3. Terms of Competition

3.1 Eligibility criteria

DECC is considering offering a grant of up to £350K to a suitable organisation to design and build a research facility capable of testing the hygrothermal performance of building materials. In particular we would like the research facility to be able to test full-scale wall assemblies under carefully controlled dynamic boundary conditions, and specifically to be able study the transfer heat and moisture through the wall sections.

A condition of the grant is that the facility must be used solely for research purposes (non-economic gain) and be available for use by other research organisations in the UK. A definition of “research facility” is below:

“research infrastructure’ means facilities, resources and related services that are used by the scientific community to conduct research in their respective fields and covers scientific equipment or sets of instruments, knowledge- based resources such as collections, archives or structured scientific information, enabling information and communication technology-based infrastructures such as grid, computing, software and communication, or any other entity of a unique nature essential to conduct research. Such infrastructures may be ‘single-sited’ or ‘distributed’ (an organised network of resources) in accordance with Article 2(a) of Council Regulation (EC) No 723/2009 of 25 June 2009 on the Community legal framework for a European Research Infrastructure Consortium (ERIC) (1)”

Applicants should be in a position to complete the delivery of all aspects of any grant by the end of March 2015.

3.2 Format and Deadline

Responses should be made using the template at Annex A by midday on 26th September 2014.

Responses should be submitted to the following email address with the subject heading ‘Test facility for hygrothermal performance of building materials competition’:

innovation@decc.gsi.gov.uk

3.3 Evaluation Criteria

Bids will be assessed based on the following criteria:

1. **Value for Money:** Applicants should provide a detailed cost breakdown for the project, including labour, materials, T&S etc. Applicants should show how their bid represents value for money and set out their organisations contribution to the project. It is anticipated that DECC funding will contribute towards non-capital expenditure.
2. **Technical Specification:** Applicants must set out how their bid meets the required outcomes specified in section 2.
3. **Delivery Plan:** Applicants must show how they intend to deliver the facility in the timescales required.
4. **Intent of use and collaboration:** Applicants should set out how they intend to utilise the facility and ensure that it is available for use by other UK research organisations, identifying other potential users already engaged in the project. They should indicate how the research will progress knowledge in this area and confirm the facility will be solely used for non-economic gain research purposes.
5. **Exploitation:** Applicants should set out plans for future use and funding related to this facility, including details of research projects they, or other stakeholders, are already undertaking or planning to undertake that will utilise this facility. This section should include plans for communications related to this facility that will ensure other stakeholders are aware of the opportunity, and research councils / funding agencies take it into account when future R&D in this area is commissioned.

4. Further Details

Any specific queries related to this call can be emailed to:

innovation@decc.gsi.gov.uk

This request for proposals does not commit DECC to proceeding with awarding the grant. DECC reserves the right not to award any grants, in particular if DECC is not satisfied by the proposals received or if the funding assigned to the scheme is required for other, unforeseen, purposes. DECC will not, under any circumstances, make any contribution to the costs of preparing proposals and applicants accept the risk that they may not be awarded a grant.

Template for Response (1 page limit per section)

Name		
Contact Details	E:	T:
Organisation		
Proposal	<ul style="list-style-type: none"> Briefly set out how your bid intends to meet the requirements of the call. 	
Technical Specification	<ul style="list-style-type: none"> Set out the technical aspects of your bid. More detail will be accepted as an annex to this document. Detailed design specification/drawings not required at this stage. 	
Delivery Plan	<ul style="list-style-type: none"> Set out how you intend to deliver this facility. A project plan or gantt chart will be accepted as an annex to this document but is not a requirement. 	
Cost/ Value for Money	<ul style="list-style-type: none"> Set out the cost for the facility proposed, including a breakdown of costs into labour, materials, travel & subsistence, other, and VAT where applicable. Please indicate clearly how your bid represents value for money. 	
Intent of use	<ul style="list-style-type: none"> Set out how you intend to utilise the facility once commissioned, including how access to other research institutes will be managed. 	
Exploitation	<ul style="list-style-type: none"> Set out plans to ensure future funding and use of facility. 	

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