

JOB DESCRIPTION

Vacancy reference:	SRF34142
Post Title:	Post-doctoral Research Associate (PDRA) in Energy Demand Flexibility Modelling
Grade:	Grade 6
School/Department:	School of the Built Environment
Reports to:	Dr Stefan Thor Smith
Responsible for:	NA

Purpose

To support the Investigator in performance assessment of demand-side technology through energy-demand model development and assessment. This will include uptake and use of specific management platforms and heating and cooling technology as part of Department for Transport and EPSRC funded projects. These include projects on thermal energy storage with a versatile phase change material technology and the ADEPT-led smart-city demonstrator project.

Main duties and responsibilities

Research:

- ❖ Undertake research with the supervision of the Principle Investigator at University of Reading. To include:
 - Microscale meteorological modelling for environmental influence on technology performance
 - Energy demand modelling (building heat load profiling) and coupling to numerical heat storage system models
 - Model sensitivity and uncertainty analysis as part of model evaluation
 - Evaluation of technology performance under different climatic conditions
 - Economic and environmental performance of demand technology under different system level uptake (whole life)
 - Assessment of Local Authority energy management plans and decarbonisation strategies (including use of forecast and control/management technology of demand, including electric vehicles)
- ❖ Contribute significantly to the writing of papers for publication in leading academic journals and other relevant media
- ❖ Prepare and disseminate research findings and establish a (inter)national reputation through participation in (inter)national conferences, exhibitions and workshop events
- ❖ Design and implement research methods that add to knowledge and understanding that are appropriate to the discipline
- ❖ Collaborate with colleagues within the University and at other institutions in the development of original research

Enterprise & Outreach:

- ❖ Liaise closely with industry partners and clients external to the University, such as academics and potential research users, and researchers and partners involved with the project.

- ❖ Support development of online presence for the project including project website content development
- ❖ Attend conferences and seminars relevant to the project wider remit and engage with identified stakeholders

Other:

- ❖ Participate in project teams and steering groups at a Research Group, Department or School level
- ❖ Contributing to the research culture within Schools of Built Environment, particularly pertaining to Energy and Environmental Engineering
- ❖ Support project-related administration such as the organisation of regular project or client meetings, departmental presentations or seminars (e.g. impact activities and advisory panel meetings)

Supervision received

Technical, daily, supervision with Dr Stefan Thor Smith as well as general management (including finance, impact, and research planning). Academic advancement will be further supported within the wider research group.

Contact

It is expected that the post holder will liaise with other academics and researchers on and off Campus involved in energy related research. Specifically, this will be with staff and students belonging to the Energy and Environmental Engineering Research Group; the Investigators and research staff working under this project and more widely within the Centre for Research into Energy Demand Solutions; and the wider research community within the University and project partners (Universities and non-academic).

Terms and conditions

The post is full-time for a fixed term of up to 33 months. There are no specific set hours of work, but the appointee will be required to work such hours as are necessary to carry out the duties associated with the post.

This document outlines the duties required for the time being of the post to indicate the level of responsibility. It is not a comprehensive or exhaustive list and the line manager may vary duties from time to time which do not change the general character of the job or the level of responsibility entailed.

Date assessed:

PERSON SPECIFICATION

Job Title	School/Department
Post-doctoral Research Associate (PDRA) in Energy Demand Flexibility Modelling	Built Environment

Criteria	Essential	Desirable
Skills Required	<ul style="list-style-type: none"> • Collation and interpretation of evidence from diverse types of sources • Collaborative approach to research and team-work • Excellent programming skills • Excellent computational and mathematical modelling ability • Ability to carry out advanced data analytics • Ability to communicate effectively, both orally and in writing • Ability to work to deadlines • Ability to present data to a wide variety of audiences 	<ul style="list-style-type: none"> • Ability to publish in top ranking refereed journals relevant to area of specialist expertise • Proven social media and networking abilities • Excellent critical thinking, analytical and problem-solving skills • Application of meteorological modelling to energy system studies
Attainment	<ul style="list-style-type: none"> • Strong track record of educational achievement in engineering, mathematical, or physical sciences • PhD (or soon to obtain PhD) in relevant subject or discipline • Appropriate publication record for career level 	
Knowledge	<ul style="list-style-type: none"> • Understanding of drivers of energy demand • Demand-side management • Knowledge of energy related practices and behaviours and appropriate modelling techniques • Relevant data sets for energy demand research 	<ul style="list-style-type: none"> • Thermal storage system models • Existing energy systems/network models • Humanities research on energy use
Relevant Experience	<ul style="list-style-type: none"> • Postgraduate level research on energy demand/systems modelling • Professional presentations at workshops and conferences 	<ul style="list-style-type: none"> • Industry or professional experience in a related field.

	<ul style="list-style-type: none"> • Management of research project • Publishing in leading academic journals 	
Disposition	<ul style="list-style-type: none"> • Willingness to travel nationally and internationally. • Strong commitment to continuous professional development. • Ability to work independently and as part of an interdisciplinary team 	<ul style="list-style-type: none"> • Willingness to instigate and deliver collaborative research with industry and wider research community.

Completed by: Stefan Thor Smith	Date:18/11/2020
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