



OLLSCOIL NA GAILLIMHĒ
UNIVERSITY OF GALWAY



HR EXCELLENCE IN RESEARCH

Postdoctoral Researcher/Research Associate
Demonstration of the Potential for Microgrids within the Irish Grid
Power Electronics Research Centre
School of Engineering
Ref. No. 010857

JOB ADVERTISEMENT

Applications are invited from suitably qualified candidates for a full-time, fixed term position as Postdoctoral Researcher/Research Associate to work on the project *Demonstration of the Potential for Microgrids within the Irish Grid* in the [School of Engineering](#) with the Power Electronics Research Centre, Electrical & Electronic Engineering at the University of Galway, Ireland.

This position is funded by the SFI MaREI Research Centre for Energy Climate and Marine and is available from 1st March to contract end date of 31st December 2025 (10 months).

The aim of the project is to demonstrate the potential for microgrids within the Irish grid. Based on the combined results of a database of standard BIMs, smart meter demand/RES supply data and historic climate data, and accounting for the increasing electrification of heating and transport, the potential for operating certain localised sections of the Irish grid as microgrids will be investigated through scenario modelling, with a view to identifying one or two suitable demonstrator sites to be considered for implementation in a future project.. Given that the research will be based on a combination of Irish data sources, the results will inform the development of microgrids in Ireland in terms of identifying characteristics of suitable sites and illustrating the level of advantage provided by distributing electricity locally within a microgrid, both for consumers and the DSO.

The research will involve system level modelling, including the development of models for the electrical distribution system to represent the flow of electricity between prosumers and centralised energy storage systems using tools such as MatLab Simulink and OpenDSS.

Salary: Research Associate/Postdoctoral Researcher salary scale €44,846 - €57,332 per annum, (subject to the project's funding limitations), and pro rata for shorter and/or part-time contracts.

The default position for all new public sector appointments is the 1st point of the salary scale. This may be reviewed, and consideration afforded to appointment at a higher point on the payscale (subject to the project's funding limitations), where evidence of prior years' equivalent experience is accepted in determining placement on the scale above point 1, subject to the maximum of the scale.

[\(Research Salary Scales - University of Galway\)](#)



Closing date for receipt of applications is 17:00 (Irish Time) on Wednesday, 5th February 2025. It will not be possible to consider applications received after the closing date.

***Please review full job description for further details and essential requirement**

JOB DESCRIPTION

The successful candidate will be responsible for developing and applying system level models for different sections of the Irish distribution system to determine their potential for operation as a microgrid through assessment of different scenarios. Models will be based on available databases of renewable energy source and load profiles for a range of electrical consumer types and will include energy storage and emerging load components (heat pumps, EVs). It will involve the development and application of models for the electrical distribution system to account for demand response actions, control of centralized energy storage resources and peer-to-peer (P2P) electricity sharing/trading.

The post-holder will also take responsibility for project management, meeting appropriate milestones, timelines and deliverables. S/he will also support a team of postgraduate researchers working on a range of different projects in MaREI at University of Galway, with different technical requirements, and will be expected to contribute to the development of the host laboratory's ongoing research programmes.

Duties:

- Lead under the supervision of the Principal Investigator, the development and application of system level models for different sections of the Irish electrical distribution system to determine their potential for operation as a microgrid through assessment of different scenarios;
- Lead under the supervision of the Principal Investigator, the development and application of models for the electrical distribution system to account for demand response actions, control of centralized energy storage resources and peer-to-peer (P2P) electricity sharing/trading within microgrids;
- Apply project management skills to complete all project deliverables (reports, prototypes, testing, etc.) within the required time-frame;
- Contribute to the further development and evolution of the host laboratory's research programme by identifying new and innovative research opportunities in electrical modelling of microgrids and associated technologies, and contributing to their development;
- Actively participate in international conferences and meetings as required;
- Publish in high-impact journals as appropriate;
- Provide support and mentoring to post-graduate research students in the host research group;
- Engage in appropriate continuing professional development activities to support their own career development plans
- Any other duties assigned commensurate to this level of post

ELIGIBILITY REQUIREMENTS



Essential Requirements:

- Primary Degree (level 8) in a relevant Engineering discipline with 4 years full-time relevant research experience after primary degree;
- Demonstrated expertise in modelling of the electrical distribution and/or transmission system using tools such as Matlab Simulink, OpenDSS or equivalent;
- Demonstrated expertise in system level modelling of renewable energy systems, including renewable energy sources, energy storage components, controllable load profiles, technoeconomic analysis, etc.
- Experience of working in an academic research environment;
- Leadership capability, and experience in project management;
- Evidence of primary/senior authorship of peer-reviewed journal publications in relevant areas, or other equivalent output;
- Excellent written and spoken English communication skills.

Desirable Requirements:

- PhD in a relevant research area. Candidates who have submitted their thesis and are awaiting their viva are eligible to apply;
- Experience of electrical modelling of microgrid systems;
- Practical experience of working with smart meters;
- Knowledge of the Irish regulatory environment for electricity supply and demand;

CONTINUING PROFESSIONAL DEVELOPMENT

Continuing Professional Development/Training:

Researchers at University of Galway are encouraged to avail of a range of training and development opportunities designed to support their personal career development plans. University of Galway provides continuing professional development supports for all researchers seeking to build their own career pathways either within or beyond academia. Researchers are encouraged to engage with our Researcher Development Centre (RDC) upon commencing employment - see [HERE](#) for further information.

Further Information/Links

- **To apply:** [Search Current University of Galway vacancies](#). Applications must be submitted online.
 - [How to apply guide](#)
- For informal enquiries, please contact Maeve Duffy, Professor in the School of Engineering, Electrical & Electronic Engineering. Email: maeve.duffy@universityofgalway.ie
- [University's Strategic Plan](#)
- [Working in Research at University of Galway](#)



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- [Moving to Ireland \(Euraxess\)](#)
- [Applicant Information](#)
- We reserve the right to re-advertise or extend the closing date for this post.
- University of Galway is an equal opportunities employer.
- All positions are recruited in line with Open, Transparent, Merit (OTM) and Competency based recruitment.

