

# Smart Grid Research Engineer

Department	Power Networks Demonstration Centre (PNDC) ( <a href="http://www.strath.ac.uk/pndc/">http://www.strath.ac.uk/pndc/</a> ), Department of Electrical and Electronic Engineering ( <a href="http://www.strath.ac.uk/eee/">http://www.strath.ac.uk/eee/</a> )		
Faculty	Faculty of Engineering ( <a href="http://www.strath.ac.uk/engineering/">www.strath.ac.uk/engineering/</a> )		
Staff Category	Knowledge Exchange	Reference No	61146
Reports To	PNDC R&D Manager	Grade:	7
Salary Range:	£31,076 - £38,183	Contract Type:	Fixed Term (12 months)
FTE:	1 (35 hours/week)	Closing Date	Monday, 6 March 2017

## Job Advert

The University of Strathclyde in Glasgow possesses a large internationally rated Engineering Faculty with a proud history of successful joint ventures with industrial and enterprise partners. As part of the University's strategic development, the Power Networks Demonstration Centre (PNDC) has been established in Wardpark North near Cumbernauld. The



PNDC is a world-class facility with dedicated staff that will accelerate the adoption of new, 'smart' technologies within advanced power grids, supporting the increased accommodation of renewable energy, electric vehicles and demand side management. The £12.5 million Centre - the first of its kind in Europe - has been founded by the University of Strathclyde and leading energy companies including Scottish Power Energy Networks and Scottish and Southern Energy Power Distribution, with support from Scottish Enterprise and the Scottish Funding Council. With the addition of UK Power Networks, Vodafone, S&C Electric, Omicron, and Locamation, the Centre has expanded its membership to seven industry partners and this growth is set to continue.

The PNDC provides: a purpose-built platform for showcasing state of the art electrical distribution, generation, storage and demand side innovation; a rapid technology pipeline accelerating the proving and deployment of integrated smart grid solutions with commercial partners; a realistic and controllable test bed from primary plant to state-of-the-art control room for the development of emerging smart grid technologies that will support the realisation of a de-carbonised grid.

The PNDC seeks to appoint a Research Engineer with the ambition, talent and drive to develop and test new network technologies and smart grid solutions in its unique, world-class industry-scale facility. The successful candidate will work as part of a growing dynamic team on a wide range of technical projects with particular emphasis on experimental validation and testing. Opportunities for innovation are extensive, through the strong working relationship and routes to market afforded by the PNDC industry members. This will be supplemented with collaborative opportunities with other research and industry teams in the UK and abroad. **You will be primarily based at PNDC in Cumbernauld.**

You should possess an excellent honours degree in electrical engineering together with a relevant PhD. You will have advanced knowledge of electrical power systems and the protection and control systems used in distribution and transmission networks, and be capable of applying this knowledge in a highly practical environment. This position will have a focus on modelling of power systems, using network modelling tools in an offline and online/real time environment. Good evidence of technical writing ability and strong communication skills are important. You must be a self-starter, you will be able to plan and conduct individual research and knowledge exchange activities in a structured fashion, as well as generate new ideas and concepts, and the capacity to work in a dynamically changing team environment.

## Job Description

### Brief Outline of Job:

You will undertake specific research and development projects under the guidance of the PNDC leadership team, providing regular updates and reports for industrial partners, and thus supporting the Centre objectives and targets. A strong engagement with industry colleagues, as well as with the PNDC and wider University team, will support the realisation of relevant and valuable results. You will be work with a focus on modelling of powers systems across assigned research areas in accordance with PNDC core programme objectives, as well as externally funded projects, and will develop project plans for consideration by industrial partners and clients as well as research proposals for geared funding. You may undertake related work on various research projects as needs arise. Through engaging in relevant professional and knowledge exchange activities you will support the PNDC's external profile and technical leadership. Working as part of a dynamic team you will further input to PNDC administrative and operational activities.

### Main Activities/Responsibilities:

1.	Conduct collaborative research, development and testing projects relevant to the PNDC research themes, determining and utilising appropriate new research methods, with a focus on practical implementation and validation within the PNDC facilities.
2.	Contribute to assigned PNDC core themes in collaboration with theme leads, academic lead, working with the PNDC R&D Manager to contribute to the realisation of strategy and foresighting materials. Maintain key relationships with industry partner thematic contacts.
3.	Run power system simulations using Real Time (RTDS) and offline simulation software, e.g. MATLAB, IPSA, PSCAD, Power Factory, PSS/O.
4.	Apply technical knowledge to industry issues to investigate and quantify problems experienced by PNDC members, and develop project enquiry outlines and project specifications for consideration as part of the Centre core programme. Contribute to the development of geared funding proposals, as part of this.
5.	Plan and manage own workload, with guidance from colleagues as required, while adopting safe and appropriate working practices.
6.	Maintain appropriate engagement with industrial members and third party vendors to ensure relevance and accuracy of work. Maintain professional awareness to ensure originality and exploitability of the research outputs.
7.	Provide quality technical and progress reports of research, development and testing work for distribution to members and clients, adopting best practice in effective knowledge transfer to members, and supporting wider dissemination at conferences and in peer reviewed journals.
8.	Supervise junior researcher and student projects, providing guidance and support to ensure maximum value to the PNDC objectives and targets. Where appropriate, supervise industrial representatives conducting collaborative research and testing on site.
9.	As part of the dynamic team at PNDC, contribute to the Centre's safe operational running, effective administration, and knowledge exchange events and initiatives.
10.	Maintain appropriate engagement with colleagues in the Institute for Energy and Environment and wider University teams, to support the capture of further funding opportunities, exploit synergy with other research programmes, and contribute to alignment with key industry member needs.
11.	Engage in continuous professional development, participating in external networks and consultations to maintain current knowledge of relevant state of the art, patent positions, products and Technology Readiness Levels.
12.	Contribute to policy and industry consultations where appropriate, in support of PNDC's sectoral contributions.
13.	Other duties as may be assigned.

## Person Specification

### Educational and/or Professional Qualifications

(E=Essential, i.e. a candidate must meet all essential criteria to be considered for selection, D=Desirable)

E.1 Excellent honours degree (minimum class 2:1) and PhD in Electrical Engineering

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## Experience

- E.2 An excellent problem-solver, with a track record of achievement in an R&D environment
- E.3 Computer simulation or modelling experience (e.g. MATLAB/Simulink, PSCAD, IPSA, Power Factory)
- E.4 Understanding of protection and control in a power systems environment.
- D.1 Experience of working in, or for, the electricity supply industry.
- D.2 Experience of power system modelling and simulation using RTDS, RSCAD.

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## Job Related Skills and Achievements

- E.5 A sound understanding of AC electrical theory and practice and the electrical supply system / smart grids landscape
- E.6 Knowledge of protection, control, automation and/or measurement schemes
- E.7 Developing ability to conduct individual research and knowledge exchange activity
- E.8 High levels of initiative with the ability to apply knowledge in a highly practical environment, and to generate new ideas.
- D.3 Good programming skills (e.g. C++, Python, Java)

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## Personal Attributes

- E.9 Excellent interpersonal and communication skills (oral and written), with the ability to listen, engage and persuade, and to present complex information in an accessible way to a range of audiences.
  - E.10 The ability to work independently, with minimum supervision, and as part of a small team.
  - E.11 Enthusiastic self-starter and able to work to deadlines, with a customer focus.
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## Application Procedure

Applicants are required to complete an application form including the name of three referees who will be contacted before interview without permission, unless you indicate you would prefer otherwise. Applicants should also submit a Curriculum Vitae and a covering letter as a single document detailing the knowledge, skills and experience you think make you the right candidate for the job. Applicants should also complete the Equal Opportunities Monitoring Form.

## Other Information

Further information on the application process and working at Strathclyde can be found on our website (<http://www.strath.ac.uk/hr/workforus>).

Informal enquiries about the post can be directed to Alan Dunn, Power Network Demonstration Centre, [alan.dunn@strath.ac.uk](mailto:alan.dunn@strath.ac.uk).

### Pension

The successful applicant will be eligible to join the Universities' Superannuation Scheme. Further information regarding this scheme is available from [Payroll and Pensions](#).

### Relocation

Where applicable, the University offers a relocation package to support new employees who meet the eligibility criteria. The relocation package is offered as a contribution towards costs incurred, and is designed to be flexible, allowing staff to use the financial support available in the way that will be most helpful to them. Further details are outlined in the Relocation Policy.

### Interviews

Formal interviews for this post will be held on Wednesday, 15 March 2017.

### Equality and Diversity

We value diversity and welcome applications from all sections of the community.

The University currently holds a Bronze Athena SWAN award, recognising our commitment to advancing women's careers in science, technology, engineering, maths and medicine (STEMM) employment in academia.

