JOB TITLE: RESEARCH ASSISTANT/ASSOCIATE FOR THE ENERGY POLICY RESEARCH GROUP (EPRG) - FIXED TERM

REPORTS TO: ASSISTANT DIRECTOR, EPRG

Background

Research is being conducted as part of the EPSRC-funded UK Carbon Capture and Storage Research Centre (UKCCSRC), which involves five partner institutions (Universities of Sheffield (lead), Nottingham, Cambridge, Imperial College London, and the British Geological Survey with additional researchers from other leading UK universities). The Centre is dedicated to performing key fundamental research and coordination activities to help the UK to meet future energy targets. The Centre supports a whole-systems based research programme and is an inclusive national hub to set research strategies, coordinate research delivery, promote community cohesion, and act as vehicle for industrial and stakeholder involvement.

The work will be conducted by the Energy Policy Research Group (EPRG), which is based at Cambridge Judge Business School, University of Cambridge. The research team have broad expertise in economics, technology policy and political science. Their core research discipline is economics, within a framework that encourages collaboration between experts from different academic traditions, drawing on insights from engineering, political science and law. The EPRG have been ranked as one of the top 10 global thinktanks on energy and natural resources and one of the two leading energy economics groups globally.

Through their publications and via their Energy Policy Forum (EPF), the group offers rigorous independent research output that informs public and private sector decision making in the electricity and energy industry. The Energy Policy Forum is supported by stakeholder membership (business and policy associates), leveraging their research funding, extending their international sphere of influence and enhancing their ability to respond to important research questions as they arise.

The role

The EPRG are looking to appoint a Research Associate at Cambridge Judge Business School within the Economics and Policy subject group. The Research Associate will support a national research centre focussed on:

1. modelling the economics of the energy system, with a particular emphasis on electricity and heat
2. pathways to deep decarbonisation of the economy
3. public attitudes towards energy technologies.
The successful candidate will be based within the Energy Policy Research Group (EPRG) at Cambridge Judge Business School.

Cambridge is responsible for overall co-ordination of the systems and policy theme of the Centre, which will deliver integrating systems modelling, social science research and policy-oriented outputs. Cambridge also leads the integrating work package across all three Centre themes in building up a systems model that links to other national modelling efforts.

The aim is to quantify and qualify the role and value of CCS in the UK’s energy system by producing a UK energy system model, which draws together all outputs from the different themes, linking demand for heat and power, the interaction between CCS technologies, energy markets, heating systems, carbon dioxide (CO₂) transport infrastructure, and CO₂ storage, subject to constraints around negative emissions technologies. In so doing, they will improve their understanding of the synergies across the entire chain and challenges of integration and explore the potential for learning from the first projects and how public policy should support the scaling up CCS deployment. The project will also examine the role of flexibility in different future system scenarios including different flexible options such as energy storage, flexible gas-fired generation, demand side response, interconnection etc.

One key goal of the research is to build up the Centre’s existing modelling capabilities using a unit commitment model for the electricity sector and to extend the in-house gas modelling. The Centre will provide inputs into existing energy system modelling approaches and integrated assessment models (IAMs). They will be working closely with the Centre’s project partners at University College London (UCL) and their TIMES model, both to help improve the specification of CCS in their model, and also with the ESME model used at the Energy Systems Catapult. The Centre also have close links with the modelling groups at IIASA and MIT for further engagement. This project will complement other EPRG research into industrial decarbonisation and greenhouse gas removal (negative emissions) technologies.

A PhD in a related area such as energy economics, techno-economic modelling, applied economics, operations research or systems engineering is essential and additional knowledge or background in adjacent areas such as energy and climate policy or econometrics is not necessary but would be desirable. In addition, good writing skills and attention to detail are important to complete project tasks. The candidate will work closely with researchers at Imperial College and UCL, but they should be able to work independently and may also contribute to other aspects of the work of EPRG.

Main responsibilities

The Research Associate is expected to contribute primarily to a programme of work being undertaken as part of an EPSRC-funded national research centre, the UK Carbon Capture and Storage Research Centre (UKCCSRC).

The Centre will be involved in all aspects of the systems and policy theme within the Centre working closely with engineering colleagues at Imperial College and economic modelling colleagues at University College London, as well as others across the Centre as necessary. The overarching goal of the Centre’s component is to improve the economic modelling of options for deep decarbonisation, and, in particular, the decarbonisation of heat in addition to electricity.

They intend to cover all major approaches to decarbonising heat within the modelling framework and will broaden or narrow the analysis as appropriate. Combined electricity modelling together with a
model of the role of hydrogen in the economy could therefore potentially give the Centre a better understanding of potential economic and policy trade-offs between different options to support decarbonisation of the UK’s economy and meeting the 2050 targets. The modelling framework they intend to develop should explicitly represent interactions between gas and electricity systems to enable us to quantify potential implications of uptake of a hydrogen system on electricity and gas markets (in particular impacts on grid usage and generation assets as well as cross-border electricity and gas trade), impact on generation, dispatch decisions with corresponding transmission capacity constraints as well as the capability to represent spatial and temporal dimensions in detail. The researcher is expected to take the lead in the modelling and analysis under the supervision of EPRG researchers.

The Centre also has funding to conduct large-scale (n~2000) annual public opinion surveys of the UK public on subjects related to energy technologies and energy systems. As such, it would be desirable if applicants had a good working knowledge of econometrics and be able to design and analyse a large-scale survey of UK consumers (the survey itself will be carried out by a professional public opinion research firm).

The research will build on existing work and expertise within EPRG (and at the Clean Fossil and Bioenergy Research Group and the Centre for Environmental Policy at Imperial College).

In addition, the research associate will be expected to contribute to other aspects of EPRG’s work programme, participate in weekly seminars, publish in working paper series, and engage with other researchers at EPRG and Cambridge Judge Business School more widely. The researcher is expected to actively engage with the other project partners at Imperial and UCL and, in particular, to work closely with relevant PDRAs at the other universities. Travel between the partner universities and to attend biannual UKCCSRC conferences is built into the grant to foster closer collaboration.

The ideal candidate should have the following qualities, skills and attributes. You are asked to demonstrate how your own experience meets these requirements in the expression of interest cover letter.

- PhD in Economics, Operations Research, Systems Engineering or other relevant discipline (e.g., public policy, energy or environmental policy, etc.).
- Strong quantitative skills, particularly in techno-economic modelling.
- Knowledge of energy economics and policy and basic knowledge of operations research (e.g. equilibrium models of energy markets).
- Excellent writing skills and attention to detail.
- Able to work independently and as part of an interdisciplinary and collaborative project.
- Driven and committed, demonstrating initiative and self-motivation.
- Good time management and planning skills with an aim to produce relevant academic papers in leading international academic journals.

Desirable characteristics

• Training in applied econometrics and demonstrated ability to design, conduct, analyse and write up survey research.

• Familiarity with UK and European energy policy including electricity and heat, gas and carbon markets, decarbonisation pathways, political economy, trade and competitiveness considerations.

Benefits

Successful candidates who have not been awarded their PhD by the appointment date will be under-appointed as a Research Assistant (Grade 5, salary range: £26,243-£30,395). Upon award of the PhD the individual will be promoted to Research Associate (Grade 7, salary range: £32,236-£39,609).

This is a fixed term appointment for one year in the first instance. We anticipate that the new starter will commence employment on or around 2 September 2019. There will be a three-month probationary period. Holiday entitlement is 33 days per annum plus eight days of public holidays.

The full incremental salary range for the position is advertised in order to demonstrate the progression for the Grade. In the majority of cases appointments will be made at the Grade minimum; only in very specific exceptional circumstances can a higher salary be offered.

The University of Cambridge comprises more than 150 departments, faculties, schools and other institutions, plus a central administration and 31 independent and autonomous Colleges. It is one of the world's oldest and most successful Universities, with an outstanding reputation for academic achievement and research.

With excellent benefits, extensive learning opportunities and a stimulating and attractive environment, the University of Cambridge is a great place to work. Our employees are eligible for a wide range of competitive benefits and services. We give them access to numerous discounts on shopping, health care, financial services and public transport. We also offer final salary pensions and tax-efficient bicycle and car lease schemes.

We have two nurseries and a holiday play scheme to help support those with childcare responsibilities and we offer various types of family-friendly leave to aid employees' work-life balance. In addition we operate a number of initiatives to promote career development, health and well-being.

Further details can be found at www.admin.cam.ac.uk/offices/hr/staff/benefits. There is also a range of information about living and working in Cambridge at www.jobs.cam.ac.uk.

Application arrangements

To submit an application for this vacancy, please search for this position on the University's Job Opportunities website at www.jobs.cam.ac.uk and click on the "Apply online" button at the bottom of the relevant job description. This will route you to the University’s Web Recruitment System, where you will need to register an account (if you have not already) and log in before completing the online application form.

The closing date for applications is Wednesday 17 April 2019. We anticipate that interviews will be held during the week commencing Monday 29 April 2019.
Equality of opportunity at the University

The University of Cambridge is committed to a proactive approach to equality, which supports and encourages all under-represented groups, promotes an inclusive culture and values diversity. Entry into employment with the University is determined by personal merit and by the application of criteria required for the post. No applicant for an appointment or member of staff will be treated less favourably than another on the grounds of sex (including gender reassignment), marital or parental status, race, ethnic or national origin, colour, disability (including HIV status), sexual orientation, religion, age or socio-economic factors.

The University has various diversity networks which help it to progress equality; these include the Women’s Staff Network, the Disabled Staff Network, the Black and Minority Ethnic Staff Network and the Lesbian, Gay, Bisexual and Transgender Staff Network. In addition, the University was ranked in the top 100 employers for lesbian, gay and bisexual (LGB) staff in Stonewall’s Workplace Equality Index 2011.

Information if you have a disability

The University welcomes applications from individuals with disabilities and is committed to ensuring fair treatment throughout the recruitment process. Adjustments will be made, wherever reasonable to do so, to enable applicants to compete to the best of their ability and, if successful, to assist them during their employment.

We encourage applicants to declare their disabilities in order that any special arrangements, particularly for the selection process, can be accommodated. Applicants or employees can declare a disability at any time.

Applicants wishing to discuss any special arrangements connected with their disability can, at any point in the recruitment process, contact, a member of Cambridge Judge Business School’s HR team who are responsible for recruitment to this position, on (01223) 768497 or by email on hr@jbs.cam.ac.uk. Alternatively, applicants can contact the HR Business Manager responsible for the department they are applying to via hrenquiries@admin.cam.ac.uk.