



Post title	Research Assistant
Unit	School of Electronic Engineering, Dublin City University
Project	IE-NETs: Potential for Negative Emissions Technology in Ireland
Funding Agency	Environmental Protection Agency (EPA), Ireland
Post duration	Fixed Term Up to 2 years

Project Background

Most climate change mitigation scenarios analysed to date by the Intergovernmental Panel on Climate Change (IPCC), for efforts consistent with the goals of the Paris Agreement (keeping global average temperature rise well below 2°C over pre-industrial), rely on presumed deployment of so-called “negative emissions technologies” (NETs) at very large (global) scales within a small number of decades. NETs are composite technology systems or interventions which, on a full lifecycle basis, achieve net removal of one or more greenhouse gases from the atmosphere. Because of its long atmospheric lifetime, and dominant role in human-caused warming, NETs typically focus exclusively on carbon dioxide (CO₂) removal. Example NET concepts include Afforestation/Reforestation (AF), Bio-Energy with Carbon Capture and Storage (BECCS), Direct Air Capture of carbon dioxide (DAC), enhanced soil carbon storage etc.

IE-NETs is a two year research project, funded by the Environmental Protection Agency (EPA) to build Irish research capacity in this emerging area. The overarching objective is to provide a detailed and rigorous assessment of the scale and speed of negative emissions technology deployment that is required by currently envisaged decarbonisation pathways (globally and nationally), consistent with the Paris agreement goals; to evaluate the options and capacity for Ireland itself to directly contribute to such deployment; and to provide an evidence base for assessing the risks attaching to reliance on such presumptive future technology deployment in designing current (5-15 year) decarbonisation policy measures. In particular, the project will focus on identifying early research or policy actions that could significantly reduce the uncertainties attaching to the feasibility and costs of negative emissions technology, both globally and nationally.

The project is being undertaken jointly by Dublin City University and Trinity College Dublin under the direction of Professor Barry McMullin (DCU) and Professor Mike Jones (TCD).

Function

We now wish to recruit a Research Assistant on a fixed term contract basis to the DCU team working on the IE-NETs project. The person appointed will be involved in all aspects of the project, but will focus particularly on modelling and analysis of the role of negative emissions technologies in deep decarbonisation pathways for the Irish energy system, including long-term infrastructure constraints and requirements.

Principle Duties and Responsibilities

Reporting to the DCU Principal Investigator the Research Assistant will:

- Identify, and summarise existing literature on the potential forms of negative emissions technology, with a particular focus on technology options suitable for deployment in Ireland. The focus will be on: the global carbon budget (consistent with the Paris Agreement objectives); options for multilateral management of the budget (with consequences for distribution/allocation); appropriate valuation/investment policy and decision making under

conditions of very uncertain technology feasibility and maturity; analysis and modelling of policy responses.

- Organise, synthesise and summarise current state of knowledge with particular relevance to Ireland. This will include explicit formulation of an appropriate range of Irish carbon budget and compatible emission pathway scenarios; an approximate ranking of potential negative emissions technologies in terms of their feasibility and suitability for deployment in Ireland; and identification of key uncertainties or unknowns in choosing Irish policy approaches to negative emissions technologies.
- Contribute to life cycle assessment (LCA) of GHG emissions associated with bioenergy production in Ireland, and techno-economic analysis of identified bioenergy production systems to provide a detailed understanding of their likely economic and technical impacts, including parameters for cost-benefit assessment and evaluation of risk.
- Investigate in detail a range of technical scenarios for full decarbonisation of the Irish energy system, including the role of negative emissions technologies, in accordance with the Paris agreement goals, and examining the specific policy implications for energy infrastructure investment.
- Contribute to effective project management, administration, reporting, communication and dissemination, so that deliverables and milestones are executed on time and within budget.
- Contribute to other tasks and activities, as necessary, in accordance with the approved project description, and at the direction of the Principal Investigator.

Minimum Criteria

The ideal candidate will have a primary degree (NFQ level 8) in a relevant applied science or engineering domain (e.g., geology, climate, energy) and a Master's degree (NFQ level 9) relating to sustainable development (climate change mitigation, sustainable energy etc.). Specific familiarity with policy-relevant climate science, including carbon budget analysis and the role of negative emissions technologies in IPCC scenarios would be advantageous. Some knowledge of economics (ecological) will be helpful.

Skills

- Excellent written and oral proficiency in English (essential).
- Excellent written and verbal communication and interpersonal skills.
- Familiarity with standard IT systems and tools: email, advanced spreadsheet use, word processing, presentation, bibliography management, cloud storage etc.
- Familiarity with digital online communication, including web content management, social media, basic video/screencast production etc.
- Personal productivity management: proven ability to work independently, to manage and prioritise personal workload, and to work to strict deadlines.
- Ability to work in a team and to take responsibility to contribute to the overall success of the team.
- Strong research and problem solving abilities.

Experience

The following are all desirable:

- Participation in public policy formation: for example, preparation of submissions in response to policy consultations, public policy commentary or critique.
- Demonstrated public communication experience with both professional and lay audiences.
- Engagement/outreach with government (national and/or local), state agencies, environmental NGO sector.
- Academic publication.

Salary Scale: * €22,396 - € 32,930 per annum

**Appointment will be commensurate with qualifications and experience and will be made on the appropriate point of the salary scale, in line with current Government pay policy.*

Application Closing Date:

Thursday 15th December 2016

Provisional Interview Date:

Shortlisted candidates will be invited for interview. Interviews are provisionally scheduled to fall in the period 4th and 6th January 2017 inclusive, and will take place at DCU (Glasnevin campus).

Informal Enquiries to:

Prof. Barry McMullin, School of Electronic Engineering, Dublin City University

E-mail: Barry.McMullin@dcu.ie Phone: +353 (0)1 700 5432

Note: Please do not send applications to this email address, instead apply as described below.

Application Procedure

Application forms are available from the DCU Current Vacancies (open Competitions) website at <http://dcu.ie/hr/vacancies/current.shtml> and also from the Human Resources Department, Dublin City University, Dublin 9. Tel: +353 (0) 1 700 5149

Applications should be submitted by email to hr.applications@dcu.ie or by Fax to +353 (0)1 700 5500 or by post to: Human Resources Department, Dublin City University, Glasnevin Campus, Dublin 9.

Please clearly state the role you are applying for in your application and email subject line, as follows:

Job Ref #445 Research Assistant, IE-NETs, School of Electronic Engineering

Dublin City University is an equal opportunities employer