

Post Specification

Post Title:	PhD Studentship
Post Status:	Full-time.
Research Group / Department / School:	E3 FOREST, Dept of Civil, Structural and Environmental Engineering, School of Engineering, Trinity College Dublin, the University of Dublin
Location:	Museum Building, Trinity College Dublin, the University of Dublin College Green, Dublin 2, Ireland
Reports to:	Prof Sarah McCormack & Prof Jane Stout
Terms & Conditions:	Full EU fees and PhD Stipend
Hours of Work:	40
Closing Date:	12 Noon (GMT), 14 th June 2023

PhD project description: Determining the potential co-benefits for biodiversity conservation and renewable energy production on solar farms in Ireland.

Given Ireland's targets to reduce greenhouse gas emissions by 51-55% by 2030 and achieve net-zero emissions by 2050, a rapid increase in renewable energy developments is expected, particularly in solar energy, increasing from less than 1 GW today to 8 GW by 2030. The development of solar farms often necessitates large land areas, which can result in significant habitat loss and degradation. While expanding solar energy is crucial for global climate mitigation, it poses a trade-off between renewable energy and biodiversity. Therefore, considering Ireland's National Climate and Biodiversity Emergency declaration in 2019, it is crucial to assess the management of land and wildlife in areas where these developments occur.

Research indicates that if solar farms are appropriately and strategically managed, particularly on previously intensively managed agricultural land, they can have positive impacts on local biodiversity. Such studies have demonstrated that a less intensive approach to vegetation and

wildlife management on solar farms does not compromise energy production efficiency. Consequently, adopting less intensive approaches to solar farm management has the potential to enhance on-site biodiversity. However, the potential of strategic management for biodiversity conservation in Irish solar farms remains unexplored and untapped.

This study aims to explore optimisation of a blended land use management approach, addressing the compatibility of nature-based solutions, such as long-term forestry, and technological solutions for example solar farms at different spatial and temporal scales to identify potential options for maximising climate action for Ireland. It will investigate the effects of solar farms on local biodiversity and explore the options of optimizing land used for solar farms to simultaneously promote renewable energy and biodiversity conservation, achieving co-production and co-benefits.

This PhD scholarship includes funding of fees and full PhD stipend for 4 years.

‘FOREST - Reimagining relations with nature’ project description:

This PhD project is embedded within the FOREST project, an exciting multi-disciplinary project that brings together a team of researchers from the schools of natural sciences, computer sciences, engineering, business, and economics, to examine changing land use practices in Ireland’s transition to sustainability. The selected candidate will join a small team of PhD scholars examining native woodland afforestation and solar farms, which have become a key strategy to address climate and biodiversity challenges and are attracting investment from public and private actors. FOREST, will use the increase in forestry and solar farms in Ireland as a model system to explore the challenges associated with addressing climate and biodiversity issues, and examine potential solutions from a multi-disciplinary perspective. The aim is to develop socially just, ecologically sound, and economically viable options.

FOREST is a Kinsella Challenge-Based E3 project at Trinity College Dublin, and PhD students will have the opportunity to work alongside the other successful projects, particularly in terms of team-building and dissemination events. Further information is available here on the Kinsella projects- <https://www.tcd.ie/e3/forest/about/>

Standard Duties and Responsibilities of the Post

- This is a full time PhD position and so would require approximately 40 hours dedicated research time per week
- Further information on the structure PhD at Trinity can be found here - <https://www.tcd.ie/graduatestudies/students/research/>

Funding Information

E3 Kinsella Challenge based award

Person Specification

Qualifications

We are looking for a PhD researcher with a Master's degree in Engineering or Environmental Sciences or a relevant area of study.

Knowledge & Experience

- Knowledge of Ireland's climate action and environment policies, planning, and performance
- Research experience in sustainable energy or biodiversity
- Experience using quantitative data collection methods and modelling.

Skills & Competencies

- Strong skills in core engineering/ science research methodologies and methods
- Excellent organisational and time-management skills
- Excellent communication skills
- Evidence of strong research competencies, in particular, in quantitative and qualitative research techniques
- PhD students will work as a team and so excellent team working and communication skills are required.

The Selection Process in Trinity

The Selection Committee (Interview Panel) will include members of the FOREST research team. Applications will be acknowledged by email.

Given the degree of co-ordination and planning to have a Selection Committee available on the specified date, the University regrets that it may not be in a position to offer alternate selection dates. Where candidates are unavailable, reserves may be drawn from a shortlist.

In some instances the Selection Committee may avail of telephone or video conferencing. The University's selection methods may consist of any or all of the following: Interviews, Presentations, References and Situational Exercises.

Equal Opportunities Policy

Trinity is an equal opportunities employer and is committed to employment policies, procedures and practices which do not discriminate on grounds such as gender, civil status, family status, age, disability, race, religious belief, sexual orientation or membership of the travelling community. On that basis we encourage and welcome talented people from all backgrounds to join our staff community. Trinity's Diversity Statement can be viewed in full at <https://www.tcd.ie/diversity-inclusion/diversity-statement>.

Application Procedure

Application Procedure

Applicants should submit a full Curriculum Vitae & Cover Letter to include the names and contact details of 2 referees (including email addresses), to:-

Name: Sarah McCormack

Email Address: mccorms1@tcd.ie

Trinity College Dublin, the University of Dublin

Trinity is Ireland's leading university and is ranked 98th in the world (QS World University Rankings 2023). Founded in 1592, the University is steeped in history with a reputation for excellence in education, research and innovation. Located on an iconic campus in the heart of Dublin's city centre, Trinity has 21,000 undergraduate and postgraduate students across our three faculties – Arts, Humanities, and Social Sciences; Engineering, Mathematics and Science; and Health Sciences. Trinity is ranked as the 17th most international university in the world (Times Higher Education Rankings 2020) and has students and staff from over 120 countries.

The pursuit of excellence through research and scholarship is at the heart of a Trinity education, and our researchers have an outstanding publication record and strong record of grant success. Trinity has developed 19 broad-based multidisciplinary research themes that cut across disciplines and facilitate world-leading research and collaboration within the University and with colleagues around the world.

Trinity is home to the famous Old Library and to the historic Book of Kells as well as other internationally significant holdings in manuscripts, maps and early printed material. The Trinity Library is a legal deposit library, granting the University the right to claim a copy of every book published in Ireland and the UK. At present, the Library's holdings span approximately 6.5 million printed items, 400,000 e-books and 150,000 e-journals. With over 120,000 alumni, Trinity's tradition of independent intellectual inquiry has produced some of the world's finest, most original minds including the writers Oscar Wilde and Samuel Beckett (Nobel laureates), the mathematician William Rowan Hamilton and the physicist Ernest Walton (Nobel laureate), the political thinker Edmund Burke, and the former President of Ireland Mary Robinson. This tradition finds expression today in a campus culture of scholarship, innovation, creativity, entrepreneurship and dedication to societal reform.



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