National Industry PhD Program: Hydrodynamics of Subsea Power Cables in Offshore Wind Industry

Adelaide University and Aurora Offshore Engineering invite applications for this industry PhD project, exploring the hydrodynamics of subsea cables.

Program overview

Degree

Doctor of Philosophy

Research area

Hydrodynamics

Academic supervisor

Feifei Tong

Industry partner

Aurora Offshore Engineering Pty Ltd

Expected commencement

2026

The successful candidate will receive:

- Admission to a PhD program at Adelaide University;
- An Adelaide University Research Scholarship for 4 years, paid at $53,635 p.a., and a tuition fee waiver;
- Supervision from research specialists at Adelaide University and Aurora Offshore Engineering;
- Industry embedment with Aurora Offshore Engineering; and
- Access to professional development opportunities through the University's Graduate Research and Innovation Training program.

Project Description

This project aims to address a critical knowledge gap regarding the reliability of subsea power cables, which are increasingly used to transport clean energy in the offshore wind industry and as interconnectors across oceans. Due to challenging metocean or seabed conditions, subsea cables are often required to be installed into pre-cut or natural trenches. However, it is unclear how subsea cables behave hydrodynamically within these trenches. Traditional guidance for pipelines in trenches may not provide a good proxy cable behaviour, motivating further research. The significance of this industry PhD project includes a technology boost toward Australia's ambitious plan to develop offshore wind renewables in achieving net-zero, through creating a cable hydrodynamics database and new guidelines in the design and protection of subsea cables. The expected outcomes include fundamental understanding on the characteristics of flow in subsea trenches and the impact on cable hydrodynamics. These outcomes will safeguard the reliability and integrity of subsea cables, and ensuring Australia's offshore wind is connection ready.

This project will be undertaken in collaboration with Dr Feifei Tong of the School of Civil Engineering and Construction Management, and research specialists at Aurora Offshore Engineering and the University of Western Australia. The student will co-locate at

Adelaide University's City Campus and Aurora's Perth site.

Eligibility Requirements

This opportunity is open to candidates who can meet the requirements for PhD admission at Adelaide University (including English language proficiency in the relevant academic area), and who can demonstrate suitable experience in ocean engineering or hydrodynamics (through a high-quality Honours or Masters degree).

In addition, the successful applicant should be able to demonstrate the following attributes:

- A strong foundation in fluid dynamics and hydrodynamics.
- Knowledge of offshore systems, such as offshore platform and subsea systems.
- Proficiency in computational modelling (e.g., computational fluid dynamics).
- Strong analytical and problem-solving skills as demonstrated by relevant experience.

- Familiarity with data analysis and visualisation tools (e.g., MATLAB, Python).
- Effective skills in communicating technical knowledge to a general audience.
- Experience in offshore engineering or renewable energy projects (desirable).
- Research publication or presentation experience (desirable).

The successful candidate must be able to enrol as a full-time PhD student at the University in the year of the offer. They must remain based in Adelaide, South Australia for the duration of the award.

Students that have previously completed a PhD program are, unfortunately, ineligible for the National Industry PhD Program.

Application Process

To apply, please email the following documents to principal supervisor Feifei Tong (feifei.tong@adelaide.edu.au) with the subject line 'National Industry PhD Program application':

- CV
- Cover Letter (of not more than 2 pages) outlining your interest in the PhD project and describing how your background and research area align with the project
- Degree certificates and relevant academic transcripts, with translations of non-English documentation

Applications close on **31 January 2026**. Please note that applications will be shortlisted on a rolling basis, and the scholarship advertisement may be withdrawn early if a suitable candidate is identified.

About the National Industry PhD Program

The National Industry PhD Program is an Australian Government initiative to enhance workforce mobility among graduate researchers, and to promote knowledge transfer between academia and industries across all areas. PhD candidates under this program are connected with academic supervisors and industry-based researchers, to co-design innovative, applied research projects. Through their doctoral candidature, students will experience research in both university and industry settings and undertake specialised training in research translation and commercialisation.

Enquiries

For enquiries about this opportunity please contact Dr Feifei Tong: feifei.tong@adelaide.edu.au

General Enquiries

For further information about the National Industry PhD Program, or research degrees at Adelaide University, please contact the Adelaide University Graduate Research School