

Project Title: Development of hydrogen-enabled economy transformation models (based at University of Sydney)

Project background and description

Green hydrogen represents a unique opportunity given its wide array of potential applications and markets both locally and overseas. This is particularly the case in light of current trends in Japan and South Korea who have forecast a significant requirement for importable hydrogen as they transition to a low-carbon economy. Hydrogen also has the potential to create new economic opportunities locally in the electricity, gas, transport, and industrial sectors. Notably, it may also be used to support Australia's electricity market by smoothing out generation and demand profiles and providing a series of other ancillary grid stabilisation services.

Aim/objectives: This project aims to investigate the techno-economic impact of relevant hydrogen based technologies on energy markets, highlighting Australia's areas of comparative advantage. It is intended that the analysis help guide the Australian Governments' investment as well as regulations/policy required in order to successfully build a local hydrogen industry and a successful energy transformation. The techno-economic assessment is based on energy system modelling and planning. The outcomes are of great significance, as it will investigate science-guided and empirically tested methodological principles to identify the best energy transformation options and outcomes for the transition to a zero-carbon future across the energy supply chain. This project will use integrated analysis to enhance a national energy transformation roadmap in terms of robustness and depth.

For enquiries on PhD project, please contact Dr Jeremy Qiu via:
Jeremy.qiu@sydney.edu.au

Environment

The GlobHE Training Centre is offering 12 Higher Degree by Research (HDR) Scholarships (PhD) that will provide a unique training opportunity through:

- World-class and state-of-the-art facilities and experts across the participating universities, research institutions, industry partners and other organisations
- An integrated Training Centre research agenda with inter-disciplinary projects across 5 themes area
- Opportunity to work or placement with partner organisations and industry partners
- Research skills, career development workshops and relevant industrial training
- Competitive support for national and international conference travel and networking opportunity
- Generous project support and excellent mentorship
- Delivering the next generation of highly skilled workforce to give Australia the ability to build home-grown hydrogen solutions and economic models.

Eligibility

PhD applicants must be acceptable as candidates for a PhD degree at the [University of New South Wales](#), [University of Queensland](#), [University of Sydney](#), [University of Newcastle](#), [Curtin University](#) and [Monash University](#).

The minimum requirement for admission to a PhD programme is:

- an appropriate Bachelor degree with upper second class Honours from one of the above universities; or
- a completed Masters by Research from one of the above universities with a substantial research component and demonstrated capacity for timely completion of a high quality research thesis; or
- an equivalent qualification from a tertiary institution as determined by the Faculty Higher Degree Committee (HDC)

The minimum requirement for Scholarship with admission to a PhD is:

- a four-year Bachelor's degree with Honours Class I from an Australian institution or equivalent research qualification experience. This qualification must be in a field relevant to the proposed area of research.

Please note that ALL applicants, whether domestic or international must provide evidence that their language ability meets the **minimum English language*** requirements. The following table provides guidelines on common English language test acceptable for meeting English requirement:

IELTS (Academic)	TOEFL (Internet based test)	Pearson Test (Academic)
Overall: 6.5 (min 6.0 in each subset)	Overall: 90 (min 23 in writing, 22 in reading, listening and speaking)	Overall 64 (min. 54 in each subset)

*please check individual institutions' requirement for English language. For UNSW, check out: https://www.international.unsw.edu.au/english-language-requirements?field_english_language_tid=4018

Selection Criteria

- Bachelor (honours) or Masters degree from relevant disciplines include chemical engineering, mechanical, electrical engineering, computer science and social policy; at 1st class or upper second class level, or equivalent
- Proficiency in computer programming/modelling is required for some of the projects.

- In assessing applications, preference will be given to applicants who can demonstrate an ability to work across disciplines, have excellent interpersonal, communication and management skills
- When applying for a particular project, please state briefly and clearly the relevance of your degree and/or your experience to the project description

PhD Stipend

PhD scholarships will be available for a period of three and a half (3.5) years. The PhD stipend rate is \$33,413 per annum tax-free. International applicants are encouraged to apply and maybe eligible for Tuition Fee Scholarship. [See International Research Scholarship \(for UNSW applicants\).](#)

Application Process

Interested applicant must email the following to be considered for Scholarship:

- CV
- Academic transcripts for all completed/pending completion degree
- Testamurs of previous study
- Statement addressing interest relevant to selection criteria
- Name of referees (can be academic or former employer)

For UNSW application, applicants are encouraged to use the HDR Self-assessment Tool: <https://selfassessment.research.unsw.edu.au/> to give indication of eligibility and competitiveness for a scholarship (please also send the outcome of this self assessment).

Closing date:

Scholarship application outcomes are released progressively from the 'Offers Released' date. To find out more on 'Offers Released' date for your application round, visit [Key Dates](#) for specific Universities. Please note that there are different deadlines for Domestic and International applicants.

For those wanting to start studies in 2021/2022 – [UNSW scholarship application](#):

- Domestic applicants closed on **9th July 2021 (T3 2021 start)**
- International applicants closed on **27 August 2021 (T1/T2 2022 start)**

Enquiries

For general enquiries regarding the Training Centre, please contact Professor Rose Amal: r.amal@unsw.edu.au, Professor Francois Aguey Zinsou Kondo: f.aguey@unsw.edu.au

