



Capability Statement

UOW Blue Energy Futures Lab

Australia is undertaking an immense task in transitioning to a low carbon economy. Offshore renewable energy will play a critical role in decarbonisation and in the development of future blue economies. Consequently, it is crucial to conduct evidence-based research that informs fair and efficient energy transformation, ensuring equitable access to clean energy for all.

At the University of Wollongong (UOW), we apply a comprehensive research approach to explore all facets of energy transformation, from social and economic factors to environmental and technical aspects. As an anchor institution in the Illawarra region, UOW actively promotes regional collaboration and champions the shift from carbon-intensive industries to innovative, clean manufacturing and energy production, driving dynamic and sustainable economies. UOW's research capabilities reflect the interdisciplinary nature of our research collaborations.

The UOW [Blue Energy Futures Lab](#) brings together the expertise of diverse UOW research entities, positioning UOW at the forefront of the emerging offshore renewable energy industry. We are an interdisciplinary research network focused on providing evidence-based advice to inform policy development, industry investment and community engagement around the emerging offshore wind industry in Australia. Expertise across the group includes law, social sciences, policy, economics, engineering, business, data analytics, Indigenous knowledges and marine sciences. The Blue Energy Futures Lab is well-positioned to offer authoritative guidance to government agencies, utilities, regulatory bodies, equipment suppliers, and communities.

The Blue Energy Futures Lab stands as a beacon of innovation, collaboration, and dedication to advancing sustainable energy solutions. It works with a range of specialist research institutes and centres from across the university and is aligned with the broader [UOW Energy Futures Network](#). Furthermore, world-class education at UOW caters to the evolving workforce demands of emerging industries like offshore wind, playing a critical role in training the skilled professionals that will be required to develop, assess and monitor such emerging industries.

SOCIAL AND CULTURAL TRANSITIONS

UOW conducts applied, community centred research which recognises that energy transitions are also social transitions. In particular, Australian Centre for Culture, Environment, Society and Space ([ACCESS](#)), our School of Business ([Economics, Finance, Management, Marketing, Accounting and Supply Chain and Analytics](#)), and the Australian Centre for Ocean Resources and Security ([ANCORS](#)) have a track record in high-impact research that examines the social dimensions of energy transitions, local jobs and supply chains, economic and social impact assessment, and ocean accounting.

ACCESS has research strengths in regional economic transformation, human-environment relations, environmental, urban and regional governance, and social and cultural relationships with oceans and coastal regions. A long-term commitment to research in the Illawarra-Shoalhaven has enabled ACCESS to build trusted relationships in the region for over a decade and work with local communities to respond to the opportunities and challenges of sustainable regional transitions.

ANCORS has strengths in several research areas, including ocean governance, blue economy governance and planning, social perceptions and the acceptability of offshore developments (referred to as Social Licence to Operate), maritime law, and the role of legal and regulatory processes in facilitating sustainable transitions.

UOW's Faculty of Business and Law ([BAL](#)) has strengths in accounting, law, regulatory frameworks, and economics, while the Sustainable Buildings Research Centre ([SBRC](#)) has research strengths in exploring solutions that address the challenge of transforming our built environment into sustainable, resilient and effective places in which people live and work.



Wind turbine.
Pexels.

COMPREHENSIVE MARINE AND COSTAL SCIENCE EXPERTISE

UOW's School of Earth, Atmospheric and Life Sciences ([SEALS](#)) focuses on environmental sciences research and teaching. Its interdisciplinary approach and expertise can also play a crucial role in advancing research related to ocean energy transformation, aligning with the broader goals of sustainable resource utilisation and conservation.

COMPREHENSIVE ENGINEERING EXPERTISE FOR FUTURE CLEAN ENERGY SYSTEMS

UOW's Faculty of Engineering and Information Sciences ([EIS](#)) is renowned for our dedication to cutting-edge research, robust partnerships with industry and government stakeholders, and a commitment to innovative pedagogical methods. This puts UOW at the forefront of shaping the future of sustainable energy through offshore wind technology. Our Schools foster interdisciplinary collaboration to provide a holistic approach to offshore wind technology research and development. Our research strengths are further fortified by distinguished centres of excellence specialising in power quality, reliability, and renewable energy systems.

The Blue Energy Futures Lab is affiliated with [UOW Energy Futures Network](#). Our energy-related research includes renewable energy systems and integration, power system's quality and reliability, battery energy storage and management systems, distributed energy generation, microgrids, infrastructure modelling and economics, and R&D leading to a decarbonised economy.

The [Australian Power Quality Research Centre](#) is an internationally recognised centre of excellence which supports research, education and consulting in distribution and transmission system power quality, reliability and renewable energy systems. The [ARC Training Centre in Energy Technologies for Future Grids](#) is addressing complex challenges in the growth of renewable energy.

HOLISTIC APPROACH TO SOLUTIONS

Our work is grounded in respectful acknowledgement of the critical role that First Nations communities must play in sustainable transitions. We endeavour to continually recognise and respect that our research is being carried out on Aboriginal Country, encompassing both land and sea. We ensure that this profound connection is always reflected in the decisions we make and in the way we conduct our research.

UOW prioritises engagement with Indigenous Knowledge into our research practices by actively seeking collaboration with local First Nations communities, Indigenous leaders, and researchers. This has led to the [Blue Futures Translational Research Initiative](#), which explores how communities respond to emerging offshore industries, such as wind energy and aquaculture. It involves collaboration between ANCORS, Aboriginal organisations and industry partners from across the South Coast.

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