INDUSTRY ENGAGEMENT OVERVIEW

We deliver impact in offshore wind energy by combining research and innovation insights using world-class whole systems thinking, allowing us to respond to key challenges across the sector. Our success as a Centre is underpinned by the development of deep, long term strategic partnerships with our industry partners, with whom we pursue an intensive programme of industry engagement that involves the co-creation and sharing of ideas, know-how and solutions to next generation challenges through a collaborative process.

We assist our industry partners in areas such as: technology development (including blades, floating platforms, and mooring systems); testing and certification; power take-off and control; grid integration and energy conversion (including hydrogen and power-to-gas); resource assessment; access and logistics; remote monitoring; marine robotics; governance and consenting; marine spatial planning; environmental monitoring (including underwater noise and seabird and marine mammal monitoring); and societal engagement. With significant investment in research capacity, infrastructure and systems, we focus relentlessly on quality and impact. MaREI delivers excellent science with societal impact by supporting industry, informing policy, and empowering society.

SUPPORT INDUSTRY

Enhance the capacity of industry across the energy, climate, and marine sectors to enable sustainable economic development, including the creation of new products and services.

INFORM POLICY

Inform energy, climate, and marine policy by increasing and improving the scientific evidence base for policy-makers

EMPOWER SOCIETY

Support societal engagement on grand challenges to facilitate participatory action on the energy transition, climate action, and the blue economy

MaREI AT A GLANCE

220+ multi-disciplinary researchers across our institutional partners

103+ industry partners including start-ups, SMEs and large enterprises

13 institutional partners combining Ireland's best talent in energy, climate and marine

36+ collaborating countries across industry, academia and government

> Enhancing the capacity of industry across the offshore wind energy sector to enable sustainable economic development, including the creation of new products, services, companies, and jobs

www.marei.ie

Offshore Wind Energy Queries:
Gillian Bruton (g.bruton@ucc.ie)
Peter Hourihane (p.hourihane@ucc.ie)

MaREI, the SFI Research Centre for Energy, Climate and Marine
Beaufort Building,
Environmental Research Institute,
University College Cork,
Ringaskiddy, Co. Cork
Tel: (021) 486 4300

Find Us

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HOST INSTITUTION: UCC University College Cork, Ireland

PARTNER INSTITUTIONS: DCU, DIAS, Dublin City University, Dublin Institute of Technology, Maynooth University, MTU, National University of Ireland Galway, Trinity College Dublin, University College Dublin, University of Dublin, Tyndall, University of Limerick

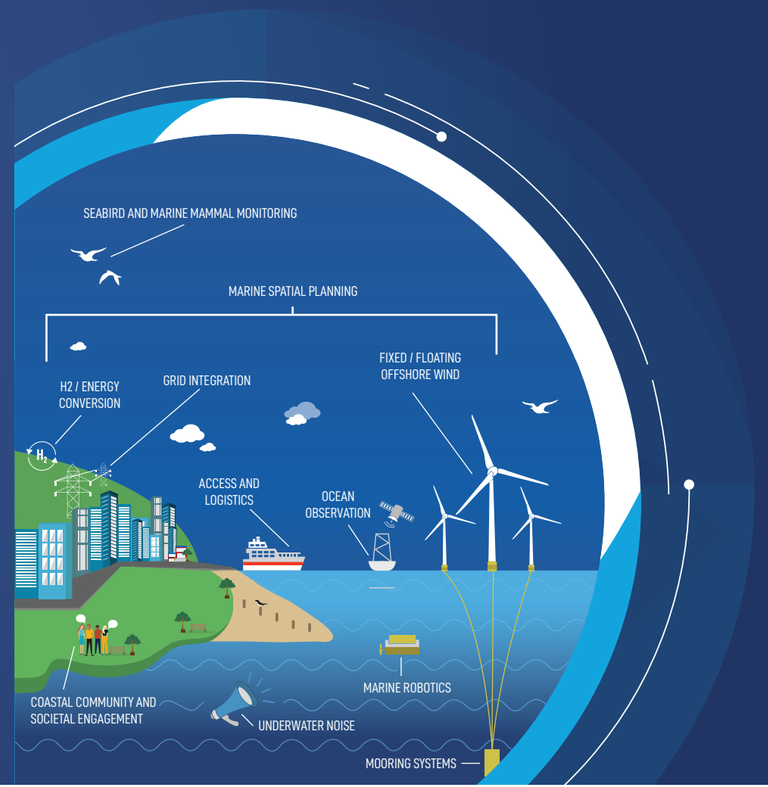
A World Leading SFI Research Centre

Science Foundation Ireland For what's next

MaREI
Energy · Climate · Marine

OFFSHORE WIND ENERGY

INDUSTRY ENGAGEMENT



MaREI OVERVIEW

MaREI is the SFI Research Centre for Energy, Climate and Marine research and innovation co-ordinated by the Environmental Research Institute (ERI) at University College Cork. Our strengths lie in the multidisciplinary nature of our research teams allowing us to combine insights in offshore wind energy from across our 13 institutional partners and draw on our expertise across key areas. Collaboration and teamwork are the forces that unite and strengthen us and allow our collective expertise to be leveraged by all stakeholders both nationally and internationally.

Global Challenge 1 // The Energy Transition

"Facilitate the transition to a low-carbon energy future through the provision of the underlying research and innovation, and the training of the highly skilled leaders of tomorrow"

Global Challenge 2 // Climate Action

"Enable positive climate action through the provision of leadership in the areas of climate mitigation, climate adaptation, climate science, and climate dialogue"

Global Challenge 3 // Blue Economy

"Better understand and sustainably utilise the potential of oursignificant marine and coastal resources"

AVAILABLE FACILITIES

MaREI offers unique world-class infrastructure and testing facilities that allow the systematic identification and reduction of offshore wind energy development risks through a structured Technology Readiness Level (TRL) development cycle.

- **Lir National Ocean Test Facility (Lir NOTF):** Includes state of the art wave tanks and electrical rigs that allow for scaled testing in a controlled environment; a 2,600m^2 tank hall which houses four different wave tanks; deep ocean wave basin (circa 1:15 scale testing) capable of producing waves of up to 1.2m high, an ocean wave basin (circa 1:50 scale testing); a wave and current flume with coastal/tidal testing capabilities (circa 1:50 scale testing). Lir mechanical/electrical workshops offering a range of electrical and energy storage infrastructure.
- **Structural Research Laboratory:** The 375m^2 state-of-the-art high-bay structural research laboratory is the largest and most advanced materials testing facility in Ireland. Team members possess extensive experience in designing and implementing full-scale testing of structural components and systems (including composite, reinforced concrete and metallic offshore renewable energy structures) subject to static, dynamic, and cyclic loadings, complemented by significant numerical modelling competency.
- **Marine Robotics Facilities:** Facilities include two dedicated marine laboratories; comprising a Dry Lab (C0-045) equipped and used for control system development, simulation, and for electronics, integration and testing small systems; Wet Lab utilised for large systems, electrical and mechanical (ROV I AUV), integration and tank testing. Facilities include extensive Remotely Operated Vehicle (ROV) equipment and capabilities, specifically designed for operation in challenging environments.

WHY PARTNER WITH MaREI?

- Access to world-class researchers and state-of-the-art facilities across our institutional partners
- Provision of innovative solutions to defined industry partner questions
- Access to co-funding opportunities for collaborative research projects
- Access to licensing/technology transfer supports to facilitate exploitation of outputs
- Access to our national and international networks
- Access to National/European proposals consortia and supports
- Increased competitive advantage, domestically and internationally, and access to new markets
- Access to potential pipeline of talented future employees

KEY FOCUS AREAS:

PROCESS TO ENGAGE

SAMPLE PROJECTS

TECHNOLOGY DESIGN:

LEAPWIND: Leading edge advanced protection using novel thermoplastic materials and processes for offshore wind turbine blades

TESTING AND CERTIFICATION:

MARINERG-i: Marine Renewable Energy Research Infrastructure (ESFRI Roadmap)

GOVERNANCE AND CONSENTING:

EirWind: Co-designing opportunities towards the development of Irish offshore wind

SIMATLANTIC: Supporting Implementation of Maritime Spatial Planning in the Atlantic region

MARINE ROBOTICS:

EU Marine Robots: Marine Robotics Research Infrastructure Network

ENERGY CONVERSION:

H-WIND: Hydrogen from Offshore Wind

HyLIGHT: Roadmaps for Hydrogen to Support Decarbonisation of Ireland's Economy by 2050

LCOE/TECHNOLOGY ADVANCEMENT:

STEP4WIND: Novel design, production and operation approaches for floating wind turbine farms

ARCWIND: The assessment of wind energy potential in the Atlantic Area choosing the best locations for wind energy farms

OPFLOW: Examination of the potential for a pre-commercial pilot floating offshore wind project off the south or west coast of Ireland

UNDERWATER NOISE:

SATURN: Development and Establishment of Standards for Terminology and Methodology to be used Across All Disciplines Working on Underwater Radiated Noise

ENVIRONMENTAL MONITORING:

Observe: Aerial Survey for Cetaceans and Seabirds in Offshore Waters

SOCIETAL ENGAGEMENT:

CCAT: Coastal Communities Adapting Together

Dingle Peninsula 2030: A Sustainable Future for the Dingle Peninsula