

MaREI Centre for Marine and Renewable Energy

MaREI is the marine and renewable energy research and development Centre supported by Science Foundation Ireland. It combines the expertise of a wide range of research groups and industry partners, with the shared mission of solving the main scientific, technical and socio-economic challenges across the marine and renewable energy sectors.



Research Areas

- › MRE technologies
- › Materials and structures
- › Observation and operations
- › Coastal and marine systems
- › Bioenergy
- › Energy policy and modelling
- › Energy management

Research Programmes

In addition to fundamental research, the Centre provides targeted research and consulting services to a wide range of companies, which has established the Centre as a strategic research and development partner for both academic and industry partners worldwide.

MaREI has over 200 researchers across six academic partner institutions, working with 46 industry partners. It is coordinated by the Environmental Research Institute (ERI) at University College Cork. MaREI has built upon the excellent track record of well-established marine and energy-based research groups across each of our academic partners, covering a range of cross-cutting topics across seven main research areas.

Facilities

- › LIR National Ocean Test Facility – 2600m² tank hall housing four test tanks, including two ocean wave basins, a wave and current flume and a wave demonstration flume
- › Rotary and linear power take-off test rigs, electrical micro-grid test and simulation electrical integration test rigs
- › Large-scale structural testing and materials testing
- › Pilot scale anaerobic digestion reactors and 200m² aquaculture tank lab
- › Mace Head Atmospheric Research Station
- › High frequency coastal observing radar system (CODAR)
- › Galway Bay instrumented sea station platform and test site
- › Wet and dry labs, tracking and remote video systems
- › Robotic hardware, including remotely operated underwater vehicles (ROVs)
- › Limerick Dock testing and development site for MRE Robotics/Tidal Energy

Industry and commercialisation

MaREI offers unique world class marine renewable energy testing infrastructure, state-of-the-art structural laboratories, novel prototypes and measurement equipment that allow the systematic identification and reduction of development risks through a structured 'Technology Readiness Level' (TRL) development cycle. This, combined with the technical competence of its employees, makes MaREI a preferred research and development partner for companies and research institutes across the world.

Industry partners include:

- Aer Lingus
- Analog Devices International
- ARUP Ireland Trust
- Automsoft International
- B9 Power
- Brí Toinne
- Bureau Veritas
- CAPACITÉS
- Commissioners of Irish Lights
- DePuy Synthes
- DP Energy Ireland
- ÉireComposites
- Enerco Energy
- Ervia
- ESB
- ESRI Ireland
- Gas Networks Ireland
- GKinetic Energy
- GRSI Energy
- Henkel Ireland
- IDS Monitoring
- Irish Aviation Authority
- Johns Manville
- KOSMOS Energy Ireland
- MAFIC Black Basalt
- Marine Harvest Ireland
- MYMIC
- National Space Centre
- NTR Foundation
- Open Ocean Energy
- OpenHydro
- Pure Marine Gen
- Qualitas Instruments
- Resilience Energy
- Resolve Marine
- RPS
- RSK Ireland
- Shannon Foynes Port Company
- Shell E&P Ireland
- SkySails
- SonarSIM
- Technology From Ideas
- Techworks Marine
- Teledyne Blueview
- Teledyne RESONeson
- WECCA

Education and Public Engagement:

MaREI's public engagement programme focuses on the development of a better understanding of the relevance and impact of our research on society, in collaboration with Science Foundation Ireland. Our researchers engage with schools, community groups and the general public through a programme of outreach initiatives aimed at different

audiences and by participating in events like Science Week, SeaFest, Cork Harbour Festival and FameLab.

MaREI researchers have considerable experience in stakeholder engagement, working with NGOs, industry, government bodies, local authorities, policy makers and community groups through their research projects, and are focused on communicating science to enable informed decision making.

Key Contacts

Professor Jerry Murphy

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Professor Murphy is Director of the MaREI Centre and Principal Investigator in Bioenergy Research. He is also Chair in Civil Engineering, Director of Bioenergy Research & Vice Director of the Environmental Research Institute, University College Cork. He also serves as International Energy Agency Bioenergy Task Leader for Energy from Biogas.

Prof. Brian Ó Gallachóir

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Prof. Ó Gallachóir is Director of the MaREI Centre and Principal Investigator in Energy Policy & Modelling. He is also Professor of Energy Engineering at University College Cork and Chair of the Executive Committee of the International Energy Agency ETSAP Technology Collaboration Programme.

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