

MaREI, SFI Research Centre for Energy, Climate and Marine

A World
Leading SFI
Research
Centre

Science
Foundation
Ireland **sfi**
For what's next

MaREI is the SFI Research Centre for Energy, Climate and Marine research and innovation, coordinated by the Environmental Research Institute (ERI) at University College Cork. The centre comprises over 200 researchers working with over 50 industry partners, focusing on defined global challenges such as the Energy Transition, Climate Action and the Blue Economy. MaREI delivers excellent research with societal impact by supporting business, informing policy and empowering society, resulting in the development of a dynamic research ecosystem that is responsive to the needs of all our stakeholders. As a driver of collaboration, our researchers engage with stakeholders across more than 36 countries, and have a proven track record of academic excellence.



Research Areas

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

Research Programmes

MaREI undertakes research related to the energy transition, climate action, and blue economy and uses this research to empower business, shift policy and support society. MaREI helps small energy and marine companies to develop new technologies and provides strategic guidance to large energy companies, thereby harnessing the economic opportunities of the low carbon energy transition. MaREI research increasingly underpins energy and climate policies of the Irish Government and the European Union. Through engaged research and dialogue with communities, MaREI also supports the human and societal dimensions of climate action and marine conservation.



Facilities

MaREI also offers unique world-class infrastructure and testing facilities that allow the systematic identification and reduction of development risks through a structured 'Technology Readiness Level' (TRL) development cycle. These include:

- › The Lir National Ocean Test Facility (Lir-NOTF)
- › Limerick Docks tidal tow-testing facility
- › NUIG Structural Research Laboratory
- › Coastal Observing Radar System
- › Mace Head Atmospheric Research Station

Industry and Commercialisation

In addition to fundamental scientific research, MaREI undertakes targeted collaborative research activities with a wide range of companies, including over 50 industry partners. In so doing, they seek to maintain the forward momentum of the energy, climate, and marine sectors through the development of technologies, tools and processes that will accelerate them towards commercialisation.

Education and Public Engagement:

MaREI's public engagement programme focuses on the development of a better understanding of the relevance and impact of their research on society, in collaboration with Science Foundation Ireland. Their 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.

HOST INSTITUTION



PARTNER INSTITUTIONS



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

Key Contacts



Professor Jerry Murphy

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Prof Jerry D Murphy is the Director of MaREI, the SFI Research Centre for Energy, Climate and Marine. MaREI has c. 200 researchers across 12 partner Institutions, 50 industry partners and has accumulated research funding of €60 million since inception in 2013. In 2017 Prof Murphy was awarded the Chair in Civil Engineering, only the 12th person to hold this post in 170 years. Prof Murphy represents Ireland at the International Energy Agency (IEA) Bioenergy since 2007. He was elected by his international peers to lead the Biogas Task from 2016 till 2018 and for a second term from 2019 to 2021. In this role he authored/edited 11 IEA Bioenergy reports, 14 case stories and chaired 6 International Symposia. He has published c. 144 peer review journal papers in high-impact journals. Professor Murphy's expertise in gaseous and algal biofuels is world leading. His h-Index (49) places him amongst the highest cited academics worldwide in the fields of biogas and anaerobic digestion. He is also ranked amongst the most cited researchers worldwide in Civil Engineering.

Prof. Brian Ó Gallachóir

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Prof. Ó Gallachóir is the Director of MaREI, the SFI Research Centre for Energy, Climate and Marine. He is also Professor of Energy Engineering in UCC, and Director of the B.E. (Energy) and M.Eng. Sc. in Sustainable Energy. His research focuses on energy modelling to inform energy and climate change mitigation policy. Brian is an elected Chair of the Executive Committee of IEA's Technology Collaboration Programme on energy systems modelling (IEA-ETSAP). Brian has published extensively (over 100 journal papers, over 4,700 citations and h-index of 36) and has directly informed energy and climate action policy decisions. He is lead PI in Climate Lab, an initiative of UCC's ERI, and is a member of the national Gas Innovation Group. Brian has a B.Sc. from TCD and a PhD from UCC.

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