

Proposal Outline

Topic	Sustainable development of Ireland's offshore renewable energy sector: Wave, tidal and offshore wind
Research Theme(s)	1) Renewable Energy and 2) Climate Change
Background and Rationale	The most recent Climate Action Plan 2021 sets out a number of ambitious targets for the decarbonisation of Ireland's energy requirements to 2030, including: • Increase electricity generated from renewable sources to 70%. • Facilitate the development of offshore wind, including the connection of at least 5GW of offshore wind. Ocean Energy: The climate in Ireland, particularly in the west of Ireland, is ideally suited for generating wave energy. In addition, opportunities for tidal energy have been identified on the east coast and in discrete locations on the west coast (Shannon Estuary and Donegal). Offshore Wind Energy: Currently Ireland has just one operational offshore wind farm, which is owned and operated by GE Energy/SSE Renewables 25MW Arklow Bank. However, there are a number of further offshore wind farms developments submitted for planning approval. The OREDP (Offshore Renewable Energy Development Plan) published by the Department of Communications, Climate Action and Environment in 2014 is the policy framework for offshore renewables in Ireland, and has identified 70GW of offshore wind potential. This plan is due to be reviewed in the coming year. With the expected fast pace of development in this sector there are a number of policy issues expected to arise that require research to be undertaken to inform decision makers as Ireland approaches 2030.
Scope of Research (Scientific/ Technical Challenge)	This fellowship will work to advance research in one or more of the following areas: • Environmental impact assessment. • Technology development to minimise underwater noise. • Impact of co-location on other marine sectors including aquaculture and fisheries. • Renewable energy options for electricity generation by coastal communities for their own use. • Planning and installation of infrastructure in Irish Ports and integration with existing activities in Port hinterlands.

	• Analysis of costs, methods of reducing production costs and increase cost efficiency. • Public awareness and local community involvement in marine projects. The fellow would ideally have a primary degree and PhD in engineering, mathematics, oceanography, physics, economics, social sciences or closely related discipline.
Expected Impact	This fellowship will help to build national expertise in this research area and publish their research findings as widely as possible through peer-reviewed papers, conference presentations, policy briefs, articles, etc. The fellow is also expected to engage with relevant national, European and international networks, and explore opportunities for collaboration and securing further research funding, including but not limited to Horizon Europe.
Specific Collaboration	Oceans, Climate and Information Services, Marine Institute Sustainable Energy Authority of Ireland (SEAI) European Marine Board activity and Working Group on marine renewable energy
Location of Fellow	Higher Education Institute or Public Research Body (Republic of Ireland or Northern Ireland)
Duration and Funding Available	4 years €100,000 per annum (i.e. total €400,000 maximum for duration of four years)
References	Ireland's National Energy and Climate Plan 2021-2030 National Marine Research & Innovation Strategy 2017-2021 https://www.seai.ie/technologies/ocean-energy/ocean-energy-technologies/ Offshore Renewable Energy Development Plan (OREDPA) Interim Review May 2018 Offshore Renewable Energy Development Plan (2014) European Marine Board activity and Working Group on marine renewable energy K.A. Abhinav, Maurizio Collu, Steven Benjamins, Huiwen Cai, Adam Hughes, Bo Jiang, Simon Jude, William Leithead, Cui Lin, Hongda Liu, Luis Recalde-Camacho, Natalia Serpetti, Ke Sun, Ben Wilson, Hong Yue, Bin-Zhen Zhou, Offshore multi-purpose platforms for a Blue Growth: A technological, environmental and socio-economic review, Science of The Total Environment, Volume 734, (2020) https://doi.org/10.1016/j.scitotenv.2020.138256



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