

## **Cullen Scholarship: Irish maritime industry's transition to alternative fuels (PhD Award)**

### **Background**

The European Green Deal will orientate all industrial sectors towards achieving carbon neutrality by 2050 and Ireland, through its Climate Action Plan and associated legislation, is committed to supporting this objective. Ireland's ports and shipping sector are vital components of the supply chains that underpin trade and economic growth. Understanding the impact of the transition to carbon neutrality on maritime transport is needed to inform policy developments and industry investments. Furthermore, there are implications for the Irish maritime industry through binding measures set out in the Fuel EU Maritime proposal as part of the Fit for 55 package, in addition to the Alternative Fuels Infrastructure Regulation (AFIR). Research is required to understand how the Irish maritime industry needs to prepare in order to meet future challenges and obligations, the port capacity that will be required, while also understanding whether there are market opportunities as the maritime industry transitions to a new fuel mix.

The main purpose of the scholarship is to generate research that provides an evidence base for policy makers and significantly informs the manner in which the maritime industry responds to the challenges of the transition to alternative fuels.

### **Proposal**

We propose a **structured four-year PhD** on a full-time basis to complete an operational and economic assessment of the Irish maritime industry's transition to carbon neutrality by 2050. The research will focus on the alternative fuels that are expected to be used to reach targets set out in Fit for 55 and what impact this will have on strategic decisions to be taken by the Irish maritime industry. Furthermore, given existing uncertainties about the type of alternative fuels that will be used in the future in shipping. The Irish maritime sector will need to develop a clear understanding of these issues, which, in turn will need to be reflected in national policy developments (National Ports Policy and the Climate Action Plan).

The key research questions should address the following:

- What is the current status of the different alternative fuels being trialled and used by the maritime industry globally and are there particular patterns or trends beginning to emerge?
- How are investment decisions being taken in other European and international ports in terms of the fuel mix that they are preparing to accommodate? What are the main policy and economic drivers for these decisions?
- What decision criteria should be used in the context of the Irish maritime industry? Criteria related to geographical position, existing and future vessel types that will service the Irish market, proximity to International shipping lanes, likely fuels that will be produced more economically locally through an offshore renewable energy sector, may be relevant.

- In addition to servicing the needs of its local market, are there opportunities for Ireland to build on its comparative advantages in terms of its location and its proximity to significant offshore renewable energy resources to become an international hub for alternatives fuels?

### **Location of Scholar**

The scholar will be based for circa 50% of their time over the four years at the Marine Institute's IMDO Office in Hatch Street, Dublin.

### **Outcome**

The expected outcomes from the project will be:

- An economic and operational analysis of the impacts of particular alternative fuels mixes from the perspective of the Irish maritime industry.
- A decision making framework on key investment decisions that need to be taken at a national level in terms of infrastructure development and provision.
- A market analysis on the strategic opportunities for Ireland as the sector transitions globally to achieving carbon neutrality by 2050.

### **Specific Requirements**

The scholar should have a primary or higher degree in business, economics or energy related disciplines.

### **Financial Details**

Scholarships will be up to €27,500 per annum (maximum funding of €110,000 over four years). This amount comprises a maintenance award of €18,500 (Irish Research Council rate effective 1-Jan-21\*) to the student as well as payment of fees to the host higher education institution (HEI). The maximum fees payable to the HEI will be €6,000 per annum. The scholarship award also includes a budget of up to €3,000 per annum for eligible research costs (travel & subsistence, publication costs, consumables and other costs e.g. laptop) for the sole use of the student, and are payable on a reimbursement basis direct to the host institution where the postgraduate student (scholar) is registered. There are no overheads payable on the scholarship. Publication costs are intended to cover publications on which the scholar is listed as first author and are published under Open Access. Scholars can also supplement this funding by applying to the Marine Institute's Networking & Marine Research Communication Awards annual call.

\*There is a national review underway of the PhD annual student stipend payment, which is expected to result in a rate increase, and the Marine Institute will adjust the total funding accordingly following the completion of this review.

### **Marine Institute Co-Supervisor**

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### **References**

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- [Fit for 55 Alternative Fuels Infrastructure Regulation](#)
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