

# marinerg-i

## A Distributed Research Infrastructure for Offshore Renewable Energy Testing Facilities

The world is transitioning to more sustainable energy sources and Offshore Renewable Energy (ORE) has the potential to make a significant contribution. MARINERG-i will be an integrated European Research Infrastructure of testing facilities; an independent legal entity, designed to facilitate growth and development of the ORE sector. This herein will be known as the Distributed Research Infrastructure (DRI).

### BACKGROUND

Evidence of the benefits of a coordinated approach were provided by the FP7 funded MaRINET and subsequent H2020 MaRINET2 projects. Consisting of 45 infrastructures operated by 36 research centres across Europe, MaRINET successfully delivered joint research to improve the quality of testing outcomes, a functional network, and a high demand access programme. However, these efforts have a limited impact given their transient nature. It is time to transition to a fully integrated and long-term approach. The EU have identified MARINERG-i as a project of key importance, placing on the 2021 ESFRI roadmap (<https://roadmap2021.esfri.eu/>).

### PREPARATION PHASE

The project has now entered the ESFRI roadmap preparation phase. Funded by the Horizon Europe MARINERG-i\_PP project, a consortium of partners have joined together to complete the work necessary to formally create an independent entity and begin offering services.

### CURRENT MEMBERS

Ireland, Belgium, Netherlands, Portugal, Spain, United Kingdom.

### ENGAGED PROSPECTIVE MEMBERS

France, Germany, Italy, and Norway.

This document provides an overview of the MARINERG-i rationale and plans for the proposed DRI.



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## Vision & Mission

MARINERG-i will form an independent legal entity of distributed testing infrastructures, united to create an integrated centre for delivering ORE.

By consolidating expertise, investment and access to infrastructures, the DRI will foster innovation across a variety of ORE technologies and stages of development.

As the only integrated ORE platform of this scale worldwide, it will be the epicentre of this developing industry.

The DRI mission is to:

- ⇒ Drive the development of innovative, investable ORE technologies by
  - Streamlining research, testing, training & user access
  - Adopting common codes of practice for uniformity in testing performance metrics, validation and certification
  - Implementing an e-infrastructure platform for remote access & secure data storage and analytical services
- ⇒ Accelerate the development of the ORE industry by leveraging and combining local/regional knowledge and capacity.
- ⇒ Inform national and EU policy and infrastructure investment strategies to sustain global leadership and reputation in the ORE sector.

*“Our vision is to ensure that the DRI will accelerate the research, development and deployment of offshore wind, wave and tidal and combined energy technologies and maintain Europe as a global leader in this industry”*

*(Project Coordinator—Jimmy Murphy MaREI Centre, University College Cork)*

## Values

Excellence and commitment

Openness and accessibility

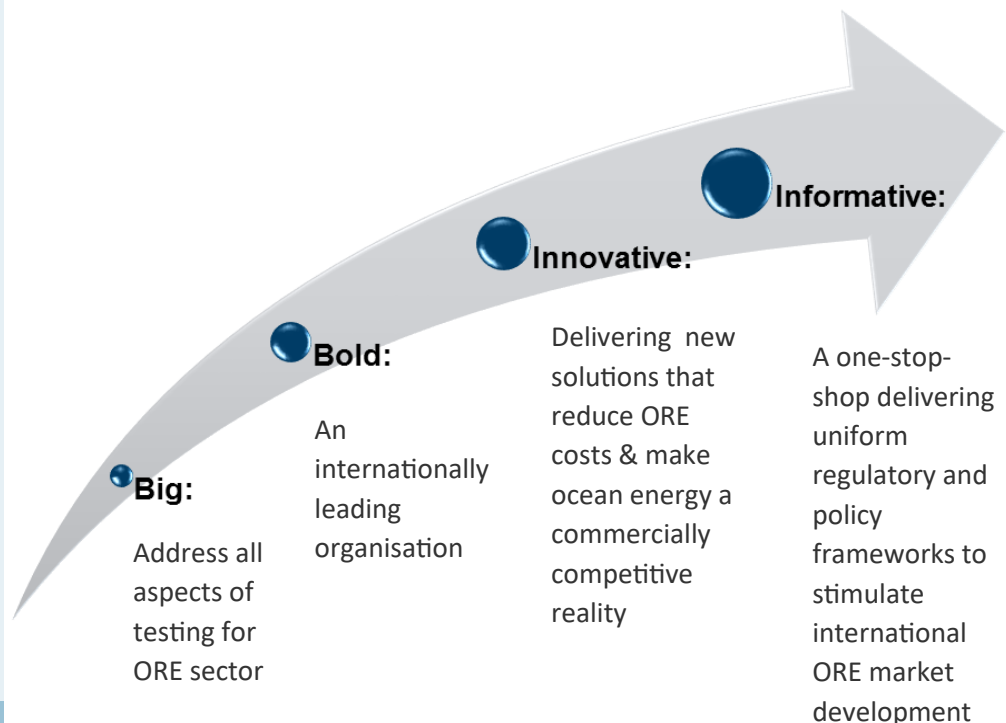
Open science and sustainability

Cross-border, cross-marine energy research

Collaboration, cooperation and quality assurance

Standardisation and interoperability

Knowledge dissemination



## Stakeholders

End-users (industry & academic)

Research Infrastructures

Wider Industry (supply-chain, private investors, technology users)

National (policy-makers, funding bodies)

European Union (policy-makers, funding bodies)

## Added Value

**Streamlined SERVICES tailored to end-user requirements**

**COLLABORATION** -> expand capacities of individual RIs & foster strategic specialisation

Improved **EFFICIENCY** & optimised resources

**STANDARDIZATION** -> improved **QUALITY** & reduced risk

**INTEGRATED KNOWLEDGE CENTRE** -> drive innovation & inform policy

**INCREASED INVESTOR CONFIDENCE** -> funding, faster commercialisation & supply-chain development

**DELIVERING TARGETS** & consolidating **EU LEADERSHIP**

## Services



### ACCESS

Facilitating access to ORE research and test facilities across Europe for national & transnational users.



### STANDARDS & QUALITY

Establishing best practices and common standards, ensuring the quality of member facilities as well as the consistency and comparability of results between centres.



### E-INFRASTRUCTURE

Facilitate and mediate access to curated data archives, knowledge resources and analytical tools.



### COLLABORATION & NETWORKING

Coordinate and ensure the operational and scientific integration of centres, augmenting existing knowledge and expertise and producing new synergies.



### PLANNING & EFFICIENCY

Promote operational and strategic planning and efficiency to make best use of infrastructures and target research that will accelerate the development of the ORE industry.



## Governance & Structure

The DRI will be established as a European Research Infrastructure Consortium (ERIC). The governance arrangements will follow ERIC guidelines and be grounded in legal statutes and associated contracts, which have been drafted during the project.

As a Distributed Research Infrastructure, it will consist of a Central Hub and interlinked National Nodes all gathered under a unique banner. The nodes will comprise single or multiple member infrastructures.

The Hub will provide leadership, governance and coordination through the office of the Chief Executive Officer (CEO) and the Central Management Office (CMO). The management and decision structures will follow ERIC rules regarding organisation and operational activities, whilst remaining responsive to specific needs and requirements arising from the distributed nodes.

The RI will foster smart specialisation with different nodes coordinating specific services.

## Service Groups

### Science and Engineering Research

Supervising, implementing and reviewing technological, engineering and standardisation practices across the DRI. Implementing interoperability and best practice, fostering convergence towards mature technologies and developing improved testing and operating methods.

### E-infrastructure and Data Management

Developing and implementing the DRI data policy to ensure effective curation and controlled access to data and analytical services (including remote access).

### User Access

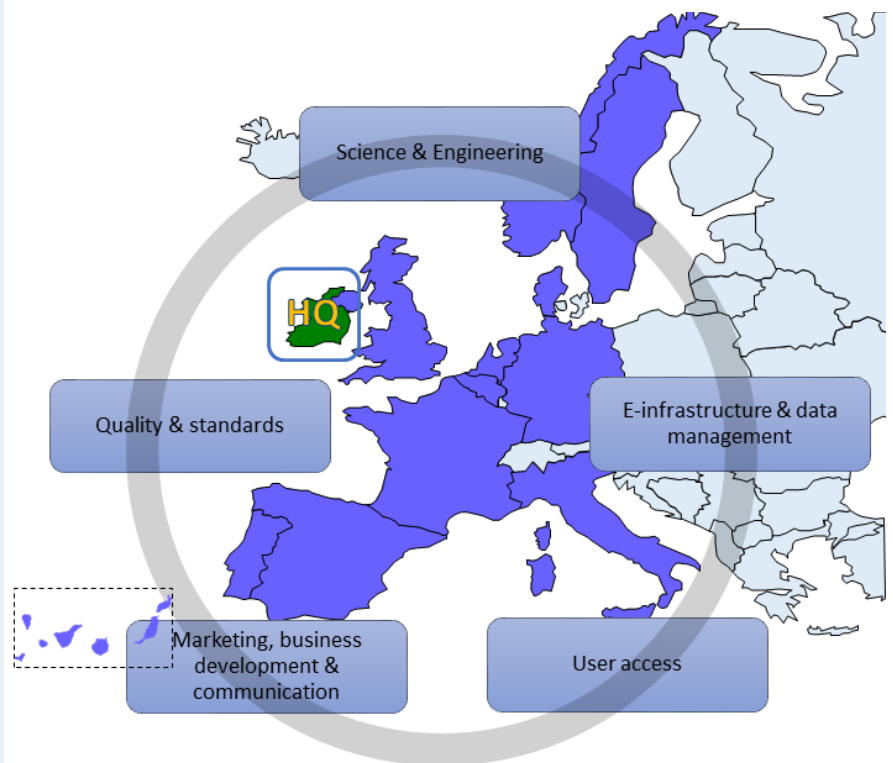
Supporting scientists and companies who wish to physically or virtually access infrastructure and/or data archives for R&D purposes.

### Marketing, Business Development & Communications

Responsible for promoting the DRI brand worldwide, to facilitate the exchange of information inside the scientific community, and to attract new users and stakeholders.

### Quality and Standards

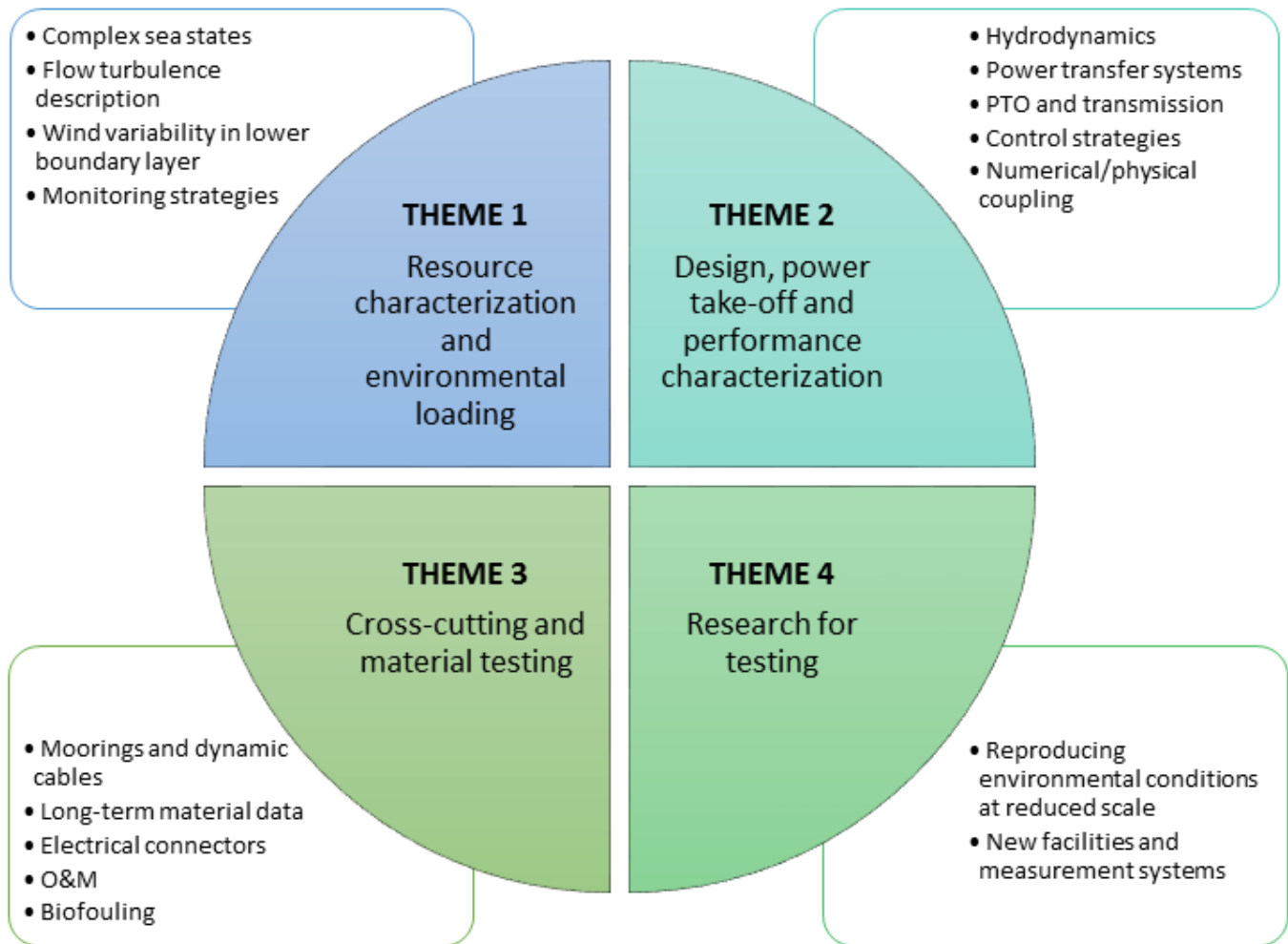
Developing and implementing the DRI quality and standards policy and procedures. Also responsible for strategic standardisation, planning processes, auditing and compliance.



## *A DISTRIBUTED RESEARCH INFRASTRUCTURE WITH SHARED CENTRAL CO-ORDINATION*

*Operating as a company that has smart  
specialisation central to all its corporate  
culture and values*

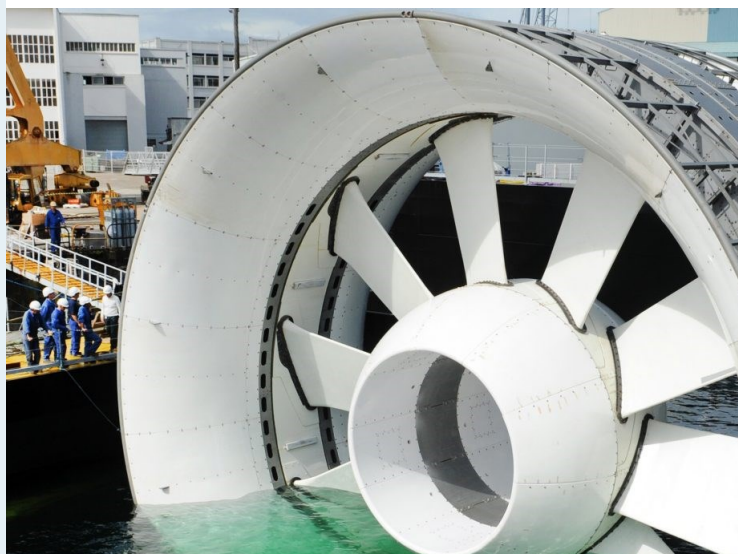
## Science Plan



## Science Plan—Objectives

Bringing together a large number of engineers and scientists, the DRI will create a *cohesive scientific community* with *core strategic objectives* focused on improving services, identifying ways to minimize the Levelised Cost of Energy (LCoE), and ultimately enabling the development of the ORE sector.

A common science plan will *address a wide panel of fundamental questions*, which need to be answered to support the ORE industry through all the stages of development along the path to deployment and production. The scope has been separated into *four main themes* as illustrated above.



## Business plan

The successful development of the MARINERG-i DRI will be realised through the **delivery of research, infrastructure access and service provisions to a global marine engineering market.**

The DRI will undertake phased business development beginning by building membership, providing access to an increasing number of infrastructures; expanding to non-EU facilities and diversifying the range of services offered; and reducing dependency on financial supports through **membership fees and revenue from user testing.** The pathway to financial sustainability is achieved through the adoption of a **lean-burn CMO operational model, where overheads are minimised.**

This unique business platform will empower and support the scientific development and accelerate the impact of research outputs to realise clean energy extraction from European coastal waters.



### Pathway to financial sustainability



Roadmap entry 2021

ERIC status 2026

Build membership

Increase services

Reduce dependency on financial supports

Self-sustaining by 2031

MARINERG-i\_PP project

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