Edition: EU H2020 MARINERG-i project completion & launch of ESFRI 2021 roadmap application --- 25 September 2019

EU H2020 MARINERG-i Project (Jan 2017– Dec 2019)

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

BACKGROUND

Following an application to the 2016 European Strategy Forum on Research Infrastructures (ESFRI) roadmap, the proposed DRI was identified as an emerging Research Infrastructure of European significance. 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 now to transition to a fully integrated and long-term approach. This DRI will extend existing programmes and seek additional mechanisms to support a sustainable collaboration.

PLANNING AN INTEGRATED EUROPEAN RESEARCH INFRASTRUCUTRE

Project Partners have joined together to complete the studies required, developing a comprehensive vision and model for this pan-European Research Infrastructure for ORE. The project key aims included:

- Broaden the number of member states involved
- Create a design study and scientific plan
- Develop a business plan including governance, legal, financial and strategic issues
- Secure further national support from partners
- Create and agree an implementation plan

Project results ensure that the DRI model attains the criteria necessary for a successful application to the roadmap in 2021.

This newsletter provides an overview of results, describing the rationale and plans for the proposed DRI.

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VISION & MISSION

The MARINERG-i project is a first step in forming 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

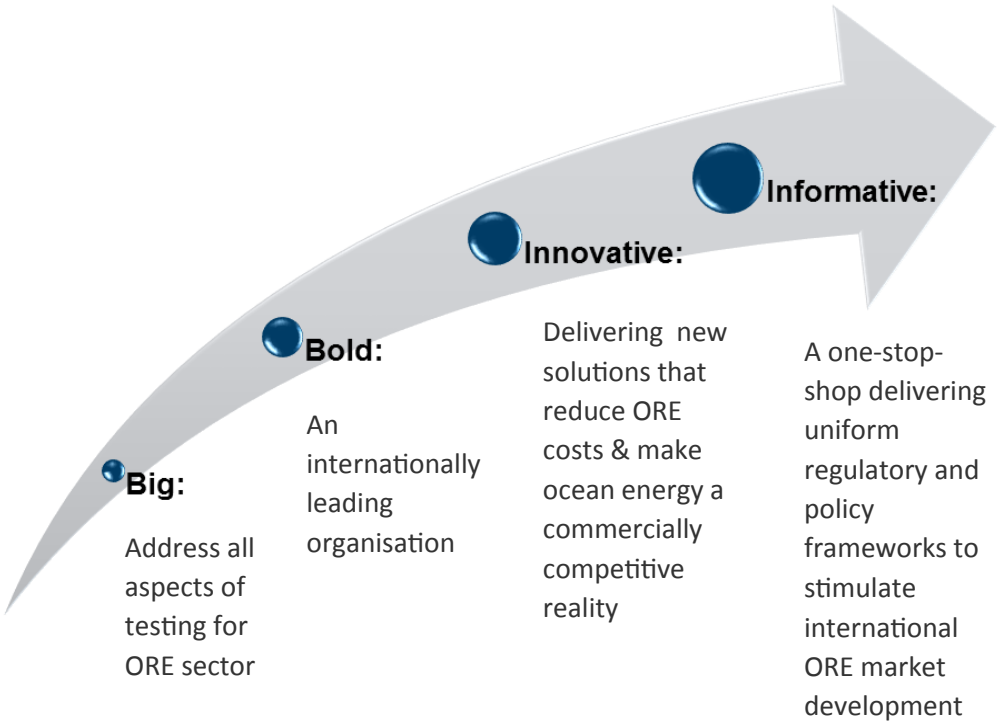
Open science and sustainability

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

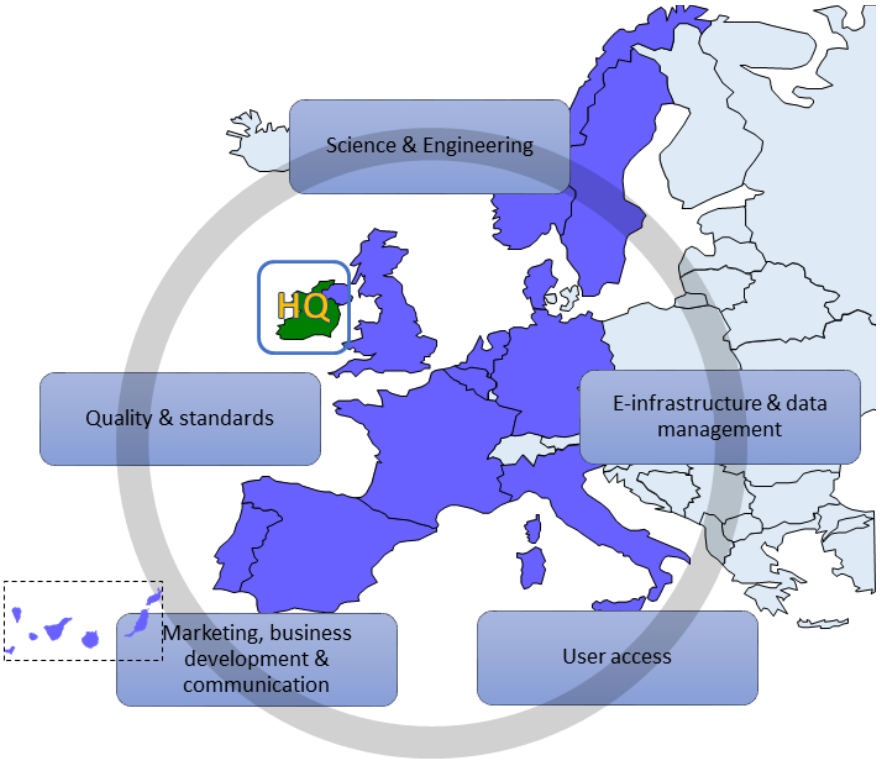
Science and Engineering Research
Supervising, implementing and reviewing technological, engineering and standardisation practices across the DRI. Implementing interoperability and best practice, fostering convergence towards mature technologies and developing improved testing and operating methods.

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.

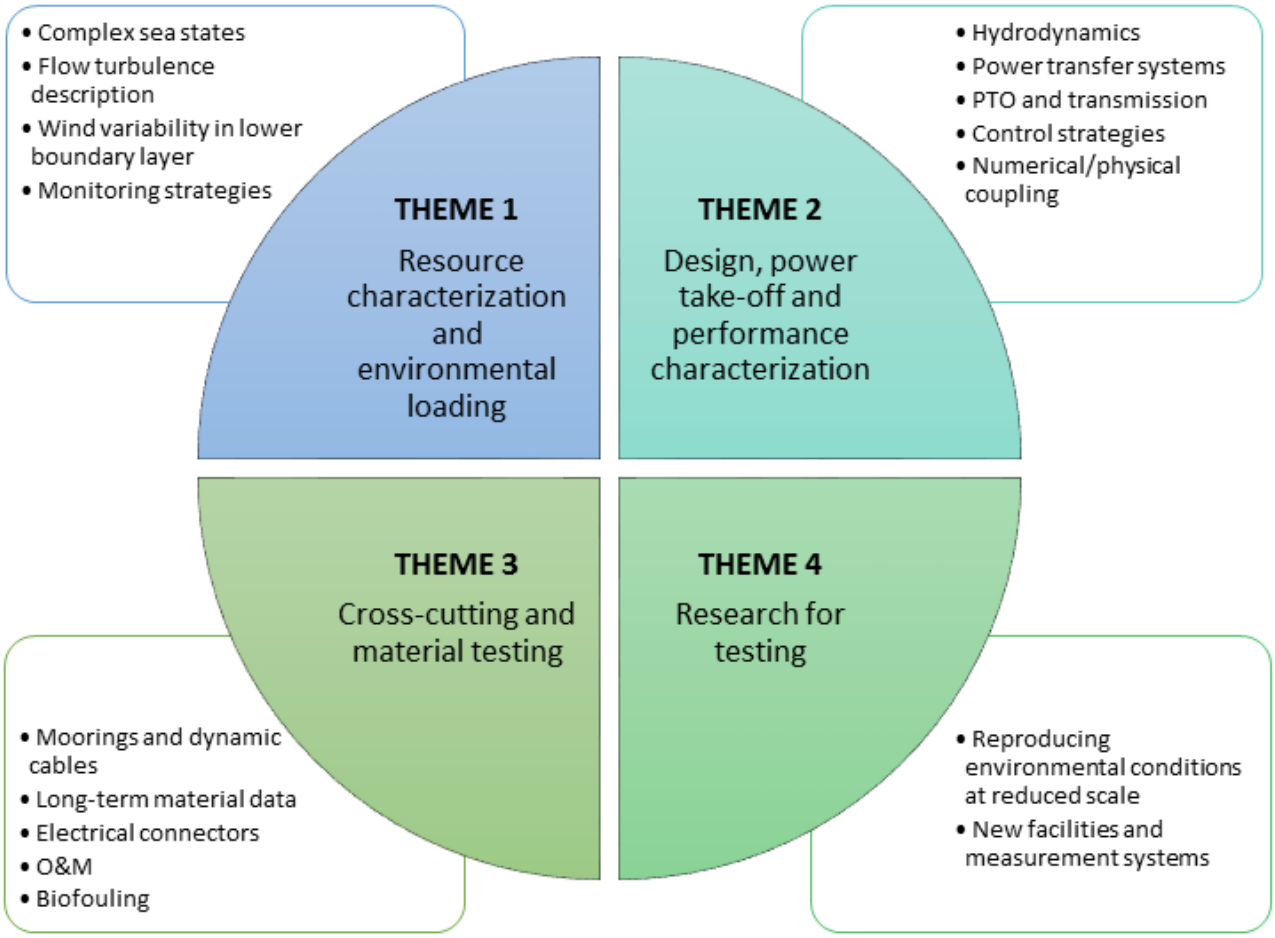
Marketing, Business Development & Communications
Responsible for promoting the DRI brand worldwide, to facilitate the exchange of information inside the scientific community, and to attract new users and stakeholders.

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 INFRASTRUCTRE WITH SHARED CENTRAL CO-ORDINATION
Operating as a company that has smart specialisation central to all its corporate culture and values

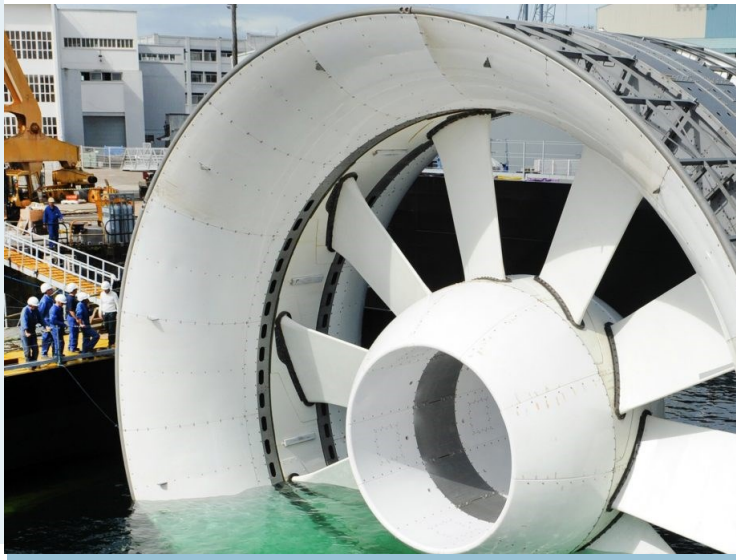
Science Plan



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.



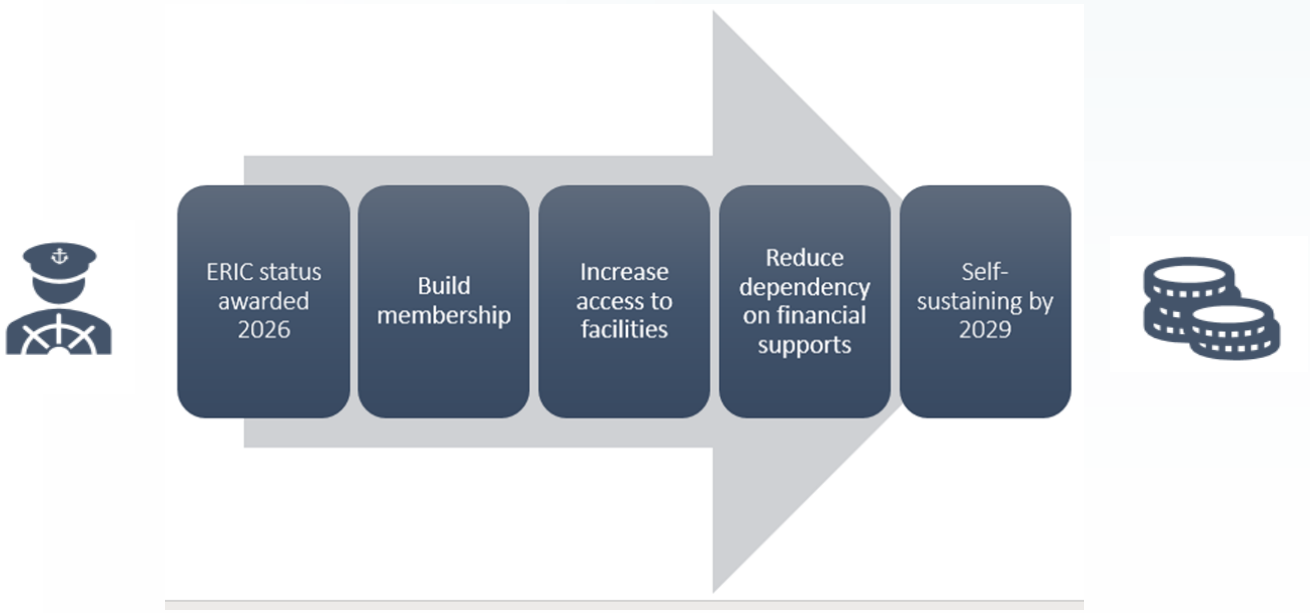
Business plan

The MARINERG–i business plan outlines the structure, management and operational strategy of the DRI, describing the pathway to achieving financial stability.

The successful development of the 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

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