



MARINERG-i

Marine Renewable Energy Research Infrastructure



marinerg-i

Website

<http://www.marinerg-i.eu/>

Headquarters

University College Cork
UCC, ERI, MaREI Centre, Beaufort
Building, Ringaksiddy, Co. Cork

Legal Status

In preparation (specify
status: i.e. step 1, 2 etc.)

Type

distributed

Access

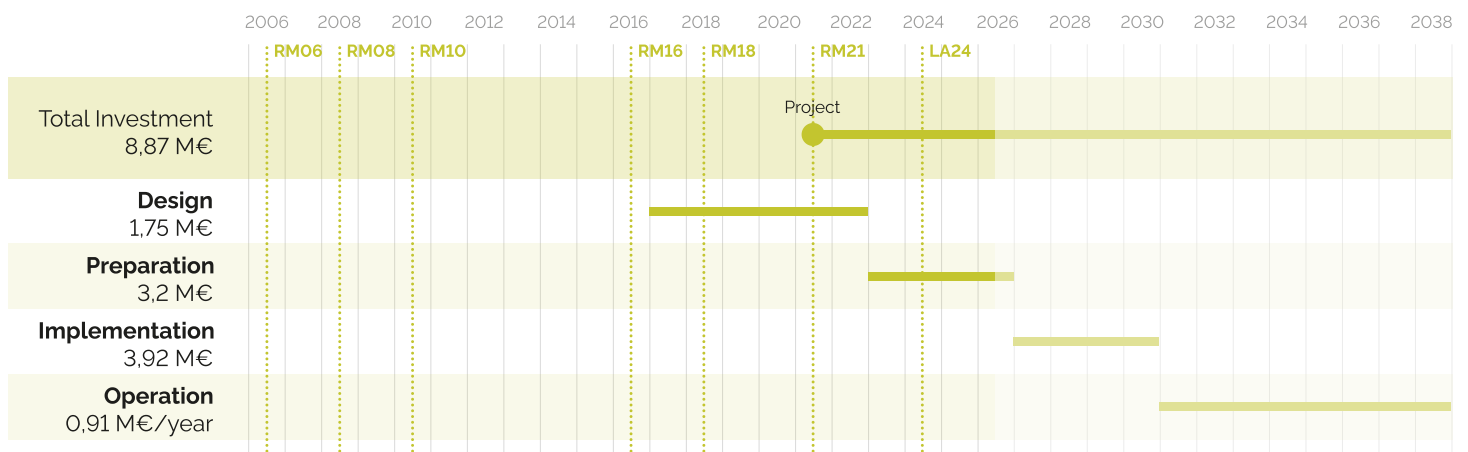
physical,
remote,
virtual

DESCRIPTION

The objective of MARINERG-i is to become the leading internationally Distributed Research Infrastructure (DRI) in the Offshore Renewable Energy (ORE) sector. Led by a central hub in Ireland, the DRI is composed of a network of test facilities spread across Europe (confirmed support from Belgium, Portugal, Spain, the Netherlands, the United Kingdom) with the critical mass of expertise, world-class equipment and e-infrastructure to support the design and advancement of ORE systems. Mission: Technical de-risking and increasing investor confidence through the development and implementation of best practices; quality metrics; standards; Leverage existing local knowledge and capabilities to accelerate the development of the ORE industry; Informing national and EU policy and investment strategies to capitalise on leadership in the ORE sector. By consolidating expertise, investment and access to infrastructures, the MARINERG-i DRI will foster innovation across a variety of ORE technologies and stages of development and help maintain Europe as a global leader in this constantly evolving industry. MARINERG-i will provide a one-stop shop via an e-infrastructure for users to apply for physical or remote testing within the network; data services e.g. access and use a dedicated virtual research environment for processing and analysis; apply for additional services e.g. technology development

planning; training etc. MARINERG-i will develop a global scientific community with a broad expertise and knowledge across disciplines and has the facilities, tools and e-infrastructure necessary to support innovation and accelerate ORE development. The DRI will operate targeted testing campaigns and research projects to address fundamental questions within clearly identified research themes and across all the levels of technological development including: THEME 1 - Resource characterisation and environmental loading; THEME 2 - Design, Power Take-Off and performance characterisation/optimisation; THEME 3 - Cross-cutting and material testing; THEME 4 - Research for testing; Core recipients of MARINERG-i services will be technology developers across the ORE sector e.g. wind, wave, tidal energy, floating PV etc. Users will also include professional researchers, undergraduate and postgraduate students. Secondary stakeholders will also benefit from the added value of the DRI in terms of increased deployment and commercialisation of technologies, development of standards and best practices, policy and investment recommendations etc. This user group will include the wider ORE sector supply-chain, policy and standard developers, national and European funding bodies and investors.

TIMELINE & ESTIMATED COSTS

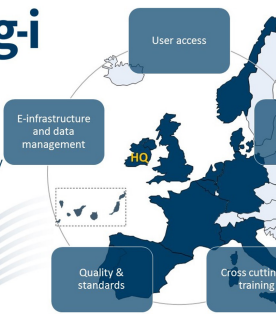


rinerg-i

DISTRIBUTED
STRUCTURE FOR
ORE RENEWABLE
ENERGY

Central co-ordination
specialisation in key
service areas

Providing expertise,
support and access to
infrastructure



POLITICAL SUPPORT

Lead

IE

Prospective member

BE, DE, DK, ES, FR, NL, PT, UK



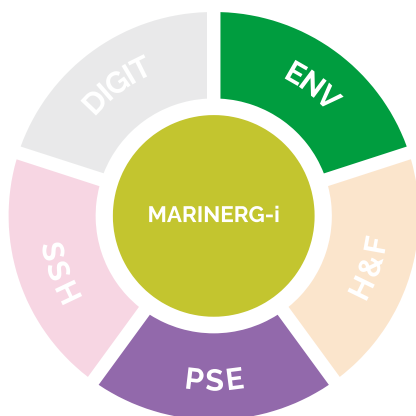
IMPACTS

MARINERG-i will support the implementation of key public policies e.g. the European Green Deal, which targets net zero emissions of greenhouse gases by 2050. New, more efficient ORE technologies are needed to achieve this goal. The MARINERG-i DRI will accelerate technology development and open up new routes to achieving public policy goals such as decarbonisation. As a highly-skilled scientific community, MARINERG-i will pursue a research agenda based on the core challenges to the ORE sector. With experience of testing the most innovative ORE technologies, the DRI will be best-placed to inform national and EU policy and future infrastructure investment strategies that will sustain the EU's global leadership and reputation in the ORE sector. The DRI will optimise public investment in research. Considerable funding has already been invested into the prospective DRI participants, making them world class facilities. The MARINERG-i DRI will provide an integrated approach for the operation of these facilities, streamlining access for developers; optimizing use of facilities; as well as enabling a cohesive research agenda to be delivered in less time and more cost effectively. Therefore, it will maximize resources and benefits. New technology pathways will have a significant economic impact, generating a competitive advantage for the EU. In addition, ORE technologies have a range of socio-economic benefits such as increased air quality, supporting well-paid employment, developing a manufacturing base in Europe and displacement of fossil fuel imports and ensuring energy security. ORE technologies will ultimately bring welfare benefits e.g. increased access to affordable electricity and will help generate economic activity in Europe's coastal regions, many of which are experiencing economic decline. Offshore renewables have been shown to breathe new life in local ports and harbours, generating work for maritime supply chains.

SERVICES

Access to a network of infrastructures is the main service that this DRI intends to provide in the initial phases of operations. This network will include infrastructures and facilities for the testing of offshore wind, wave, tidal energy and floating PV technologies at all stages of development (TRL1-9). In addition, the DRI will: Provide access to internationally leading ORE's researchers and the additional expertise they can offer users; Establish best practises and common standards for testing; Provide technology development guidance; Facilitate data access, sharing and processing through a virtual research environment; Support ORE innovation through technology development planning; Undertake research coordination in accordance with the common scientific programme; Provide operational, strategic and investment planning for infrastructures; Guide policy makers; Upskill and train staff and researchers to maintain a high-quality service. The creation of a MARINERG-i e-Infrastructure is a vital facet of the overall DRI, as it enables and supports the delivery of many other services as well as applications for access. Specifically, it will provide more specific IT and data related services including granting structured access to publicly available data produced at test sites, including advanced metadata tools for data discovery and utility assessment. This ORE DRI will also support sophisticated e-brokerage services to facilitate permitted access to proprietary data and data-products under secure controlled conditions, and will ensure the integrity of Intellectually Property (IP) at all times, adopting a common, trusted approach to IP management.

INTERCONNECTIONS



COOPERATION WITH OTHER RIS

MARINERG-i primarily supports the design and optimisation of ORE systems in terms of power extraction and survivability. However, the deployment and operation of ORE technologies introduces a broad scope of areas e.g. installation, grid connection, energy storage etc. MARINERG-i must also take advantage of potential linkages (e.g. EU platforms, networks, other ESFRI RI and R&D projects) to provide users with access to further resources in related research areas. The DRI will also undertake exchange and networking activities to disseminate and share knowledge. The following highlight key existing initiatives with significant collaboration opportunities that will support MARINERG-i end-users: EU coordinated RIs, which can provide support for offshore wind research including IRP Wind; JPIs addressing climate change challenges, such as JPI Oceans; MARINERG-i partners are also involved in existing EU and ESFRI structures such as EMSO ERIC, EURO-ARGO (ERIC), Copernicus Marine Environment and Monitoring Service, SeaDataNet, or EMODnet. Furthermore, cooperation opportunities between MARINERG-i and the following ESFRI RIs are identified, as they are all linked to the marine environment: The LifeWatch ERIC for the (marine) Biodiversity research community; The EMBRC ERIC for research in marine organisms and ecosystems; The DANUBIUS-RI for River-Sea Systems.