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# RiC<sup>ORE</sup>

RISK BASED CONSENTING FOR OFFSHORE RENEWABLES



## INTRODUCTION

The RiCORE project has been charged with promoting a risk based approach to the consenting of offshore renewable energy.

The cost and time taken to conduct environmental impact assessment remains one of the key barriers to the deployment of offshore energy arrays. Costly and time consuming environmental surveys are a prerequisite, even for known technologies in areas of low environmental sensitivity. There is little standardisation across different EU Member States in terms of the regulatory environment, how the consenting process is administered, and the interpretation of EU environmental legislation.

Against this background, RiCORE hopes to reduce the time and cost involved in consenting arrays by the development and promotion of a risk based approach to the consenting of projects. Using risk profiles, scientists and regulators could potentially reduce the amount of survey data required prior to the deployment of relatively small arrays, of known technology in areas of low environmental sensitivity.

There have been three main strands to this work:

- Understanding what happens in different Member States regarding the consenting process, the application of legislation and any legal barriers to the application of a risk based approach;
- Examining the potential for developing and using risk profiles in different partner countries;
- Building the case for more standardisation in post deployment environmental impact monitoring to allow developers, scientists and regulators to better understand the environmental effects of different devices.

The project has used a combination of desk based research and expert workshops. Experts have been engaged from different stakeholder groups including developers, scientists, regulators, legislators, development agencies, academia and representatives of other marine users and special interest groups.



## TERMINOLOGY

Adaptive Management: a process used to manage "resources that are responsive to management interventions but subject to uncertainties about the impacts of those interventions" [1] and has been described as "a structured process of learning by doing, and adapting based on what is learned." [2] The goal of Adaptive Management is to reduce scientific uncertainty.

Survey Deploy and Monitor (SDM): an example of a policy developed by Marine Scotland that promotes Adaptive Management approaches by enabling the consenting of wave and tidal energy projects. SDM combines existing information on the environmental risks, technology risks, and project scale to distinguish between proposed projects for which there are sufficient grounds to seek determination on a consent application based on 1 year of wildlife survey and those proposed projects where a greater level of site characterisation is required. SDM represents a risk-based approach to consenting.

Risk-based approach: any approach that seeks to inform decision making through an understanding of the scientific uncertainties and associated consequences in terms of likelihood and magnitude of impact. SDM is an example of a risk-based approach with respect to project consenting and adaptive management adopts a risk-based approach to reducing scientific uncertainties.

[1] Williams, B.K. 2011. Adaptive management of natural resources – framework and issues. *Journal of Environmental Management* 92, 1346-1353.

[2] Walters, C.J. and Holling, C.S., 1990. Large-scale management experiments and learning by doing, *Ecology* 71, 2060-2068.



## WORK PACKAGE 2

### - Profiling Member State consenting processes and reconciling EU legal requirements

#### Objectives:

The primary objective was to understand the consenting requirements across participant Member States, with a particular focus on environmental requirements, and their effect as a non-technical barrier on offshore renewable energy development. The work conducted sought to determine how environmental effects are addressed in existing national consenting processes, the extent to which these processes currently take a risk-based approach and the possible legal impediments to widespread uptake of risk based management.

#### Key findings:

The absence of an ORE-specific consenting process, the lack of clear and focused EIA guidance, and multiple competent authorities are key barriers to project consenting. The legal basis for Adaptive Management is not a problem but entrenched administrative processes may hamper the ability to take an Adaptive Management approach. There appears to be little consistency in the approaches taken to measure or interpret environmental data and information between and within Member States. In many instances the presence of a European protected site or species under nature conservation legislation complicates consenting of ORE projects. Guidance is needed to explain Adaptive Management and risk-based approaches to regulators and developers as well as other marine users.



## WORK PACKAGE 3

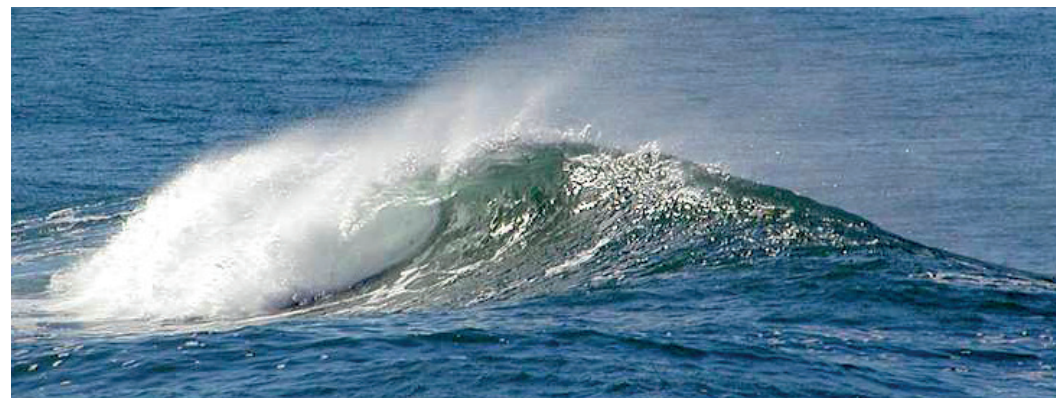
### - Survey, Deploy and Monitor

#### Objectives:

The primary objective was to further develop the Survey, Deploy and Monitor (SDM) policy guidance, pioneered by Marine Scotland, to include all relevant technologies in the Offshore Renewable Energy (ORE) sector, including the adaptation of the policy as new technologies are developed. The work conducted sought to review the state of the art of the SDM policy, review the novel technologies currently in development and further develop the SDM acting as a guide for users wishing to apply a risk profiling approach at a Member State level.

#### Key findings:

Following the description of the SDM policy and the analysis of the case studies different aspects of improvement were identified: (i) extend the risk-based approach to post-consenting processes; (ii) update the criteria for the evaluation of the scale of the project; (iii) establish a set of common criteria for the evaluation of the environmental sensitivity of a specific location; (iv) update and review of the expected environmental impacts of the different technologies; (v) include some guidance on the methodology for pre- and post-consenting monitoring and; (vi) introduce the aspect of uncertainty in the risk based approach. Taking into account the 19 technology types across all three technology categories that were identified and the above mentioned point of improvement, a review and further development of the three main pillars on which the SDM approach is based was undertaken: (i) environmental sensitivity of the site, (ii) the risk profile of the technology and (iii) the scale of the proposed project.





## WORK PACKAGE 4

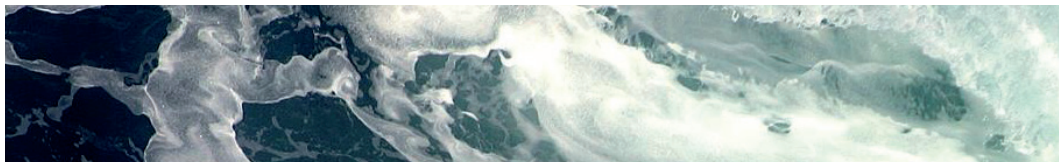
### - Pre-consent survey optimisation

#### Objectives:

In order to implement a risk based approach existing requirements for Pre-Consent Surveys in the participating countries were first assessed. Generally, such pre-consent survey may be part of a preliminary site characterisation exercise or scoping as part of the EIA process. This work package utilised information collected in previous work packages and in a workshop to assess comprehensively how well existing methods could be optimised across EU Member States, taking into account the potential positive implications for project timescales and costs. A key outcome of this work package was the development of guidance for pre-consent surveys considering the spectrum of survey requirements of existing project experience. The guidance encompasses the transferability of methods and technologies among MRE types.

#### Key findings:

Information on pre-consent monitoring practices has been compiled for the assessment of the effects of MRE developments on relevant receptors (seabirds, marine mammals, fish and shellfish and the seabed and benthic environment). In general, methodologies to assess most of the parameters identified for each receptor seemed to be applicable to all MRE types. A compilation was also made of the innovative technologies that are currently being developed for marine environment monitoring. The costs of many of the listed approaches were also considered and it was found that these costs varied substantially among receptor groups. Although the cost is an important consideration in survey design, the logistical constraints and the requirements requested by regulators should be coupled to ensure that these can be met by selecting a suitable survey method. The use of power analysis can provide useful information on the ability of data gathered to create a baseline for detecting change. It is likely to become a commonly used approach in pre-consent survey design, as it can identify how much data are required to address the requests made by regulators and at the same time contribute to a better understanding of the costs involved, considering the data that already exists. It is considered unlikely that pre-consent site characterisation surveys will have sufficient statistical power for fully achieving this purpose and their main utility is to inform consenting decisions. The information gathered supports the development of guidance on pre-consent surveys taking into account risk based approaches such as SDM, and is available through the project website.



## WORK PACKAGE 5

### - Post-Consent & Post-Deployment monitoring standardisation

#### Objectives:

The focus of this work package was the development of best practice for post consent and post deployment monitoring strategies, including industry standards where appropriate, with particular reference to risk-based approaches to survey and consenting/licensing for novel technologies. Currently Member States do not have cohesive strategies for undertaking monitoring at operational devices with the clear goal of reducing the scientific uncertainties associated with consenting in order to have greater confidence in future decision making associated with commercial scale arrays. This 'learning-by-doing' process is formally known as Adaptive Management and the Survey, Deploy, Monitor (SDM) policy is an example. The need for guidance to support licensing regimes and industry relates to the development of an over-arching adaptive management approach for marine renewables and to the scientific issues associated with undertaking monitoring that is able to reduce the uncertainties in a meaningful manner.

#### Key findings:

Under this work package workshop attendees provided feedback on post-consent monitoring approaches during workshops, details of which are contained in the workshop reports. The further tasks were to review the suitability of Adaptive Management as a policy approach to guide post-consent monitoring that is able to meaningfully inform risk-based consenting of marine renewable energy by reducing key scientific uncertainties that could serve to delay decision making by regulators. Examples of applying the approach are considered and recommendations on good practice provided. The RiCORE project has identified that post-consent monitoring that is able to meaningfully reduce key scientific uncertainties remains challenging owing to a range of issues relating to the scientific quality of studies that are undertaken. A further task is to identify the key scientific issues that can hinder the provision of results that are useful in the context of risk-based decision making. The need for a question-led approach, study designs that can provide sufficient relevant information and the need for decision makers to engage with the issues associated with sampling intensity and statistical power are reviewed. Recommendations to enable regulators to apply risk-based approaches that can provide them with greater confidence are made.





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