SAFE WAVE

STREAMLIING THE ASSESSMENT OF ENVIRONMENTAL EFFECTS OF WAVE ENERGY

DELIVERABLE 5.4

Guidance document on a risk based, adaptive management based consenting process for wave energy projects in France and Ireland

This Project is co-funded by the European Climate, Infrastructure and Environment Executive Agency (CINEA)

WP 5

Guidance document on a risk based, adaptive management based consenting process for wave energy projects in France and Ireland

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SUBMISSION DATE

17 | December | 2024

DISSEMINATION LEVEL

PU	Public	X
CL	Classified – EU classified (EU-CONF, EU-RESTR, EU-SEC) under Commission Decision No 2015/444	
CO	Confidential, only for members of the consortium (including Commission Services)	

DOCUMENT HISTORY

Issue Date	Version	Changes Made / Reason for this Issue
17/12/2024	1.0	

CITATION

Verling, E., O'Hagan, A.M., Soulard, T., Menchaca, I., Galparsoro, I., Machado, I., and Bald, J. (2024). Deliverable 5.4 Guidance document on a risk based, adaptive management based consenting process for wave energy projects in France and Ireland. Corporate deliverable of the SafeWAVE Project co-funded by the European Climate, Infrastructure and Environment Executive Agency (CINEA), Call for Proposals EMFF-2019-1.2.1.1 - Environmental monitoring of ocean energy devices. 33 pp. DOI: http://dx.doi.org/10.13140/RG.2.2.29930.02245

This Project is co-funded by the European Climate, Infrastructure and Environment Executive Agency (CINEA), Call for Proposals EMFF-2019-1.2.1.1 - Environmental monitoring of ocean energy devices.

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1. SAFE WAVE project synopsis

The European Atlantic Ocean offers a high potential for marine renewable energy (MRE), which is targeted to be at least 32% of the EU's gross final consumption by 2030 (European Commission, 2020 (European Commission, 2020). The European Commission is supporting the development of the ocean energy sector through an array of activities and policies: the Green Deal, the Energy Union, the Strategic Energy Technology Plan (SET-Plan) and the Sustainable Blue Economy Strategy. As part of the Green Deal, the Commission adopted the EU Offshore Renewable Energy Strategy (European Commission, 2020) which estimates to have an installed capacity of at least 60 GW of offshore wind and at least 1 GW of ocean energy by 2030, reaching 300 GW and 40 GW of installed capacity, respectively, moving the EU towards climate neutrality by 2050.

Another important policy initiative is the REPowerEU plan (European Commission, 2022) which the European Commission launched in response to Russia's invasion of Ukraine. REPowerEU plan aims to reduce the European dependence amongst Member States on Russian energy sources, substituting fossil fuels by accelerating Europe's clean energy transition to a more resilient energy system and a true Energy Union. In this context, higher renewable energy targets and additional investment, as well as introducing mechanisms to shorten and simplify the consenting processes (i.e., 'go-to' areas or suitable areas designated by a Member State for renewable energy production) will enable the EU to fully meet the REPowerEU objectives.

The nascent status of the Marine Renewable Energy (MRE) sector and Wave Energy (WE) in particular, yields many unknowns about its potential environmental pressures and impacts, some of them still far from being completely understood. The operation of Wave Energy Converters (WECs) in the marine environment is still perceived by regulators and stakeholders as a risky activity, particularly for some groups of species and habitats.

The complexity of MRE licensing processes is also indicated as one of the main barriers to the sector's development. The lack of clarity of procedures (arising from the lack of specific laws for these types of projects), the varied number of authorities involved, and the early stage of Maritime Spatial Planning (MSP) implementation are examples of the issues identified as resulting in a delay to the permitting of projects.

Finally, there is also a need to provide more information on the sector not only to regulators, developers and other stakeholders but also to the general public. Information should be provided focusing on the technical aspects of ocean energy, its effects on the marine environment, the impact on local and regional socio-economics and effects on a global scale as a sector producing clean energy and thus having a role in contributing to decarbonisation of human activities. Only with an informed society will it be possible to carry out fruitful public debates on MRE implementation at the local level.

These non-technological barriers that could hinder the future development of wave energy (WE) in EU, were partially addressed by the WESE project funded by EMFF in 2018. The present project builds on the results of the WESE project and aims to move forward through the following specific objectives:

1. Development of an **Environmental Research Demonstration Strategy** based on the collection, processing, modelling, analysis and sharing of environmental data collected in WE sites in different European countries where wave energy converters (WECs) are currently operating (Mutriku power plant and BIMEP in Spain, Aguçadoura in Portugal and SEMREV in France). The SafeWAVE project aims to enhance the understanding of the negative, positive and negligible environmental effects of WE projects. The SafeWAVE project will build on previous work, carried out under the WESE project, to increase the knowledge on priority research areas, expanding the analysis to other types of sites, technologies and countries. This will increase the robustness of information available and help to better inform decision makers and managers about real

environmental risks, broaden engagement with relevant stakeholders, related sectors and the public at large and reduce environmental uncertainties in consenting of WE deployments across Europe;

2. Development of a **Consenting and Planning Strategy** through providing guidance to ocean energy developers and to public authorities tasked with consenting and licensing of WE projects in France and Ireland; this strategy will build on country-specific licensing guidance and on the application of the MSP decision support tools (i.e. WEC-ERA[1] by Galparsoro et al., 2021[2] and VAPEM[3] tools) developed for Spain and Portugal in the framework of the WESE project; the results will complete guidance to ocean energy developers and public authorities for most of the EU countries in the Atlantic Arch.
3. Development of a **Public Education and Engagement Strategy** to work collaboratively with coastal communities in France, Ireland, Portugal and Spain, to co-develop and demonstrate a framework for education and public engagement (EPE) of MRE enhancing ocean literacy and improve the quality of public debates.

[1] https://aztidata.es/wec-era/;
[2] Galparsoro, I., M. Korta, I. Subirana, Á. Borja, I. Menchaca, O. Solaun, I. Muxika, G. Iglesias, J. Bald, 2021. A new framework and tool for ecological risk assessment of wave energy converters projects. Renewable and Sustainable Energy Reviews, 151: 111539
[3] https://aztidata.es/vapem/

2. Glossary of Terms

Adaptive Management - Adaptive management, also known as adaptive resource management or adaptive environmental assessment and management, is a structured, iterative process of robust decision making in the face of uncertainty, with an aim to reducing uncertainty over time via system monitoring.

Expert Judgement - Expert judgment is a technique in the project planning process that refers to making a judgment based on skill, expertise, or specialized knowledge in a particular area. The expertise can be based on an individual's training or educational background, career experience, or knowledge of the product/market[4].

Consequence - outcome of an event affecting objectives (ISO31000:2009).

Likelihood - chance of something happening (ISO31000:2009).

Pressure - any physical, chemical, or biological entity that can induce an adverse response.

Receptor - environmental components including (species and habitats).

Risk - there are many definitions of risk and some can be context specific. See text box in main text for further detail. A concise but broad definition of risk is that it is the probability of an undesired outcome or effect of uncertainty on objectives (ISO31000, 2009).

Ecological Risk Based Approach - a process whereby decisions are taken based on identifying, understanding, evaluating and prioritising the risks in a given situation relating to ecology.

[4] https://www.wrike.com/project-management-guide/faq/what-is-expert-judgment-in-project-management/

2. Executive Summary

The development of an Offshore Renewable Energy (ORE) sector is increasingly becoming one of the key low-carbon energy solutions for coastal nations in their drive to tackle both the impacts of a changing climate and to provide energy security in the face of these global challenges. While certainty about the impacts of the devices is some way off, there is an opportunity in the meantime to revisit consenting processes in order to determine whether changes to these could help to release this bottleneck.

SafeWAVE Deliverable 5.2[5] explored the use of ecological or environmental Risk Based Approaches (RBA) in the ORE development context, which is one potential solution to streamline consenting processes. Deliverable 5.3[6] built on this work and presented a "simple stepwise approach" which reduced the complexity of the RBA but ensured that relevant scientific work was considered. In this Deliverable 5.4, the intention was to present the Risk-based Approach in the form of a guidance document to include the outcome of consultation with developers and regulators in France and Ireland.

It is important to recognise that this document does not constitute formal guidance, endorsed by national consenting bodies or agencies. Rather it is intended to explain how the principles of RBA and adaptive management could be incorporated into consenting processes and in that way inform licensing processes that better reflect environmental realities. The approach taken involved providing a draft of this document to interested parties in both France and Ireland. Workshops were held with relevant stakeholders in France and Ireland to discuss the concepts and garner their views on how the approaches proposed could be

5 https://www.safewave-project.eu/wp-content/uploads/2022/06/Deliverable-5.2-Risk-Based-Approaches-and-Adaptive-Management..pdf

6 https://www.safewave-project.eu/wp-content/uploads/2023/03/Deliverable-5.3-Refinement-and-validation-of-risk-based-adaptive-management-approach.pdf

incorporated into existing consenting systems. When considering the findings from these workshops, there is clearly a need for more direct evidence before regulators, developers and consultants feel confident that they can fully engage and understand the benefits and improvements RBA might offer. Although this deliverable is termed 'a guidance document', there is limited guidance we can put forward given the above statement. Wider roll-out of RBAs is dependent on additional evidence from developments. This evidence can only be collected when more developments have been consented and additional experience with the authorisation of such projects has occurred. From the outset, however, it is essential that RBA is complimentary to the existing regulatory frameworks in individual countries and that it adds value to the overall consenting process rather than becoming an additional procedure.

3. Background to this guidance

Several key RBAs have been developed for practical use in implementation of different policies globally. Five of these approaches were considered most relevant to ORE and were selected for analysis in SafeWAVE Deliverable 5.2. They are listed below, and further details can also be found in SafeWAVE Deliverable 5.3.:

1. ISO: Risk Assessment approach from ISO Standard 31010 (from ISO, 2009).
2. ERES: Environmental Risk Evaluation System (Copping et al., 2015).
3. ERA: Ecological Risk Assessment Framework (Galparsoro et al., 2021).
4. RR: Risk Retirement (Copping et al., 2020).
5. SDM: Survey-Deploy-Monitor guidance (Marine Scotland, 2016).

There are many links and similarities between these five key RBAs and a number of important points emerged from an examination of the five frameworks together:

1. All of RBAs focus on the overarching goal of identifying the **most pertinent risks** and addressing these. This is the ultimate aim of a Risk-Based Process.
2. All of the RBAs explicitly tackle **receptor-stressor relationships**. This should be the focus of a Risk-Based Approach.
3. An assessment of the **likelihood and consequence** of a receptor-stressor interaction is a common theme in the majority of these approaches. This key step should be included in the Risk-based Approach.
4. All the RBAs involve some form of **risk evaluation** process in order to identify the most critical risks. This allows risks to be assessed relative to each other and managed appropriately.

5. The identification of risks must be based on **scientific evidence** although this is often not wholly accessible or does not exist. In such cases, the use of **expert judgement** as part of a RBA, in the absence of quantitative data, can be seen as an acceptable alternative.

There are several examples of specific **steps** within the different approaches that are equivalent or almost equivalent but have been given different names. There are also a number of key considerations that are common between all the approaches, though they have been called by different terms or divided between steps in various ways. These varied interpretations - whilst valid and essential in developing the ideas behind RBAs - have had the undesired effect of adding to the complexity of such frameworks for regulators and developers and may actually be a deterrent to their use. The simplified stepwise process presented here aims to take the key elements of all existing approaches, but to present them in a **more accessible way for practical use**.

Importantly, most of the frameworks explicitly define risk in a similar way and all provide a systematic approach to considering risk. Care should be taken to ensure that the meaning of **risk** is understood clearly in advance of applying a RBA to a given scenario.

A concise but broad definition of risk is that it is the ***probability of occurrence of an undesired ecological impact*** (Jorgensen & Fath, 2008)**.** This definition can be refined once the context of the risk assessment is adequately understood. For example, in a risk management context, the International Organization for Standardization (ISO) define risk as ***the effect of uncertainty on objectives*** (ISO 31000:2009) while the Environmental Protection Agency in the USA defines risk as ***the chance of harmful effects to human health or ecological systems resulting from exposure to an environmental stressor***[7]**.**

Each of these definitions are valid and all lend themselves to the concepts of likelihood (the chance of a pressure and receptor overlapping in space

[7] https://www.epa.gov/risk/about-risk-assessment

or time) and consequence (the potentially negative result of that overlap). These are the two key concepts underpinning the risk-based approach outlined here.

4. The simple stepwise process

4.1 Risk-Based Approach process and steps

Using the understanding gathered from a detailed examination of the existing frameworks, the simple stepwise approach proposed here consists of four steps. Figure 1 provides a visual representation of this stepwise approach and each step is described in detail below.

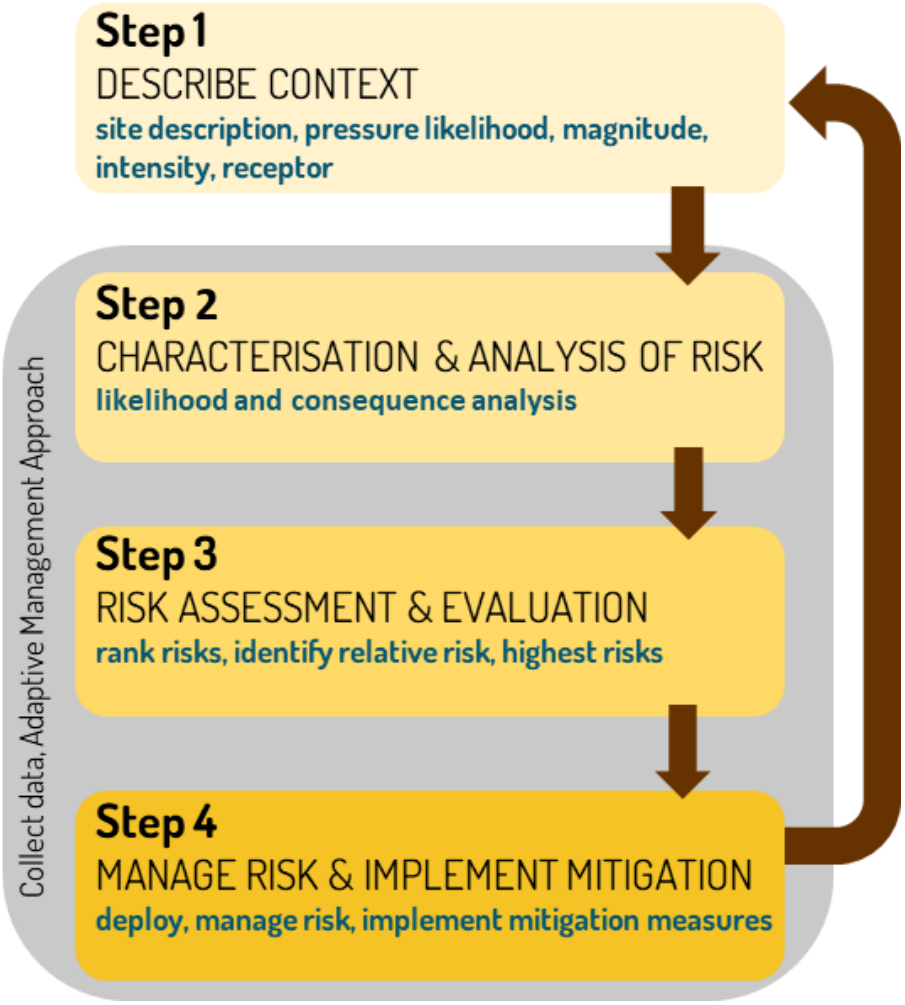

Figure 1. Diagram showing the stepwise Risk-Based Approach process and steps.

4.1.1 STEP 1. Describe Context and Identify Risk

The main tasks within this step include providing a background to the scenario such as a site and project description. A project description involves, for example, the type of ORE, production capacity, number of devices etc. This provides an idea of the magnitude of the project and of the types of pressures that can be produced by different ORE technologies. The site description refers to the ecosystem components that might be present in the area, and the associated vulnerability to the potential pressures produced by the project.

Crucially, this section also includes a description of the risks identified, by describing and identifying:

1. the potential **pressures (likelihood and intensity)**, and
2. the **receptors** and **ecosystem components** such as habitats and species, that are potentially sensitive to pressures.

This step can be detailed, or very simple, but in order to make it as comprehensive as possible, it is imperative to understand **what is meant by 'risk' in each particular case** (see Text Box above for definitions). Note that this process may reveal that there are several different pressure and receptor **combinations** that need to be taken into account. In considering pressures, it is also important that factors such as intensity and duration are included where such information is available.

4.1.2 STEP 2. Analyse Risk

For each pressure and receptor combination identified in Step 1, this step undertakes a **likelihood** analysis and a **consequence** analysis. A likelihood analysis considers the chance that a pressure and a particular receptor (e.g., species or habitat) will overlap in space (and by extension in time). A consequence analysis considers the potential outcome or result of that overlap (i.e., environmental impact or changes on the environmental status). The aim is to produce a **quantitative measure** of both of these parameters which (in the next step) can be used together to calculate **an overall measure of risk**. This is the most complex of all the steps as it requires

a process to be devised to determine the likelihood and consequence measures in a particular situation. Variations in factors such as pressure intensity and duration can impact both the likelihood and consequence scores. It may be necessary to calculate different scores based on varying levels of pressure intensity, for example. Additionally, the cumulative pressures should be also considered when implementing a RBA (e.g., Stellzenmuller et al., 2018; 2020).

4.1.3 STEP 3. Evaluate Risk

This step takes the information gathered in Step 2 and uses it to determine the **relative risk.** Relative Risk is obtained by taking the product of the likelihood and consequence analyses in Step 2 **(likelihood x consequence**) for different combinations of pressure and receptor and comparing the results with each other to identify those risks that are most significant. This concept is illustrated in Figure 2 below.

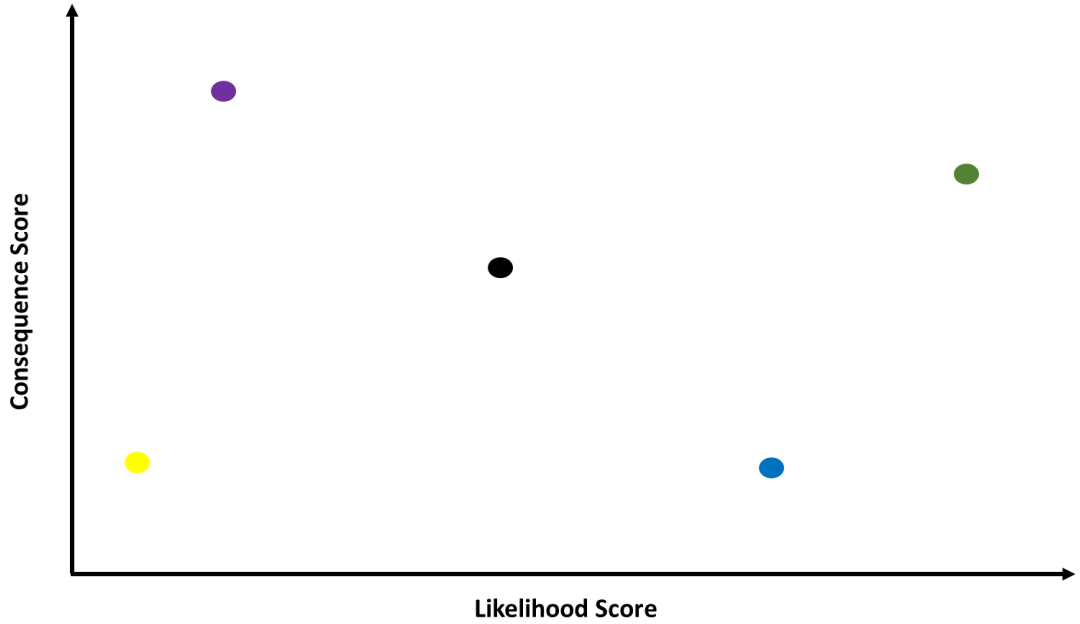

Figure 2. A visual representation of Relative Risk, whereby the results of Step 2 are graphically represented and can be compared to one another. The coloured circles represent different scenarios, for example, a high likelihood and high consequence situation (green circle) and a high likelihood but low consequence (blue circle). Each of these scenarios would require the adoption of different management and risk mitigation measures.

4.1.4 STEP 4. Manage Risk and Implement mitigation measures

This step refers to the actions taken pre, during and post deployment to manage the risks identified in the preceding steps. This step will be specific to a particular setting and will vary depending largely on the environmental and regulatory factors. Importantly, this step also includes the testing of reduction measures and novel mitigation strategies in order to increase knowledge and expertise in the future. This feedback is represented in Figure 1 through the large arrow on the right.

Alongside each of these four steps is the overarching consideration of **new data collection (monitoring)**, which does not fit into any particular step – in fact the opportunity to collect new information exists for all steps. This concept is strongly emphasised in the Survey Deploy Monitor (SDM) and Risk Retirement (RR) approaches (via the Collect Additional Data in RR and Monitor in SDM) but less so in the others. Emphasising the need for this consideration draws the process further into the Adaptive Management space and allows knowledge to improve and influence the other parts of the process.

4.2 Relationship between the stepwise approach and the five core RBAs

A relationship can be suggested between the stepwise process proposed here and each of the five core RBAs previously proposed by other authors. However, it is important to note that these relationships are not rigidly defined and the boundaries between them can be considered somewhat fuzzy. Figure 3 aims to illustrate the proposed relationship between each step relative to those of the core RBAs. The aim is to help define each step insofar as possible and to assist in directing the user to the appropriate aspect of the underlying approaches if they would like to obtain more detail or refer to examples of the risk approach in action.

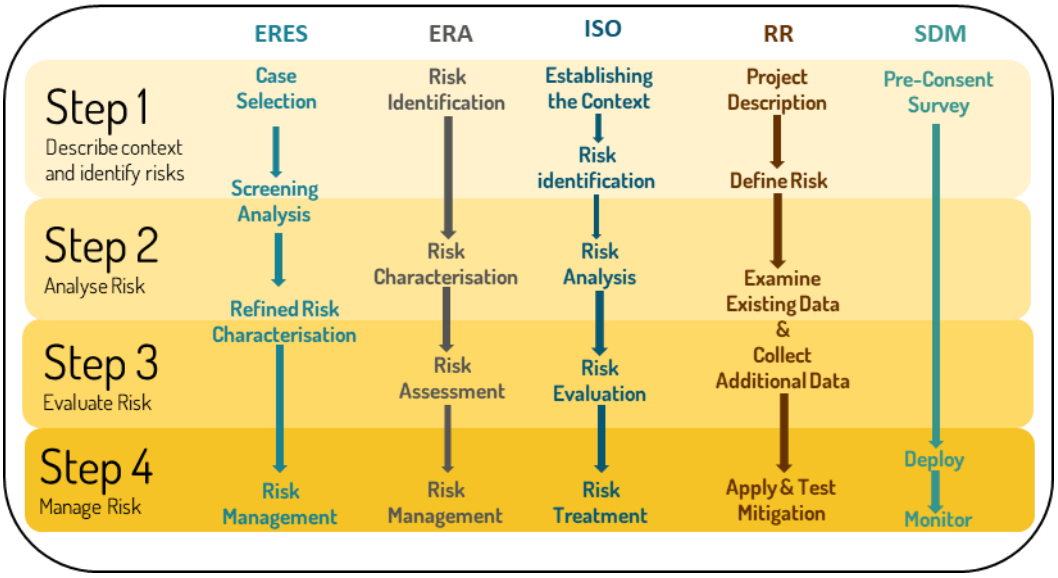

Figure 3. Showing the suggested relationships between the steps in the simple stepwise approach and the five core RBAs that contributed to this work.

This final deliverable of Work Package 5 builds on the inputs garnered from further consultation with stakeholders in France and Ireland and uses all of the information obtained and developed to date (in deliverables 5.1, 5.2 and 5.3) to produce a guidance document on the use of RBA in consenting processes in both countries.

5. Practical use of the Risk-based Approach in France and Ireland

Deliverable 5.1 consisted of a legal and institutional review of national consenting processes in both France and Ireland. It was produced in July 2021 and consequently as a result of time passing, some processes and procedures have changed in both countries. A concise overview is provided here for convenience. This deals only with the consenting process and not the wider policy changes that, for example, may have increased targets or changed operational priorities.

5.1 Overview of Regulatory landscape in France

The consenting system for offshore renewable energy in France has been the subject of several major changes in recent years, primarily driven by the fact that the previous system was not fit for purpose to deliver the scaling up of offshore wind in particular to meet the targets contained in the Multiannual Energy Plans (*Programmations pluriannuelles de l'energie,* PPE).

The principal instruments determining the processes for consenting are the Energy Code, the Environmental Code and the General Code on Public Property. As an initial step, and linking to wider Maritime Spatial Planning policy, the Department of Ecology conducts consultations for specific areas of coast with a view to assisting with site designation for offshore energy development. In 2023, a new piece of legislation, the law to accelerate renewable energy (*Loi no. 2023-175 du 10 mars 2023 relative à l'accélération de la production d'énergies renouvelables, AER*) was passed to expedite the construction and operation of offshore wind in particular. This provided for the creation of a map of priority maritime areas for the expansion of offshore wind by 2050 and also enabled public debates relating to offshore wind tenders to take place at the same time as the debates on MSP organised through the strategic document of the maritime façade (DSF).

With respect to offshore wind, a number of competitive tender processes have taken place since 2012. This is the responsibility of the Minister for Energy who selects the operator either through a competitive dialogue with pre-selected candidates or by an invitation to tender (Energy Code, article R311-12), a process coordinated by the Energy Regulatory Commission (*Commission de régulation de l'energie*).

As a result of the AER law, State bodies therefore pre-identify suitable sites, carry out preliminary technical surveys, initial environmental monitoring work, and consult with the public and other marine users. Hence it is the State rather than the developer that provides the technical and environmental studies to progress the tender and EIA. Once a successful tender has been awarded, the developer is responsible for securing a number of authorisations relating to the environment and occupation of the marine space.

The main environmental authorisation is provided for in L181-1 of the Environmental Code. This is issued by the Prefecture (*préfet*) in a process that usually takes between 12-15 months.[8] The enactment of the AER law has set statutory time limits for this process now, with government estimating it should take nine months. The environmental authorisation could be said to comprise of a number of other permissions: the Water Act for example provides that certain activities are either required to be declared to the relevant authority if they have a low environmental impact or are subject to an authorisation regime. It also ties in requirements deriving from the EU's Habitats Directive, whereby a derogation from the prohibition on harming protected species and their habitats is required when a project is expected to be detrimental to the conservation of a certain species or habitat.

For the derogation to be granted, the project must be needed for imperative reasons of overriding public interest – this in now implied with

[8] Legislative report from the Senate no. 82 (2022-2023), Projet de loi relative à l'accélération de la production d'énergies renouvelables, 26 octobre 2022.

the adoption of the EU's most recent Renewable Energy Directive (REDIII); it must not be detrimental to the conservation status of the species, and thirdly, there must be no alternative solution.[9] The represents an integration of wider EU biodiversity law and policy with national processes in an effort to streamline the requirements.

The Environmental Authorisation also sets out the measures that a developer must take in order to prevent, minimise or compensate for any environmental impacts. The Environmental Code now also recognises that technology may vary over the time taken to secure consent and accordingly introduces the concept of a 'design envelope' or 'envelope authorisation' which acknowledges the variable characteristics of the technology and how it can change within the limits of the thresholds set by the authorisation.[10]

In essence it is the Environmental Authorisation that incorporates the provisions of the EU's EIA Directive. Offshore wind projects must have an EIA under the Environmental Code, all or part of which is conducted by the Energy Minister before a tender process is launched. For other offshore energy developments, the requirement for an EIA is decided on a case by case basis. EIA documentation must be made available to the public in line with wider EU law and Aarhus Convention requirements.

In addition to the Environmental Authorisation, developers must also obtain an authorisation to occupy the maritime space as it constitutes part of the public domain, which also necessitates payment of a fee under the General Code of Public Property.[11]

Depending on where the development is situated there may also be a need to carry out an archaeological assessment if there are maritime cultural assets on or near the site. These provisions are contained in the

[9] Environmental Code, article L411-2.

[10] Environmental Code, article L181-28-1.

[11] General Code of Public Property, articles L2125-1 and L2122-2 et seq.

Heritage Code.[12] Offshore energy development is exempt from any requirements deriving from terrestrial planning requirements such as the Town Planning Code.[13]

In addition to all of the above, the transmission system operator (RTE) is responsible for the construction and operation of the connections to the transmission network, and they assume ownership of the connection cable following construction. Authorisations relating to grid connection are not considered any further here.

5.2 Overview of Regulatory landscape in Ireland

The regulatory system for marine development in Ireland, including offshore renewable energy, was radically overhauled through the enactment of new legislation in the form of the Maritime Area Planning Act, 2021 [MAPA] in December 2021 and ongoing implementation of the National Marine Planning Framework, Ireland's first Maritime Spatial Plan. MAPA strengthened the legal basis for Maritime Spatial Planning enabling forward planning, introduced a new development management (consenting) system and created a new authority known as the Maritime Area Regulatory Authority (MARA) to administer some of these changes. The new development management system consists of three different elements:

- Maritime Area Consent System (MAC), administered by MARA,
- Licensing for certain maritime usages which do not require planning permission or an EIA, and
- Development Consent (or Planning Permission) administered by An Bord Pleanála.

MAPA applies to the entire maritime area defined as extending from the high-water mark to the outer limit of Ireland's continental shelf and includes the territorial seas and the Exclusive Economic Zone (EEZ). This is

[12] Heritage Code, articles L521-1 and R523-1 et seq.

[13] Town Planning Code, articles L421-5 and R421-8-1.

the first time that Ireland has had a planning regime for marine spaces beyond 12 nautical miles.

MAPA provides for the creation of Designated Maritime Area Plans (DMAPs), which are essentially marine plans that can cover a region or activity and be proposed by a public body to advance a particular sector, a number of sectors or a particular location. MAPA requires that all DMAPs must be prepared by a designated Competent Authority, who has been approved for this purpose by the Minster of the Environment, Climate and Communications. Overarching competence for MSP in Ireland transferred from the Minister of Housing, Local Government and Heritage to the Minister of the Environment, Climate and Communications in May 2024 meaning that responsibility for MSP and Energy are now under the same Minister and Department. With respect to DMAPs, the intention is that a DMAP will act as a management plan for a specific area of marine waters, which can be used to develop multi-activity area plans to promote the use of specific activities. All future Offshore Renewable Energy must be taken forward through DMAPs, meaning it will not be possible to propose an offshore energy development outside a DMAP area. In this sense, development is moving from a developer-led system to a plan-led one.

The DMAP establishment process includes a statutory requirement to provide opportunities for engagement with citizens and local communities. Accordingly, the publication of any DMAP proposal must be accompanied by a Public Participation Statement outlining opportunities for the involvement of interested parties in the DMAP establishment process. This is to ensure that development occurs in the most suitable locations and delivers maximum benefits to local communities. It also assists with considering other existing marine activities and usages in planning processes.

In July 2023, a proposal for a South Coast Designated Maritime Area Plan (DMAP) was published by government. The Minister for the Environment, Climate and Communications was designated as the Competent Authority to prepare DMAPs for the development of offshore renewable

energy. The proposed South Coast DMAP covers an area of 8,600 square kilometres in size, extending from the mean high-water mark on the south coast to the 80-metre depth contour and/or the edge of the Irish EEZ and this will effectively dictate the second round of offshore wind energy developments in Irish waters. The proposed plan was subject to a nine week public consultation (August-October 2023), and subsequently revised to take account of the submissions received. Both Houses of the Oireachtas [parliament] must approve the DMAP for it to have effect.

This DMAP was approved by both Houses on 10th October 2024. It identifies four maritime areas for accelerated deployment of fixed offshore wind off the south coast of Ireland over the next decade. This includes a maritime area, known as Tonn Nua [*New Wave*], which is identified for a 900 MW project to be built by the winner of Ireland's second offshore wind auction. This auction is expected to commence next year, with terms and conditions to be published following adoption of this DMAP.

To carry out any offshore energy development in Irish waters, developers must firstly apply to the Maritime Area Regulatory Authority (MARA) for a Maritime Area Consent (MAC). This is solely a right to occupy a defined area of maritime space, subject to securing other necessary approvals. A MAC is necessary to enter into the planning process. All maritime usages require a MAC unless they are exempted under Schedules 3 or 4 of the Act. These exemptions include activities that require a Maritime Usage Licence, which are listed in Schedule 7 of the Act and include, for example, marine environmental surveys and site investigations. An application for a MAC involves an assessment of the technical and financial capability of the proposer, a public interest test, adherence and relevance of the proposed development to the National Marine Planning Framework, stakeholder engagement and preparatory work undertaken. An application for a MAC can be refused, the applicant asked to provide further information or granted subject to conditions.

On receipt of a MAC, a developer can then enter the Development Consent process. Depending on the type and location of the proposed development application for development consent is made to either An

Bord Pleanála or to the adjoining Coastal Planning Authority if the proposed development is situated within three nautical miles of the high water mark and does not require an EIA or Appropriate Assessment under the EU Habitats Directive. It is anticipated that most offshore energy development will be of a scale that will necessitate application to An Bord Pleanála.

Before making an application for development consent to the Board, the applicant must enter into pre-application consultations with An Bord Pleanála as required under section 287 of the Planning and Development Act 2000, as amended. This provides the Board with the opportunity to express its opinion on the design options in relation to the proposed development and in that way better inform the content of EIA for example. It is the responsibility of the developer to conduct the EIA and submit it to An Bord Pleanála.

If an offshore energy development has ancillary elements that will be located on land, e.g. a substation, cables etc., these will require Planning Permission from the Local Authority in compliance with the Planning and Development Acts, as amended. Planning Permission is applied for by filling in a planning application form and submitting it together with required documents to the local planning authority, usually the County Council. The local authority will advise on compliance with the County Development Plan, other required documentation, the applicable fee and any other requirements including EIA and/or AA.

In addition to a MAC and development consent, an offshore energy developer is also required to obtain to Licence to Generate and Supply Electricity (section 14) and an Authorisation to Construct or Re-construct a Generating Stations (section 16) under the Electricity Regulation Act, 1999. These permissions are administered by the Commission for the Regulation of Utilities (CRU). All offshore wind projects must be in receipt of a Maritime Area Consent; Route to Market; and final development consent from An Bord Pleanála before they are eligible to request a full grid connection offer, execute that offer and connect to the transmission system.

CRU also oversees the provision of access to the transmission or distribution system to holders of licences or authorisations. If a proposed generating station has an installed capacity of less than or equal to 1 MW, then applicants are exempt from the need to apply to CRU for a Licence or Authorisation. Such generating stations are licensed and authorised pursuant to the Electricity Regulation Act, 1999 (Section 14 (1A)) Order 2008 (S.I No. 384 of 2008) and Electricity Regulation Act 1999 (Section 16(3A)) Order 2008 (S.I 383 of 2008) respectively.

5.3 Practicalities of embedding RBA in France and Ireland

In the final phase of this work, the aim was to explore the feasibility of using a RBA in France and Ireland, considering the regulatory landscape in both countries. Efforts were made to contact relevant agencies (e.g. government bodies, regulators) in both countries to share the RBA developed during this project presented in Deliverable 5.3 and to seek feedback on it. In both cases, availability of relevant authorities was challenging, due to the level of activity and flux in this sector in both countries at the current time but indicative responses are presented in a narrative form below.

In France, a workshop took place in November 2023 during a meeting of the French Renewable Energy Trade Association (*Syndicat des Énergies Renouvelables, SER*). In total there were 17 attendees from a range of different sectors including SER members, tidal developers, consultants for wave and tidal energy, one wave energy developer (Legendre group, project DIKWE), and a representative from the Brittany development agency. The group was first given a presentation outlining the RBA and their relevance to offshore energy development and following this, they were presented with a series of questions to explore their current level of engagement with RBA and their views of it:

1. Are you concerned about consenting processes? Why/Why not?
2. Have you encountered risk-based approaches in your work?
3. Have you used (RBAs) in any ORE projects?

4. Which RBAs have you used, why? What worked and what did not?
5. Would you use RBAs again or would you like to see wider uptake?
6. Which environmental inputs do you consider to be most 'uncertain'?
7. If the use of RBAs successfully embedded and streamlined in the consenting processes of other countries, do you think this would increase their uptake and use in France?
8. Would a worked example of this process make it more understandable?

The outcome of the session revealed a number of important points that need to be considered when considering implementation of RBAs. Firstly, most workshop participants indicated that they were concerned about the consenting processes, particularly given the size and location of some of the development projects. However, 71% of them indicated that they had not encountered the RBA to consenting in their work to date. Despite this, all respondents felt that they would be encouraged to use it more in France if it was shown to be effective in other countries. In addition, all respondents also felt that a worked example of the RBA in action would be of use to them in gaining an understanding of how the method could work, and this is something that would need to be considered in the future.

In Ireland, some difficulties were encountered in engaging with the key stakeholders and regulatory authorities. This is because the regulatory system in Ireland system has been dramatically overhauled during the course of the SafeWAVE project (see the information outlined in section 6.2 above) and particularly since the enactment of new legislation in December 2021. Many processes and procedures still being developed, coupled with the need for approval of DMAPs prior to authorising any offshore energy development. Therefore, feedback on RBA was sought from the key individuals at a time when the consenting systems and processes to be followed continue to adapt. In addition to this, the key staff and their specific responsibilities were also in flux, with organisational

responsibilities and role descriptions changing as well as individual staff in those roles. In October and November 2024 meetings were held with representatives from the Maritime Area Regulatory Authority (MARA) in an effort to determine if and how risk-based approaches feature in existing processes or how this may evolve in future. The questions in Box 1were also presented to them and used to frame and guide the discussions.

To recap, MARA have the responsibility for granting Maritime Area Consents (MAC), authorising occupation of the maritime space, whilst ABP are responsible for processing development consent applications, including the Environmental Impact Assessment (EIA) and Appropriate Assessment (AA) processes. In addition to their MAC role, MARA are also responsible for granting Maritime Usage Licences (MULs) which, amongst other activities, are needed to undertake marine environmental surveys for the purposes of scientific discovery and site investigation, installation of non-permanent structures, and other activities listed in Schedule 7 of the Maritime Area Planning Act, 2021. The legislation also provides that the relevant Minister may add to this list by enacting further regulations. Whilst the later has not happened yet it is expected to be utilised in future.

In conducting their licensing functions, MARA have regard to both EIA and AA legislation by way of a screening process. If this screening determines that an EIA applies, then the application will be returned to the applicant and advised to apply for a Maritime Area Consent. Maritime Usage Licences are intended to cover short-term, non-permanent activities only. In discussing RBA with MARA personnel, it was made clear that both EIA and AA reflect risk-based management concepts, though perhaps not in as formalised a sense as is put forward by the SafeWAVE project consortium.

In dealing with MULs, no one risk management approach has been encountered but rather more general principles relating to risk as are implicit in the regulatory processes that already exist, such as EIA. Personnel were aware of ongoing work progressing in Ireland in relation to Ecological Sensitivity Analysis, which also includes risk-based approaches. It was strongly stressed that whatever type of risk-based approach is

favoured **must** also be compatible with existing regulatory processes: otherwise, it will not work and only lead to additional work and potentially duplication of effort in already stretched resources. It was acknowledged that there is scope to have a wider uptake of RBAs provide they can co-exist with existing processes.

In terms of the environmental inputs that are considered most 'uncertain' currently, given Ireland's limited deployment of offshore energy devices to date but huge ambition, cumulative effects are a critical concern as well as conservation of habitats and species under the Habitats Directive and operation of the AA process. This is potentially critical for the Irish Sea area where a number of fixed offshore wind farms are planned in an area that is already host to a wide range of maritime activities and uses, proximate to other offshore wind developments off the British coast, and some of which are planned to be located in shallow waters, sandbanks and/or mudflats, relatively close to shore. Personnel drew attention to the work of the European Environment Agency (EEA) and the Organisation for Economic Co-operation and Development (OECD) in particular and their work on foresight, horizon-scanning and scenarios for sustainable energy futures. This recognises the need for careful planning and implementation so as to avoid the introduction of additional environmental pressures, even if offshore energy does lower the need for fossil fuels across the EU.

If RBAs were successfully embedded and streamlined in the consenting processes of other countries, however, it was intimated that this could increase their uptake and use in Ireland. Again, the need to tie this back to the regulatory system in place was emphasised. It was also suggested that there may be a need to make RBA approaches better known to business users and regulators who could 'champion' the approach and encourage policymakers to adopt its uptake.

The difficulties relating to a worked example were well understood by MARA with respect to how such an example could be misinterpreted or misused. One possibility raised was to explore if and how RBA could be used to decide on the level of authorisation required in a similar manner to how wastewater and abstraction licences are granted in other

jurisdictions. For example, a low risk could take the form of self-assessment by the developer applying for consent, a medium risk could be examined by a Coastal Planning Authority, and if a higher level of risk was anticipated this could be made subject to the existing regime, conducted by ABP.

6. Concluding remarks

When considering the findings from France and Ireland, there is clearly a need for more direct evidence (e.g. from RBAs in action in other countries or through worked examples) before regulators, developers and consultants feel confident that they can fully engage and understand the benefits and improvements RBA might offer. Although this deliverable is termed 'a guidance document', there is limited guidance we can put forward given the above statement. It does however guide the users on the various types of RBAs that are available, how they align or differ whilst also synthesizing these into a simpler step-wise process. Wider roll-out of RBAs is dependent on additional evidence from developments. This evidence can only be collected when more developments have been consented and additional experience with the authorisation of such projects has occurred. From the outset, however, it is essential that RBA is complimentary to the existing regulatory frameworks in individual countries and that it adds value to the overall consenting process rather than becoming an additional procedure.

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