# MARINEWIND

## Market Uptake Measures of Floating Offshore Wind Technology Systems (FOWTs)

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# D4.5: MARINEWIND Replicability Plan

Lead partner: Q-PLAN

Authors: Parodos L., Q-PLAN
Tsogas D., Q-PLAN
Spyridopoulos G., Q-PLAN

Reviewers: Paola Zerilli, University of York

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# TABLE OF CONTENTS

## TABLE OF FIGURES



## TABLE OF TABLES

## EXECUTIVE SUMMARY

This document, titled **D4.5 MARINEWIND Replicability Plan**, outlines the method for implementing a future iteration of the MARINEWIND activities.

This guide is a framework designed to give guidance in the **replication of the MARINEWIND experiences** to support interested stakeholders identify, verify and overcome barriers and constraints related to the development of Floating Offshore Wind Technologies (FOWTs), as well as to foster knowledge exchange across Europe. Moreover, the guide outlines the steps and challenges faced in implementing the MARINEWIND activities and gives insights into the process as they evolved.

It takes the steps employed by the members of the MARINEWIND consortium and overlays them with the feedback of these activities provided by those involved in the delivery, combined with feedback collected from policy stakeholders through the **EU policy virtual Roundtable**.

The guide demonstrates how the 5 areas of support, namely (i) the **Lab formation and stakeholder engagement**, (ii) the **Data collection and analysis methodology**, (iii) the **Development and launch of Surve**y, (iv) the **Drafting Recommendations for stakeholders**, as well as (v) the **Design and development of WebGIS tool**, can be utilised to foster the market uptake of FOWTs across Europe.

The guide showcases the key activities, learnings and outcomes carried out during the implementation of the MARINEWIND project and puts them to a practical framework for stakeholders that would wish to employ such activities going forward.

# 1 INTRODUCTION

Within the frame of MARINEWIND, 5 Labs were established to identify and analyse barriers and enablers surrounding the development of FOWTs, through several activities throughout the course of the project. The current document is titled "D4.5: MARINEWIND Replicability Plan" and has been elaborated in order to collate all the knowledge and insights gained through the deployment of the 5 MARINEWIND Labs and offer this knowledge in a practical way to empower interested stakeholders to replicate the project's methodologies and results.

In this context, the Replication Guide is structured in 3 distinct chapters, as follows:

- **Chapter 1** provides introductory information about the Replicability Plan, the context in which it has been elaborated as well as about its objectives and structure.
- **Chapter 2** describes the key activities in terms of the methodology used for their implementation, the key insights and the respective recommendations for their replication in other contexts.
- **Chapter 3** gives an overview of the conclusions.

MARINEWIND is an EU project aiming to **accelerate the market uptake of FOWT**. It maps the FOWT landscape across policy, societal, financial, and techno-economic dimensions through in-depth analysis of five pilot studies (MARINEWIND Labs) in Portugal, the UK, Greece, Spain, and Italy. The project **involves diverse stakeholders** across the Quintuple Helix and **supports knowledge transfer** from experienced to emerging FOWT regions, but also it **develops a WebGIS tool** to provide specifically tailored information on FOWT to the various stakeholders and policy recommendations.

There are several key challenges related to the market uptake of FOWTs, which can be summarized in a number of broad areas:

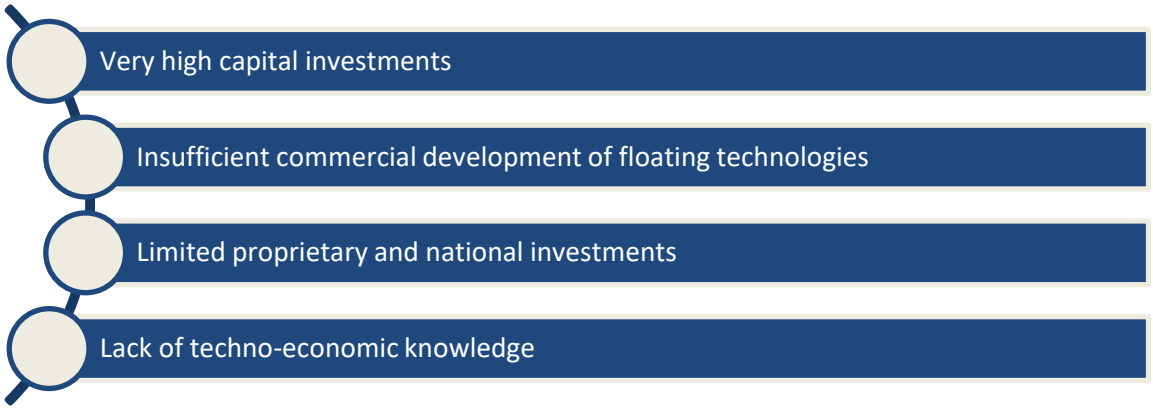



Figure 1: Key challenges in the development of FOWTs

As a result, European countries cannot yet unlock the full potential of the offshore wind against climate change. To understand and solve the above challenges, the MARINEWIND project identified bottlenecks and potential opportunities to strengthen offshore wind's role in delivering innovative solutions to system integration and considered how best to integrate such a system by exploring the

market, policy and regulations issues, social, financial and techno-economic optimal solutions, and provision for storage and flexibility recommendations. In this direction, the MARINEWIND strived to support investments of both private and public sectors in FOWTs, as well as to accelerate their commercialization and deployment in various European geographical areas by:

- **Increasing awareness** towards developing political and business agendas open to the floating offshore wind energy opportunities,
- **Increasing social acceptance** of FOWT via science-based evidence and tools,
- **Contributing to the development of efficient financial frameworks** to support further investments in FOWT, and
- **Provide solutions** characterized by a wide potential for reapplication and long-term viability

To this end, the Replicability Plan intends to indicate those elements of the MARINEWIND project that could be integrated, in identical or adapted form, by other projects or other users that have similar objectives and target groups in other EU countries. In this Plan, we identify the elements of the project that could be replicable, either 'as is' or with adjustments, setting out in a simple and practical way how these elements were designed and implemented, to facilitate their potential replication (Chapter 2).

It should be noted that "Projects with similar objectives" are projects (and any other users) that aim to support FOWTs and professionals in the offshore wind sector. The replicable elements of the MARINEWIND project could be used separately or in total, as items of an integral methodology. They could be adopted as such or set the basis of a new model with relevant adjustments. The potential projects or users in which the project elements of MARINEWIND could be replicated and adopted are highlighted in Table 1.

**Table 1: Potential adopters of MARINEWIND experiences**

| | |
|---|---|
| 1 | Policymakers and Public Authorities |
| 2 | FOWT developers and technology providers |
| 3 | Investors and financing institutions |
| 4 | Universities and research institutions |
| 5 | EU funded initiatives and projects related to FOWTs |
| 6 | Citizen associations |

As part of the MARINEWIND objectives to ensure that its experiences can be effectively transferred and replicated across Europe, an **EU Policy Virtual Roundtable** was organised on 8th of July 2025, engaging 20 participants. The event served as an important milestone for the Replicability Plan, offering an opportunity to present its initial version to relevant stakeholders and EU representatives and to gather valuable feedback regarding its relevance, potential, and added value for supporting the market uptake and development of FOWTs.

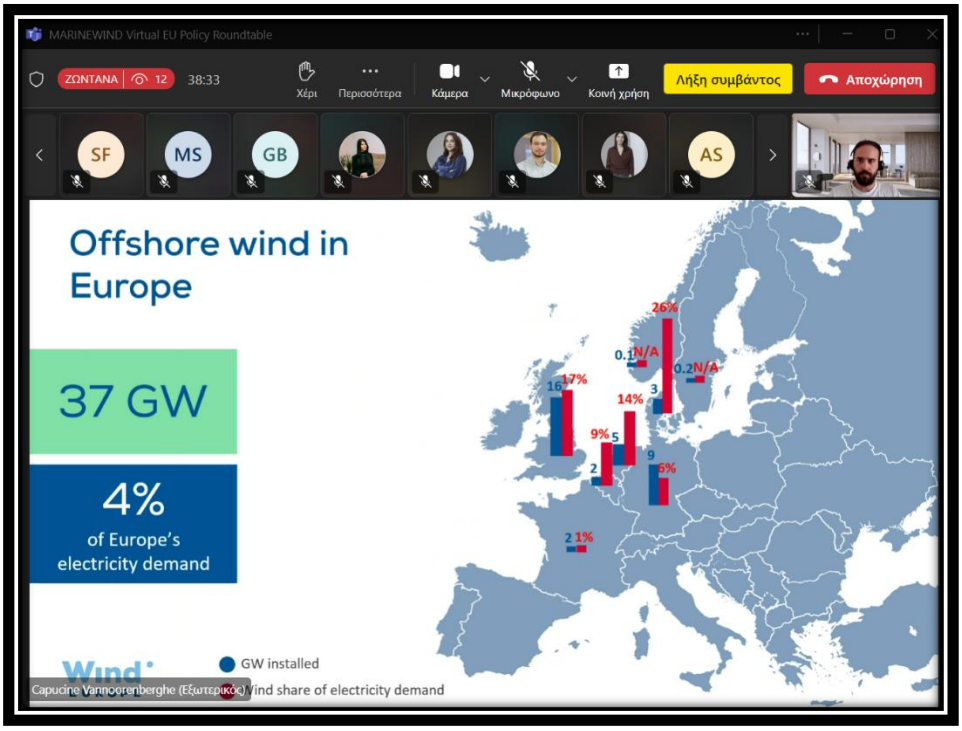



Figure 2: Snapshot from the EU Policy Roundtable – Presentation from key expert

During the first session of the Roundtable, Dr. Matthijs Soede, EC Policy Officer, provided a short presentation about the **relevance of FOWTs and the European Ocean Pact**. Following that, the initial version of the MARINEWIND Replicability Plan was presented to the audience by Q-PLAN, and the session closed with brief presentations about **Insights and Priorities for a Resilient Offshore Wind Future for all stakeholders**, by key experts from relevant EU projects. In the second session of the Roundtable participants engaged in an open discussion on stakeholder engagement in FOWTs and social acceptance, key recommendations for them, approaches to leverage available data for shaping FOWT strategies across Europe, as well as the **feasibility and applicability of the proposed replicability framework** across different national and regional contexts. The EU Policy Virtual Roundtable Agenda is included in Annex 2.

Particularly, participants underlined the importance of **meaningful involvement of local communities in the deployment of FOWTs**. Citizens are often absent from related debates; therefore, proactive outreach, transparent communication, and evidence-based information and data sharing are deemed essential. In addition, the use of new technologies was highlighted as a means to facilitate wider stakeholder engagement, while clearer communication of costs, risks and benefits was considered necessary to build trust. Furthermore, on stakeholder acceptance and engagement, participants stressed the need to involve local communities from the earliest stages, including the design phase, and to align projects with local needs. The creation of employment opportunities was identified as a key factor in strengthening acceptance, but also it was also agreed that inclusive participation of all relevant stakeholders is critical to ensuring balanced decision-making and successful project implementation.

The discussion further highlighted the **need for reliable and comprehensive data from the industrial environment** to address discussions on energy demand and trade with other countries. Moreover, while local adjustments to the energy systems are important, participants recognised that **systemic changes at the global level are required** to address climate change effectively. The discussion also highlighted that the **regulatory complexities associated with FOWT projects can increase significantly** when these projects extend beyond national Exclusive Economic Zones (EEZs). Finally, regarding **Environmental Impact Assessments (EIA)**, stakeholders emphasised the importance of robust regulations and the value of conducting EIAs at the local level to accelerate the licensing process and project development.

The debate not only validated the approach taken but also provided key insights to enhance the usefulness and, eventually, inform the refinement and finalisation of the MARINEWIND Replicability Plan.

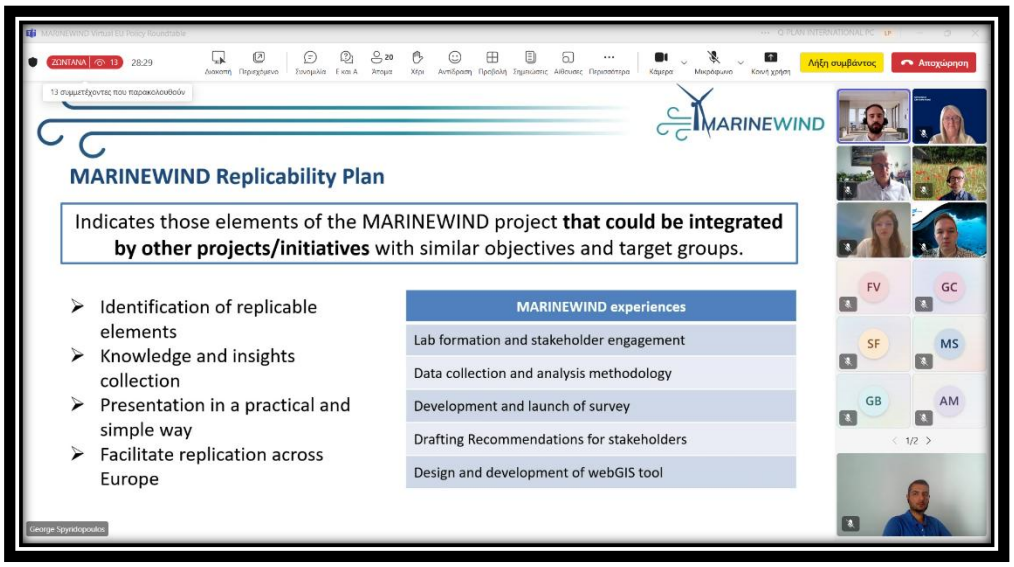



Figure 3: Snapshot from the EU Policy Roundtable – Presentation of the MARINEWIND Replicability Plan

# 2 PRACTICAL GUIDELINES TO SUPPORT THE REPLICATION OF THE MARINEWIND EXPERIENCES

The practical guidelines of MARINEWIND, that help interested stakeholders to replicate the MARINEWIND methodologies and experiences, revolved around 5 keys areas of focus, as described in the following sections. Each key replication activity is structured to support practical implementation and ease of use. It begins with a **short introduction** that explains the purpose and relevance of the activity, followed by a **step-by-step methodology** outlining how it can be replicated. To support users in applying each step effectively, **targeted recommendations** are provided throughout the methodology, highlighting success factors, good practices, and lessons learned from the MARINEWIND experience.

## 2.1 Lab formation and stakeholder engagement through co-creation

The successful establishment of the MARINEWIND Labs across five countries (Portugal, UK, Greece, Spain, and Italy) relied heavily on strategic stakeholder engagement. These Labs, that are social, environmental, technological and financial pilot studies served as regional hubs to:

- collect and analyse data from relevant stakeholders, aiming to identify barriers and enablers related to policy measures, societal engagement and environmental impact, and financial solutions, technoeconomic implications and commercialization of FOWT,
- collect information and co-create new knowledge with the MARINEWIND stakeholders, and
- build networks and transfer knowledge that could support the development and deployment of FOWTs in regions where FOWTs are still immature.

The MARINEWIND Labs are the field for engaging stakeholders through co-creation activities, following an approach that considers the whole Quintuple Helix (industry, academia, public authorities, civil society, green innovation).

For replication of this activity, it is essential to understand how to build such a structure, starting from stakeholder identification to active engagement in co-creation activities. Particularly, the MARINEWIND approach to Lab formation followed a systematic and inclusive approach to stakeholder identification and engagement. The goal is to ensure a well-rounded representation of the ecosystem, enabling meaningful involvement and interactions. The following methodology outlines how MARINEWIND established its Labs and engaged relevant actors effectively.

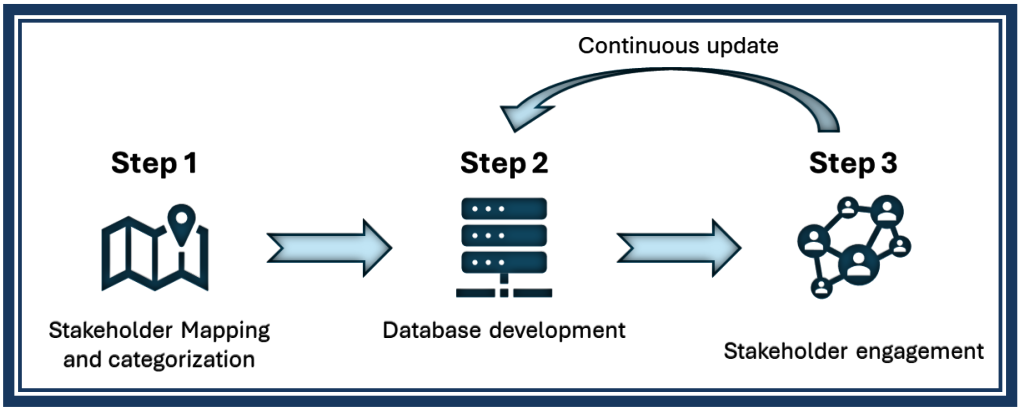



Figure 4: MARINEWIND methodology to establish, mobilize and expand a Lab

**Step 1: Stakeholder Mapping and Categorization**

As a first step, specific guidelines for mapping should be developed, with the aim of supporting the identification of actors and relevant stakeholders who work or are, directly or indirectly, involved in the offshore sector. The guidelines must define (i) what are the target groups of stakeholders, (ii) where to find them, as well as (iii) how to identify them.

✓ **Tip #1**: *Define clear target groups from the Quintuple Helix based on the needs that they will be used in following activities.*

In the MARINEWIND example, the following exhaustive list of categories was followed:

Table 2: Stakeholder categories

| | |
|---|---|
| **Industry** | FOWT installation developers |
| | Engineering companies |
| | Tech/project developers |
| | Trade associations (fisheries and tourism) |
| **Academia** | Scientific community |
| | Research centres |
| | Universities |
| **Public Authorities** | Local authorities |
| | National authorities |
| | European authorities |
| | Local associations |
| | National associations |
| | European associations |
| | Maritime transport authorities |
| | Policy makers |
| | Municipalities |
| **Civil Society** | NGOs civil society organizations |
| | Citizens |
| | Foundations |
| **SMEs** | Public/private financial investors |

| | |
|---|---|
| | Insurers |
| | Ecologists |
| | Environmental organizations |
| | National natural park |

✓ **Tip #2**: *Have a balance in the categories of stakeholders, so that the results obtained from the activities are not biased or category-oriented, unless that is the goal. Gender balance is also critical to be met.*

Regarding the geographical context, it must be defined at what level stakeholders should be identified. For example, MARINEWIND targeted 3 levels of mapping: MARINEWIND Labs, European level, and Extra European level.

Finally, the way in which the identification is carried out plays an important role in the size and quality of information that will be gathered. Several sources must be explored, including (i) established networks, (ii) desk research, (iii) EU funded projects and initiatives, (iv) publications, and (v) thematic events, in order to cover in the most efficient way possible the Quintuple Helix.

✓ **Tip #3**: *Since the way to identify stakeholders is difficult, utilize every available source, especially your network and networking in events.*

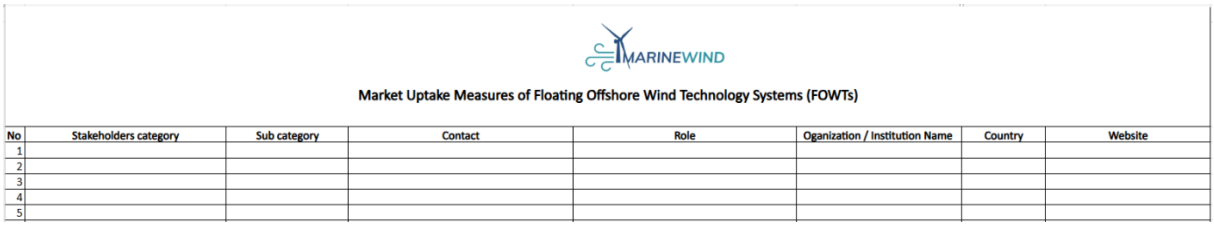
**Step 2: Database Development**

All the information obtained through the mapping must be captured in a database, in order to be used at any time. The database should include all the necessary information that will help to reach a stakeholder out for a specific request (e.g., a policy workshop). Essential, but not limited to, information that needs to be included in the database for each registration is (i) stakeholder category, (ii) name, (iii) organisation and role, and (iv) contact information (email and/or phone). Finally, going back to step 1, after the identification of new contacts or any changes in the existing information, the database(s) should be updated.

✓ **Tip #4**: *Try to include only the necessary information in the database, making it easier to be used. The database should be regularly updated, since contact information from stakeholders might change (e.g., change of organisation and corporate email).*

In case of more than 1 entities are engaged in this exercise, sharing of information can be achieved through a common database in a safe repository, always considering GDPR and data privacy issues.

✓ **Tip #5**: *Avoid sharing personal information that were not obtained from publicly available sources, in order to comply with GDPR.*



Market Uptake Measures of Floating Offshore Wind Technology Systems (FOWTs)

| No | Stakeholders category | Sub category | Contact | Role | Organization / Institution Name | Country | Website |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |

Figure 5: MARINEWIND stakeholder database structure

**Step 3: Stakeholder Engagement through co-creation activities**

To mobilise a Lab, stakeholder engagement is necessary. Using the database, targeted outreach via emails, phone calls, and dissemination activities (e.g., posts on social media) can be conducted, aiming to invite stakeholders to participate in specific activities. In MARINEWIND project, stakeholders were invited to participate in physical co-creation workshops aimed at identifying challenges, sharing knowledge, and validating recommendations. Tailored messages were used depending on the stakeholder type and expected level of involvement.

✓ **Tip #6**: *Organising co-creation activities is a key mechanism to mobilise a lab and engage stakeholders.*

The organisation of physical co-creation workshops is important, as it can bring stakeholders together and actively engage them to co-create knowledge and insights. The first step includes the definition of the workshop thematic and Agenda, considering the insights and feedback the organiser intends to collect.

✓ **Tip #7**: *During a co-creation workshop, dedicated sessions for open discussion and Q&As is essential in order to get valuable feedback from participants and co-create new knowledge.*

✓ **Tip #8**: *An effective way to engage and interact with participants is to use interactive tools such as Mentimeter and Miro. Additionally, using these tools makes the workshop more interesting for participants, thus increasing its effective outcome.*

Based on that, it is essential to select the best location that the workshop will take place, in order to gain data-driven information from real-life applications.

✓ **Tip #9**: *Consider organising the workshop within the frame of bigger regional or national events related to the workshop thematic, to attract more participants and maximise its impact.*

After defining the agenda and location, each session along with their presentations should be assigned to relative speakers.

✓ **Tip #10**: *Experts related to the co-creation workshop thematic should be invited as speakers to share their knowledge and insights with participants.*

The next step is to prepare promotional material, in order to disseminate the event and attract participants. Following that, utilizing the database, invitations to relevant stakeholders should be sent, including information about the event (e.g., thematic, dates, location) along with the promotional

material. Finally, after the completion of the co-creation workshop, a report summarizing the key outcomes must be developed to assess the impact of the workshop.

## 2.2 Data collection and analysis methodology

A well-structured data collection and analysis process is critical for building an informed strategy to accelerate the deployment of Floating Offshore Wind Technologies (FOWTs). In MARINEWIND, data served as the foundation for assessing national policy frameworks, understanding socio-economic and environmental barriers, evaluating financial and market dynamics, and identifying technical challenges and opportunities. This comprehensive evidence base enabled informed stakeholder engagement and the development of actionable recommendations.

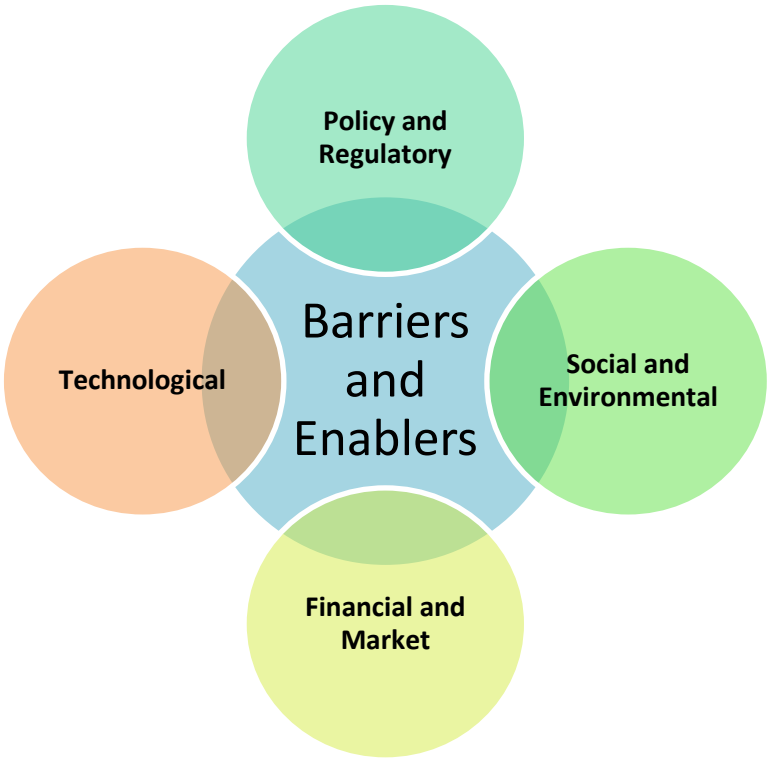



Figure 6: Core dimensions for collecting and analysing data towards the deployment of FOWTs

To replicate this approach, data must be gathered and analysed in a targeted and structured way across four core dimensions: policy and regulatory, socio-economic and environmental, financial and market-related, and technological. Capturing insights from multiple angles allows for a holistic understanding of the local context and helps anticipate risks, identify enablers, and shape strategies that are grounded in reality.

This activity is mainly focused on literature-based internal research, but it can be enriched by direct stakeholder input, aiming to ensure that the resulting analysis reflects not only theoretical frameworks but also real-world experience and perspectives. The following section presents a step-by-step methodology that can be followed to conduct similarly robust assessments, ensuring that data collection is tailored, meaningful, and aligned with local conditions. This process allows for the

identification of barriers and enablers across key dimensions of FOWT deployment and supports evidence-based decision-making.

**Define the Analytical Dimensions**

Begin by identifying the thematic areas to be explored: policy and regulation, socio-economic and environmental aspects, market and financial dynamics, and technological developments. Align these with the national or regional context to ensure relevance.

✓ **Tip #1***: Clearly define the needs and gaps for collecting data at local and national level and try to formulate the questions to be used for each stakeholder category.*

**Map Stakeholder Groups and Information Needs**

Determine which actors are most relevant to each dimension (e.g., regulators, investors, technology providers, developers) and define what information is required from or about each group to uncover knowledge gaps and decision-making drivers.

✓ **Tip #2***: Map stakeholders early on (see Section 2.1) and adapt communication materials and tools to their specific profiles and interests.*

**Select Data Collection Tools**

Choose a combination of research tools, starting with desk research exercise and complementing with participatory and stakeholder-driven methods. The selected tools should be adapted to the context, the target audience, and the type of data required. Below is a set of recommended tools that proved effective in MARINEWIND and can be replicated:

- Desk Research. This is the main tool and includes the systematic review of academic literature, technical studies, policy documents, national strategies, and regulatory frameworks relevant to FOWTs, forming as the foundation to understand the baseline context.
- Interviews with Project Partners and Experts. Conduct semi-structured interviews with project partners to gather localized insights on the national FOWT landscape. Additionally, engage external experts (e.g., researchers, industry leaders, consultants) to gain independent, in-depth perspectives on specific themes, gaps, or trends.
- Data collection forms. Develop structured forms tailored to different stakeholder groups to collect targeted quantitative and qualitative data at scale.
- Co-creation Workshops with Stakeholders. Organize participatory workshops bringing together local stakeholders from across the Quintuple Helix, facilitating the collection of diverse viewpoints and helping validate findings from other tools.

✓ **Tip #3***: Use a mix of tools (e.g., interviews and data collection forms) targeting all stakeholder categories, in order to obtain comprehensive findings and increase the validity of conclusions.*

**Design tailored tools**

Structure the desk research, defining the pool of sources to be explored. Tailor the selected complementary tools to each group's expertise and role in the FOWT ecosystem and align them with the desk research structure. Before using the tools, test them with a small number of users to refine clarity, relevance, and comprehensiveness before full deployment.

**Execute the Data Collection Process**

Initiate the desk research utilizing all the available sources, to gather valuable information and form the baseline context. In parallel, launch the complementary designed tools to enrich findings, considering the use of digital platforms for scalability and in-person events for depth when needed.

✓ **Tip #4**: *Ensure a satisfactory volume of responses and prioritize diversity in your sample to capture a wide range of perspectives, especially across regions and stakeholder categories.*

Additionally, disseminate the process through social media and personal networks of relevant stakeholders.

**Analyse Data Across Dimensions**

Use both qualitative and quantitative techniques to identify trends, enablers, barriers, and opportunities. Organize findings by dimension and stakeholder group to facilitate comparison and cross-sectoral insights.

✓ **Tip #5**: *During the analysis, try to identify any biases and low-quality data in order to exclude them and, thus, increase the reliability of the results.*

**Synthesize, Document and Validate**

Consolidate the key findings into clear thematic insights, following a structured and accessible format for internal use, future updates, and external replication.

✓ **Tip #6**: *Maintain documentation to allow future updates, ease replication, and support dissemination.*

Present these to stakeholders through validation workshops or roundtables to confirm interpretations and incorporate local knowledge.

✓ **Tip #7**: *After the initial analysis, ensure the validation of findings with stakeholders to enhance credibility and identify potential areas that have not been considered in the assessment.*

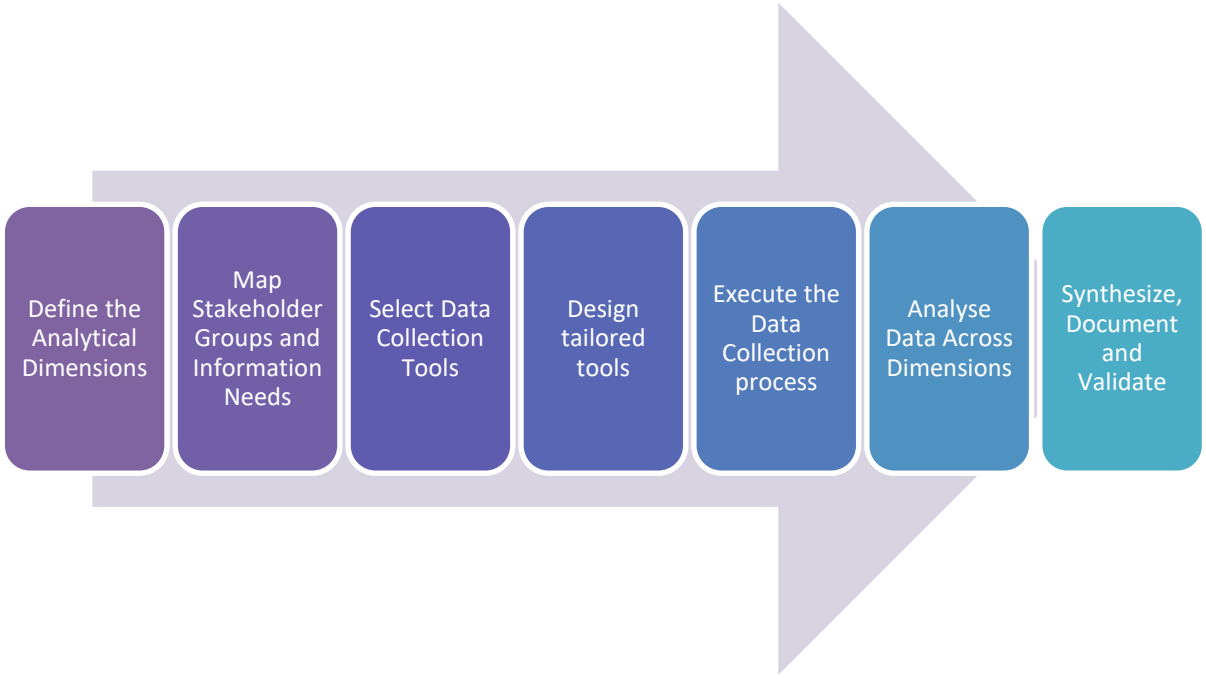



Figure 7: Process to collect and analyse data for building informed strategies

**More information about the MARINEWIND analyses of barriers and enablers across the aforementioned dimensions can be found in the respective deliverables D1.1, D2.1, D3.1, and D3.2.**

## 2.3 Development and launch of Survey

Survey-based research is a powerful tool for gathering insights from a broad and diverse range of stakeholders. In the context of Floating Offshore Wind Technologies (FOWTs), surveys can help assess perceptions, barriers, enablers, and expectations across policy, social, environmental, financial, and technological dimensions. The MARINEWIND Survey was carefully designed and structured to capture such multifaceted feedback from experts, local communities, investors, policymakers, and other relevant actors.

To develop a robust, meaningful and replicable survey, a structured and goal-driven methodology is essential. The process should be guided by clearly defined objectives, target groups, and thematic areas aligned with national or regional needs. The steps below outline a practical framework for designing, deploying, and analysing a survey that can effectively capture stakeholder insights across diverse dimensions of FOWT development.

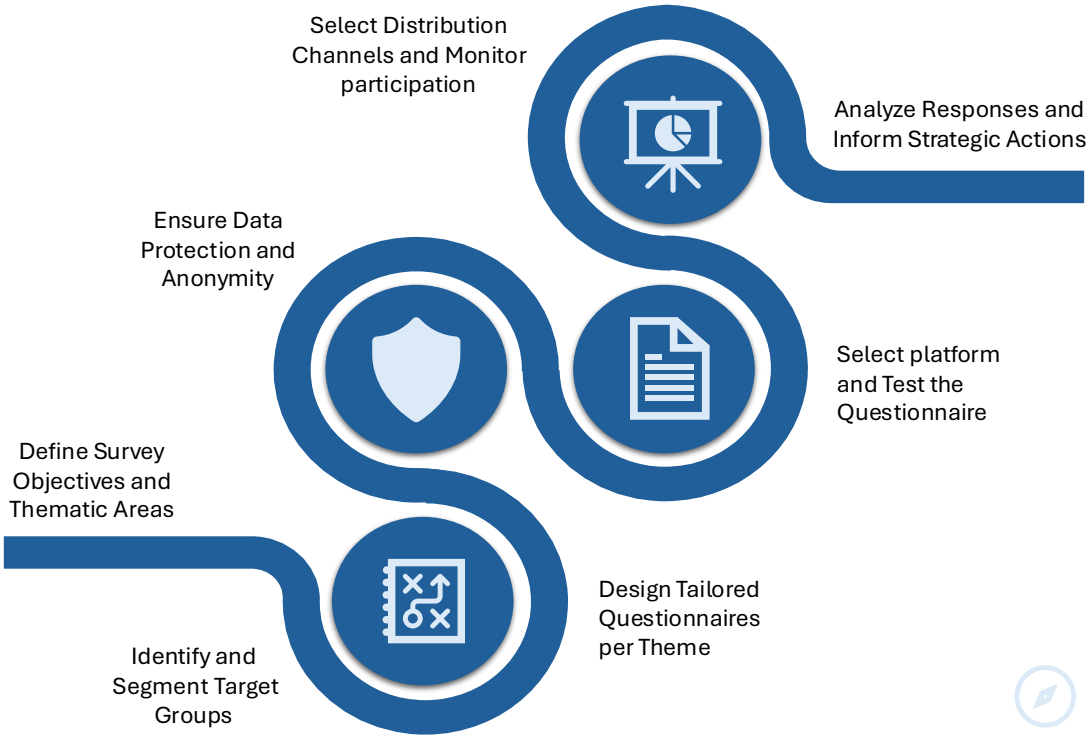



Figure 8: Steps to design and deploy a Survey

**Define Survey Objectives and Thematic Areas**

Clearly establish what the survey aims to achieve. In MARINEWIND, the objectives spanned five core themes: policymaking, social acceptance, environmental impact, financial/market conditions, and techno-economic feasibility. Ensure that the themes align with local priorities and gaps in knowledge.

**Identify and Segment Target Groups**

Define which stakeholder categories should participate. The MARINEWIND survey included groups such as public authorities, local communities, NGOs, investors, SMEs, developers, and academics. Segment the audience based on their role, knowledge level, and relationship to FOWTs, as this influences both the content and the phrasing of questions, as well as the quality of data. Finally, translate the questionnaire into the necessary languages to foster local participation.

**Design Tailored sets of questions per Theme**

Develop one or more dedicated question blocks per thematic area. Use a combination of:

- Closed-ended questions (e.g., multiple choice, Likert scale) for quantifiable data.
- Open-ended questions for deeper qualitative insights. Questions should address both perceptions (e.g., awareness, perceived risks) and practical realities (e.g., policy obstacles, financial readiness).

✓ **Tip #1**: *Include questions that measure attitudes, trust, and perceived risks, alongside questions about actual experience, knowledge, or access to resources. It is key to understand stakeholders' perceptions and knowledge gaps.*

Specify, in an automatic way, for each target group the question blocks that they should answer, to avoid collecting deficient data and reduce the complexity of the survey.

✓ **Tip #2**: *Design modular questionnaires that allow responses to be grouped and analysed by theme and stakeholder type, to help participants focus on relevant content.*
✓ **Tip #3**: *Keep the language simple and the overall complexity low to make it easier for participants to provide their feedback. Avoid developing long and time-consuming questionnaires.*

**Ensure Data Protection and Anonymity**

Inform participants about how their data will be used and stored, offer anonymity or confidentiality options to increase response rates.

**Select platform and Test the Questionnaire**

After the developing the questionnaire, select the platform that will host the survey and upload the questions. In MARINEWIND, the EU Survey platform was selected.

✓ **Tip #4**: *Use digital survey tools (e.g., EU Survey, Google Forms) that support advanced functionality, such as skip logic, multilingual formats, mobile compatibility, and easy export of data.*

Before launching and full-scale deployment, test the survey with a small representative group from each target segment. Use their feedback to refine the wording, format, and clarity of the questions and address any bugs. In MARINEWIND project, all partners tested the MARINEWIND Survey before its launch.

✓ **Tip #5**: *Testing the survey after uploading it to a platform is crucial to address errors.*

**Select Distribution Channels and Monitor participation**

Choose effective dissemination methods tailored to each group. In MARINEWIND, these included:

- Email invitations via partner networks
- Social media and project newsletters
- Distribution during workshops and webinars

✓ **Tip #6**: *Iterative promotion and dissemination through the available channels and networks play a key role in attracting participants.*

Track completion rates and ensure balanced representation from all key groups. If participation is low in certain categories (e.g., public authorities or industry), implement targeted follow-up campaigns.

✓ **Tip #7**: *Ensure a geographically and professionally diverse sample through proper dissemination to avoid biased results.*

**Analyze Responses and Inform Strategic Actions**

Quantitative data (closed-ended questions) should be assessed with descriptive statistics and qualitative responses (open-ended questions) should be analyzed thematically to extract patterns, highlight unique insights, or identify emerging trends. Finally, integrate the findings into stakeholder recommendations and action plans to support informed decision-making.

✓ **Tip #8***: Present the results in a visual and digestible format (e.g., charts, infographics) to improve usability for policymakers and non-technical audiences.*

**More information about the MARINEWIND Survey and its results can be found in the respective deliverables D3.3.**

## 2.4 Drafting Recommendations for stakeholders

Recommendations serve as a crucial tool for translating project findings into actionable insights for decision-makers and practitioners. In MARINEWIND, the development of stakeholder recommendations was designed to valorise the outcomes of the regional Labs and the project's broader research activities, aiming to enhance the market uptake and development of Floating Offshore Wind Technologies (FOWTs) across Europe. These recommendations intend to address barriers and enablers across multiple dimensions - policy, regulatory, social, environmental, financial, market, and technological - and they target diverse stakeholders from the Quintuple Helix at both national and European levels. Beyond these areas, MARINEWIND Recommendations can advance the deployment readiness of FOWTs by providing knowledge and directions regarding their potential capacities and balancing aspects, as well as system services including markets and market signals.

A pivotal role in shaping these recommendations was played by the Mobilisation and Mutual Learning (MML) workshop, which brought together project partners and stakeholders from all MARINEWIND Labs. This workshop created a collaborative space for exchanging best practices, validating findings, and co-creating recommendations based on collective insights and real-world experiences. Through interactive tools and participatory methods, the MML helped ensure that the final recommendations were both well-informed and stakeholder-driven, increasing their relevance, quality, and potential for impact.

The following methodology was used in MARINEWIND for drafting stakeholder recommendations, which can serve as a practical, step-by-step guide for other initiatives aiming to build evidence-based, stakeholder-driven outputs. It combines internal project knowledge with stakeholder engagement to ensure both quality and relevance.

**Define the Approach and Structure**

The initial step is to determine the objectives and scope of the Recommendations, as well as their structure. Beyond these, the thematic areas should be defined (e.g., policy, social, technological, etc.) as well as the target groups (e.g., academics, industry, etc.). It is also essential to organise the Recommendations into categories, such as by stakeholder group or thematic area, based on their

scope. For example, in MARINEWIND the Recommendations were categorised at Lab and EU level as well as per stakeholder group.

**Develop a template to draft the Recommendations**

Considering the objectives and scope of the Recommendations, a template to collect the necessary information and draft the Recommendations should be developed. The respective template that was developed within the frame of MARINEWIND, along with guidelines for the information required, can be found in Annex 1.

**Desk Research and Consolidation of an initial set of Recommendations**

The main step in this process is to find relevant information and draft the Recommendations. Use all the available resources to conduct a thorough Desk Research, including project deliverables, online reports and relevant publications, and identify success stories, existing challenges and areas for improvement in terms of developing FOWTs.

✓ **Tip #1***: Ground the Recommendations in real evidence from the Desk Research, combining data from reliable sources. Including references in the Recommendations will enhance their credibility.*

Summarise and analyse the key findings from the Desk Research and use the template to create an initial set of Recommendations. The Recommendations should be coherent, comprehensive, and actionable.

✓ **Tip #2***: In case input to draft a recommendation is needed from other entities (e.g., project partners), provide the template along with an example, to ensure clarity and facilitate their contributions.*

**Validation and Finalisation**

The final steps are to validate and enrich the Recommendations with external stakeholders. In MARINEWIND project, a Mobilisation and Mutual Learning workshop was organised for this exercise. Considering the target groups of the Recommendations, the workshop should aim the same ones in order to gain relevant feedback.

✓ **Tip #3***: Ensure a balanced stakeholder representation in the validation process, to enhance legitimacy and practical value.*

Present the initial set to participants and initiate discussions with them, to validate the Recommendations and identify any others that have not been considered. Incorporate feedback from the MML workshop to refine the recommendations.

✓ **Tip #4***: Use interactive tools in the validation process, such as Miro and Mentimeter, to actively engage participants and gain valuable feedback.*

Adjust wording for clarity, remove redundant points, and enhance the alignment of each recommendation with stakeholder priorities and practical needs.

✓ **Tip #5**: *Integrate recommendations into strategic planning, ensuring they directly inform public awareness actions, policy briefs, or roadmaps for FOWT market uptake.*

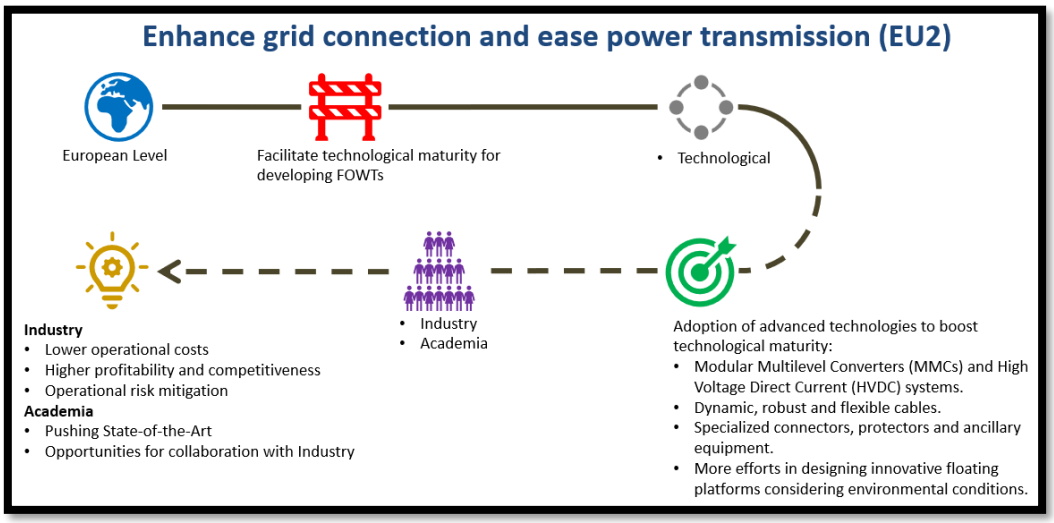



Figure 9: Visual representation of MARINEWIND Recommendation at EU level

## 2.5 Design and development of WebGIS tool

Digital tools such as web-based Geographic Information Systems (WebGIS) can play a critical role in supporting informed decision-making. The MARINEWIND WebGIS tool was developed as a multifunctional platform to centralize, visualize, and communicate key findings from MARINEWIND activities and analysis, providing tailored information on FOWTs to various stakeholders based on their needs, interests and geographic location, policy recommendations on how to have more informed RES policy, and how to increase social acceptance.

Replicating such a tool can help stakeholders, from local authorities and developers to community representatives and investors, gain easy access to structured, rich and region-specific information. It also fosters public and private engagement and supports the uptake of FOWT projects, leading to higher investments in this sector.

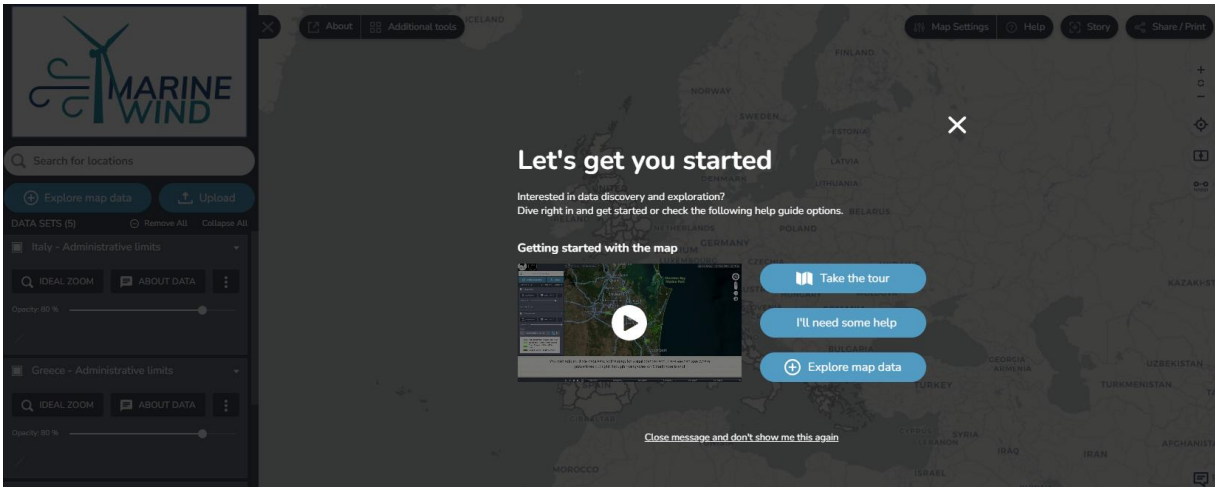



Figure 10: MARINEWIND WebGIS tool interface

To this end, developing a WebGIS tool requires a careful balance between technical functionality, user-friendly design, and strategic content integration. The tool should serve both as a repository of visualized knowledge and as an interactive decision-support system. To ensure replicability, the methodology must be adaptable to different national or regional contexts while maintaining a consistent structure that meets the needs of various stakeholder groups. Based on the MARINEWIND methodology, the following steps should be considered to design, develop and deploy a WebGIS tool:

**Define the purpose and user groups**

As a first step, define the objective of the WebGIS tool and the challenges it will try to address. Based on that, identify the primary and secondary functions that should be implemented as well as the target users.

✓ **Tip #1**: *Start with clear objectives and define the core content to be included in the tool. This will help to design the main structure along with the desired functionalities.*

**Choose a Suitable Platform and Design the tool**

Select a GIS framework (e.g. ArcGIS Online, QGIS with web publishing, Leaflet.js, or Mapbox) based on your technical capacity and resource availability. It is key to prioritizing open-source or low-cost solutions if replicability across diverse regions is a goal.

✓ **Tip #2**: *Explore opportunities to embed the tool within broader policy or planning initiatives, such as Marine Spatial Planning processes, regional energy strategies, or funding calls, not only to maximise its impact but also to further develop it.*

Ensure the platform is accessible to both expert and non-expert users. Finally, design a user-friendly interface in order to ease the navigation, using clear labeling, language options, tooltips, and visual elements.

**Define Functional Components of the Tool**

Develop distinct modules and functionalities within the WebGIS, aligned with the tool's objectives and stakeholder needs. Based on MARINEWIND, suggested modules and functionalities include:

- Consistent and clear structure of map data (e.g. layer panel, legends, basemaps).
- Interactive map visualizing layers of the aforementioned datasets.
- Transparent description of data, sources and related service link.
- Settings functionalities for visualization, navigation, querying and, possibly, downloading data.
- Library of best practices showcasing FOWT applications and lessons learned.
- Additional tools useful for the application, as an example a financial tool to calculate the Levelized Cost of Electricity (LCOE).
- Help center and sharing/printing capability.
- Users' feedback tab.
- Capability to add to the visualized map other datasets that are not included in the WebGIS tool.

✓ **Tip #3***: Include explanatory functionalities (help centre, tooltips, user guides) to help users navigate easier and understand the content.*
✓ **Tip #4***: Collaborate with IT and GIS experts throughout the process, to communicate the specifications and address potential problems in design. Outsourcing may be considered where necessary.*

**Map and collect data inputs**

Considering the objectives of the WebGIS tool, define and organize the datasets to be included along with their format. It is essential to define a basic category of must-have datasets that will be included for each area considered in the tool, enhancing its consistency.

✓ **Tip #5***: Use interoperable and open formats for data layers and documents to ensure integration and easier updates.*

Additionally, it is important to map and collect data from reliable sources, such as public authorities and research centers, in order to ensure the credibility, completeness, accuracy and integrity of the data. In MARINEWIND, the WebGIS tool integrated results from the project activities and external datasets for each MARINEWIND Lab, including:

- Administrative boundaries
- Marine cartography
- Offshore wind projects (see Figure 11)
- Protected Areas
- Network infrastructure (see Figure 12)
- Co-creation workshops

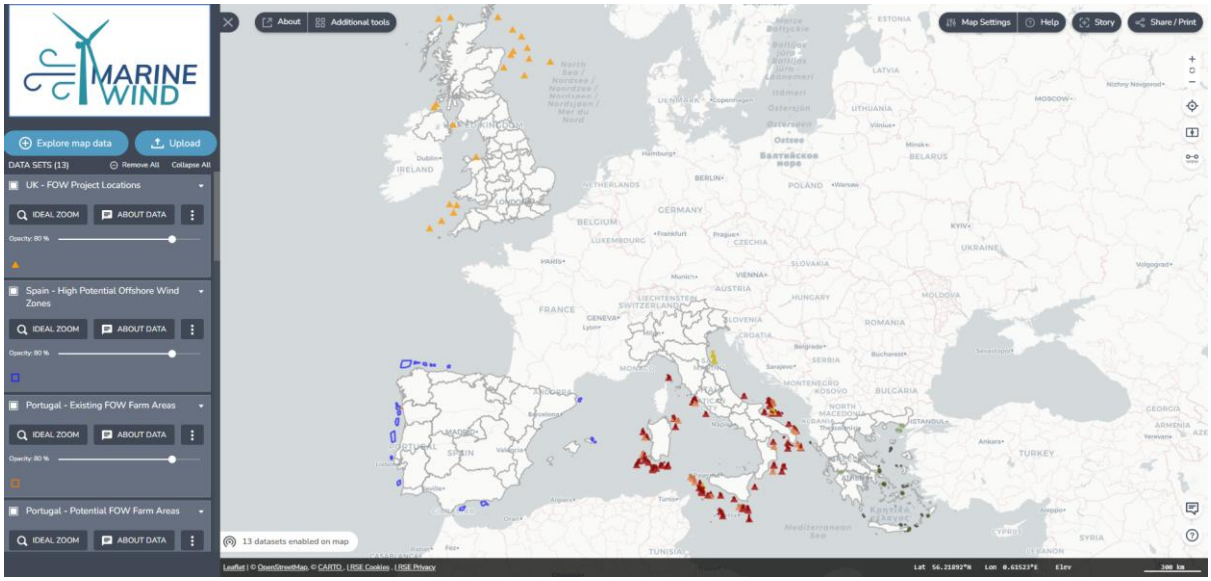



Figure 11: Potential and Existing Offshore wind projects across the MARINEWIND Labs

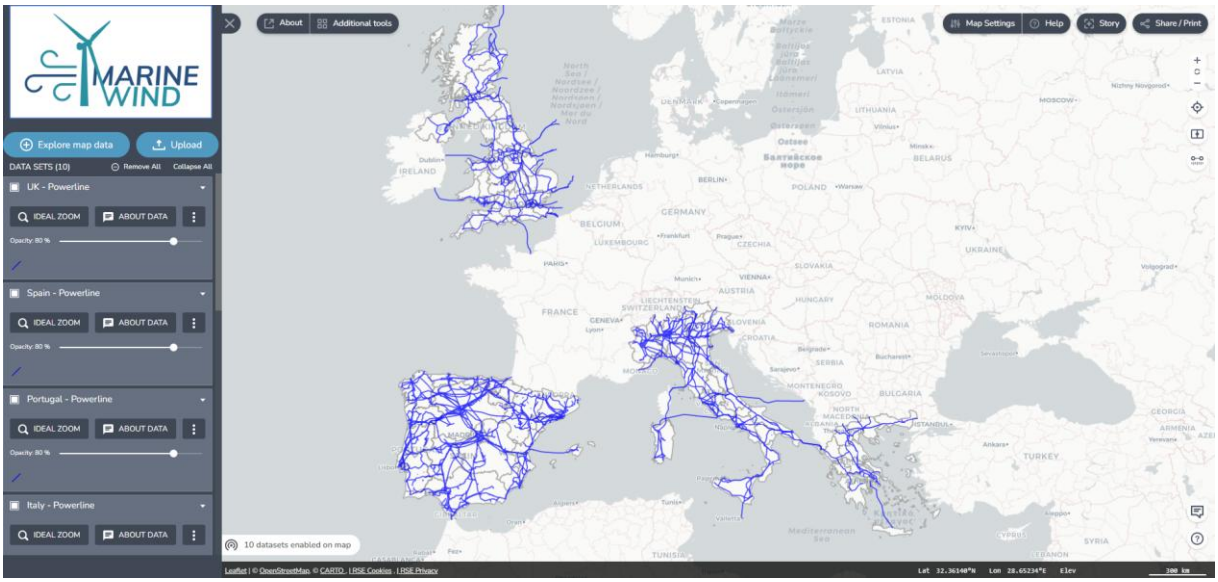



Figure 12: Powerlines within the MARINEWIND Labs

## Testing, Accessibility and Maintenance

Before full release, conduct internal usability tests and/or external with different stakeholder groups to gather feedback on clarity, complexity, and potential bugs. Adjust content and functionalities based on this input and re-test the tool to ensure that all problems are addressed.

Host the platform on a secure server with public access. A responsible entity should be assigned to maintain and update the tool as new data becomes available or priorities evolve.

✓ **Tip #6**: *Promote the tool through social media, websites, workshops and events, and newsletters to maximize its visibility and uptake.*

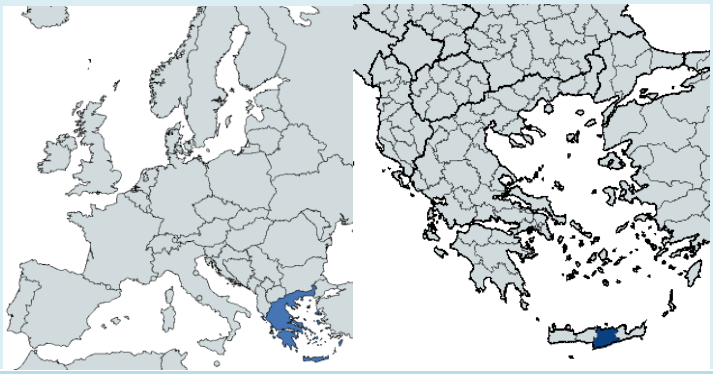
# 3 CONCLUSIONS

The deliverable **D4.5 MARINEWIND Replicability Plan** has outlined the key processes, methodologies, and tools used in the MARINEWIND project along with lessons learnt and recommendations that can be successfully replicated in other EU regions and countries beyond the MARINEWIND Labs. Through practical guidance and evidence-based insights, this guide aims to support interested stakeholders in advancing the deployment of FOWTs in a more informed manner.

By showcasing replicable activities - from stakeholder Lab formation and data analysis to survey deployment, WebGIS development, and recommendation drafting - the guide emphasizes the importance of structured, participatory, and context-tailored approaches. The MARINEWIND experience demonstrates that co-creation, cross-sector collaboration, and continuous learning are vital for addressing the multifaceted challenges of FOWT adoption, particularly in regions where the regulatory framework and technology are still immature.

It is expected that this guide will serve not only as a practical toolkit but also as an inspiration for similar initiatives, and future interested stakeholders are encouraged to adapt these methodologies to their specific local realities, challenges and needs.

# 4 ANNEX 1 – MARINEWIND TEMPLATE FOR RECOMMENDATIONS

| | |
|---|---|
| **Title** | *<XXX>* |
| **Respective WP(s)** | *<XXX>* |
| **Respective Deliverable(s)** | *<XXX>* |
| **Geography Level of reference** | *European level / MARINEWIND Lab*<br><br>*<Specify the jurisdiction or geographical area to which the recommendation applies, guiding readers to understand its scope. You can illustrate the area using a map from:* https://www.mapchart.net/europe-nuts3.html *>*<br>  |
| **High level Recommendation** | *<Identify a broader challenge to be addressed by the specific recommended action(s).>* |
| **Dimension(s)** | • *Policy*<br>• *Regulatory*<br>• *Social*<br>• *Environmental*<br>• *Financial*<br>• *Market*<br>• *Technological* |
| **Brief Description** | *<Offer a concise summary of the recommendation's core objectives and purpose for quick understanding. >* |
| **Context or Scope of Issue (Identified gap or barrier or best practice coming from specific Lab) (150-300 words)** | *<Outline the background or context surrounding the issue addressed by the recommendation, providing essential context for readers. It's a clear and comprehensive description of the issue or problem that regional authorities, policymakers and wind energy actors need to address.>* |
| **Targeted recommendations per stakeholder group** | *< Identify the specific groups or stakeholders affected by or involved in the policy, aiding readers in understanding its relevance to different parties>*<br><br>• *Industry*<br>• *Academia*<br>• *Public Authorities*<br>• *Civil Society*<br>• *Green Innovation* |

| | |
|---|---|
| **Expected benefits (150-300 words)** | *<Outline the anticipated outcomes or effects of implementing the recommendation, helping readers gauge its potential effectiveness.>* |
| **References** | *<List the resources or data needed to support the policy's implementation, assisting readers in understanding the information needed for effective execution>* |

# 5 ANNEX 2 – EU POLICY VIRTUAL ROUNDTABLE AGENDA

## EU policy virtual Roundtable

**July 8, 2025**

**11:00 - 12.45 CET**

Microsoft Teams

**Bridging Innovation and Policy in Offshore Wind: The MARINEWIND Replicability Dialogue**

| Agenda | | |
|---|---|---|
| **Time (CET)** | **Activities** | **Speaker** |
| **11:00 – 11:05** | Welcome & introduction of panelists | **Leonidas Parodos,** Q-PLAN International |
| **11:05 – 11:15** | Welcome Speech by EC Policy Officer | **Dr. Matthijs Soede**, European Commission DG Research & Innovation Unit C.1 "Clean Energy Transition" |
| **11:15 – 11:25** | Practical guidelines and lessons learned to replicate MARINEWIND experiences | **George Spyridopoulos**, Project manager at Q-PLAN International |
| **11:25 – 12:05** | Insights and Priorities for a Resilient Offshore Wind Future for all stakeholders | **Panelists**<br>**Capucine Vannoorenberghe**, Research & Innovation Advisor at WindEurope - SETIPWind project<br>**Dr. Heiko Keller,** Senior project manager & Sustainability expert at IFEU – MADE4WIND project<br>**Astrid Green**, Business Development manager at Norwegian Offshore Wind – WENDY project |

| | | |
|---|---|---|
| | | **Marko Kovacevic,** Project manager at SUBMARINER Network for Blue Growth EEIG – FLORES project |
| **Roundtable discussion** | | |
| **12:05 – 12:35** | Topics:<br>• Stakeholder engagement through co-creation activities towards social acceptance<br>• Stakeholder recommendations for Public Acceptance on FOWTs<br>• From Insight to Impact: Leveraging Data to Shape Local FOWT Strategies in EU Member States | **ALL Panelists**<br><br>Moderator: **Leonidas Parodos**<br>Q-PLAN International |
| **12:35 – 12:45** | Key messages and actions for taking the MARINEWIND replicability plan forward | **Leonidas Parodos,** Q-PLAN International |
| **12:45** | Closing of the event | |

**Background**

MARINEWIND is supporting investment of both private sector and public authorities in Floating Offshore Wind Technologies (FOWTs) in various European geographical areas. The key objectives are to **increase awareness of all relevant actors** to the floating opportunities and **increase social acceptance** of FOWTs installations, while providing solutions characterised by a wide potential of reapplication and long-term viability.

To this end, the MARINEWIND project is structured on the analysis of 5 Labs (Italy, Spain, Portugal, UK and Greece) in which multi-faceted data collection and analysis methodology is applied, supplemented by thorough survey. The analysis of the Labs is conveyed into a web based Geographical Information System (webGIS) which provides tailored information on FOWTs to the various stakeholders. Finally, a set of stakeholder recommendations have been developed to serve as a basis for an Action Plan of public acceptance on FOWTs. Based on this research and co-creation activities at Lab level, an initial Replicability Plan has been developed and includes practical guidelines along with lessons learned, recommendations and tools that will support how to replicate the MARINEWIND experiences in other EU countries non partners.

The EU policy virtual Roundtable is organized by Q-PLAN International.

**Objectives of the EU Policy virtual Roundtable**

- To share and exchange knowledge, experiences and results gained through the project and stimulate a constructive discussion on how to replicate MarineWIND experiences.
- To provide input on fine-tuning of the initial Replication plan.
- To brainstorm the next steps for implementing the Replication plan.