



# W E S E

WAVE ENERGY  
IN SOUTHERN EUROPE

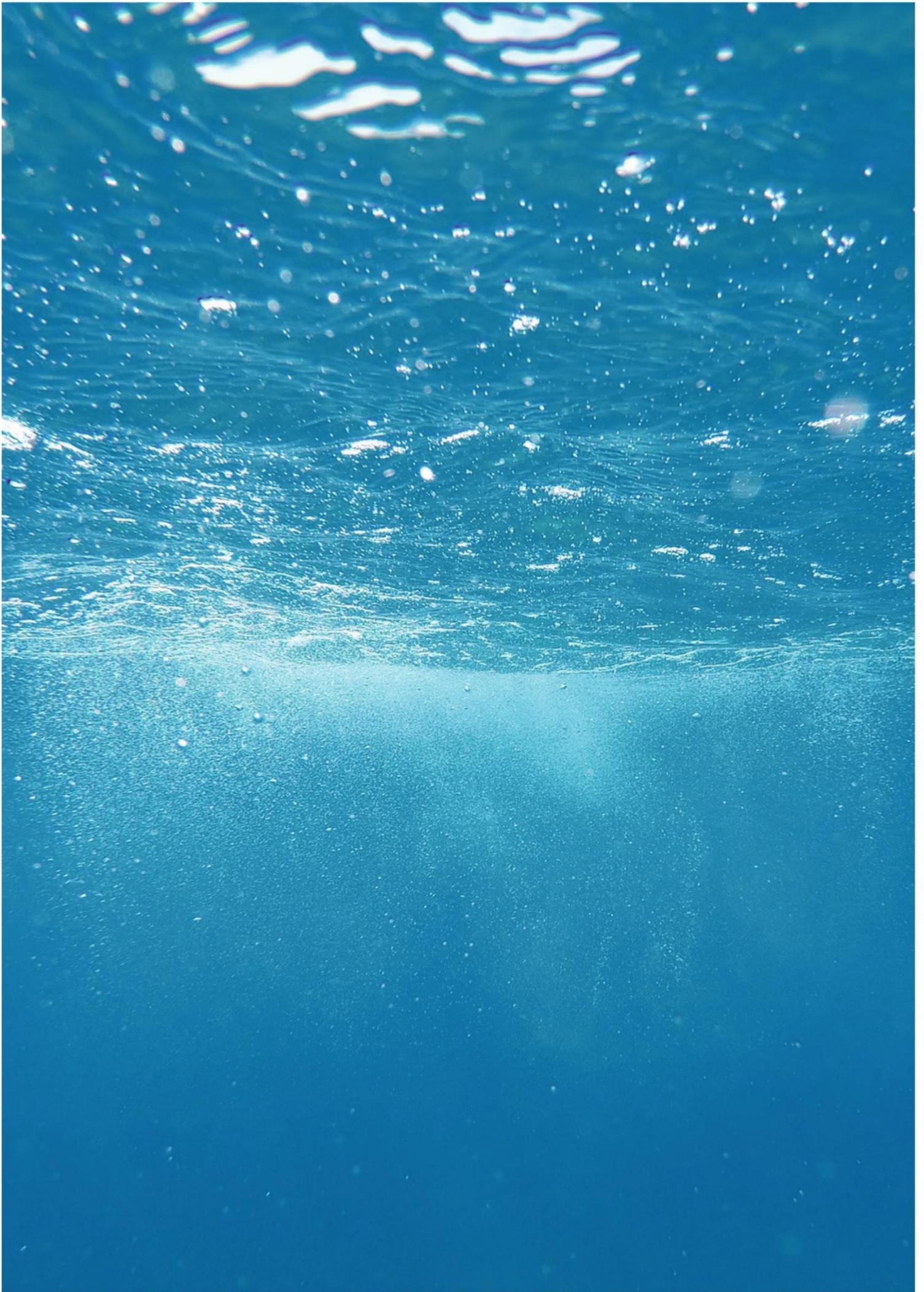
## DELIVERABLE 2.5

### Data Validation



*This project has been funded by the European Commission under the European Maritime and Fisheries Fund (EMFF), Call for Proposals EASME/EMFF/2017/1.2.1.1 – “Environmental monitoring of wave and tidal devices”. This communication reflects only the author’s view. EASME is not responsible for any use that may be made of the information it contains.*





## WP 2

### Deliverable 2.5 Data Validation

#### PROJECT COORDINATOR

AZTI

#### TASK LEADER

Hidromod

#### AUTHORS

José Chambel Leitão - Hidromod

Nadiia Basos – Hidromod

João Rodrigues – Hidromod

Hélio Santos - Hidromod

#### SUBMISSION DATE

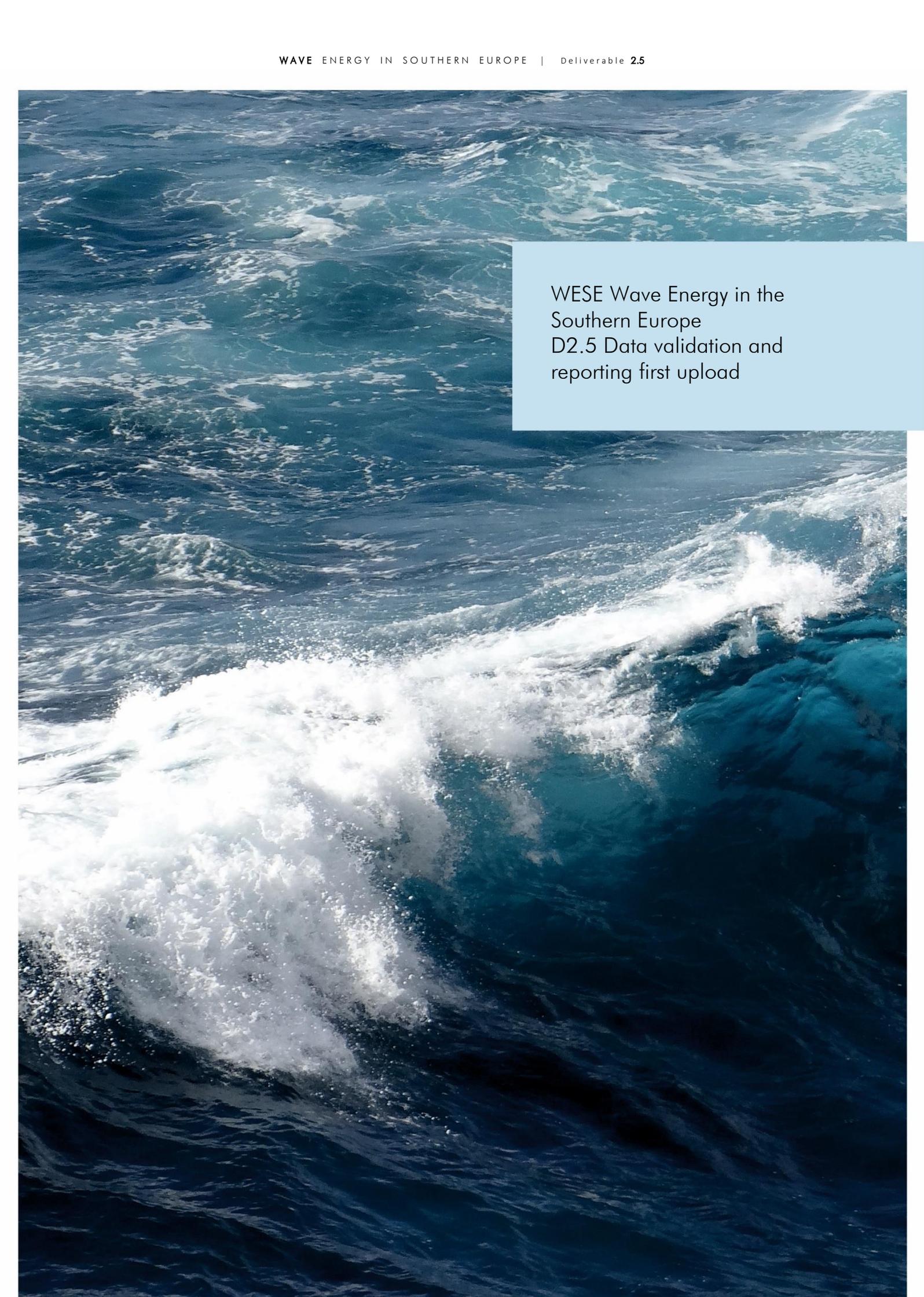
29 | June | 2020

#### CITATION

Leitão, J.C., Basos, N., Rodrigues, J., Santos, H., 2019. Deliverable 2.5 Data validation and reporting first upload to the data platform. Corporate deliverable of the WESE Project funded by the European Commission. Agreement number EASME/EMFF/2017/1.2.1.1/02/SI2.787640. 19 pp.



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An aerial photograph of the ocean showing a large, white, turbulent wake in the foreground, likely from a ship. The water is a deep blue color, and the wake is a bright white foam. The background shows smaller, more regular waves.

WESE Wave Energy in the  
Southern Europe  
D2.5 Data validation and  
reporting first upload

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## 1. WESE project synopsis

The Atlantic seaboard offers a vast marine renewable energy (MRE) resource which is still far from being exploited. These resources include offshore wind, wave and tidal. This industrial activity holds considerable potential for enhancing the diversity of energy sources, reducing greenhouse gas emissions and stimulating and diversifying the economies of coastal communities. Therefore, the ocean energy development is one of the main pillars of the EU Blue Growth strategy. While the technological development of devices is growing fast, their potential environmental effects are not well-known. In a new industry like MRE, and Wave Energy (WE) in particular, there may be interactions between devices and marine organisms or habitats that regulators or stakeholders perceive as risky. In many instances, this perception of risk is due to the high degree of uncertainty that results from a paucity of data collected in the ocean. However, the possibility of real risk to marine organisms or habitats cannot be ignored; the lack of data continues to confound our ability to differentiate between real and perceived risks. Due to the present and future demand for marine resources and space, human activities in the marine environment are expected to increase, which will produce higher pressures on marine ecosystems; as well as competition and conflicts among marine users. This context still continues to present challenges to permitting/consenting of commercial-scale development. Time-consuming procedures linked to uncertainty about project environmental impacts, the need to consult with numerous stakeholders and potential conflicts with other marine users appear to be the main obstacles to consenting WE projects. These are considered as non-technological barriers that could hinder the future development of WE in EU and Spain and Portugal in particular where, for instance, consenting approaches remain fragmented and sequential. Consequently, and in accordance with the Ocean Energy Strategic Roadmap published in November 2016, the main aim of the project consists on overcoming these non-technological barriers through the following specific objectives:

- Development of environmental monitoring around wave energy converters (WECs) operating at sea, to analyse, share and improve the knowledge of the positive and negative environmental pressures and impacts of these technologies and consequently a better knowledge of real risks;
- The resulting data collection will be used to apply and improve existing modelling tools and contribute to the overall understanding of potential cumulative pressures and impacts of larger scale, and future wave energy deployments;

- Development of efficient guidance for planning and consenting procedures in Spain and Portugal for WE projects, to better inform decision-makers and managers on environmental real risks and reduce environmental consenting uncertainty of ocean WE introducing the Risk Based Approach suggested by the RiCORE, a Horizon 2020 project, which underline the difficulties for developers with an existing fragmented and sequential consenting approaches in these countries;
- Development and implementation of innovative maritime spatial planning (MSP) Decision Support Tools (DSTs) for Portugal and Spain for site selection of WE projects. The final objective of such tools will be the identification and selection of suitable areas for WE development, as well as to support decision makers and developers during the licensing process. These DSTs will consider previous findings (both environmental and legal, found in RiCORE) and the new knowledge acquired in WESE in order to support the development of the risk-based approach mentioned in iii;
- Development of a Data Sharing Platform that will serve data providers, developers and regulators. This includes the partners of the project. WESE Data Platform will be made of a number of ICT services in order to have: (i) a single web access point to relevant data (either produced within the project or by others); (ii) Generation of OGC compliant requests to access data via command line (advanced users); (iii) a dedicated cloud server to store frequently used data or data that may not fit in existing Data Portals; (iv) synchronized biological data and environmental parameters in order to feed models automatically.

## 2. Executive summary

The objective of this task was to standardize data processing and reporting among sites in order to allow comparison between them and the establishment of general guidelines for monitoring plans' development considering different wave energy project locations: onshore, nearshore, offshore.

Every partner is responsible for reporting and validation of their data and will decide the process. Strategies on how data should be described, stored and exploited are suggested here. This task was carried out in close collaboration with WP6 on data organization and storage and secondary data production (Task 6.2 and 6.3).

## 3. Data validation and reporting first upload to the Data Platform

### 3.1 Data validation

Every partner is responsible for validation of their own data. The process and the criteria are being discussed in the project meetings between the partners.

Data quality is described in the metadata of the datasets uploaded to the Data Platform in the Lineage section according to the INSPIRE directive.

Some general strategies on guidelines for marine data quality control are available on the EMODnet portal:

- <https://www.emodnet-ingestion.eu/guidelines/how-to-handle-different-marine-data-types>

Examples of data quality standards can be also found on the NASA portal:

- <https://earthdata.nasa.gov/esdis/eso/standards-and-references>

### 3.2 First upload to the Data Platform

The Data Platform was named Marendata and is available at <https://marendata.eu/>.

The first dataset of the project is already available on Marendata under bimep/Acoustics/Fixed hydrophones/Underwater noise recording MARMOK-A-5 (Figure 1). These data consist of underwater noise recording undertaken to acoustically characterize the WEC MARMOK-A-5 in the context of WESE project.

More data are in the process of uploading.

### 3.3 Upload instructions for the partners

Guidelines to describe and upload data were developed in order to standardize the data available on the platform and to make it consistent.

The instructions for uploading data and its metadata (including data quality information) for the platform are described in the Annex 1.

To facilitate the uploading process, video instructions were created as well:

- <https://www.youtube.com/watch?v=igoQq6BuY7c>

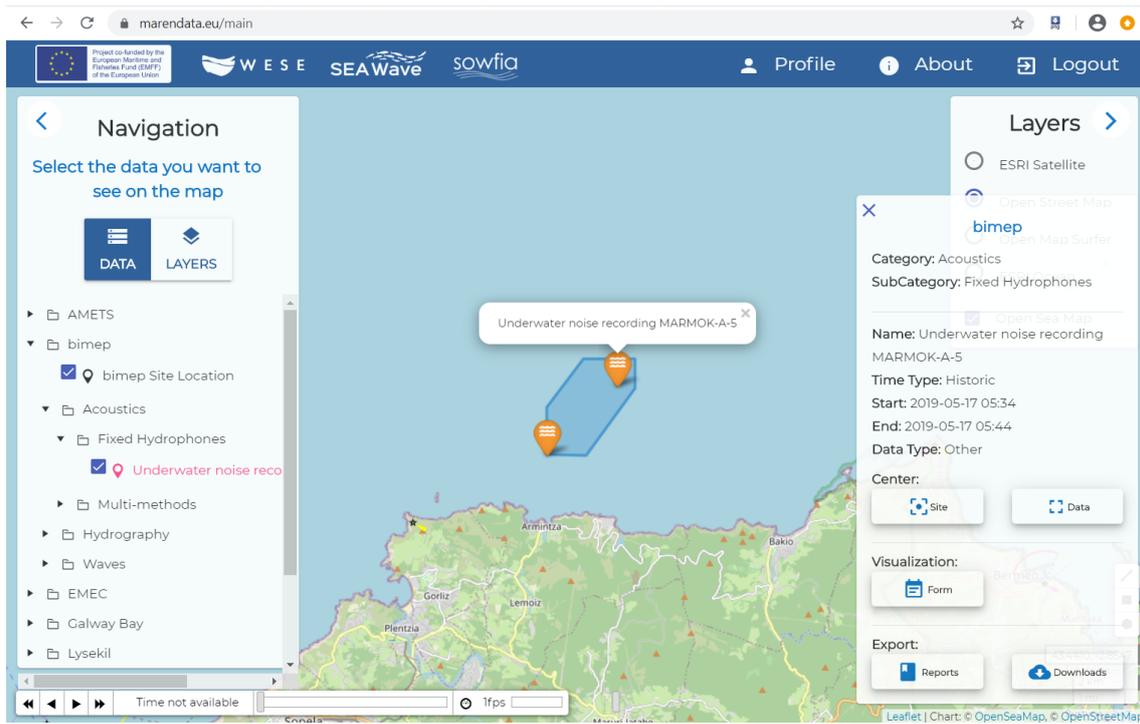


Figure 1: First data uploaded to the WESE Data Platform.

## 4. Annex 1. GeoNetwork data upload instructions

### Data

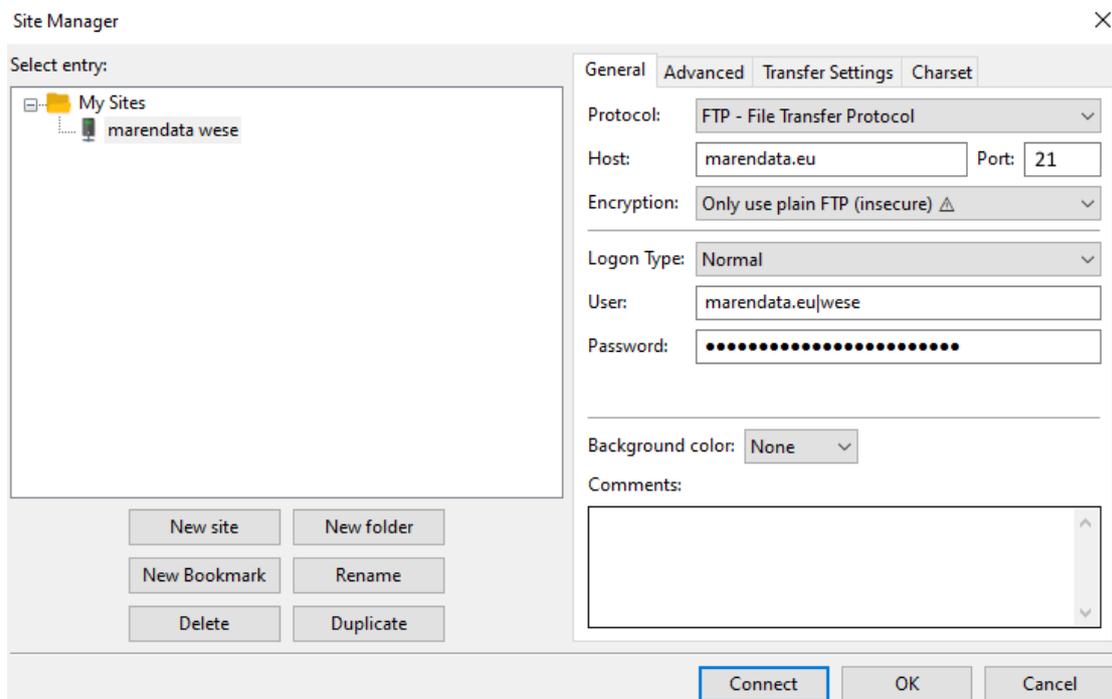
FTP for the WESE project:

- Server -> <ftp://marendata.eu>
- User -> marendata.eu|wese
- Password -> XXXXXXXXXXXXXXXXXXXX

Configuration of a FTP client

For example, using free software FileZilla

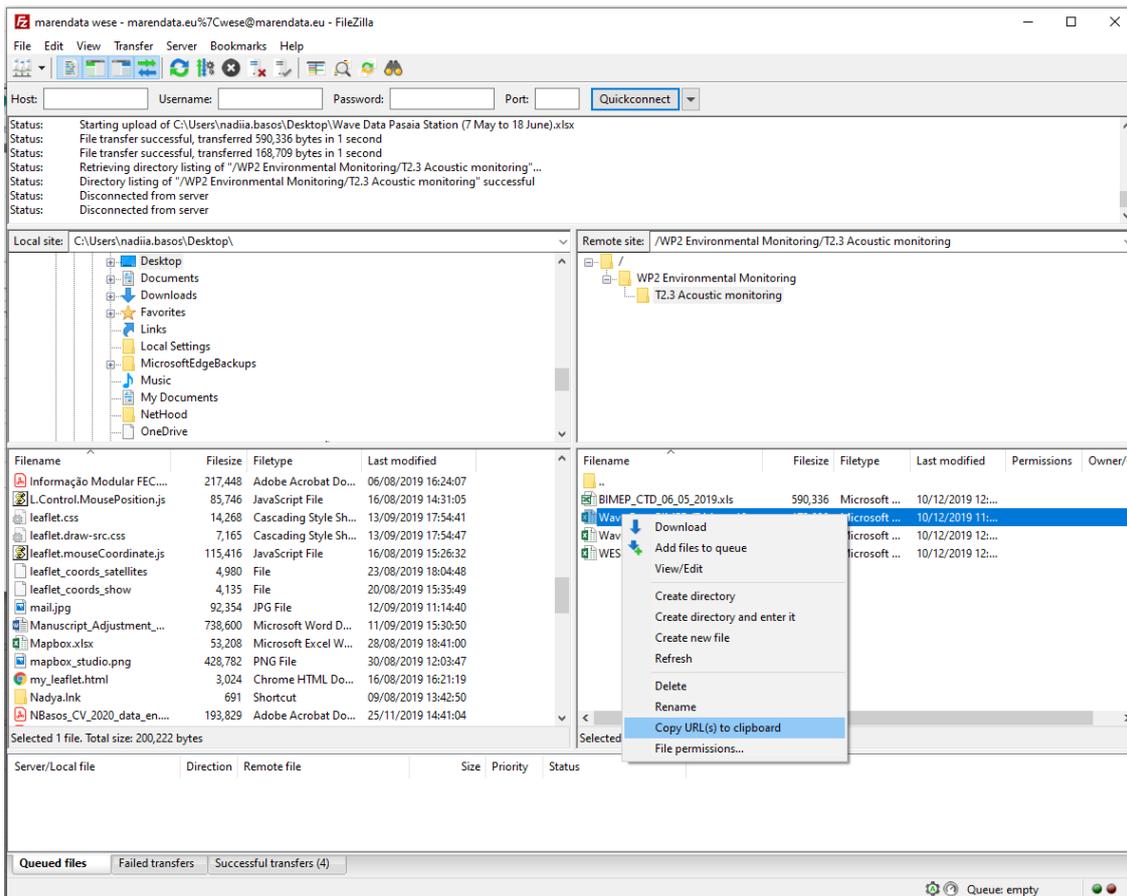
Menu *File / Site Manager / New Site*



Click Connect.

Copy files from local directories to the remote FTP site.

Right click on a file there will allow to copy the link to this file.



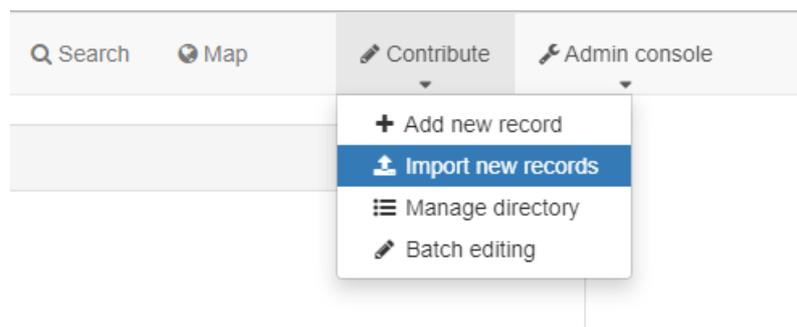
## Metadata

The metadata should be uploaded to this location:

<https://nautilus.hidromod.com:8443/geonetwork>

- User -> WESE
- Password -> XXXXXXXX

If you already have INSPIRE compliant XML metadata file about your dataset, you can upload it via the upper panel menu **Contribute / Import new records**



There choose the XML file and click Import

**Import new records**

Upload a file from your computer  
 Upload a file from URL  
 Copy/Paste  
 Import a set of files from a folder on the server

+ Choose or drop resource here

- wave\_data\_bimep.xml (text/xml / 16.60 KB) ✕

**Type of record** Metadata ▼

**Record identifier processing**

None  
 Overwrite metadata with same UUID  
 Generate UUID for inserted metadata

**Apply XSLT conversion** ▼

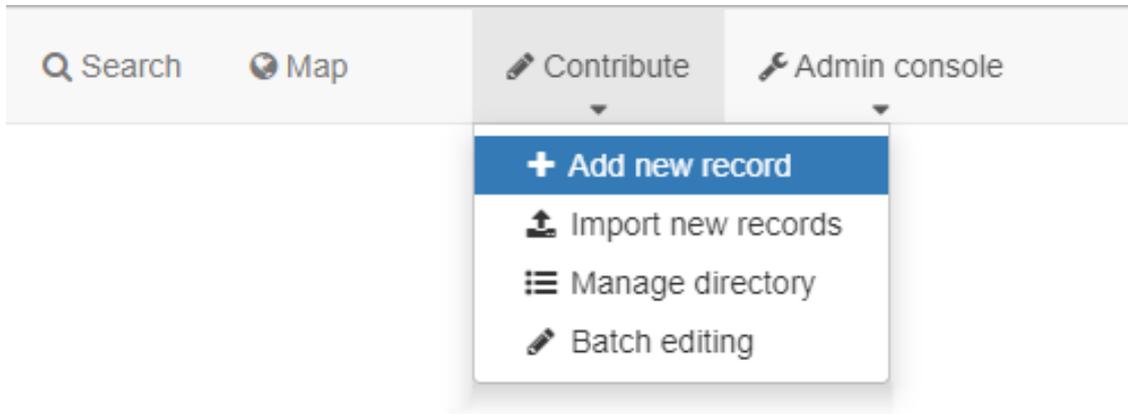
Validate  
 Publish  
 Assign to current catalog

**Assign to group** WESE ▼

**Assign to category** ▼

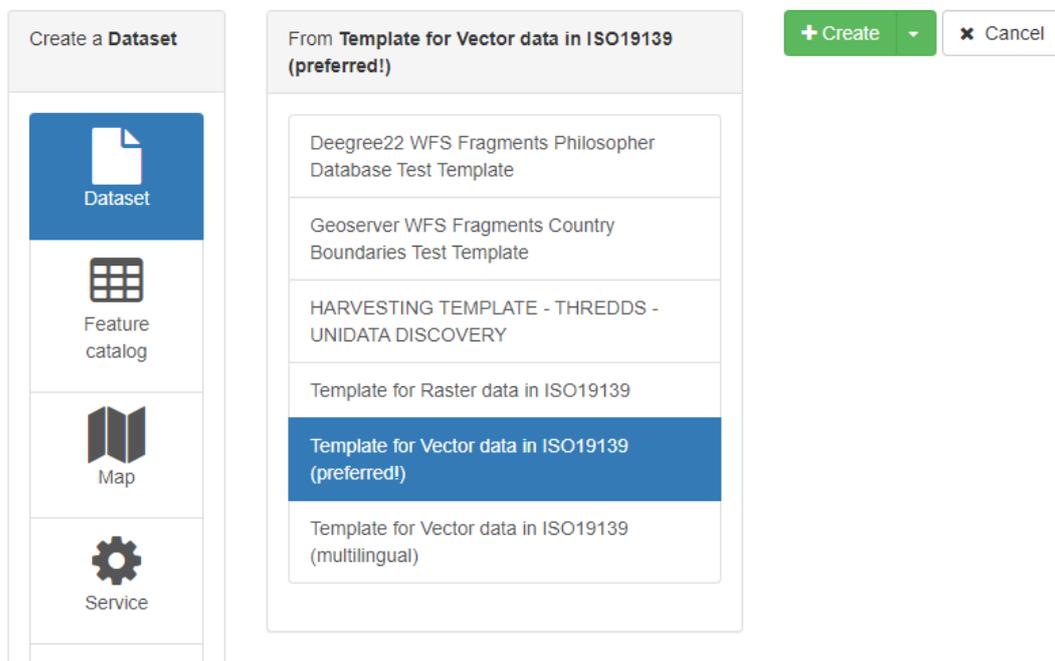
+ Import
✕ Cancel

If you don't have INSPIRE compliant metadata files, you can create it in the following way. To add a dataset, go to the upper panel menu **Contribute / Add new record**



There select **Dataset / Template for Vector data in ISO19139**, and click on the button **+ Create**

## Create a



In the field **Title** write the Common Data Designation which will appear on the platform as the layer name.

In the field **Abstract** write Why Monitoring Data for the platform.

Fill the **Date** and **Point of Contact**, select relevant **keywords**, choose the **Spatial resolution** and **Extent**.

▼ Identification info

Title \* Wave Data BIMEP (7 May - 19 June 2019)

Date \* Publication 01/11/2019

Edition

Abstract \* The Biscay Marine Energy Platform (BIMEP, www.bimep.com) is an open-sea facility to support research, technical testing and commercial demonstration of pre-commercial prototype utility-scale floating Marine Renewable Energy Devices (MREDS).

Purpose

Status Completed

▼ Point of contact

Organisation name	Individual name	Electronic mail address	Role
AZTI	AZTI	info@azti.es	Originator

In the **Data quality** info section in the **Distribution Information** add **Distribution format** (the file format). In the **Lineage** write any text about quality of the data or just “none” (for INSPIRE compliance). Add **Contact** information in the end.

After filling all the fields, in the upper right corner click **Save metadata** and then **Validate** button.

Categories Group [check] Cancel Save & close Save metadata [dropdown] [eye]

Validate

Inspire validation

- TG version 1.3
- TG version 2.0 - Data sets and series
- TG version 2.0 - Spatial data service

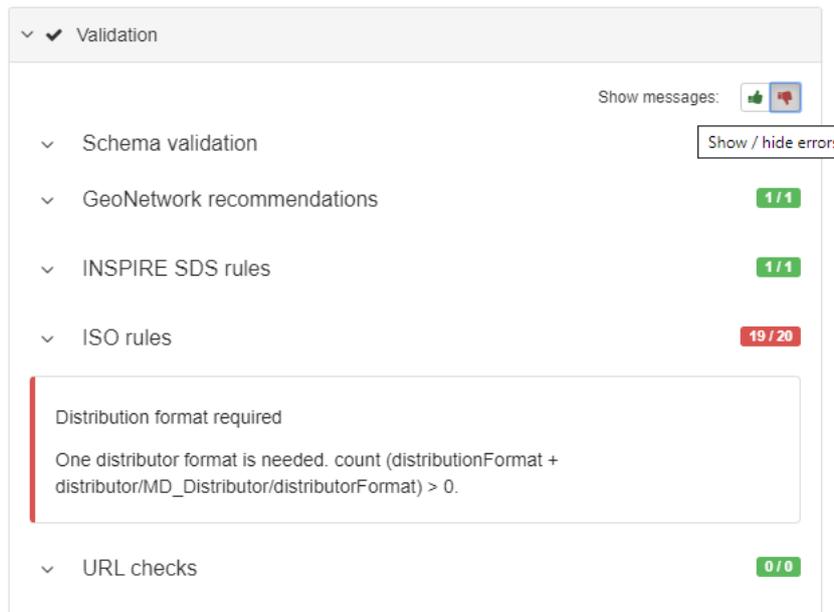
Choose or drop an image here

✖

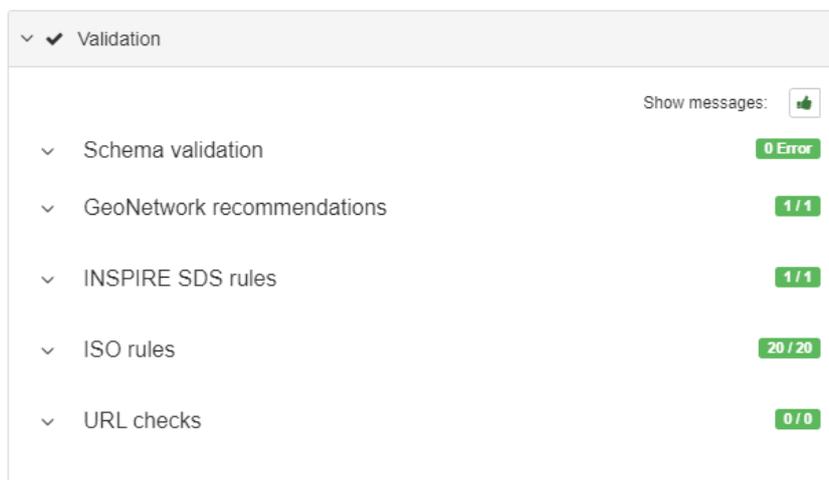
Associated resources

+ Add

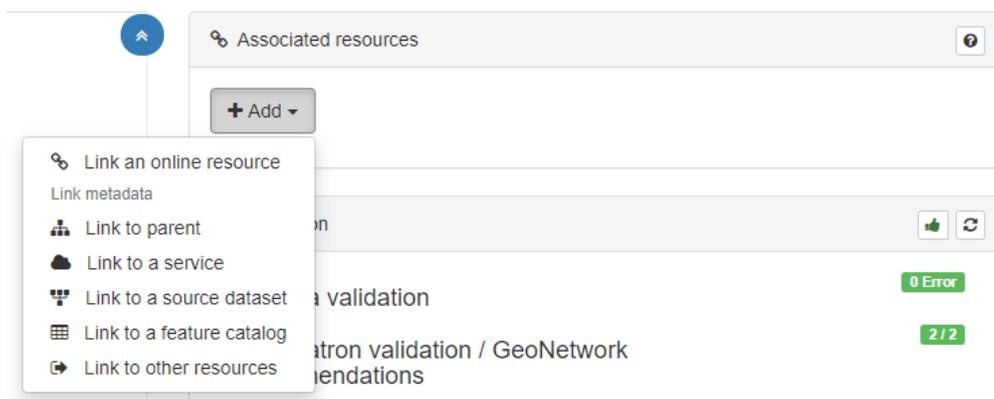
If it reports errors, click on the red thumb down.



Scroll the metadata page, find the missing field and fill it. Then save and validate again.



In order to add the link to the FTP, in the **Associated resources** section click + Add



There chose **Link an online resource**.

In the Protocol chose FTP, in the URL add the link to the file on the FTP, starting from the root folder (for example

*/WP2%20Environmental%20Monitoring/T2.3%20Acoustic%20monitoring/Wave%20Data%20BiMEP%20%287%20May%20-%202019%20June%202019%29.xlsx )*

Click the button **Add online resource**

Link an online resource

Add online resource  Add a thumbnail

**Protocol \***

**URL \***

**Resource name**

**Description**

**Function**

**Application profile**

Save and close the metadata.

To see all the files, go to **Contribute / Editor board**

The screenshot shows the MARENDATA web interface. At the top, there is a navigation bar with the MARENDATA logo, a search bar, a map icon, and a 'Contribute' button. Below the navigation bar, there is a search bar with a 'Only my record' checkbox and a search input field. Below the search bar, there are 'Expand' and 'Collapse' buttons. Below these buttons, there is a section titled 'TYPE OF RESOURCES' with a dropdown arrow. Under this section, there are two options: 'Dataset (217)' and 'Series (111)'. On the right side, the 'Contribute' button is open, showing a dropdown menu with the following options: 'Editor board', 'Add new record', 'Import new records', 'Manage directory', and 'Batch editing'.



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