



# DATA INGESTION PORTAL

*Wake up your data - set them free for Blue Society*

## EMODnet Data Ingestion: EU public service supporting the Blue Economy towards FAIR marine data sharing

EMODnet marine data for the offshore renewable energy sector in the Mediterranean and Black Seas

20-21 October 2022 Virtual event

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# EMODnet Ingestion Objectives

*Addressing marine data sharing*

- ④ To **identify, encourage and support data holders** (from public and private sectors) to **share their data** with EMODnet by teaming up with EU data management infrastructures.
- ④ To operate the **EMODnet Ingestion portal/platform** to **facilitate data holders submitting marine data** sets for publishing, further processing and safekeeping by expert data centres, and subsequent **distribution through EMODnet** thematic portals as **open data**.



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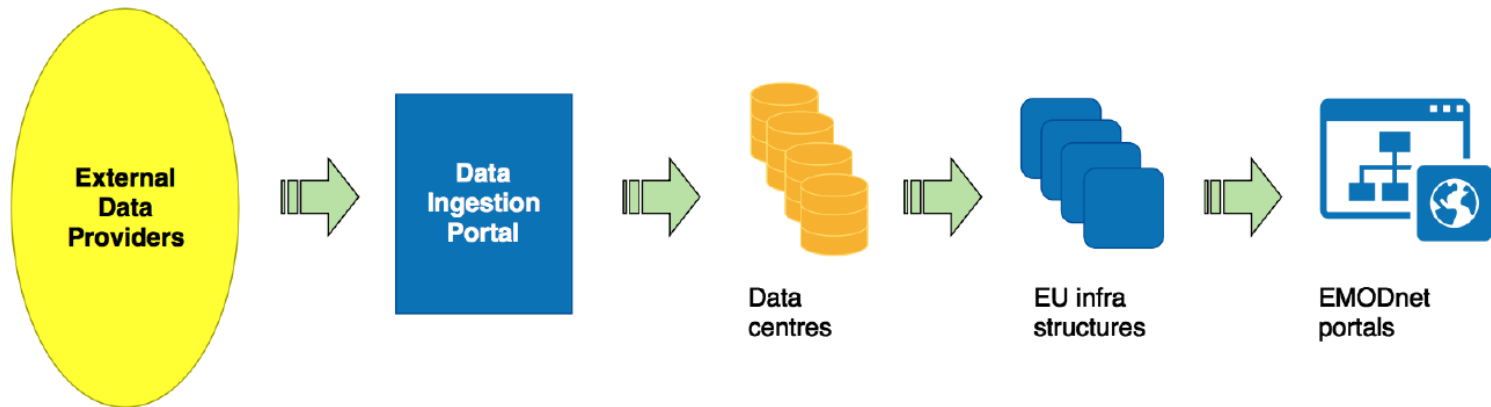


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# Principle data flow

*Harmonization, standardisation, integration*  
*Making data FAIR*

Use is made of standards, best practices, and existing marine data management infrastructures, data centres and pathways\* towards the EMODnet data portals



Workflow from submission to elaborating and processing for publishing in EMODnet

\* *Data Centres, SeaDataNet, EurOBIS, EGDI, ICES, CMEMS, and others*



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## FAIR data

🎯 **FAIR** : a set of principles applied to the data. It is about sharing them in a way that enables others to:

🎯 **FIND**

🎯 **ACCESS**

🎯 **INTEROPERATE**

🎯 **RE-USE**

🎯 The goal of applying the FAIR Data Principles is to **enable** and **enhance** the **reuse** of data **by both humans and machines**.



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# FAIR Principles



## **F** – “Your data can be discovered by others”

- Assigned **persistent identifier** for unique identification and versions management
- Rich descriptive **metadata** for searching and finding

## **A** – “Your data can be made available to others”

- Accessible on the **internet** or by other applications
- **Access restrictions and conditions** should be clearly specified

## **I** – “Your data can be integrated with other data”

- Open **standards (formats, vocabularies)** should be applied to (meta)data
- **Identifiers** for linking with other data, metadata, information

## **R** – “Your data can be reused by others”

- Clear **license** to specify the reuse conditions and permissions (CC-read, understood by machines)
- **Provenance** information on how the data was created



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# The Portal and its services

(operational since Feb. 2017)

 **Data Submission service**  
*(following ISO 19115-2 standard,  
compliant with the INSPIRE model)*

 **Discovery and Access service**  
*(publishing completed submissions as-  
is and elaborated)*

 **Services for integrating  
operational data**  
*(together with EMODnet Physics)*

 **Help Desk**

 **Guidelines**

[www.emodnet-ingestion.eu](http://www.emodnet-ingestion.eu)



The screenshot shows the EMODnet Data Ingestion Portal website. The header includes the EMODnet logo, the title "DATA INGESTION PORTAL", a search bar, and a "CONTACT US" link. The navigation menu contains: ABOUT, DATA SUBMISSION, OPERATIONAL DATA, SUBMISSIONS, GUIDELINES, HELP, PROMOTION, and CENTRAL PORTAL. The main content area features a welcome message: "Welcome to the EMODnet Data Ingestion portal" and a brief description of the network. Below this are several service tiles, each with a "READ MORE" button: "WAKE UP YOUR DATA" (with a video icon), "YOUR DATA WORK IT" (with a video icon), "Join our success stories" (with an illustration of people), "Submit your data files" (with a keyboard and 'submit' button image), "Ingest operational data" (with a data visualization image), "View submissions" (with a data visualization image), "Check guidelines for formatting" (with a laptop and 'GUIDELINES' sign image), and "HELP!" (with a glowing lightbulb image).



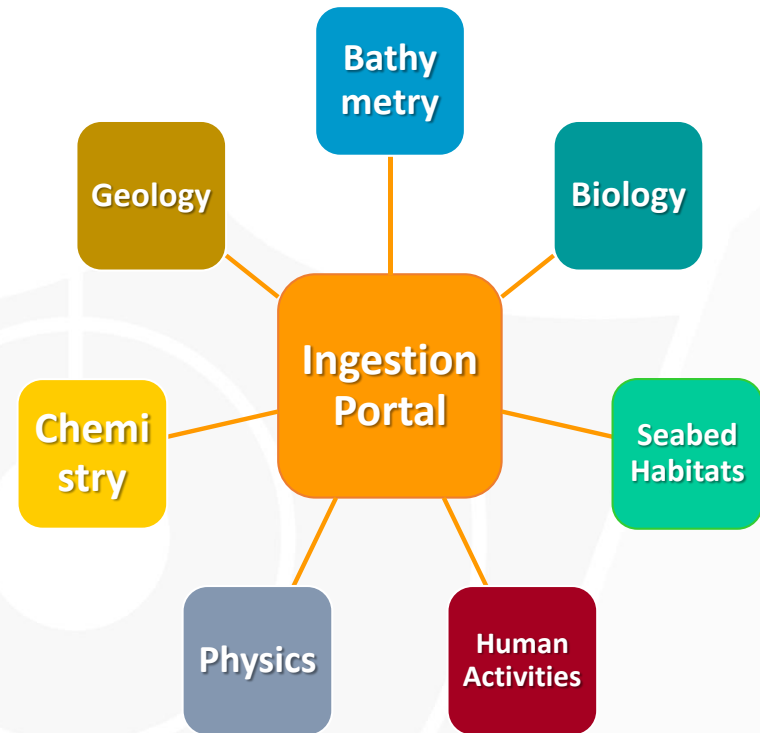
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## Our network

🎯 **50 Data Centres and specialized marine centres** covering all EMODnet data themes.

🎯 **Including Coordinators of all EMODnet Thematics**





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# Data Submission process overview with the support of experts

Distinction between 2 phases in the life cycle of a data submission:

- 🎯 **Phase I:** from data submission to publishing ‘as is’.
  - 🎯 **Step 1: Data submitter** completes a number of key fields of the submission form and uploads a zip file with the datasets and related documentation.
  - 🎯 **Step 2: Data Centre** is assigned who reviews and complete the submission form for publishing ‘as is’ in **Summary Service**.
- 🎯 **Phase II:** further elaboration and integration (of subsets) by assigned Data Centre in national, European and EMODnet thematic portals (if possible).





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# Making data FAIR

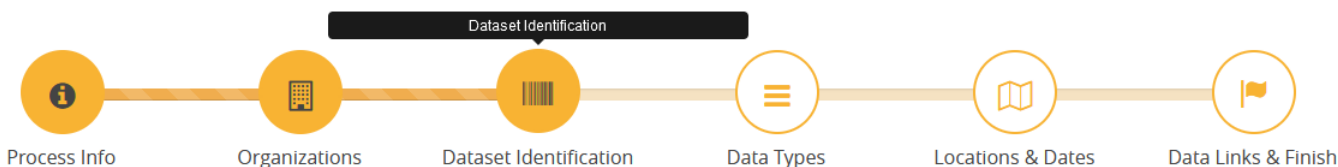
## DATA INGESTION PORTAL

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Data Submission Service

[DASHBOARD](#) | [BACK TO LIST](#)

WELCOME ATHANASIA IONA (M) | [LOGOUT](#)



## Dataset Identification

\* = Required

### DATASET GENERAL INFORMATION

**Title of dataset** \* ⓘ Carbon parameters in the Western tropical Atlantic

**Narrative summary of dataset** \* ⓘ Surface alkalinity and total inorganic carbon (in  $\mu\text{mol/kg}$ ) were measured by closed-cell potentiometric titration during PIRATA Brazilian cruises. Important Note: This submission has been initially submitted to SEA scieNtific Open data Edition (SEANOE) publication service and received the recorded DOI. The metadata elements have been further processed (refined) in EMODnet Ingestion Service in order to conform with the Data Submission Service specifications.

### DATASET FORMATS

**Dataset format** \* ⓘ ASC

**Language used in dataset** ⓘ English



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# On-line Summary service

A viewing & downloading service for publishing the data and for making them Findable and Accessible

## View submissions

This service allows users to search and download the datasets that have been submitted via the Submission service and that have been reviewed and completed in metadata by assigned data centers. These datasets are published "as-is" and will be further inspected and elaborated, where possible, for uptake in the national and European infrastructures supporting EMODnet. Once elaborated and included, users can also find the URLs of the European data infrastructures. See also [Conditions of Use](#).

### Filter Search

#### Free search

Input string

#### Date [yyyymmdd]

Date from

Date to

#### Geobox

North

West

East

South

RESET

SEND

#### Stage of processing

Phase 1 - Published 'as-is' (563)

Phase 2 - Elaborated (472)

#### Sea areas

Black Sea (213)

North Atlantic Ocean (147)

Northeast Atlantic Ocean (4... (142)

Atlantic Ocean (133)

North Sea (65)

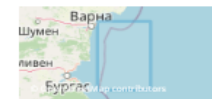
Found 1035 Show (1 - 20) < Prev Next >

### Results

#### chemical data 2018

Period: 2018-03-01 - 2018-03-31

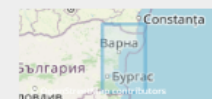
Observation type: Other inorganic chemical measurements



#### Chemical data 2017

Period: 2017-05-01 - 2017-11-30

Observation type: Other inorganic chemical measurements



#### Oceanographic dataset in the Mediterranean Sea collected during the cruise BioArgoMed 2015

Period: 2015-05-13 - 2015-06-01

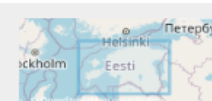
Observation type: Administration and dimensions, Dissolved gases, Nutrients, Pigments, Water column temperature and salinity



#### Beach litter monitoring data 2021 (Estonia)

Period: 2021-04-12 - 2021-11-17

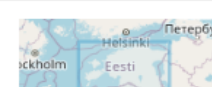
Observation type: Human activity, Pollution



#### Beach litter monitoring data 2020 (Estonia)

Period: 2020-04-21 - 2020-11-12

Observation type: Other physical oceanographic measurements, Pollution





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# Making more data available

Establishing automatic (M2M) exchanges with other data repositories

## Coupling with the SeaDataNet/ SEANOE data citing service:

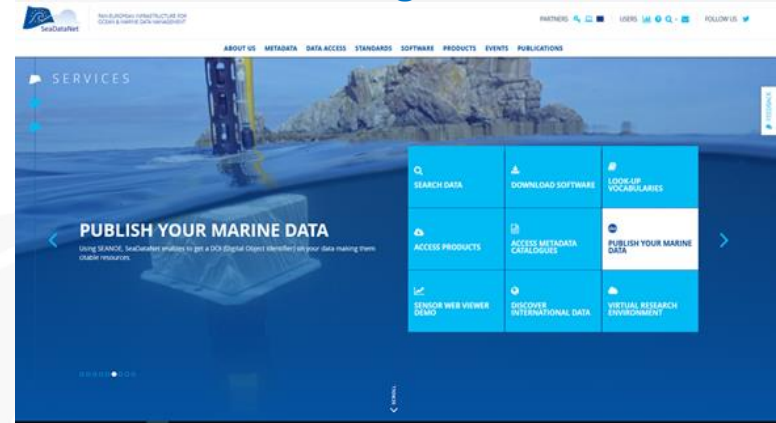
Dynamic exchange has been deployed (already 190 entries)

## Coupling with The Crown Estate (TCE) Marine Data Exchange (MDE) is under development

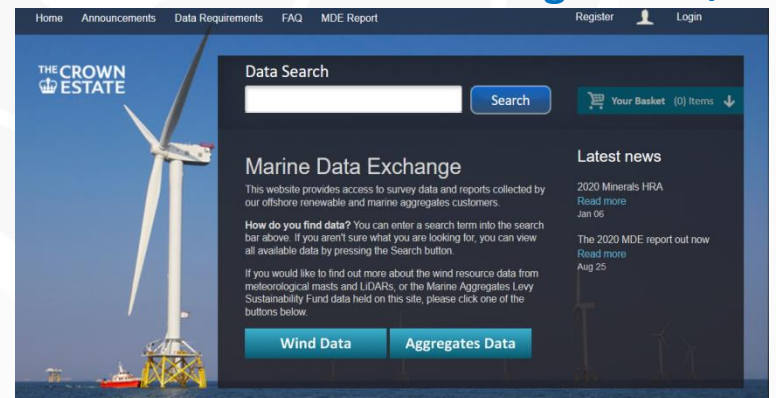
MDE stores, manage, share data of offshore renewable energy projects in UK North Sea sector.

**publish and get a DOI for your data**

[www.seadatanet.org/Software/SEANOE](http://www.seadatanet.org/Software/SEANOE)



[www.marinedataexchange.co.uk/](http://www.marinedataexchange.co.uk/)





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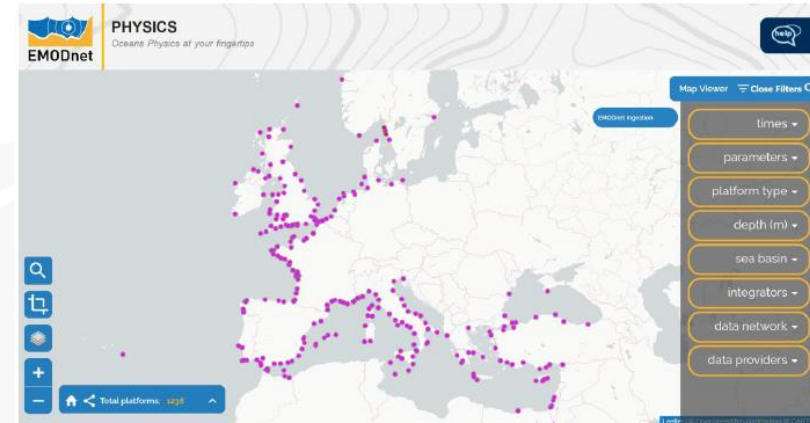
## Making operational data available faster

Establishing M2M transfers (together with EMODnet Physics)

Identifying, convincing and supporting operators of oceanography observation platforms and networks to **connect & share their NRT data streams to the EU operational Oceanography data exchange**

- Already > 450 platforms have been added to this NRT exchange
- EU operational exchange is managed by Copernicus Marine, EuroGOOS, and SeaDataNet

[map.emodnet-physics.eu](http://map.emodnet-physics.eu)



*View of EMODnet Physics Mapviewer of NRT sources added with EMODnet Ingestion*



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## Engagement of coastal & offshore license data

- ⊙ Extra emphasis will be given to **improve** and document the **availability of data provided for coastal and offshore licensing** (for aquaculture, offshore energy, ...):
  - ⊙ Identify stakeholders (license authorities per country and sector)
  - ⊙ Analyse license procedures for data monitoring and reporting, and long-term data management
  - ⊙ Discuss findings with stakeholders, aiming at a more harmonised and effective approach, benefitting the European marine data exchange.

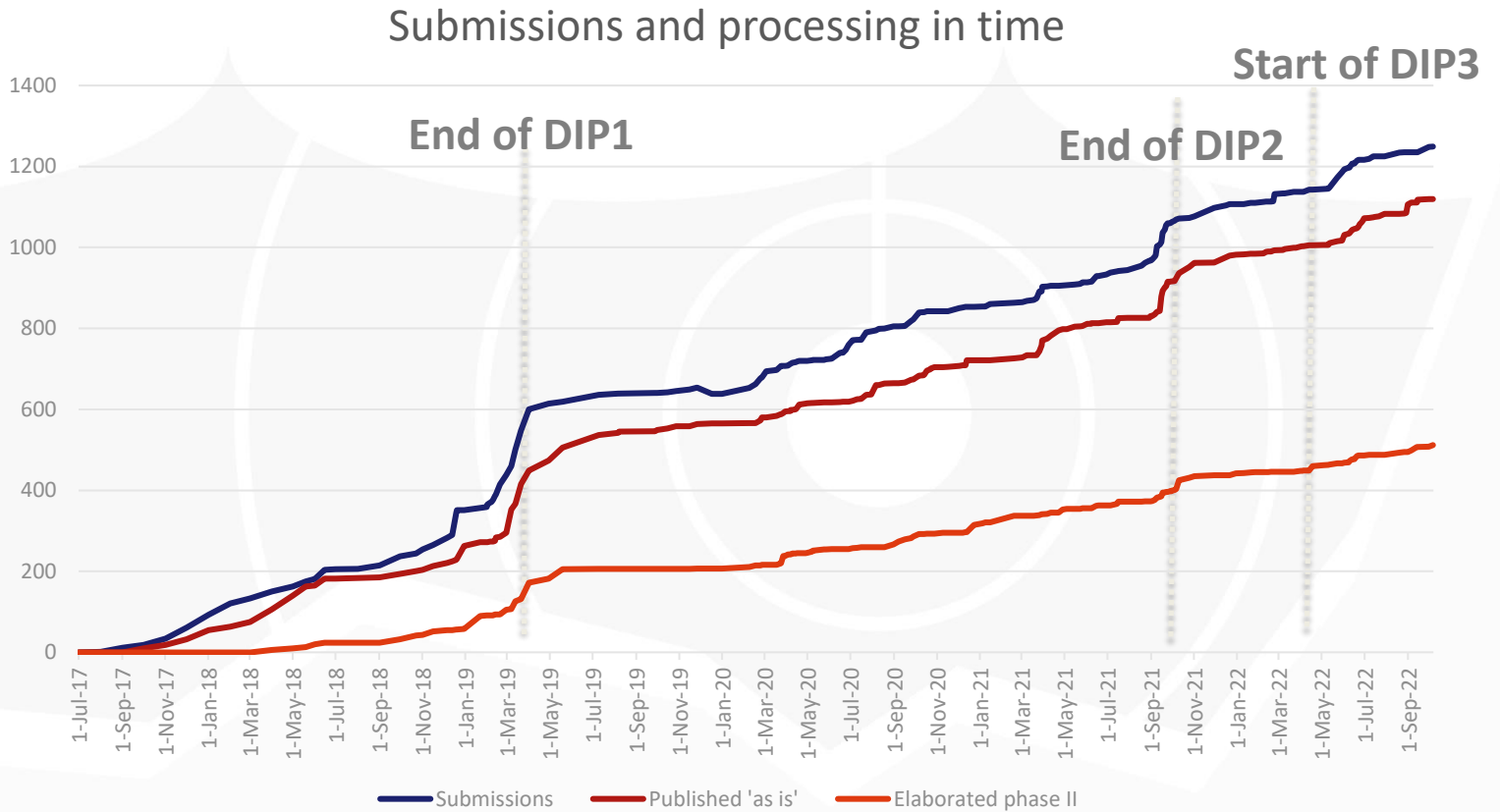


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# Submission progress

> 1200 submissions in total, Phase I-II





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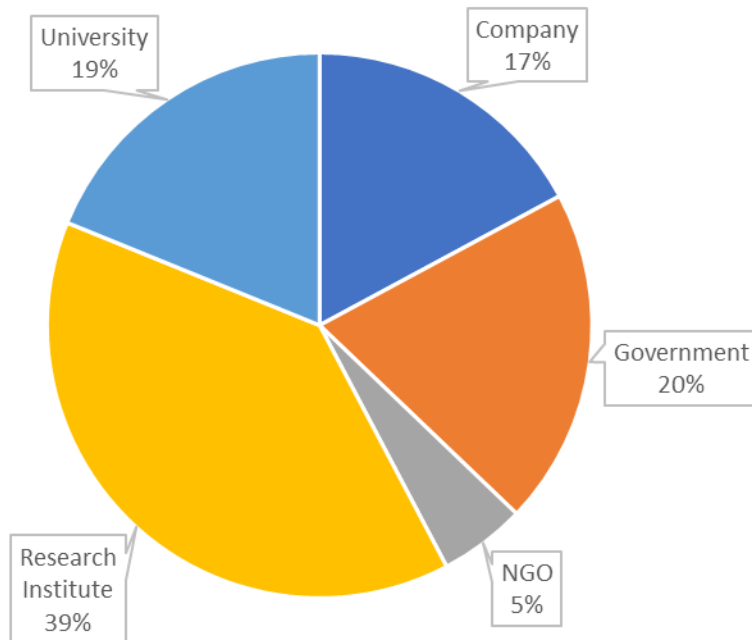
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# Published Submissions by sector

	Organizations (data originators and holding centres)
DIP2	149
DIP3 Kick off (9 Jun'22)	175

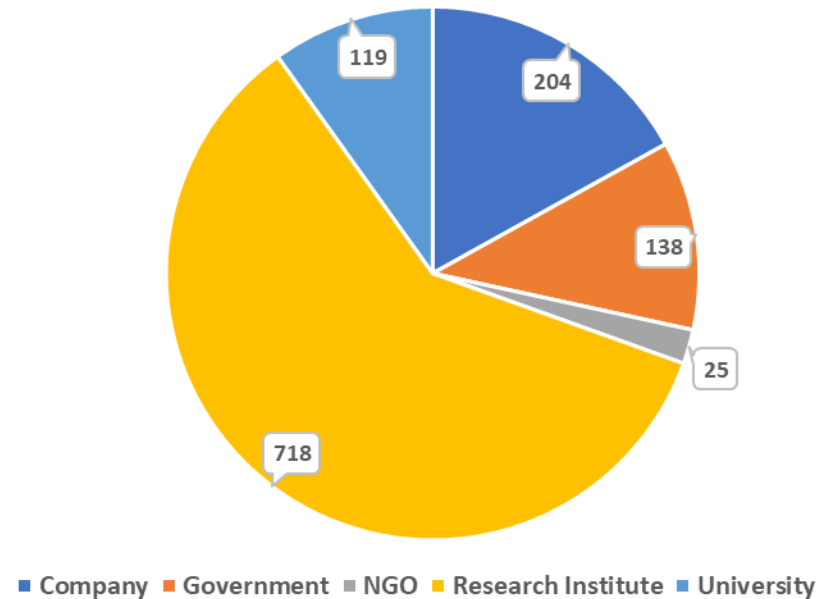
*Division of Organisations per sector*

**Types of organisations**



*Division of Submissions per sector*

**No of submissions per sector**





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## Examples of monitoring data from Windfarms

MEP-NSW Fish community: Fish community surveys for the Monitoring and Evaluation Programme of the North Sea OWEZ wind park between 2003 and 2011:

- NoordzeeWind BV
- Rijkswaterstaat Water, Traffic and Environment

Published at EMODnet Ingestion

Ingested into EMODnet Biology

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ABOUT DATA SUBMISSION OPERATIONAL DATA SUBMISSIONS GUIDELINES HELP PROMOTION CENTRAL PORTAL

Home / Submissions

### Details of MEP-NSW Demersal fish

**Dataset identification**

<b>Title of dataset</b>	MEP-NSW Demersal fish
<b>Narrative summary of dataset</b>	The main purpose of this sampling was to study the effects of the OWEZ windpark on the demersal fish community. Because before installation of the windfarm the main fisheries activity in the area was bottom trawling, it is expected that exclusion of fisheries in the wind farm has the largest effect on the demersal fish community. The wind farm and its safety zone could function as a refugium for these species. If the area functions as a refugium this could be the case for a large number of demersal fish species that occur in the Dutch coastal zone. Owing to this a positive effect of the wind farm on the demersal fish community was expected. The fisheries that occurred in the area targeted larger fish, therefore fisheries mortality was higher on the larger fish. By excluding fisheries in the farm it was expected to change the size distribution in the farm and by that the age distribution of the fish populations. A Hydrolab minisonde, attached to the net, was used for continuous CTD measurements.

**BIOLOGY**  
Dive into data on Europe's marine life

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ABOUT DATA & DATA PRODUCT ACCESS ATLAS OF MARINE LIFE NEWS & EVENTS TERMS & CONDITIONS GET INVOLVED! HELP/DESK

Toolbox Home Occurrence Data Explore Select Data download Geoserver





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## Examples of monitoring data from Windfarms

2012, Partrac Ltd, Islay  
Offshore Wind Farm,  
Metocean Survey :

SSE Renewables

Partrac , Head office

Published at EMODnet  
Ingestion

Ingested into EMODnet Physics

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# Examples of monitoring data around pipeline

2014, Southstream pipeline environmental monitoring near Varna, Bulgaria:

GeoMarine Ltd

Published at EMODnet Ingestion

Ingested into SeaDataNet CDI service



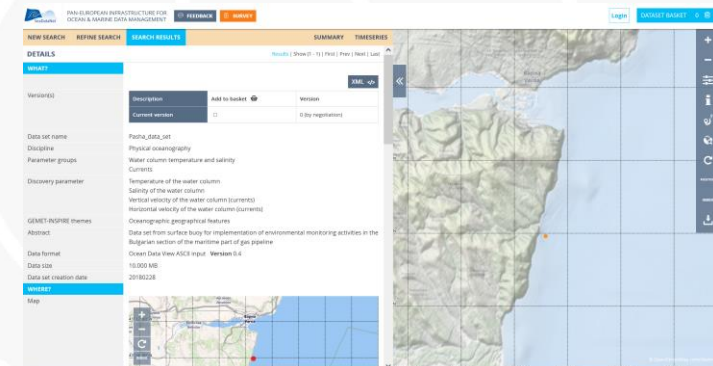
Home / Submissions

## Details of southstream observation

BACK

### Dataset identification

Title of dataset	southstream observation
Narrative summary of dataset	southstream observation buoy in front of Varna Bay
Summary of processing methodology	Used instrumentation: EXO2 Multiparameter Sonde ( <a href="https://www.ysi.com/exo2">https://www.ysi.com/exo2</a> ) with Storm 3 Data Logger ( <a href="http://www.waterlog.com/productsdetail.php?Storm-3-Data-Logger-1-">http://www.waterlog.com/productsdetail.php?Storm-3-Data-Logger-1-</a> ). Sampling interval: 20 minutes



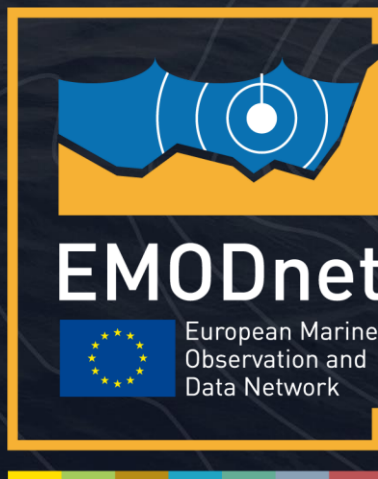


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## Benefits of data sharing

- ① **Safeguarding long-term data availability** for wider use
- ① **Better return on investments** made in data observation
- ① Contributes to generating **better knowledge of the marine environment** and **higher quality data products**, which benefits all marine stakeholders
- ① **Satisfying funding requirements** for open access of data
- ① Making data **FAIR**
- ① Proper **acknowledgment** and increase of **citation** scores
- ① **Prevent duplication** of effort, reduce costs for operators and environmental impact



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*Your gateway to marine data in Europe*