



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 Northeast Atlantic, North Sea and Baltic Sea

20-21 September 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 maintain the **EMODnet Ingestion portal** 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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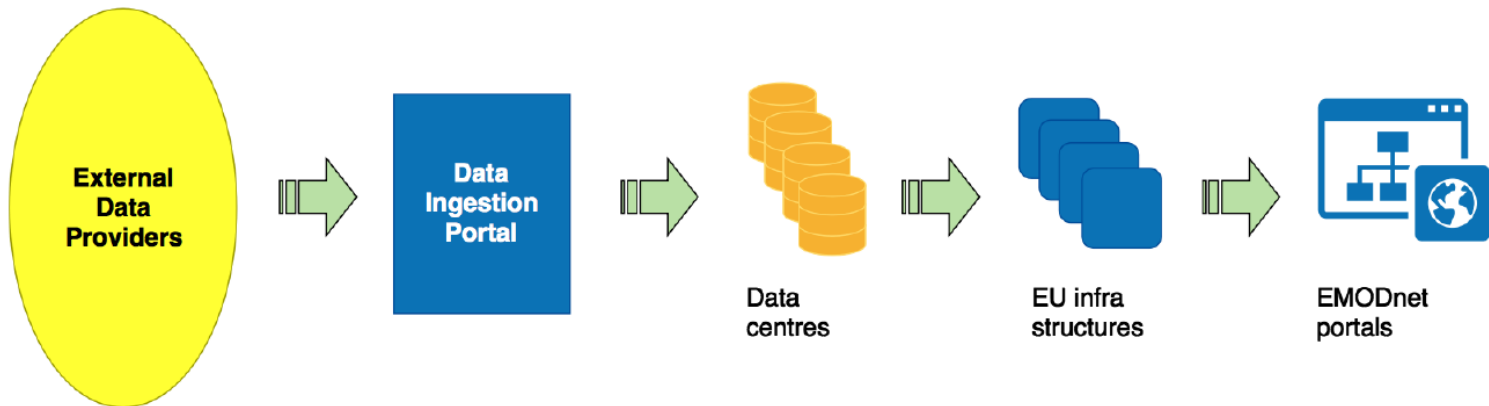


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Principle data flow

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



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 Twitter icon), "YOUR DATA WORK IT" (with a funnel icon), "Join our success stories" (with a group of people icon), "Submit your data files" (with a keyboard icon and a "submit" button), "Ingest operational data" (with a data stream icon), "View submissions" (with a data access icon), "Check guidelines for formatting" (with a laptop icon and a "GUIDELINES" sign), and "Help" (with a lightbulb icon).



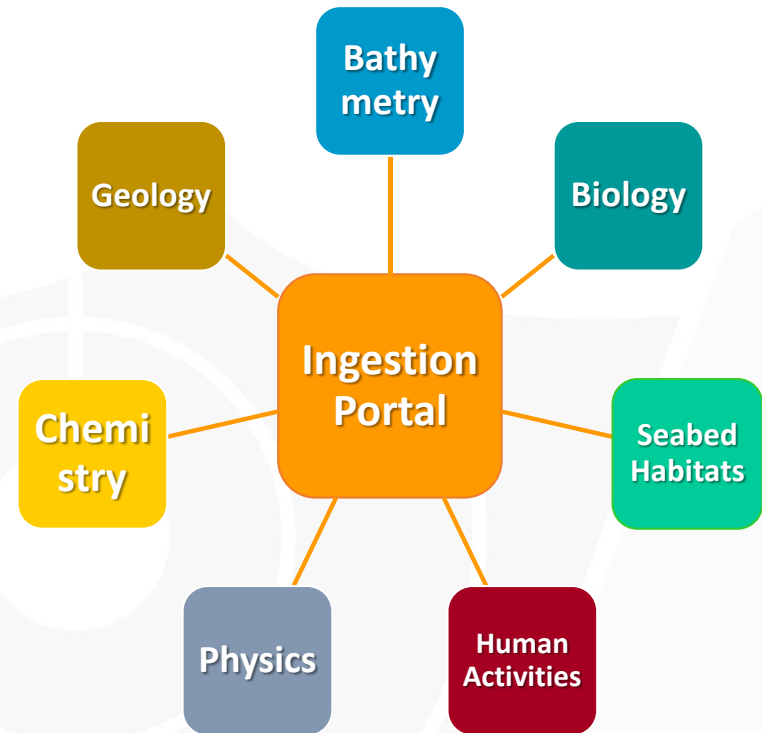
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Our network

🎯 **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

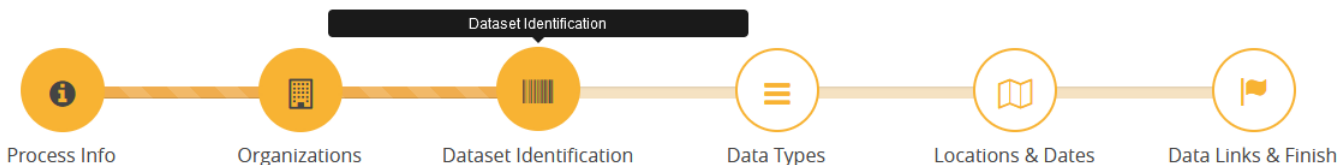
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Data Submission Service

[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:

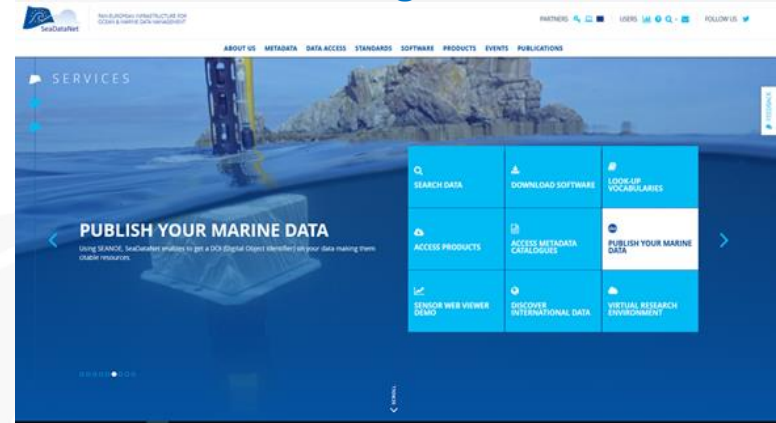
Dynamic exchange has been deployed (already 190 entries)

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

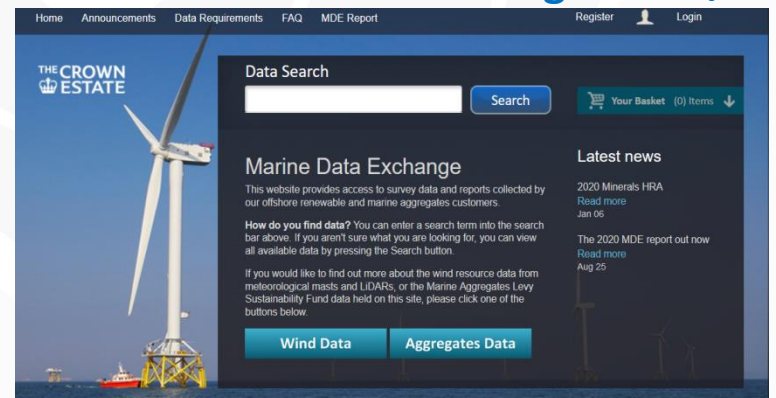
MDE stores, manage, share data of offshore renewable energy projects in UK North Sea sector.

publish and get a DOI for your data

www.seadatanet.org/Software/SEANOE



www.marinedataexchange.co.uk/





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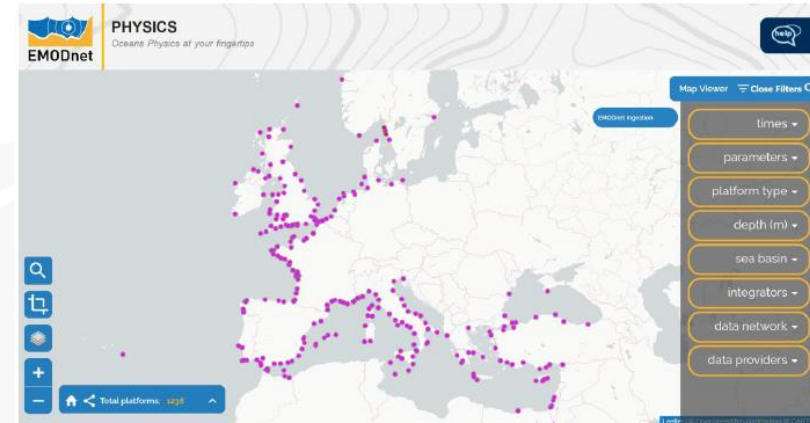
Making operational data available faster

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



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.



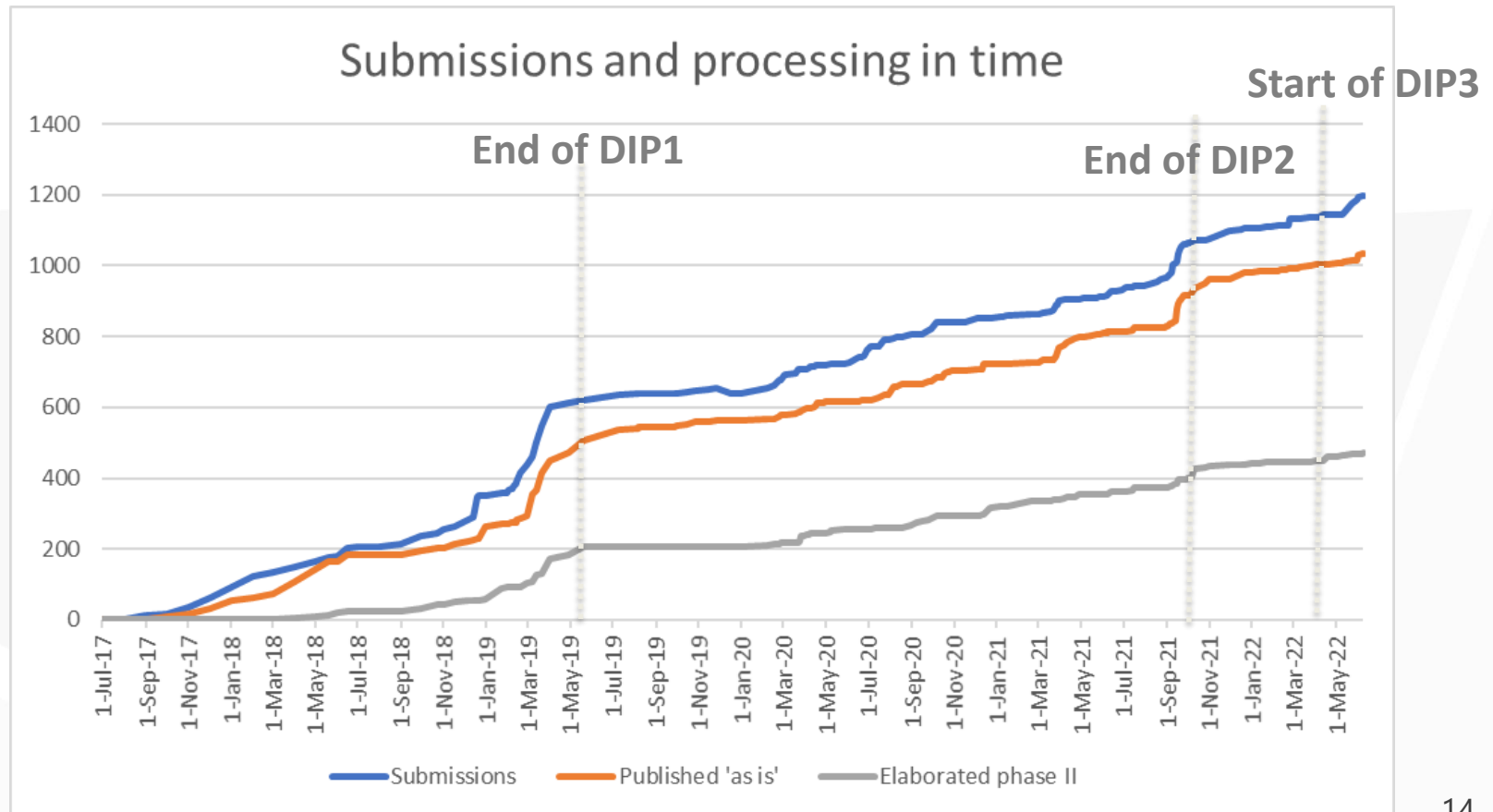
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Submission progress

> 1200 submissions in total, Phase I-II





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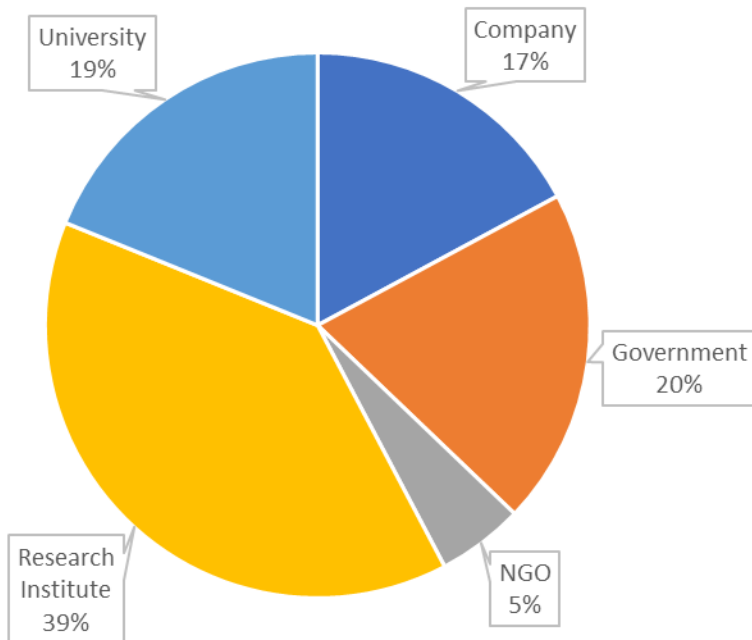
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Published Submissions by sector

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

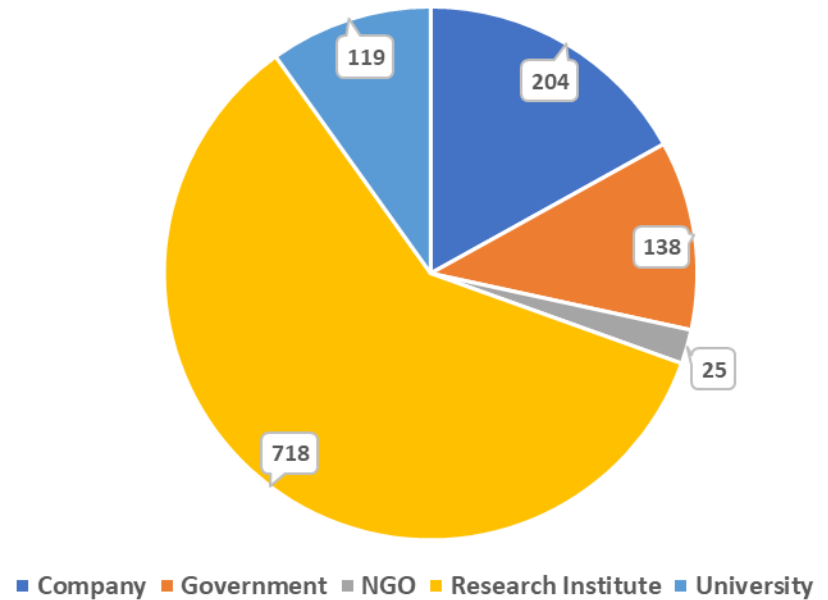
Division of Organisations per sector

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

[BACK](#)

Dataset identification

Title of dataset	MEP-NSW Demersal fish
Narrative summary of dataset	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 Geoviewer



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Examples of monitoring data from Windfarms

MEP-NSW Bivalves: Bivalves surveys for the Monitoring and Evaluation Programme of the North Sea OWEZ wind park in 2007:

- NoordzeeWind BV
- Rijkswaterstaat Water, Traffic and Environment

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Home / Submissions

Details of MEP-NSW Bivalves

Dataset identification

Title of dataset	MEP-NSW Bivalves
Narrative summary of dataset	Bivalves surveys for the Monitoring and Evaluation Programme of the OWEZ wind park
Summary of processing methodology	Field survey on juvenile bivalve densities; date: 8-11 October 2007; vessel: RV POSEIDON (operated by IFM Geomar, Germany); sampling stations: 20 stations in OWEZ and 10 stations in each of the 5 reference areas R2, R3, R4, R5, RL; sampling design: 1 boxcore per station; sampling gear: NIOZ boxcoring, sampling depth 20 cm, sampling diameter 30 cm; sample surface juvenile bivalves: 0.024 m ² (i.e. 3 sub-cores each with diameter 10 cm ² per boxcore); sample depth juvenile bivalves: 5 cm; sorting procedure lab: stacked sieves 1.0, 0.5 and 0.2 mm; following worksheets describes: *number of identified juvenile bivalve species (> 0.5 mm) found per boxcore (0.024m ²) and per m ² , Station, Date time, species, n bivalves > 0.5 mm per 0.024m ² , n bivalves > 0.5 mm per m ² .
Project/programme	Monitoring Offshore Windfarm Egmond aan Zee

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Toolbox Home Occurrence Data Explore Select Data download Overview

Map showing the North Sea region with a highlighted area for the OWEZ wind park.



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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

The screenshot displays the EMODnet Data Ingestion Portal interface. At the top, the header includes the EMODnet logo, the title "DATA INGESTION PORTAL" with the tagline "Wake up your data - set them free for Blue Society", a search bar, and a "CONTACT US" link. A navigation menu below the header lists "ABOUT", "DATA SUBMISSION", "OPERATIONAL DATA", "SUBMISSIONS" (highlighted), "GUIDELINES", "HELP", "PROMOTION", and "CENTRAL PORTAL".

The main content area shows the path "Home / Submissions" and the title "Details of 2012, Partrac Ltd, Islay Offshore Wind Farm, Metocean Survey". A "BACK" button is visible in the top right corner of this section.

The "Dataset identification" section contains the following information:

- Title of dataset:** 2012, Partrac Ltd, Islay Offshore Wind Farm, Metocean Survey
- Narrative summary of dataset:** Partrac Ltd. were contracted by SSE Renewables to deploy three Waverider wave buoys and two ADCP frames at the proposed Islay Offshore Wind Farm site. The objective of the study was to provide wave data that will inform the physical processes modelling and engineering design. The Waverider buoys were deployed on 12th February 2012 until the 14th August 2012, with the ADCP frames being deployed in July 2012. Deliverables were in the format of reports and excel spreadsheets containing raw data. This dataset package contains the wave rider buoy reports, including raw data, QC'd data, failed data, flagged data and statistics.

A small map of the Islay region is shown to the right of the narrative summary.

The bottom section of the screenshot shows the "PHYSICS" interface, featuring a map of the UK and Ireland with a red dot indicating the location of the Islay Offshore Wind Farm. A "Map Viewer" sidebar on the right contains various filter options: "Optical Properties", "Sea Level", "Atmospheric", "Water conductivity / SalCon/Chemical", "Winds", "User", and "Underwater noise". Below these are dropdown menus for "platform type", "depth (m)", "sea basin", "integrators", "data network", and "data providers". A status bar at the bottom left of the map indicates "Total platforms: 4030".



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Other Originators from offshore renewable energy sector

- 📍 **Fugro GeoConsulting Limited, UK: rock & sediment biota data**
- 📍 **Centrica Energy Renewable Investments, UK: rock & sediment data**
- 📍 **The European Marine Energy Centre Limited, UK: waves**
- 📍 **Gardline Geosurvey Limited, UK: bathymetry**

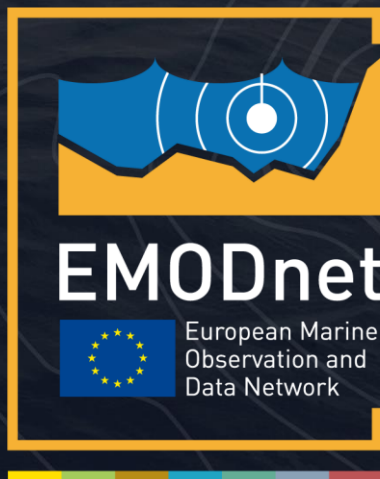


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Benefits of data sharing

- 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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