Webinar: ‘Copernicus Marine Service: A Game-Changer for Ocean Energy Sector’

Marine Monitoring

Copernicus Marine Service introduction

Tina Silovic

Mercator Ocean International

European Commission | Copernicus Europe's eyes on Earth | Implemented by MERCATOR OCEAN INTERNATIONAL


THE OCEAN IS CENTRAL TO THE FUNCTIONING OF THE PLANET
O_2 reservoir
The ocean provides nearly half of the world's oxygen
Ocean currents
Ocean currents act as major navigation routes
A crucial factor in weather and climate
Linked to the Earth system cycle and ocean currents
Carbon Storage
Pivotal role in the circle of life:
the ocean contains 50% more carbon than the atmosphere
Protein tank
World largest source of protein
Biodiversity tank
Production of about half the world's oxygen - phytoplankton
90% of the planet's living biomass is found in the ocean
Ocean waves
Vital role in transporting energy around the globe and shaping the coastline
Earth water reservoir
97% of Earth water supply
Maritime Space
71% of Earth's surface and over 90% of the habitable space on the living planet
Sea Ice
Vital role in global climate, polar ecosystems and human systems
Heat Storage
The most important climate regulator
THE OCEAN IS CENTRAL FOR HUMAN WELLBEING
Food Security
20% average per capita animal protein intake for 3 billion people, provided by fish food
Urban and regional planning
Disaster Risk Management
(40% of the world population lives within 100 km from the coast)
Public Health
Oxygen, food and novel pharmaceutical provision
Recreation and Tourism
Marine and coastal areas are the top tourism and recreational destinations and represent over one third of the maritime economy
Ocean governance,
Legal Frameworks and maritime spatial planning
(the ocean offers an enormous space resource)
Blue Economy
Renewables | Aquaculture |
Fisheries | Trade and Transport
von Schuckmann and Holland, 2019.

THE OCEAN, A MOST UNDERVALUED RESOURCE FOR MEETING ENERGY DEMAND

ECONOMIST IMPACT

Global Maritime Trends 2050

What does the future of the maritime industry look like?

The coming decades will see the growth of other sources of ocean-based renewable energy, such as wave and tidal, both of which are in relatively mature phases of development.

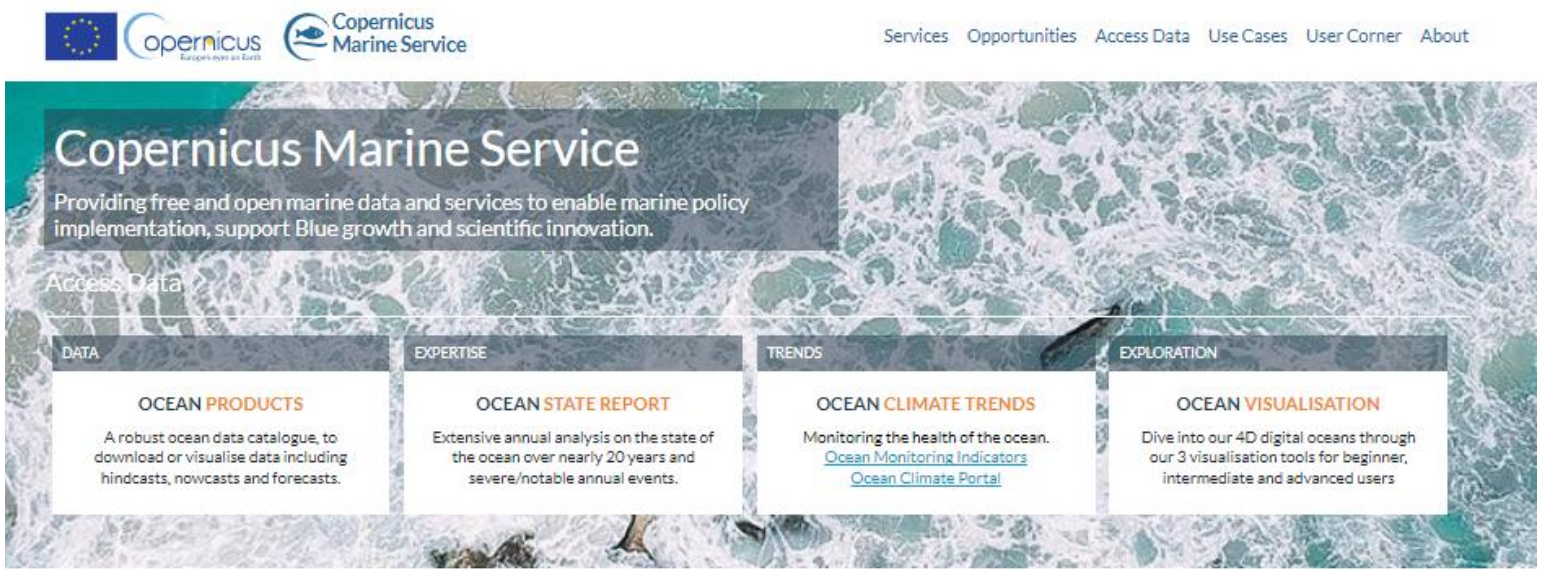
90%

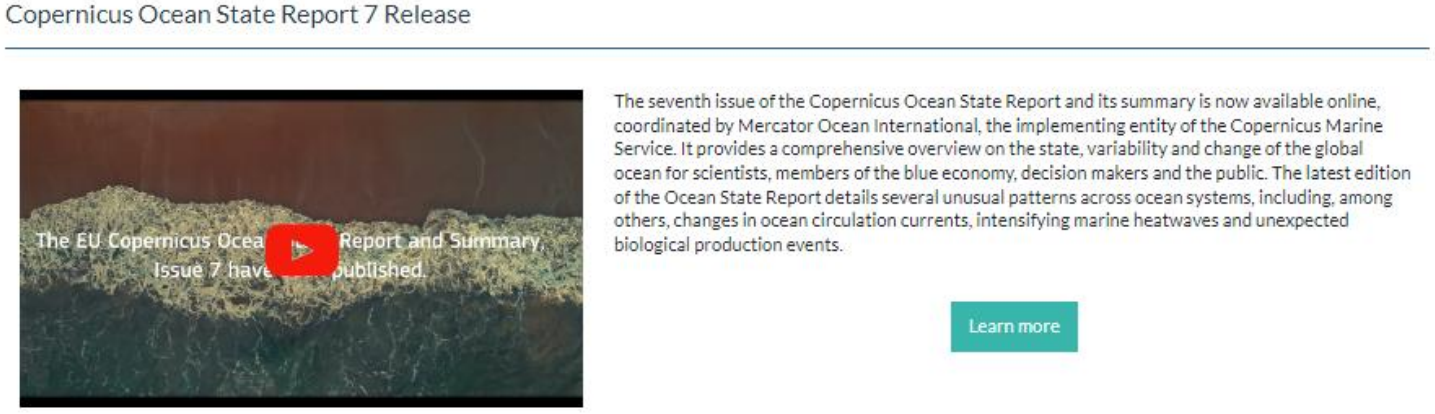
Most electricity expansion over the next five years will be renewable

International Energy Agency

Offshore wind is now one of the fastest growing energy technologies,

Copernicus Marine Service





- Online Catalogue
- More than 300 scientifically qualified products
- User-driven
- Common format *Netcdf*
- Spatial resolution from 25 km to 100 m
- Temporal resolution from monthly to 15 min
- Open & Free

The EU Copernicus Marine Service
Global & Regional Monitoring and Forecasting

MULTI-YEAR
10 to 45 years

REAL-TIME
Daily, hourly

FORECAST
2 to 10 days

ESSENTIAL MARINE VARIABLES

BLUE OCEAN	WHITE OCEAN	GREEN OCEAN
Physics	Sea Ice	Biogeochemistry

OBSERVATIONS
In-situ & Satellites

NUMERICAL MODELS
& data assimilation

marine.copernicus.eu

COPERNICUS MARINE REGIONAL OCEAN PRODUCT DIVISIONS

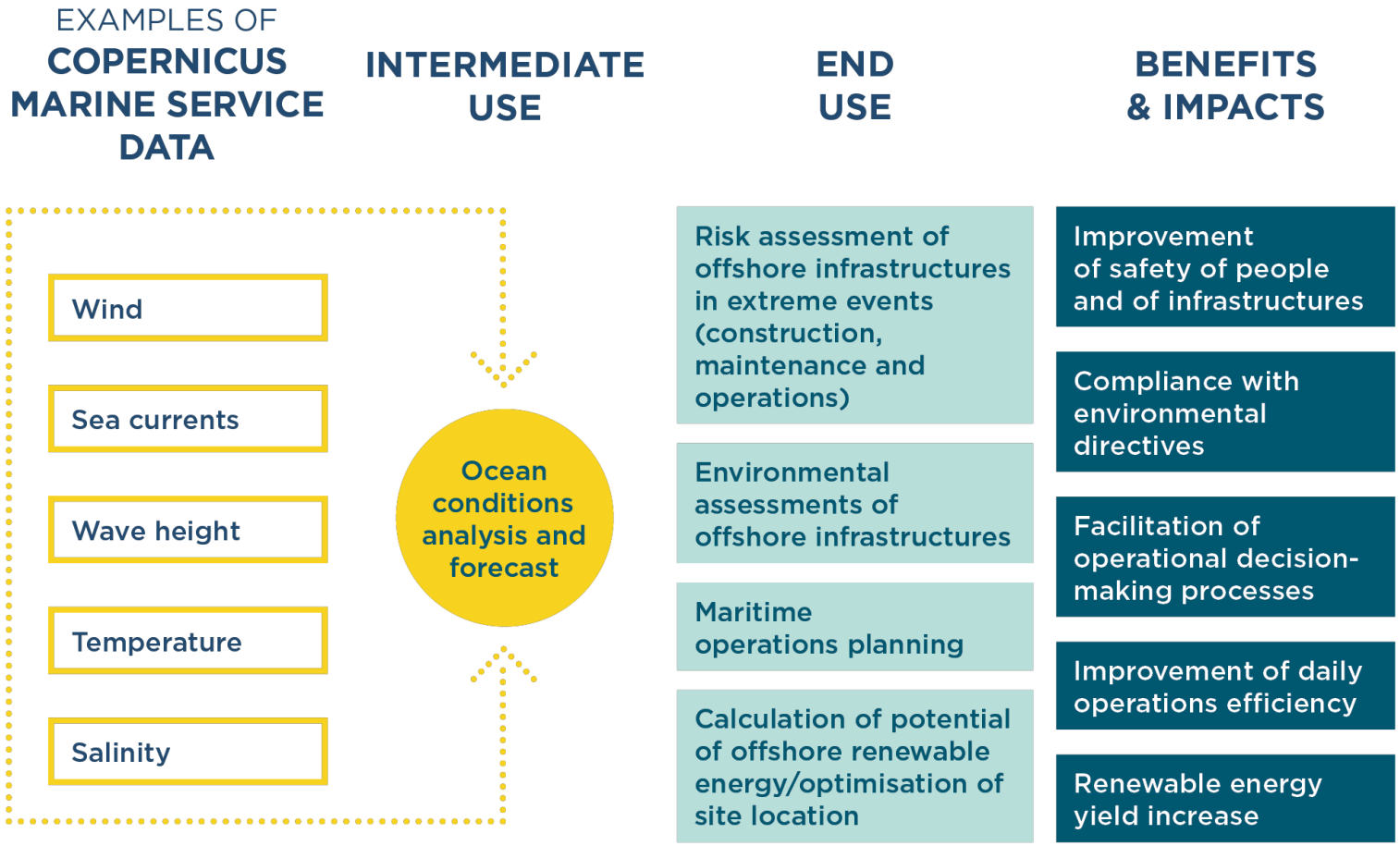
1. Global Ocean
2. Arctic Ocean
3. Baltic Sea
4. European North West Shelf Seas
5. Iberian Biscay Ireland Seas
6. Mediterranean Sea
7. Black Sea

PROGRAMME OF THE EUROPEAN UNION

Copernicus Europe's eyes on Earth

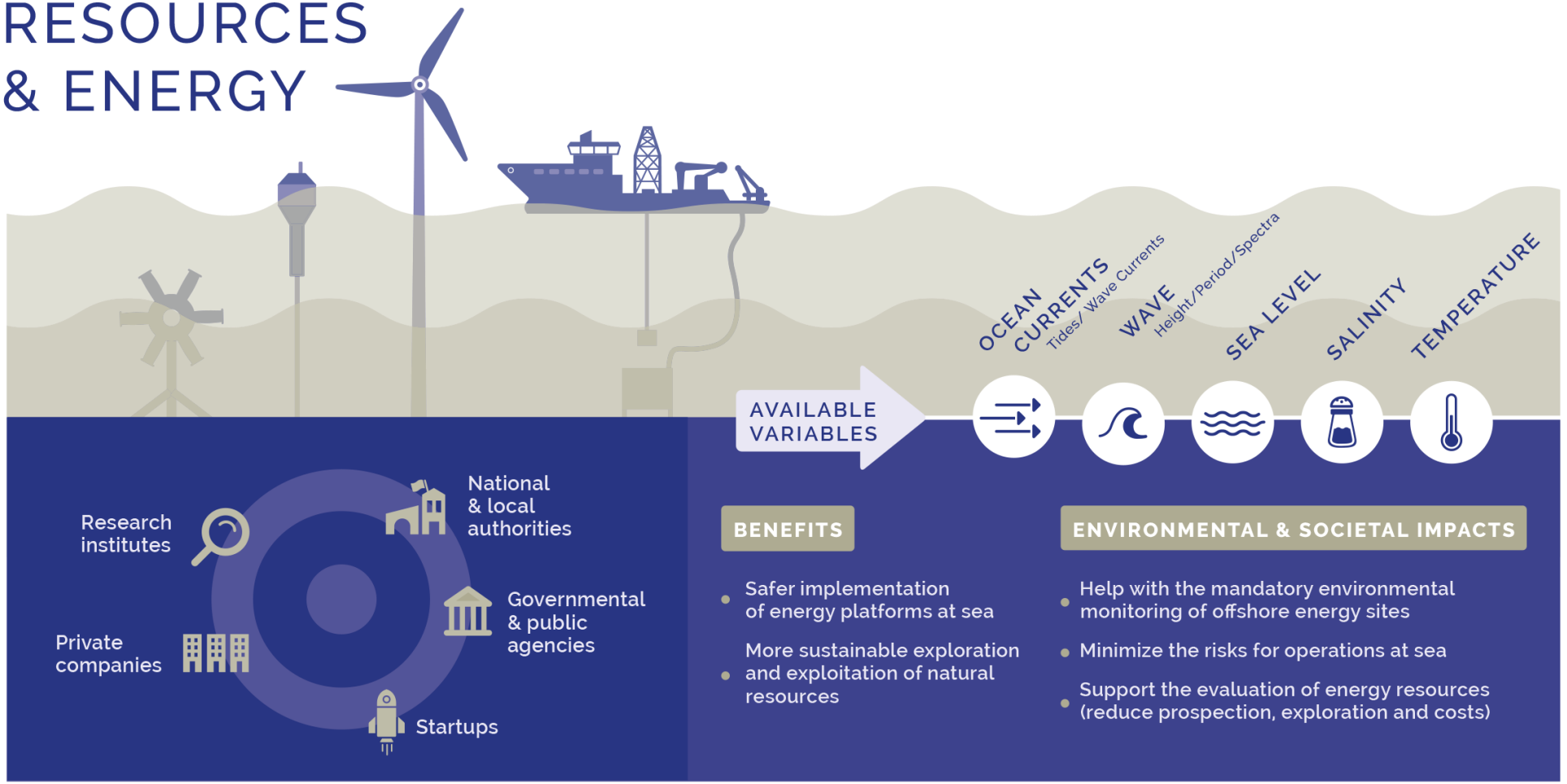
implemented by MERCATOR OCEAN INTERNATIONAL

Copernicus Marine Service – What is there for you?

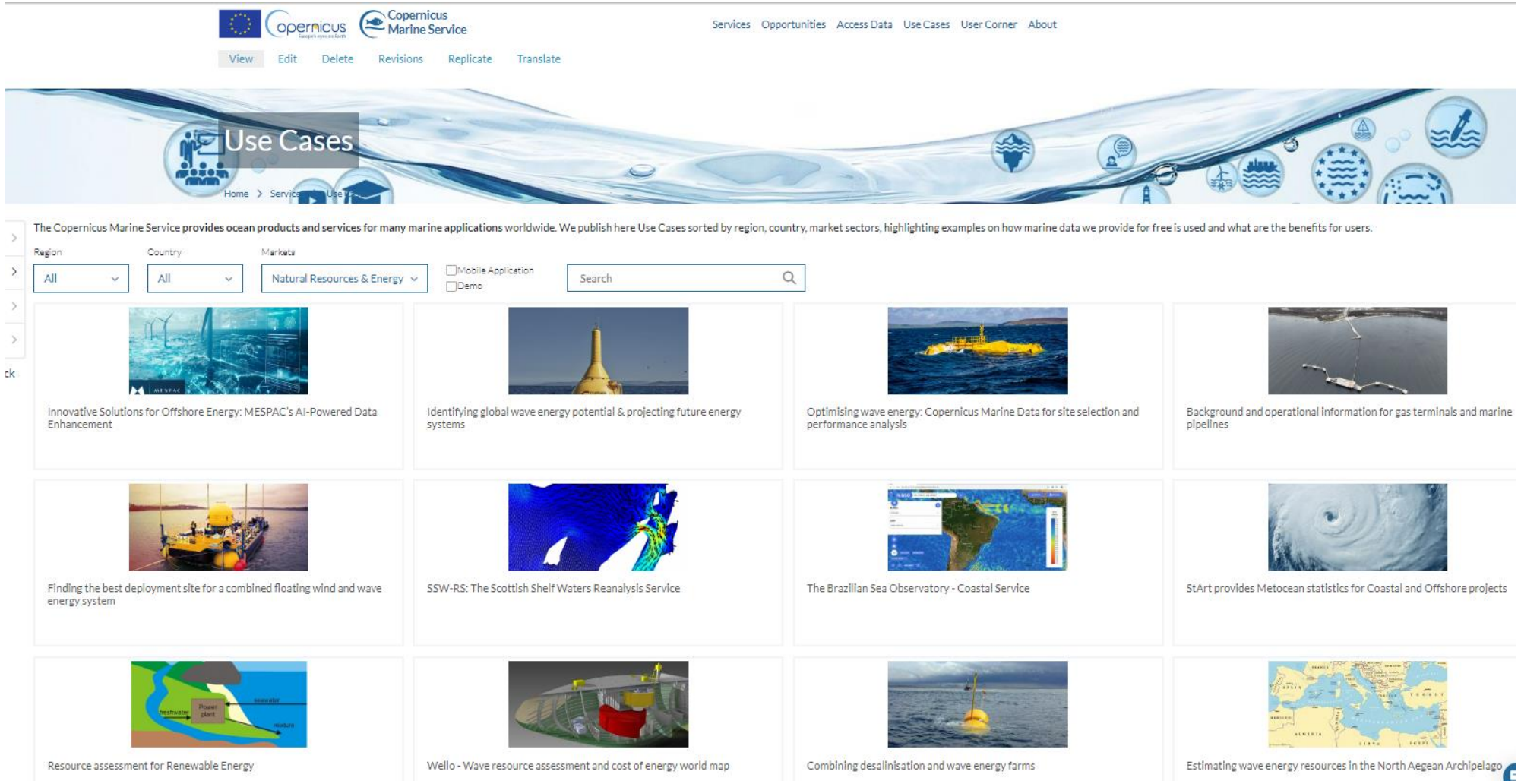


Copernicus Marine Service – What is there for you?

NATURAL RESOURCES & ENERGY



Copernicus Marine Service – Use cases



Copernicus Marine Service – Products/Data

Services Opportunities Access Data Use Cases User Corner About

Copernicus Marine Data Store

Home > Marine Data Store

Filters

FREE-TEXT SEARCH: wave

TIME RANGE: dd/mm/yyyy – dd/mm/yyyy, Covering full interval

WITH DEPTH 6

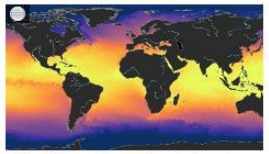
DEPTH RANGE

UNIVERSE
Blue Ocean 76
White Ocean 11
Green Ocean 23

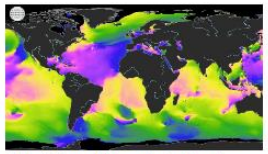
MAIN VARIABLES
Mixed layer thickness 7
Optics 12
Oxygen 7
Plankton 23
Salinity 14
Sea ice 10
Sea surface height 23
Temperature 33
Velocity 26
Wave 38
Wind 1

AREA
Global Ocean 22
Antarctic Ocean 2
Arctic Ocean 17
Atlantic: Iberia-Biscay-Ireland 26
Atlantic: NW European Shelf 23
Atlantic: North 37

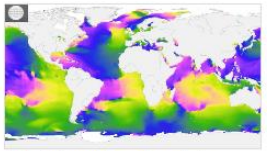
Products 97



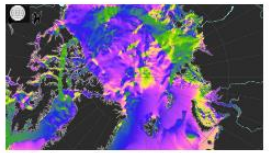
Global Ocean Physics Analysis and Forecast
GLOBAL_ANALYSISFORECAST_PHY_001_024
Models
Global, 0.083° × 0.083° × 50 levels
1 Jan 2019 to 27 Jun 2024, hourly, daily, monthly
Temperature, salinity, sea surface height, velocity, mixed layer thickness, wave, sea ice



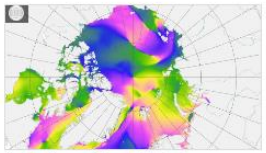
Global Ocean Waves Analysis and Forecast
GLOBAL_ANALYSISFORECAST_WAV_001_027
Models
Global, 0.083° × 0.083°
1 Oct 2021 to 26 Jun 2024, hourly
Temperature, salinity, sea surface height, velocity, mixed layer thickness, wave, sea ice



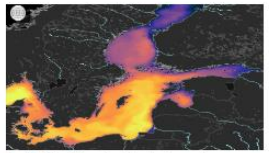
Global Ocean Waves Reanalysis
GLOBAL_MULTIYEAR_WAV_001_032
Models
Global, 0.2° × 0.2°
1 Jan 1993 to 31 Jan 2024, hourly, monthly
Velocity, wave



Arctic Ocean Wave Analysis and Forecast
ARCTIC_ANALYSIS_FORECAST_WAV_002_014
Models
Arctic, 3 × 3 km
Since 3 Dec 2017, hourly



Arctic Ocean Wave Hindcast
ARCTIC_MULTIYEAR_WAV_002_013
Models
Arctic, 3 × 3 km
1 Jan 1980 to 30 Nov 2022, hourly, multi-yearly



Baltic Sea Physics Analysis and Forecast
BALTICSEA_ANALYSISFORECAST_PHY_003_006
Models
Baltic, 2 × 2 km × 56 levels
1 Nov 2021 to 22 Jun 2024, sub-hourly, hourly,...

Services Opportunities Access Data Use Cases User Corner About

Copernicus Marine Data Store

Home > Marine Data Store

Filters

FREE-TEXT SEARCH: wind

TIME RANGE: dd/mm/yyyy – dd/mm/yyyy, Covering full interval

WITH DEPTH 4

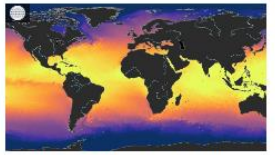
DEPTH RANGE

UNIVERSE
Blue Ocean 47
White Ocean 6
Green Ocean 3

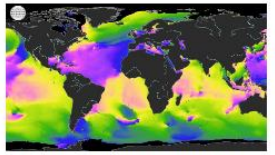
MAIN VARIABLES
Carbonate system 3
Mixed layer thickness 2
Nutrients 2
Optics 1
Oxygen 2
Plankton 2
Salinity 2
Sea ice 5
Sea surface height 6
Temperature 14
Velocity 20
Wave 21
Wind 6

AREA
Global Ocean 22
Arctic Ocean 8
Atlantic: Iberia-Biscay-Ireland 12
Atlantic: NW European Shelf 8
Atlantic: North 14

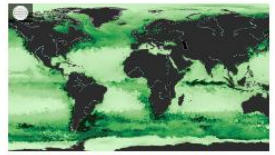
Products 54



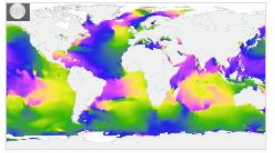
Global Ocean Physics Analysis and Forecast
GLOBAL_ANALYSISFORECAST_PHY_001_024
Models
Global, 0.083° × 0.083° × 50 levels
1 Jan 2019 to 27 Jun 2024, hourly, daily, monthly
Temperature, salinity, sea surface height, velocity, mixed layer thickness, wave, sea ice



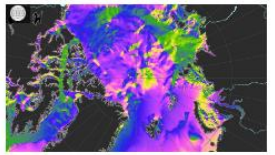
Global Ocean Waves Analysis and Forecast
GLOBAL_ANALYSISFORECAST_WAV_001_027
Models
Global, 0.083° × 0.083°
1 Oct 2021 to 26 Jun 2024, hourly
Temperature, salinity, sea surface height, velocity, mixed layer thickness, wave, sea ice



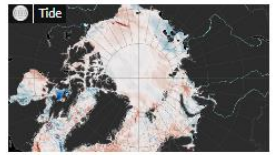
Global Ocean Biogeochemistry Analysis and Forecast
GLOBAL_ANALYSISFORECAST_BGC_001_028
Models
Global, 0.25° × 0.25° × 50 levels
1 Oct 2021 to 21 Jun 2024, daily, monthly
Plankton, nutrients, oxygen, carbonate system, optics



Global Ocean Waves Reanalysis
GLOBAL_MULTIYEAR_WAV_001_032
Models
Global, 0.2° × 0.2°
1 Jan 1993 to 31 Jan 2024, hourly, monthly



Arctic Ocean Wave Analysis and Forecast
ARCTIC_ANALYSIS_FORECAST_WAV_002_014
Models
Arctic, 3 × 3 km
Since 3 Dec 2017, hourly



Arctic Ocean Tidal Analysis and Forecast
ARCTIC_ANALYSISFORECAST_PHY_TI...002_015
Models
Arctic, 3 × 3 km
Since 19 Dec 2017, sub-hourly

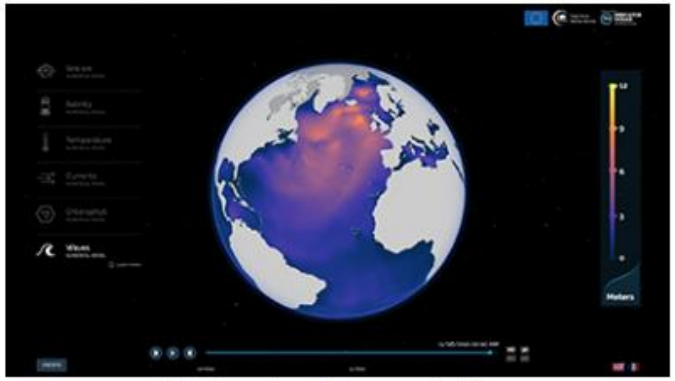
PROGRAMME OF THE EUROPEAN UNION

implemented by MERCATOR OCEAN INTERNATIONAL

Copernicus Marine Service – MyOcean Viewer

MYOCEAN LEARN

(BEGINNER) GLOBE

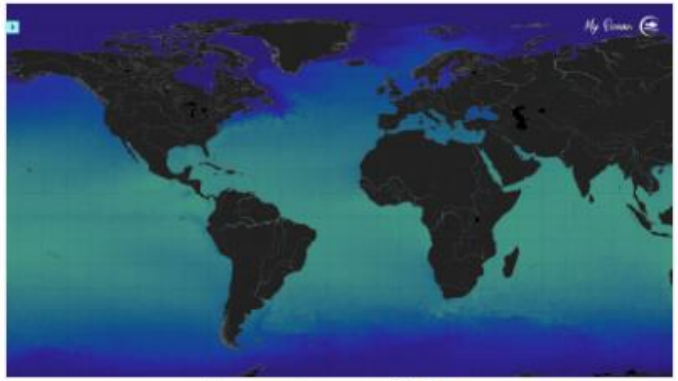


Understand key variables

Explore MyOcean Learn

MYOCEAN LIGHT

(INTERMEDIATE) PLANISPHERE

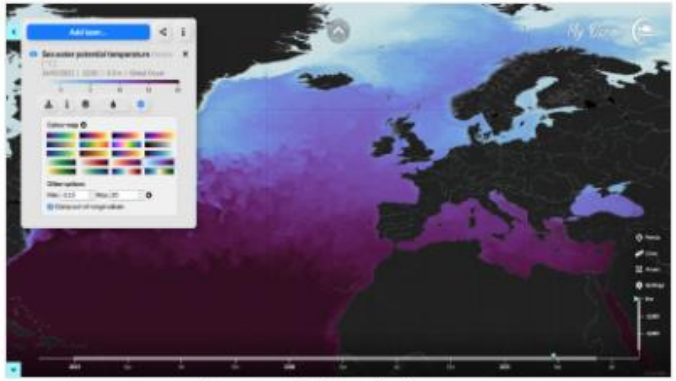


Access key variables

Explore MyOcean Light

MYOCEAN PRO

(EXPERT) PLANISPHERE



Access full catalogue

Explore MyOcean Pro

THANK YOU !

Marine Monitoring

@CMEMS_EU

Copernicus Marine Service

Newsletter

European Commission | Copernicus Europe's eyes on Earth

Implemented by MERCATOR OCEAN INTERNATIONAL

tsilovic@mercator-ocean.fr