

  
**MAP OF PROJECTS INSIDE**



# BRETAGNE

## A STRATEGIC LOCATION

In the heart of Offshore Wind  
& Marine Energies Market

BRETAGNE   
OCEAN POWER



**190 COMPANIES**

# to find your right partner

Offshore renewable energy is a sector with more than 190 companies working:

- in all offshore renewable technologies
- and at all stages of offshore renewable projects.

Bretons companies are already involved in many marine energy project in Europe, such as the Ailes Marines project in Bay of Saint-Brieuc. They are ready for other projects, including the South Brittany floating wind farm.

Find the right partner for your business: more than 190 companies and 32 research labs are referenced by skills in our online directory.



[www.bretagneoceanpower.fr/directory](http://www.bretagneoceanpower.fr/directory)

**3 TESTS SITES**

# to prove your concept

Open sea test sites are open to your projects, whether they are in the development or pre-commercialization phase. Specialists accompany you from the commissioning to the connection to the network and up to the tests. They host all kinds of marine energies and offshore wind technologies (tidal turbines, floating wind turbines, etc.).

If you need to perfect your technologies, you can count on the expertise of more than 67 companies and research centres specialized in marine energy technologies in Brittany.

Paimpol-Bréhat and Sainte-Anne du Portzic test sites are part of the Open-C Foundation, the largest offshore test center for floating wind and MRE in Europe.



On Paimpol-Bréhat test site, European Tiger Project is dedicated to demonstrate that tidal stream energy is a maturing industry, capable of achieving an accelerated cost reduction pathway.

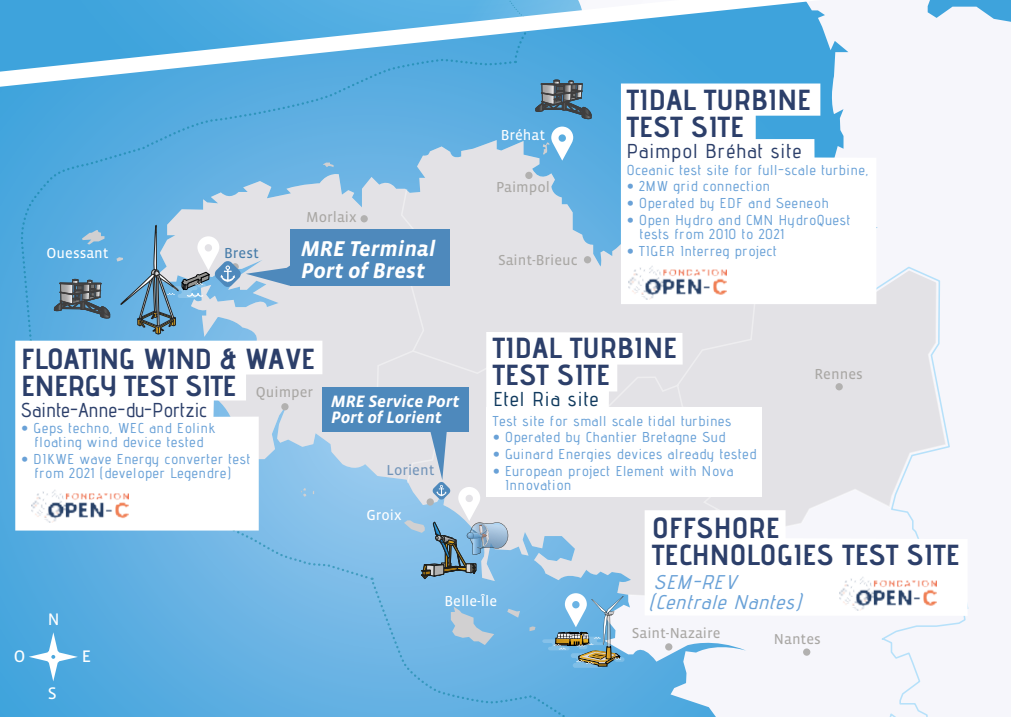


[testsites.bretagneoceanpower.fr](http://testsites.bretagneoceanpower.fr)

**INVEST IN BRETAGNE**

**INTO 6 GW**

Offshore wind park planned
















## DEDICATED PORT INFRASTRUCTURE

# specialised for more efficiency







### PORT OF BREST

A new terminal dedicated to large offshore renewable projects:

-  **40** ha OF INDUSTRIAL LOTS CONNECTED TO SEA AND TRANSPORT NETWORKS
-  **380** LM OF DOCK WITH A HANDLING BERTH OF 100 m WIDTH
-  FREIGHT PORT AND LOGISTIC HUB FOR EUROPEAN SEAWAYS
-  HEAVY LIFTING CRANES UP TO 200 TONS
-  **8** m CHANNEL ACCESS DEPTH: 8 m BELOW CD
-  **12** m BERTH DEPTH ACCESS: 12 m BELOW CD
-  ISPS CODE CERTIFIED
-  **64** t/m<sup>2</sup> FROM 10 TO 64 T/M<sup>2</sup> LOAD BEARING CAPACITY
-  LOCATED IN A PROTECTED ROADSTEAD WITH EASY ACCESS
-  DEDICATED WORKSHOP OF 1375 M<sup>2</sup> WITH BRIDGE CRANE 50 TONS
-  UNRESTRICTED ACCESS TO OPEN SEA & NO AIR DRAFT RESTRICTIONS
-  **1<sup>st</sup>** FRENCH PORT FOR SHIP REPAIR (3 DRY DOCKS)
-  MORE THAN 70 SKILLED COMPANIES AROUND THE PORT SUCH SPECIALIZED IN LOGISTIC ENGINEERING, ELECTRICITY AND STRUCTURE

### PORT OF LORIENT

A logistic hub for installation and maintenance:

-  SHELTERED AND ACCESSIBLE BAY: UNRESTRICTED ACCESS TO OPEN SEA & NO AIR DRAFT RESTRICTIONS, EASY ACCESS 24/7, WATER HEIGHT OF 9M (+6M50 TIDAL RANGE)
-  **2.5** ha 25 HA DEDICATED TO THE INSTALLATION STEP:
  - 800 LM OF QUAY
  - 13M CD DRAFT
  - RORO HANDLING
  - SUITABLE LIFTING EQUIPMENT INCLUDING A 30T CRANE AT 30M
-  **1.5** ha MAINTENANCE BASE AND ASSOCIATED SERVICES:
  - 15 HA
  - 100 LM OF QUAY
  - 3M CD DRAFT
  - CREW FACILITIES
-  SHIP REPAIR AREA WITH SHIPLIFT UP TO 650 T AND 80 LM OF QUAY (8T/M<sup>2</sup>)
-  **14 001** ISO CERTIFICATION
-  NEARLY 50 SKILLED COMPANIES AROUND THE PORT SUCH SPECIALIZED IN LOGISTIC ENGINEERING, ELECTRICITY AND STRUCTURE

## AN OPEN REGION WITH

# effective partnerships



**DeepWind**  
North of Scotland Offshore Wind Cluster

**Norwegian Offshore Wind**

**MARINE ENERGY WALES**  
YNNI MOROL CYMRU

**EUROPEAN ATLANTIC ARC PARTNERS**

**BRETAGNE OCEAN POWER**  
member of

**France Offshore Renewables**  
The Inter-Cluster Alliance

**COSSANONNE PARTNERS** **SUDEOLE** **WIND OCC**

**BRETAGNE OCEAN POWER** **PROLIA** **AQUITAINE BLUE ENERGIES**

# Offshore Wind and Marine Energies IN BRITTANY

## OFF-GRID ISLAND DEMONSTRATOR

Model of a 100% autonomous island with 100% renewable energy including:

- Connection of a tidal turbine, photovoltaic power plant, electricity storage system
- Smart grids regulate and manage consumption and production using an energy management system
- Ice Interreg project
- Sabella D10 tidal turbine demo

## FLOATING WIND & WAVE ENERGY TEST SITE

Sainte-Anne-du-Portzic

- Geys techno, WEC and Eolink floating wind device tested
- DIKWE wave Energy converter test from 2021 (developer Legendre)

## ONSHORE WAVE ENERGY

PILOT SITE

- Esquibien breakwater in Audierne
- DIKWE full scale prototype project to be studied, installation from 2024

## OFFSHORE WAVE ENERGY

PILOT SITE

- Existing offshore site, preliminary studies already performed
- Further project to be studied

## SITE FOR TIDAL ENERGY COMMERCIAL PROJECT

Ouessant

Brest

## MRE Terminal Port of Brest

## TIDAL TURBINE TEST SITE

Paimpol Bréhat site

- Oceanic test site for full-scale turbine.
- 2MW grid connection
- Operated by EDF and Seeneah
- Open Hydro and CMN HydroQuest tests from 2010 to 2021
- TIGER Interreg project

Bréhat

Paimpol

Saint-Quay-Portrieux

## ST QUAY O&M PORT

for St Brieuc offshore wind farm

Saint-Brieuc

## BOTTOM-FIXED OFFSHORE WIND FARM

Bay of Saint-Brieuc

- 496 MW commissioning 2023
- Project developer: Ailes Marines
- 62 wind turbines Siemens Gamesa Renewable Energy SG 8.0-167 DD, assembled in Le Havre and Brest
- Jacket foundation Nevantia Winder built in Brest (FR) and Fene (ES)

496 MW

## SERVICE PORT

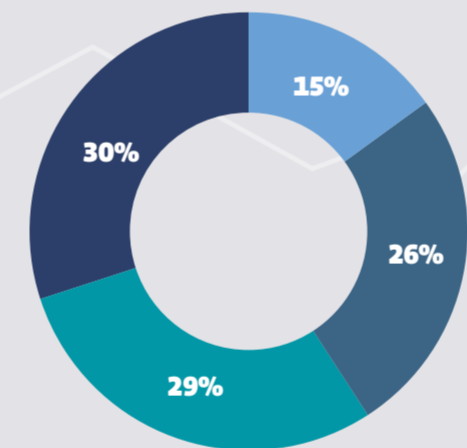
for St Brieuc offshore wind farm

Saint-Malo

240 MW

## TIDAL POWER PLANT (EDF)

## 190 COMPANIES ON THE WHOLE VALUE CHAIN



- Installation / Logistics
- Operation / Maintenance
- Studies / Project development
- Construction

## MRE Service Port Port of Lorient

Lorient

Groix

## FLOATING WIND PILOT SITE

- Preliminary studies and consenting already performed
- Opportunity for H2 demonstration

750 MW

## 750MW FOR FLOATING WIND

Call for tender

- 250 MW 2021
- 500 MW from 2023

## TIDAL TURBINE TEST SITE

Etel Ria site

- Test site for small scale tidal turbines
- Operated by Chantier Bretagne Sud
- Guinard Energies devices already tested
- European project Element with Nova Innovation

## OFFSHORE TECHNOLOGIES TEST SITE

SEM-REV (Centrale Nantes)

## BOTTOM-FIXED OFFSHORE WIND FARM

Saint-Nazaire (EDF R, Enbridge)

480 MW

## Research centres

- Ifremer Brest: Wave and Wind Tank and test site
- Campus Mondial de la Mer (Worldwide campus for blue growth) - Brest
- ENSTA Bretagne - Brest
- ITE France Energies Marines - Brest

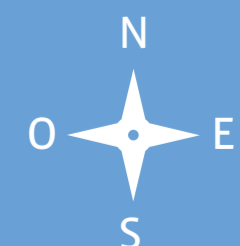
## Business and innovation clusters

- Pôle Mer Bretagne-Atlantique
- Bretagne Pôle Naval
- Breizh EMR
- Pôle EMC2
- Technopole Brest Iroise

## Ports dedicated to MREs

- Maintenance ports

## / Geographical scale



**BRETAGNE** <sup>BE</sup>  
**OCEAN PO'WER**  
 by Région Bretagne

# BRITTANY, A STRATEGIC LOCATION

## HOME OF OCEAN ENERGY

- Support to the technology development
- Defined areas for tidal commercial projects

## HOME OF FLOATING WIND

- 1st commercial project awarded in Europe
- Dedicated port infrastructure

/ Have a project? Contact us!

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BRETAGNE<sup>BE</sup>  
OCEAN POWER



L'Europe s'engage  
en Bretagne

BRETAGNE<sup>®</sup>  
COMMERCE  
INTERNATIONAL

BRETAGNE<sup>®</sup>  
DÉVELOPPEMENT  
INNOVATION

CCI BRETAGNE

BREIZH  
EMR

77  
TECHNIPOLIS  
BRETAGNE

POLE MER  
BRETAGNE ATLANTIQUE

bpi