

A PROPOSAL FOR

Testing Floating Offshore Wind at the Atlantic Marine Energy Test Site (AMETS)



Rialtas na hÉireann
Government of Ireland

Interreg 
North-West Europe
AFLOWT

WHO IS SEAI?

SEAI is Ireland's national energy authority investing in, and delivering, appropriate, effective, and sustainable solutions to help Ireland's transition to a clean energy future.

We work with Government, homeowners, businesses, and communities to achieve this, through expertise, funding, educational programmes, policy advice, research, and the development of new technologies.

SEAI is funded by the Government of Ireland through the Department of the Environment, Climate and Communications.

Source: RSK Ireland

AFLOWT (ACCELERATING MARKET UPTAKE OF FLOATING OFFSHORE WIND TECHNOLOGY)

The aim of the AFLOWT (Accelerating Market Uptake of Floating Offshore Wind Technology) project is to demonstrate the survivability and cost-competitiveness of floating offshore wind technologies and support the development of an active supply chain for floating offshore wind in the North-West Europe region.

The AFLOWT project is an Interreg North-West Europe funded project. Interreg North-West Europe is a European transnational co-operation programme aimed at encouraging economic activity across the various regions in North-West Europe.

SEAI is a project partner within AFLOWT, and AFLOWT is providing support for expanding the scope to test floating offshore wind technologies at the Atlantic Marine Energy Test Site.

THE ATLANTIC MARINE ENERGY TEST SITE (AMETS)

The Atlantic Marine Energy Test Site was initially foreseen as a grid connected facility for testing the performance of wave energy conversion technologies in real-sea conditions.

To date no testing activity has started at the site and the cable and related infrastructure has yet to be installed. Work on the site has been focussed on data collection. In 2018, SEAI began the process of expanding the scope of the site to also include floating offshore wind technologies testing.

This information booklet summarises the key information for stakeholders about the Environmental Impact Assessment Report and consenting process that SEAI is undertaking at the site.

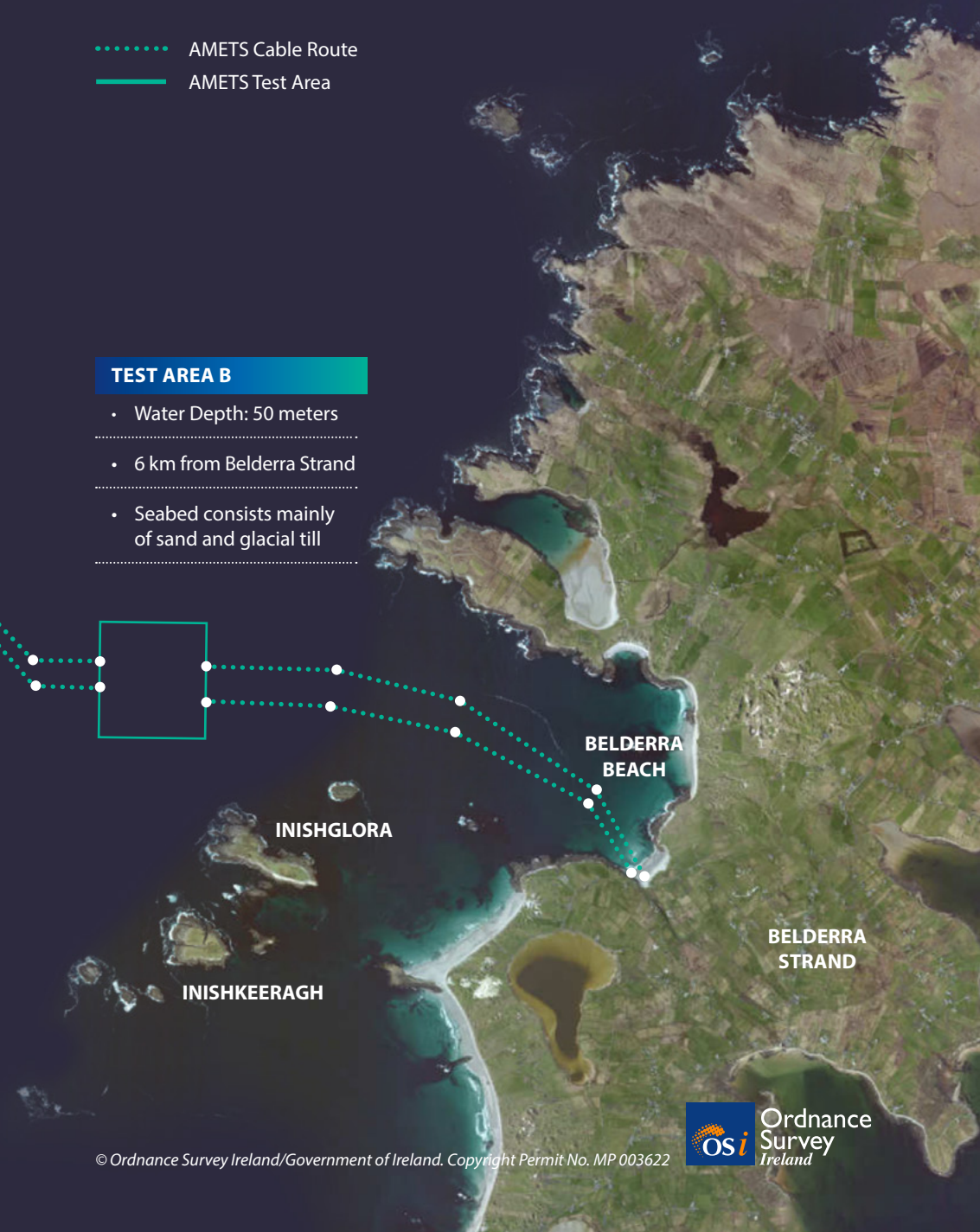
TEST AREA A

- Water Depth: 100 meters
- 16 km northwest from Belderra Strand
- Seabed consists mainly of deep sand

- AMETS Cable Route
- AMETS Test Area

TEST AREA B

- Water Depth: 50 meters
- 6 km from Belderra Strand
- Seabed consists mainly of sand and glacial till



WHAT HAS HAPPENED TO DATE?



CLIMATE CHANGE AND ENERGY SECURITY

Ireland is home to some of the most powerful winds and areas that have deep water, in particular on Ireland’s west coast, making it most suitable for testing floating offshore wind technologies.

Given that the sea floor is almost ten times the size of the island, we can utilise these expansive areas through offshore floating wind technologies to harness the energy, further out to sea.

This wind potential and the development of technologies to capture offshore wind energy more

efficiently can enhance Ireland’s capacity to produce its own clean, renewable energy and transition away from the use of fossil fuels and ensure the country’s future energy security.

The need to accelerate our clean energy transition is a matter of urgency for both present and future generations.

Climate change

is related to our **energy consumption**.



We need to **reduce our energy use as a society** and shift from using fossil fuels to secure **clean renewable sources of energy**.



Ireland has a legally binding **target to reduce greenhouse gas emissions by**

51% by 2030 and reach **net-zero by 2050**.

Ireland’s aim is to generate **80%** of our electricity from **renewable sources by 2030**.

WHAT IS FLOATING OFFSHORE WIND?

A wind turbine is mounted on a floating structure which is moored to the seabed by an anchor and its mooring lines. This makes it more suitable for deeper waters of greater than 50 metres depth, in comparison to fixed offshore wind which rely on shallower water depths. And they can be used further from the shore.

MAIN ADVANTAGES OF DEVELOPING FLOATING OFFSHORE WIND TECHNOLOGIES:

- Access to stronger and more reliable wind resulting in more electricity production.
- These technologies can allow us to tap into previously inaccessible energy.
- Less visual impact because they are located further out to sea.
- Installation and maintenance of FOWTs are more simple as they can be assembled on land and are towable.
- Noise and visual impacts are reduced as they are in more remote offshore areas.
- These technology innovations could make Ireland a world leader and provide economic opportunities.



There are differing floating offshore wind designs that need to be tested at full scale, here are some examples.

Barge

Ireland's floating offshore wind target capacity is 30 GW by 2050, which could provide electricity equivalent to powering over 8 million all electric homes using heat pumps and electric vehicles.

Semi-submersible

Ireland is targeting the deployment of 5GW of fixed offshore wind energy by 2030, more than doubling our current wind generating capacity.

Conventional spar

Tension-leg platform

WHAT IS PROPOSED AT AMETS?

SEAI will make a consent application which will include a range of floating offshore wind technologies which could be installed and tested at the site.

Each technology developer wishing to use the test site to deploy their floating offshore wind technology will have a different technology design.

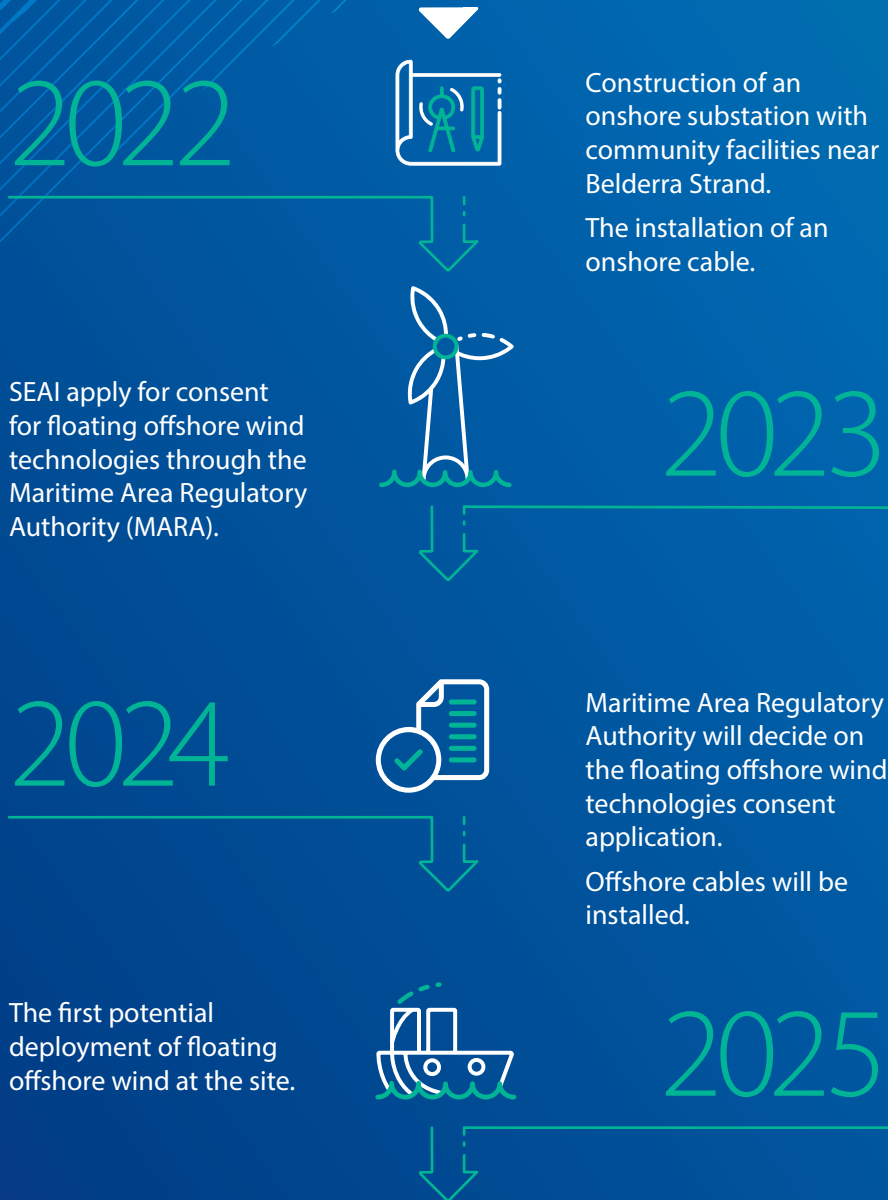
To allow for a variety of technology types to be considered for use at the site, a range of technology specifications will be screened in the Environmental Impact Assessment Report.

KEY DETAILS ABOUT TESTING FLOATING OFFSHORE WIND DEVICES

- A range of floating offshore wind technologies, may be tested on site, with a maximum of six installed at any one time across the two test areas.
- Test Area A is further offshore and in deeper water so is more suitable for testing larger floating offshore wind technologies.
- The maximum height of a device positioned in Test Area A would be 300 meters. The maximum height for a device deployed in Test Area B, closer to shore would be 110m.
- Wave energy converters and floating offshore wind technologies could be deployed at the same time.
- The turbines could have either two or three blades.
- The maximum electricity export capacity for the whole test site is currently 10MW.



WHAT IS PLANNED

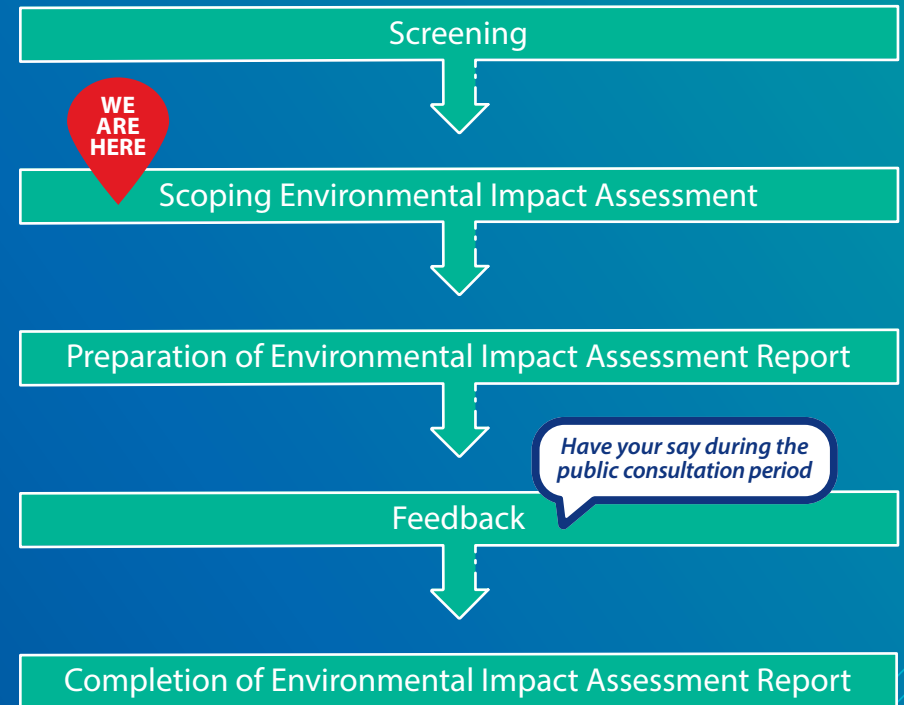


ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

This assesses the potential positive and negative effects of a development on the environment and human well-being. These are written into a report called an Environmental Impact Assessment Report (EIAR).

Public involvement is very important in this process. It helps to ensure the decision-making process is equitable and fair and leads to more informed decisions and better environmental outcomes.

ENVIRONMENTAL IMPACT ASSESSMENT STEP BY STEP PROCESS



SCOPING FOR ENVIRONMENTAL EFFECTS

SEAI has been collecting information about the presence of plants and animals below and above the waves, including marine mammals (dolphins, seals, whales, etc.) and sea birds at the site since 2009.

SEAI HAS COLLECTED INFORMATION USING:

| Survey Type | What is being studied | How is it being studied |
|--------------------|--|---|
| Land-based surveys | Marine mammals and birds | Observing wildlife from coastal vantage points |
| Sea-based surveys | Abundance of marine mammals such as porpoises, dolphins and toothed whales | Monitoring underwater sounds using static equipment called CPODs (click detectors) |
| | Marine communities living in or on the seabed (benthos) | Boat-based activities, including drop down videos, dive surveys, kelp density surveys |
| | Abundance of bird species | Boat and aeroplane-based surveys |
| Seabed Surveys | The Marine Institute and Geological Survey of Ireland have extensively surveyed the area to collect geophysical and geotechnical data to help map the contours of the seabed (bathymetry) and determine what material the seabed is composed of (sand/rock/mud). | |

SEAI is waiting on the receipt of a foreshore licence to collect additional seabed data for the site. This licence will only allow SEAI to collect data and is not related to the deployment of any floating offshore wind technology. Other data is being gathered on a wide range of important factors listed on the following page which is included in the Environmental Impact Assessment Scoping Report.

ENVIRONMENTAL CONSIDERATIONS

We are currently looking into any significant environmental considerations which need to be taken into account within the Environmental Impact Assessment Report. This will help us work out the range of floating offshore wind technologies that could be used at the test site, in addition to the licensed wave energy convertors.

ENVIRONMENTAL CONSIDERATIONS FOR THE ENVIRONMENTAL IMPACT ASSESSMENT

Offshore Physical Environment



- Coastal erosion, sedimentation processes, seabed geology and wind
- Bathymetry (seafloor) and hydrography (physical features of the sea and neighbouring areas)
- Water and sediment quality

Offshore Biodiversity



- Protected sites and species
- Benthic (subtidal and intertidal) ecology
- Fish and shellfish ecology
- Marine mammals, megafauna (large mammals) and reptiles
- Marine ornithology (bird life)

Human Environment



- Ports, shipping and navigation
- Aviation safety, military exercise and telecommunications
- Socioeconomics, recreation and tourism
- Commercial fisheries, shellfish and aquaculture
- Airborne noise
- Risk of major accidents and disasters

- Human health
- Cultural and archaeological heritage
- Seascape, landscape and visual impact
- Material assets and activities
- Climate change

ATLANTIC MARINE ENERGY TEST SITE



Talk to us

SEAI has a dedicated team that are happy to answer any questions you might have.

Email: ocean.energy@seai.ie

Send a letter:

The AMETS Team, Offshore Renewable Energy, SEAI, 3 Park Place, Hatch Street Upper, Dublin 2, D02 FX65.

Find out more

www.oceanenergyireland.com





Atlantic Marine Energy Test Site (AMETS)

FEEDBACK FORM:

We are keen to receive your views and comments on the following questions:

1. Has the information provided explained the need for the addition of floating offshore wind technologies at the Atlantic Marine Energy Test Site?

Yes No unsure

If no/unsure please explain why,

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2. Do you agree with the proposed testing of floating offshore wind technologies at the Atlantic Marine Energy Test Site?

Yes No unsure

Please explain why

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3. Do you have any additional comments or concerns on potential impacts that the addition of floating offshore wind technologies may have on the environment or community that we have not covered?

Please give details.

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4. Are there any additional comments you wish to bring to the attention of the Atlantic Marine Energy Test Site team?

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5. Following this engagement, how would you describe how well informed you feel you are regarding the Atlantic Marine Energy Test Site and proposed development?

Very well informed Sufficiently informed Minimally informed

Not well informed Not informed at all

Please note: This survey is anonymous.

Thank you for taking the time to complete this form. Please hand your completed form to a member of the team at the event, or alternatively please send:

Via Email: ocean.energy@seai.ie

Via Post: 3 Park Place, Upper Hatch Street, Dublin 2, D02 FX65

Any information given throughout this consultation can be used and published anonymously as part of the Environmental Impact Assessment consultation report. By completing this feedback form and providing comments through the other available means you consent to the feedback being used for this purpose.

HOW CAN I HAVE MY SAY?

Informal feedback

We would like to know your thoughts on the Environmental Impact Assessment Scoping Report which is available online and on display in the Belmullet library.

We will host a second information event by early 2023 once the Environmental Impact Assessment Report has been finalised.

Formal feedback

You can make a formal submission on the consent application documents during the statutory consultation period which will last eight weeks.

We will advertise the public consultation period in the local and national press.

You can view the consent application and full Environmental Impact Assessment Report online and physically on displays in the local community in 2023.

This formal consultation takes place before any licence can be issued or before development works, or deployments can start.

Thank you for taking the time to come and view our display. We hope you enjoyed what you saw and learned something new about floating offshore wind technologies and the Atlantic Marine Energy Test Site.

Don't forget to complete the feedback form and submit it by email or to a member of our team.

Email: ocean.energy@seai.ie

Send a letter:

The AMETS Team, Offshore Renewable Energy, SEAI, 3 Park Place, Hatch Street Upper, Dublin 2, D02 FX65.



Find out more

www.oceanenergyireland.com