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Ref: FS 006566



**Re: Galway Bay Marine and Renewable Energy Test Site
Foreshore Lease Application – Response to Observations**

Dear Mr. O'Neill,

I refer to your letter dated 9th September 2016 in relation to observations made by **Birdwatch Ireland**.

The Marine Institute's responses to the comments of BirdWatch Ireland are detailed below:

1. Details of both long term and short term infrastructure, and all the devices that could potentially be located on the test site are described in Chapter 4 of the Environmental Report accompanying the foreshore lease application.

Various environmental assessments have been undertaken prior to, during, and after the deployment of devices at the test site over the past ten years, and thus a very good understanding of the nature of impacts arising from marine renewable energy devices has been developed. Impacts that may arise that have not previously been studied at the Galway Bay wave energy test site specifically rely on knowledge and observations from existing marine industries such as oil, gas, shipping, from limited information from prototype wave energy convertors deployed at other test site internationally, and from independent expert judgement.

The worst case scenario assessment for each environmental receptor assumed that all permanent infrastructure was deployed at the site, all recurring short term infrastructure was deployed at the site, and that the three device testing berths were occupied by those devices which would be expected to have greatest impact on the receptor under consideration. The various components

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contributing to the worst case scenarios for each receptor are detailed in Chapter 4.7: Worst Case Scenarios for Impact Assessment

Appropriate methodologies were used to assess the effects relating to each of the environmental topics that have been investigated as part of the application. These methodologies are based on recognised good practice and guidelines specific to each subject area, details of which are provided within each individual technical section.

During the statutory consultation process The National Parks and Wildlife Services of the Department of Arts, Heritage and the Gaeltacht have noted:

“that the construction and operation of the renewable energy test site is unlikely to have a negative interactions with Natura 2000 nature conservation sites due to the nature and locations of the works”

Any device that falls without the scope of the devices assessed in the Environmental Report and supporting appendices will require a separate environmental assessment to be undertaken and appropriate consents obtained from the Minister.

2. The Marine Institute note the recommendation that ornithological survey work be conducted to determine bird species, abundance and behaviour in and around the test site and welcome guidance from BirdWatch Ireland as to the most appropriate methodologies for inclusion in the Environmental Monitoring Plan for the proposed test site.
3. The Marine Institute commit to undertaking all efforts to ensure that there are no significant impacts on birds in the area and welcome guidance from BirdWatch Ireland as to the most appropriate range of mitigation measures to implement.
4. Boat traffic to and from the test site on an typical annual basis would include weekly inspection visits using a 6.5m Rigid Inflatable Boat (RIB), five days use of a 20m tugboat and 30m workboat per device installation, five days use of a 20m tugboat and 30m workboat per device removal, five days use of 65m-70m research vessel for seabed survey work and test site maintenance. The test site can only accommodate a maximum of three ocean energy devices for testing at any one time. This limits the requirements for large (15m+) vessel activity at the test site.
5. The proposed test site would only accommodate one floating wind turbine at any time, to a maximum blade tip-height of 35m, for a maximum period of eighteen months.

The risk to, and the impacts on, birds that could be posed by the project have been examined in Section 6.4 of the Environmental Report. This information is supported by the Appropriate Assessment Stage 1 Screening Report in Appendix 6, Section 3 as required under Article 6(3) of the EU Habitats Directive. The relevant likelihood, consequence and impact magnitude of the identified risks to birds were as follows:

Risk	Likelihood	Consequence	Impact
Addition of New Structures:	Highly Likely;	Negligible;	Low
Collision Risk:	Unlikely;	Minor;	Low
Barrier to Movement:	Remote;	Negligible;	Low

The findings of the Appropriate Assessment Stage I Screening Report found that the project will not pose any risk to the populations of any of the bird species.

6. The increase in vessel traffic to and from the test site will be minimal as detailed previously. The test site is located approximately 15km from the proposed Galway Harbour extension. The Galway Harbour expansion Natura Impact Statement found that
“due to the distance between the test site and the Galway Harbour Extension location, there will be no in combination effects in possible future use of the site.”
7. In the Environmental Report, the Flora and Fauna worst case scenario Table 6.4 is the worse-case scenario of proposed infrastructure and devices deployed at the test site.

The actual impacts assessed for this scenario are specified in Section 6.5: “Impact of the development” and include; *disturbance of natural sediments, loss of substratum and disturbance to species, contamination during installation works, temporary resuspension of particulate materials, smothering and increased suspended sediment and turbidity, noise, risk of colliding, disturbance effect of vessels, accidental events, sediment accretion or erosion (scour) of the sediment, direct loss of benthic habitat and sessile species, introduce a hard substrate, barrier to movement, habitat exclusion, provision of roosting, nesting and/or breeding sites, anti-fouling compounds, electro-magnetic fields and minor leakages.*

Table 6.9 in the Environmental Report shows the impact matrix for the different activities that have been described in the preceding section, and therefore are not explicitly re-stated. Section 6.6.1: “Impact Analysis” explains who the impact analysis tables evaluate and rank the impacts compared to each other. They form the basis for rating the likelihood (Table 6.5) of an impact occurring and the consequence of the impact (Table 6.6). The likelihood and consequence ratings are combined to form a score for impact evaluation. Table 6.7 showed the Impact Matrix based on likelihood and consequence and the impact scores vary between from Low, Medium and High.

The conclusions of the assessment of impacts on flora and fauna in Chapter 6 of the Environmental report were:

Given the scale of the site and the intermittent nature of deployments the impacts on all receptors are of low concern.

- *The impacts from the loss of habitats/species, sediment disturbance and addition of new substrata/structures on the benthos, fisheries, protected habitats/species, mammals and birds are all negligible.*
- *Impacts on mammals, birds, fish and protected species caused by barriers to movement are negligible.*
- *The impacts from vessel noise on mammals, birds and fish are negligible.*
- *The collision risk posed to birds, mammals, fish and protected species is minor.*
- *No impact is expected on any receptor from energy extraction.*

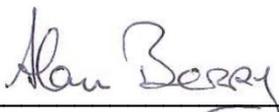
8. Project splitting has not occurred. Foreshore licence FS005751 and related Galway Co. Co. planning application 13/947 submitted in 2013 was for the Galway Bay Cable Project, the installation and operation of a single telecommunications cable from the secondary school in Spiddal to the standalone Galway Bay observatory, a scientific research station, co-located at the test site.

The current foreshore lease application is for a proposed upgrade to the existing wave energy test site facility. The upgrade would allow for the deployment and testing of a wider range of prototype marine renewable energy devices, innovative marine technologies and novel sensors. No increase in the scale of the test site has been sought. It is proposed that the upgraded test site will operate for up to 35 years, with devices on site intermittently throughout the year. The test site would be structured into three berths, designed to only allow a maximum of 3 prototype ocean energy convertors to be deployed and tested at any one time

The Marine Institute agree with BirdWatch Ireland that Galway Bay would benefit from an overarching strategy to outline the vision and direction for Galway Bay, it's people and the immense wealth of biodiversity underpinning it.

To this end, and on a national level, the Marine Institute are working closely with the Department of Housing, Planning, Community and Local Government to implement Ireland's Maritime Spatial Plan. Maritime Spatial Planning (MSP) is a new way of looking at how we use the marine area and planning how best to use it into the future. MSP will try to balance the different demands for using the sea including the need to protect the marine environment. It's about planning when and where human activities take place at sea. It's about ensuring these activities are as efficient and sustainable as possible.

Yours sincerely,



Marine Institute