

Marine Works Licence Application Addition Question Information – Erebus  
Geotechnical Survey 21/12/2020

**6(a). Please give a description of the proposed project.**

The geophysical surveys are expected to commence in March 2021 and the geotechnical survey to start in May 2021. We will be seeking a Band 2 marine licence to cover 12 months for the geotechnical survey, from May 2021 to April 22, to ensure sufficient contingency and reduce the need for subsequent licence variations, should works be delayed.

Working hours offshore will be continuous 24-hour periods for intervals of at least 14 days between port calls.

**The overall total volume of sediment will not exceed 4 m<sup>3</sup>.** Approx. volume of sediment removal is provided in the table below:

Sample Type	Area	No. of Samples	Volume per sample (m <sup>3</sup> )	Total volume of samples (m <sup>3</sup> )
VibroCore/piston	WTG Array	20	0.04	0.80
VibroCore/piston	Export Cable Corridor	30	0.04	1.2
<b>Total volume of all samples (m<sup>3</sup>)</b>				<b>2.00</b>

Geotechnical and geophysical acquisition should provide information to inform:

- Aid the mooring and cabling;
- Corroborate the assumptions made in the interpretation of the existing geophysical data and 'ground truth' the ground model;
- Enable the most appropriate method of subsequent investigation to be determined.
- Soil classification and engineering properties (particle size distribution, density and shear strength, thermal properties, as appropriate);
- Peat, gravel and shell content of the shallow soils;
- Potential for exposed cabling over rocky seabed with anticipated protection from movement due to current or to man-made seabed activity;
- Trenchability; and
- Geological substrate and its relationship with seabed bedforms.
- Delivery of factual geotechnical report;
- Delivery of final geophysical report;

It is currently proposed the geophysical survey will be completed first as can then be used to inform the geotechnical scope of work (i.e. the PCPT and sampling locations). However, in the event that both the geophysical and geotechnical survey scopes are to be undertaken simultaneously, the geophysical survey scope (which is focused on the Array Area (plus 1 km buffer)) shall be undertaken before the geotechnical acquisition is undertaken in the Array Area, because the results of the geophysical survey can then be used to inform the geotechnical scope of work (i.e. the PCPT and sampling locations).

**MBES** - Operating frequency of between 200 - 400kHz or greater;

**Side Scan Sonar** - simultaneous dual frequency of 300/600 kHz to allow object detection of 0.25 m in any direction;

**Sub-bottom profiler** - Two SBP systems shall be provided and operated simultaneously:

1. A High Frequency system, either hull mounted (preferable) or towed with minimum penetration below seabed of 5 m and vertical resolution of 0.2 m. The system shall be of Chirp type and/or parametric (pinger will not be used) with an operational frequency band of at least 3-15 kHz.

## Marine Works Licence Application Addition Question Information – Erebus Geotechnical Survey 21/12/2020

2. A Low Frequency system, comprising a towed single channel sparker of negative discharge type (e.g. Geo-spark) with minimum penetration of 20 m below seabed and a vertical resolution of at least 0.5 m.

### **7(c). Please state the measures to be taken to:**

#### **(i) Minimise risk to the marine environment**

Environmental best practice will be followed throughout the duration of the works, including adhering to the following:

- Relevant Guidance for Pollution Prevention (GPP) including PPG 6: Works and maintenance in or near water;
- English Heritage (2013) Marine Geophysics Data Acquisition, Processing and Interpretation: Guidance Note;
- Standard Guidance for Archaeological Geophysical Survey (CifA, 2016);
- Wessex Archaeology (2007) Historical Environment Guidance for the Offshore Renewable Energy Sector (COWRIE); and
- Offshore Geotechnical Investigations and Historic Environment Analysis: Guidance for the Renewable Energy Sector (Gribble and Leather, 2011).
- All equipment, temporary structures, access tracks, waste and/or debris associated with the works will be removed on completion of the works.
- Bunding, storage facilities and spill kits will be employed to contain and prevent the release of fuel, oils and chemicals associated with the plant, refuelling and construction equipment into the marine environment.
- Plant, vehicles and machinery will not be refuelled on the foreshore.
- Coatings and treatments will be suitable for use in the marine environment and are used in accordance with best environmental practice.
- All equipment, materials, machinery and PPE used will be in a clean condition prior to their arrival on site, and upon removal from site, to minimise risk of introducing non-native species into the marine environment.

#### **(ii) Prevent undue interference to others**

The Ministry of Defence (MoD) will be notified in relation to survey activity in proximity to MoD activities in the area. The survey corridor will pass through the Castlemartin Sea Danger Area for approximately 20 km. The works will not start until written confirmation is received from relevant MoD contacts that the survey is OK to proceed.

The project-specific Fisheries Liaison Officer will notify fishermen in the area. Whilst surveying, the vessel crew and survey team will, at all times, be mindful of any fishing interests, particularly fixed gear and where appropriate, put in place measures to minimise and/or avoid interaction.

The project will follow MCAs condition (please find email from MCA submitted with application documents):

1. Comply with all maritime safety related legislation and guidance, including COLREGs;
2. Issue local notification to marine users - including fisherman's organisations, neighbouring port authorities and other local stakeholders - to ensure that they are made fully aware of the activity; and
3. Notify HM Coastguard, in this case zone28@hmcg.gov.uk of the works prior to commencement.

#### **(iii) Maintain navigational safety, including marking and lighting of works**

Pre-application engagement has taken place with the Maritime and Coastguard Agency who have confirmed that the works will not pose a significant risk to navigation providing recommendations in 7(c) (iii) and below, are adhered to (see supporting email from MCA).

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Pre-application engagement has also taken place with Trinity House, who have advised that they have no objection to the working taking place subject to a notice to mariners being issued.

The survey team, vessel, crew and equipment will comply with all relevant Health and Safety legislation.

- ✓ All equipment, temporary structures, access tracks, waste and/or debris associated with the works will be removed on completion of the works.
- ✓ Bunding, storage facilities and spill kits will be employed to contain and prevent the release of fuel, oils and chemicals associated with the plant, refuelling and construction equipment into the marine environment.
- ✓ Plant, vehicles and machinery will not be refuelled on the foreshore.
- ✓ Coatings and treatments will be suitable for use in the marine environment and are used in accordance with best environmental practice.
- ✓ All equipment, materials, machinery and PPE used will be in a clean condition prior to their arrival on site, and upon removal from site, to minimise risk of introducing non-native species into the marine environment.
- ✓ In the event of removal of any sensitive species or habitat designated by NRW under Schedule 7 of the Environment (Wales) Act 2016, no further removals will occur at that location or within 20m of that location.