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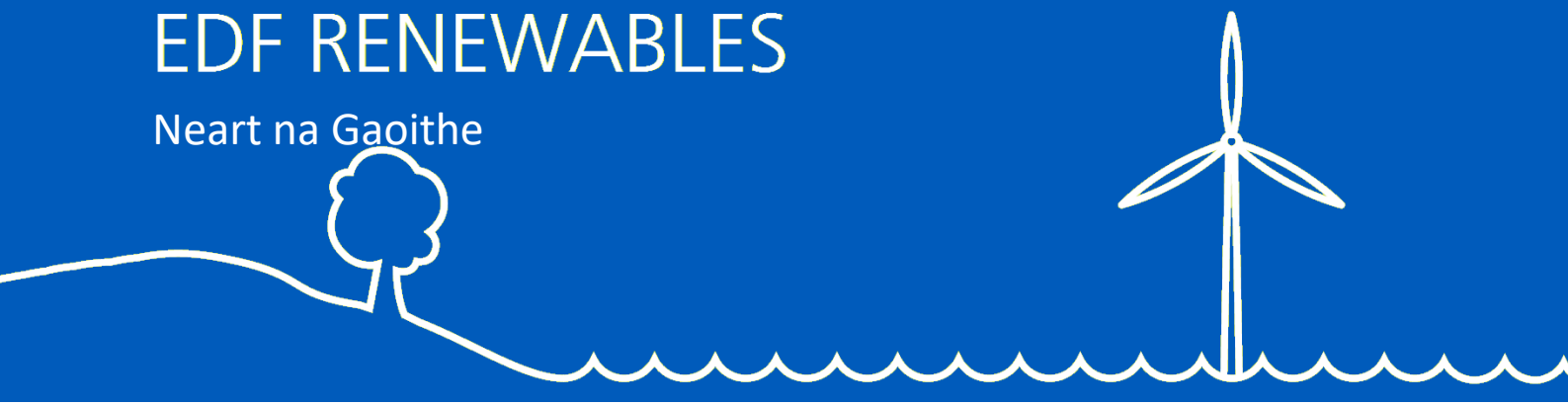
Neart na Gaoithe



Neart na Gaoithe

Target Inspection Survey - European Protected Species Risk Assessment

NnG OFFSHORE WIND

EDF renewables

Document Control

DOCUMENT CONTROL					
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Contents

1 Introduction

1.1 Background

1. Neart na Gaoithe Offshore Wind Limited (NnGOWL) are currently planning to undertake a target inspection survey within the Neart na Gaoithe Offshore Wind Farm Site and Export Cable Corridor to inform the requirement to undertake micro-siting and Unexploded Ordnance (UXO) and debris clearance activities and prior to construction.
2. The survey is planned to start in July 2019 and last 12 to 15 weeks (end of September to middle October 2019)
3. The survey will focus on identified unknown targets on the seabed, the exact location and number of targets is currently unknown but will be determined from the outputs of the geophysical surveys which commenced at the end of May 2019 (offshore) and will continue into June 2019 (nearshore export cable route). All unknown targets identified within the following areas will be inspected:
   - A 300m x 300m box around the centre of planned wind turbine locations,
   - 50m each side of all planned inter-array and interconnector cable routes,
   - A 300m x 300m box around the centre of planned offshore substation locations,
   - The entire 300m-wide export cable corridor.

1.2 Objectives of the Document

4. NnGOWL has defined a survey scope of works and are currently procuring a survey contractor. NnGOWL has determined that the survey will utilise equipment that emits underwater noise and has confirmed with MS-LOT that the survey is subject to European Protected Species (EPS) licensing requirements under the Conservation of Habitats and Species Regulations 2017. This document has been prepared to support an application to MS-LOT for an EPS Licence.
5. Please note that NnGOWL has confirmed with Marine Scotland Licensing Operations Team (MS-LOT) that survey activities are exempt from the requirement to obtain a Marine Licence under the Marine (Scotland) Act 2010.

2 Survey Scope and Methodology

6. A geophysical survey of the Wind Farm site and Export Cable Corridor commenced in May 2019 and a geophysical survey of the nearshore export cable route is due to commence in June 2019. The purpose of the target inspection survey within the Wind Farm site and Export Cable Corridor is to:
   a. Acquire survey data, which will be processed and assessed for the presence of potential dangerous targets, including UXOs; and
   b. To map seabed features and boulders >0.5 m in size.
7. The above target inspection survey works within the Offshore Wind Farm Area and Export Cable Corridor (in water depths of 10 m LAT or more) will be undertaken from a single dynamically positioned survey vessel. At each target position the survey vessel will move to a standoff position away from the target and the inspection undertaken either from a Work Class Remotely Operated Vehicle (WROV) or Subsea Utility Vehicle (SUV). The target inspection shall confirm the item to be a UXO or debris.

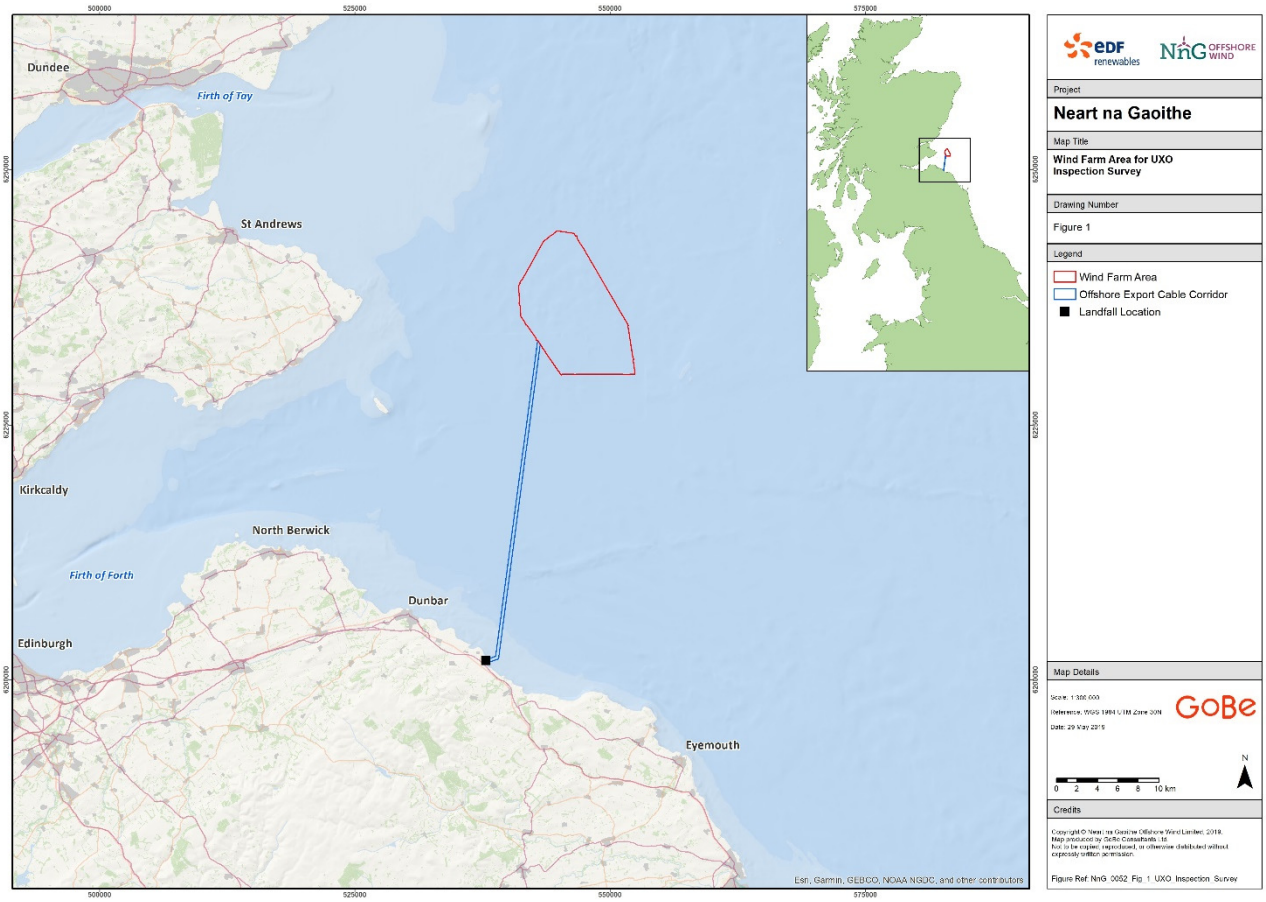
   The WROV or SUV will utilise the following noise-emitting equipment to aid the inspection:
   - High frequency sonar imagery (sonar imaging system),
   - Ultra-Short Baseline (USBL) positioning equipment.
8. The following non-noise emitting equipment will also be used to aid the inspection:

- Electromagnetic pulse induction sensor;
- Magnetometers;
- Lights;
- Cameras; and
- Air lift system.

9. Within the nearshore area (10m LAT or shallower) the WROV or SUV may be replaced by divers with similar handheld equipment.

10. The high frequency sonar imagery will be used to provide detailed information on the target, where it is able to identify targets in low light and poor visibility. The USBL system is commonly used by offshore industries to provide accurate positional data and in this case will be used to accurately determine the position of the WROV, SUV or diver and target under inspection.

Figure 1: Neart na Gaoithe Wind Farm area and Export Cable Corridor.



3 Underwater Noise Sources

11. The contractor undertaking the planned UXO target inspection survey is still to be selected. Consequently, the precise details of the equipment to be used during the survey are not yet available and will depend on the outcome of the contract tendering process currently being undertaken. However, the broader type of equipment that will be required to undertake a successful UXO target survey is known and the assessment is based on a realistic worst-case scenario. Representative examples of the equipment that could be used are presented in Table 1 below.

Table 1: Operating frequency and sound source level of representative UXO target survey equipment.

EQUIPMENT	OPERATING FREQUENCY	SOURCE LEVEL REPORTED BY MANUFACTURER (DB)
High frequency sonar imagery		
ARIS Explorer 3000	1.8 MHz to 3 MHz (1,800 kHz to 3,000 kHz)	200 – 206
Blue View P900	900 kHz	Not available
USBL positioning equipment		
HiPAP 452	21 – 31 kHz	Maximum 207

4 Favourable Conservation Status

12. The favourable Conservation Status (FCS) is defined under Article 1 (i) of the Habitats Directive as follows:
    - Conservation status of a species means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within the territory referred to in Article 2.
13. The conservation status will be taken as 'favourable' when:
    - Population dynamics data on the species concerned indicates that it is maintaining itself on a long-term basis as a viable component of its natural habitats,
    - The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future,
    - There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.
14. Table 2 summarises the conservation status of cetaceans in the area of potential disturbance. The status of a population becomes unfavourable should it decline by more than 1% per year or if there is an overall decrease in the population by more than 25% (European Commission 2005).

Table 2: Favourable Conservation Status and regional Management Unit population of cetaceans relevant to this application.

SPECIES	FCS ASSESSMENT	MANAGEMENT UNIT POPULATION
Harbour porpoise	Favourable	227,298 (95% CI 176,360 - 292,948) **333,808**
Bottlenose dolphin	Unfavourable	195 (95% HDPI 162 – 253)
White-beaked dolphin	Favourable	15,895 (95% CI 9,107 – 27,743) **35,908**
Minke whale	Favourable	23,528 (95% CI=13,989-39,572) **11,819**

Regional Management Unit population is based on IAMMWG (2015). Bottlenose dolphin population is based on the Coastal East Scotland population from Cheney *et al.* (2013).
Favourable Conservation Status assessment from JNCC (2010) and JNCC (2013).
Figures in bold are the latest management unit population estimates (JNCC 2017a).

5 Potential Impacts on European Protected Species

5.1 European Protected Species Present in the Survey Area

15. Site specific marine mammal surveys were undertaken for three years between November 2010 and October 2012. Monthly surveys were undertaken by boat along a series of transects running in a north west to south easterly direction across the offshore site plus an 8 km buffer area and spaced 2 km apart.

16. A total of 10,400 km of transect was surveyed for marine mammals over a period of three years. The total number of EPS recorded during each survey including within the 8 km buffer area are presented in Tables 3 to 5.

Table 3: Number of European protected Species recorded each month during Year 1 surveys (shaded area covers period when survey may be undertaken).

SPECIES	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	TOTAL
Harbour porpoise	15	37	2	1	7	7	0	0	0	8	1	11	89
White-beaked dolphin	0	0	0	0	0	0	0	0	0	0	0	0	0
Minke whale	0	0	0	0	0	0	0	0	0	0	0	2	2
Unidentified dolphin	0	5	0	0	0	0	0	0	0	0	0	0	5

Table 4: Number of European Protected Species recorded each month during Year 2 surveys (shaded area covers period when survey may be undertaken).

SPECIES	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	TOTAL
Harbour porpoise	0	1	0	6	15	15	0	0	4	22	11	9	83
White-beaked dolphin	0	0	1	0	0	0	12	3	0	0	0	0	16
Minke whale	0	0	0	0	0	0	0	3	0	4	1	1	9
Orca	0	0	0	0	0	0	0	0	0	0	0	1	0
Unidentified dolphin	0	0	1	0	0	0	0	0	0	0	0	0	0

Table 5: Number of European protected Species recorded each month during Year 3 surveys (shaded area covers period when survey may be undertaken).

SPECIES	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	TOTAL
Harbour porpoise	7	0	4	51	14	16	2	0	0	4	2	7	107
White-beaked dolphin	6	0	0	0	0	0	1	1	0	0	0	0	8
Minke whale	0	0	0	0	0	0	0	2	0	0	0	0	2
Unidentified dolphin	0	0	0	0	0	0	0	2	0	0	0	0	2

17. The results indicate that during the period when the proposed surveys are likely to be undertaken, between July and October, small numbers of European Protected Species were observed during the three years of baseline data collection.
18. Harbour porpoise were recorded throughout the period with very low numbers during July and relatively higher numbers between August and October; with a maximum of 22 individuals recorded in August during the Year 2 surveys.
19. No white-beaked dolphins were recorded during this period in any of the three years of survey.
20. Peak numbers of minke whale occur during August and September, although the numbers recorded were very low with none seen during this period in two of the three years of survey.
21. Data from the East Coast Marine Mammal Acoustic Study (ECOMMAS) C-POD arrays located along the east coast of Scotland including off St Andrews and St Abb's, the closest locations to the proposed surveys, indicate there is greater potential for harbour porpoise and bottlenose dolphin to occur in nearshore waters. Between 2013 and 2016 harbour porpoise were recorded on a daily basis at the C-PoD arrays located at both St Andrews and St Abb's. Bottlenose dolphins were less frequently recorded with detections typically less than 5% of the days and no more than 8% of the time at St Abb's and 18% at St Andrews (Brookes 2017).
22. Unexploded ordnance and geotechnical surveys were undertaken across the NnG Wind Farm Area between 3 August 2018 and 9 January 2019. During the surveys, marine mammal observations were undertaken prior to the start of USBL equipment. The survey was undertaken over a similar period as this proposed survey and no marine mammals were recorded.
23. All the available evidence indicates that although it may be possible for a European Protected Species to be present during the period of the proposed surveys, numbers of individuals are likely to be low.

6 European Protected Species Assessment

24. Under Regulation 53(9) of the Habitats Regulations licences can only be issued where the proposed activity meets certain criteria. For the purposes of any likely application they are:
    - There is a licensable purpose,
    - There is no satisfactory alternative,
    - The action authorised will not be detrimental to the maintenance of the population of the species concerned at favourable conservation status in their natural range.

6.1 Test 1: Licensable Purpose

25. The Scottish Government can only issue licenses under Regulation 44(2) of the Regulations (as amended) for specific purposes. These purposes include:
    - 44(2)(e) preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment; (Marine Scotland 2012).
26. When considering EPS licences under IROPI, SNH takes into account whether an activity or development is required to meet, or contribute to meeting a specific need, such as:
    - maintaining the health, safety, education or environment (sustainable development, renewable or green energy, green transport) of Scotland's people.
    - complying with national planning policies.
    - supporting economic or social development (nationally important infrastructure development projects, employment, regeneration, mineral extraction, housing etc.).
27. The Project meets the criteria for the development to be considered as one of IROPI.

28. The development of the Project demonstrates a direct environmental benefit on a national and international scale and complies with international and national environmental policies. Furthermore, the life-span of the Project is predicted to be up to a 50 year period and therefore a long-term development that will contribute to ensuring the security of energy supply, with long-term environmental benefits. It is not a development for short-term economic interests.

29. The Project will have a direct national and international environmental benefit by significantly reducing carbon emissions to the atmosphere compared to other sources of non-renewable energy generation. By replacing non-renewable energy generation, e.g. coal generation, the development of the Project will reduce annual CO_2 emissions. Over the operational period of the wind turbines, the Project will displace CO_2 from other energy sources by up to 12.61 million tonnes coal equivalent.

30. Recognising the importance of reducing carbon emissions, the EU, UK and Scottish Government have all committed to reduce emissions and increase the use of renewable energy:

    - In 2009 the EU introduced Directive 2009/28/EC on the *Promotion of the use of energy from renewable sources*, which set renewable energy targets for each member state. The Directive imposed on the UK a mandatory national target of deriving 15% of gross final energy consumption from renewable sources by 2020.
    - The Climate Change (Scotland) Act 2009, which sets additional targets for emissions reductions in Scotland than the Climate Change Act: 80% reduction by 2050, with an additional interim target of 42% by 2020.
    - The Climate Change Act 2008, which commits the UK to a net reduction in greenhouse gas emissions of 80% by 2050 and 34% by 2020.

31. The development complies with national policies and plans including:

    - The National Renewable Energy Action Plan for the UK produced under Article 4 of the Renewable Energy Directive.
    - The UK National Policy Statements (NPSs) on Energy, produced under Part 2 of the Planning Act 2008, which decision makers must have regard to when deciding an application for nationally significant infrastructure projects consented under that Act. As energy policy is a reserved matter for UK ministers, the Energy NPSs may be a relevant consideration in energy infrastructure decisions in Scotland. Of the 12 NPSs, EN-1 (overarching energy) sets out the policy for the delivery of major energy infrastructure and reflects the UK Low Carbon Transition Plan, and EN-3 (Renewable Energy) supports the development of renewable energy and offshore wind farms in particular.
    - The National Planning Framework 2 (NPF2), produced under the Planning etc. (Scotland) Act 2006, sets out a strategy for Scotland's development up to 2030. One of the main elements of the strategy is to "*realise the potential of Scotland's renewable energy resources and facilitate the generation of power and heat from all clean, low carbon sources"* (Scottish Government 2009).
    - The 2020 Routemap for Renewable Energy in Scotland, which sets further targets of renewable sources to meet the equivalent of 100% of Scotland's gross annual electricity demand by 2020.
    - Scotland's Low Carbon Economic Strategy (LCES) aims to secure economic growth and includes an approach to guiding Scotland into a low carbon economy. The strategy focuses on Scotland's targets for reducing GHG emissions, and recognises that, *"By 2030 almost all of our electricity will have to come from low carbon technologies such as renewables and fossil fuelled plants fitted with carbon capture and storage technology"* (Scottish Government 2010).
    - A sector specific marine plan, 'Blue Seas - Green Energy: A Sectoral Marine Plan for Offshore Wind in Scottish Territorial Waters' ('the Plan') (Marine Scotland 2011) was published in March 2011 (including a SEA, HRA and an Economic Impact Assessment), and confirmed that six sites for offshore wind developments were suitable for development. Within the Plan the Neart na Gaoithe site was shortlisted as one of these sites.

32. The development of the Project identifies a direct environmental benefit and complies with both international and national policies and plans and is therefore a project of Imperative Overriding Public Interest.

33. The proposed geophysical survey is directly linked with the development of the project and therefore meets the requirements of the Regulations.

6.2 Test 2: No satisfactory alternative

34. Knowing how much, where and what type of UXO is present in the area is safety critical. If UXO is found to be present, then how best to manage it can then be determined. The only effective way of ensuring that no UXO is present that could endanger life is to look for it using the equipment proposed.

6.3 Test 3: That the action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range

35. Regulation 44(3)(b) states that a licence cannot be issued unless the Scottish Government is satisfied that the action proposed "will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range".

36. This section considers whether the proposed activities that could require licensing will be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range. The information provided is based on the assessments presented in Chapter 8: Marine Mammals of the Neart na Gaoithe Environmental Impact Assessment (EIA) Report (March 2018).

6.3.1 Risk Assessment

37. The range at which marine mammals may be able to detect sound arising from offshore activities depends on the hearing ability of the species and the frequency of the sound. Marine mammals may be able to detect sound across a broad range of frequencies but are less sensitive at frequencies at the lower or higher end of their functional hearing range. Porpoises have a functional hearing range of between 250 Hz and 180 kHz with their most sensitive hearing at high frequencies between approximately 100 kHz and 140 kHz (Kastelein *et al.* 2002, Southall *et al*. 2007). Dolphins have a broad hearing range of between 150 Hz and 160 kHz but are most sensitive to sounds between 10 kHz and 50 kHz (Richardson *et al*. 1995). Minke whale hearing has not been studied directly. Indirect evidence suggests they are most sensitive to low to medium frequencies of between 20 Hz and 2 kHz (Erbe 2002).

38. The frequencies at which equipment planned to be used for the UXO detection survey will be operated at and the hearing frequency range of marine mammals are presented in Figure 2.

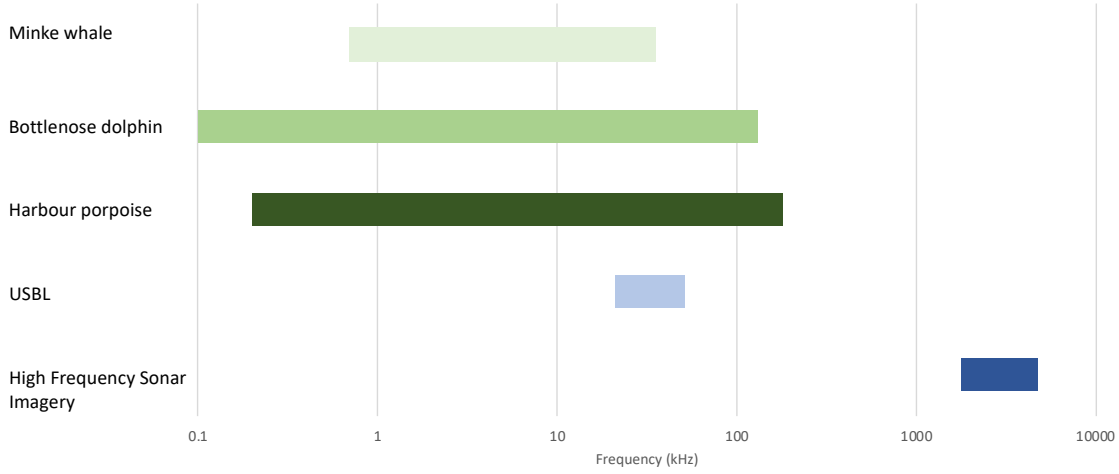


Figure 2: Marine mammal hearing frequencies and sound produced by UXO inspection equipment.

6.3.2 Ultra-short Baseline (USBL)

39. The USBL system consists of a transceiver, which is mounted at the end of a transducer pole either to the side of, or beneath the survey vessel, and a transponder attached to the vehicle or the diver. The USBL calculates the position of the equipment by measuring the range and bearing from the vessel mounted transceiver to the transponder. The transceiver emits a signal (a ping) at predetermined periods which is returned by the transponder and allows for the bearing and distance to be calculated.

40. Reported sound levels produced by USBL range from between 188 and 207 dB (peak).

41. There is limited published information on the potential impact USBL may have on marine mammals. Assessments based on NMFS (National Marine Fisheries Service) disturbance criteria indicate that there is no risk of physical injury (Level A Harassment) to any marine mammals and that disturbance (level B Harassment) will only occur to within 6 m of the USBL equipment (NOAA 2018)

42. Monitoring reports for the installation of a cable between Caithness and Moray, during which USBL was operated, reported bottlenose dolphins between 100 m and 1,200 m from the sound source and minke whale between 80 m and 2,000 m. Indicating that marine mammals were not significantly displaced beyond that which might be expected from the presence a vessel, during the time USBL was in operation. The report does not record the behaviour of the marine mammals observed during the period USBL equipment was operating and therefore it is not known whether there was disturbance that could have caused changes in behaviour. However, there were no sightings of any marine mammals within the range at which physical injury was predicted to occur (Natural Power 2018).

43. USBL equipment is widely used by offshore industries and scientific research vessels, where positional accuracy is critical and where underwater survey equipment is towed against strong/varying currents. For example, it is known that this type of equipment has been used at Hywind, Hornsea One Project, Blyth Offshore Wind Farm, Teesside Offshore Wind Farm and Rampion Offshore Wind Farm, though it can be presumed also across the majority of offshore wind farm sites during surveys where accurate positioning is required.

44. It is therefore concluded that there is no risk of physical injury to any marine mammals from the use of USBL equipment. There may be potential disturbance within a few metres of the USBL although any impacts will be temporary and will not be detrimental to the maintenance of the population at a favourable conservation status within their natural range for any European Protected Species.

6.3.3 High Frequency Sonar Imagery

45. The High Frequency Sonar will be operated at frequencies of between 1,800 kHz and 3,000 kHz. These frequencies are higher than the range at which all marine mammals will be able to detect sound and therefore there will be no impact on marine mammals from the use of High Frequency Sonar Imagery.

6.4 Mitigation

46. Marine Scotland guidance on EPS states that 'Mitigation measures should be put in place whenever there is concern that an activity is likely to cause an offence and should be proportionate to the risk of injury or disturbance' (Marine Scotland 2014). There is no risk of injury to any EPS from noise arising from USBL which operates at a level below which noise could cause the onset of PTS. There is no risk of injury to any EPS from noise arising from Very High Frequency Imagery which operates at frequencies that cannot be detected by marine mammals.

47. Mitigation measures to reduce the risk of disturbance include ensuring that the USBL is operated at the lowest potential sound levels and over the shortest period of time. The survey will also be undertaken within as localised area as possible. This will reduce the potential extent and duration of any possible disturbance.

48. The use of a Marine Mammal Observer (MMO) or Passive Acoustic Monitoring (PAM) is not considered to be necessary as there is no risk, of injury occurring due to the very low number of cetaceans recorded in the area.

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