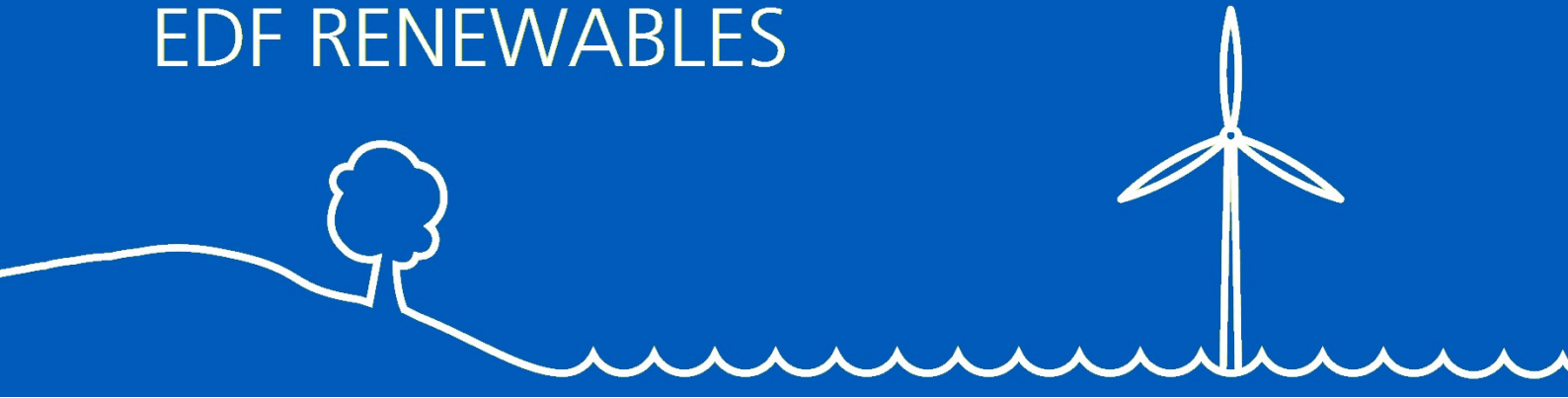


EDF RENEWABLES



Neart na Gaoithe Offshore Wind Farm

Offshore Geotechnical Survey – European Protected Species Risk Assessment

DOCUMENT REFERENCE: NNG-PEL-ECF-LIC-0001

DOCUMENT CONTROL

| | | | | | |
|-----------------|--------------|--|----------|---------|----------|
| Document Number | | NNG-PEL-ECF-LIC-0001 | | | |
| Document Title | | Offshore Geotechnical Survey EPS Risk Assessment | | | |
| Rev. | Date | Description | Prepared | Checked | Approved |
| 0.1 | 27 June 2019 | First Draft for EDF Review | Pelagica | PT | |
| 0.2 | 30 June 2019 | Second Draft for EDF Review | Pelagica | PT | EW |
| | | | | | |
| | | | | | |

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1 Introduction

1.1 Background

1. Neart na Gaoithe Offshore Wind Limited (NnGOWL) is currently planning to undertake a geotechnical survey of the Neart na Gaoithe (NnG) wind farm area to inform final detailed design of the Project. The surveys are planned to start in July 2019 and last around two months, with a latest expected end date in November 2019, dependent on weather.

1.2 Objectives of this Document

2. 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.
3. 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.

2 Survey Scope and Methodology

4. The survey be undertaken within the NnG wind farm area by a single dedicated survey vessel.
5. The planned survey will provide an improved understanding of seabed conditions by determining the near surface geotechnical engineering properties of soils and assessing the subsurface stratigraphy
6. As is commonly used by offshore industries the survey vessel will use the noise emitting Ultra-Short Baseline (USBL) positioning equipment to provide accurate positional data for the vessel and equipment.

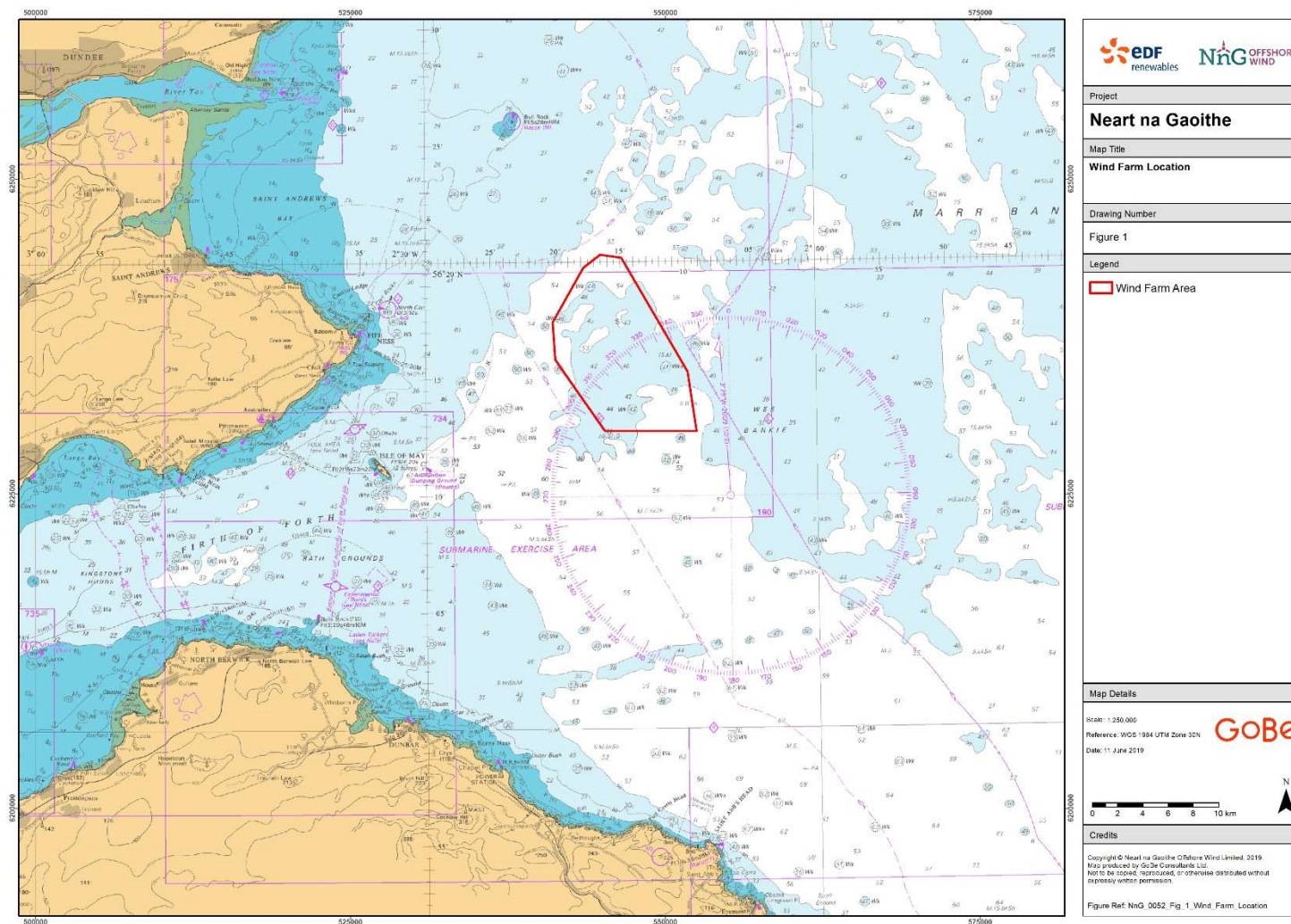


Figure 1: Neart na Gaoithe offshore geotechnical survey area.

3 Underwater Noise Sources

7. The equipment to be used for the survey is still to be selected. However, the broad types of equipment that will be required to undertake a successful geotechnical survey are known and the assessment is based on a realistic worst-case scenario. Representative examples of the USBL equipment are presented in Table 1 below. Several USBL devices are listed to be used as the exact device is yet to be confirmed.

Table 1: Operating frequency and sound source level of USBL equipment.

| GEOTECHNICAL EQUIPMENT | OPERATING FREQUENCY | SOURCE LEVEL REPORTED BY MANUFACTURER (DB) |
|--|---------------------|--|
| Subsea Positioning USBL (note only one of these devices will be used) | | |
| Sonardyne Ranger USBL | 35 – 50 kHz | 200 (peak), 188 (rms) |
| Sonardyne Ranger 2 USBL HPT 3000 | 19 – 34 kHz | 194 (peak), 188 (rms) |
| Sonardyne Scout | 30 – 35 kHz | 193 (peak) |
| Easytrak Nexus 2 USBL | 18 – 32 kHz | 198 (peak), 192 (rms) |
| Kongsberg HiPAP | 21 – 30.5 kHz | 207 (peak), 188 – 190 (rms) * |
| Ix Blue GAPS | 19 – 30 kHz | 191 (rms) |

* note the HiPAP USBL has the capability to operate to up to 207 dB. However, if the HiPAP USBL is used in the proposed survey it would only operate to a maximum sound source level of 190 dB with operating frequency of 21-31 kHz.

4 Favourable Conservation Status

8. 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.
9. 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.
10. 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 2017).

5 Potential Impacts on European Protected Species

5.1 European Protected Species Present in the Survey Area

11. Site specific marine mammal surveys were undertaken for three years between November 2009 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.
12. A total of 10,400 km of transect was surveyed for marine mammals over a period of three years. The total number of European Protected Species recorded during each survey including within the 8 km buffer area are presented in Tables 3 to 5. Figure 2 presents the total number of each cetacean species recorded each month from the three years of surveys.

Table 3: Number of European protected Species recorded each month during Year 1 surveys (Shaded area covers period when geotechnical surveys 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 geotechnical surveys 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 geotechnical surveys 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 |

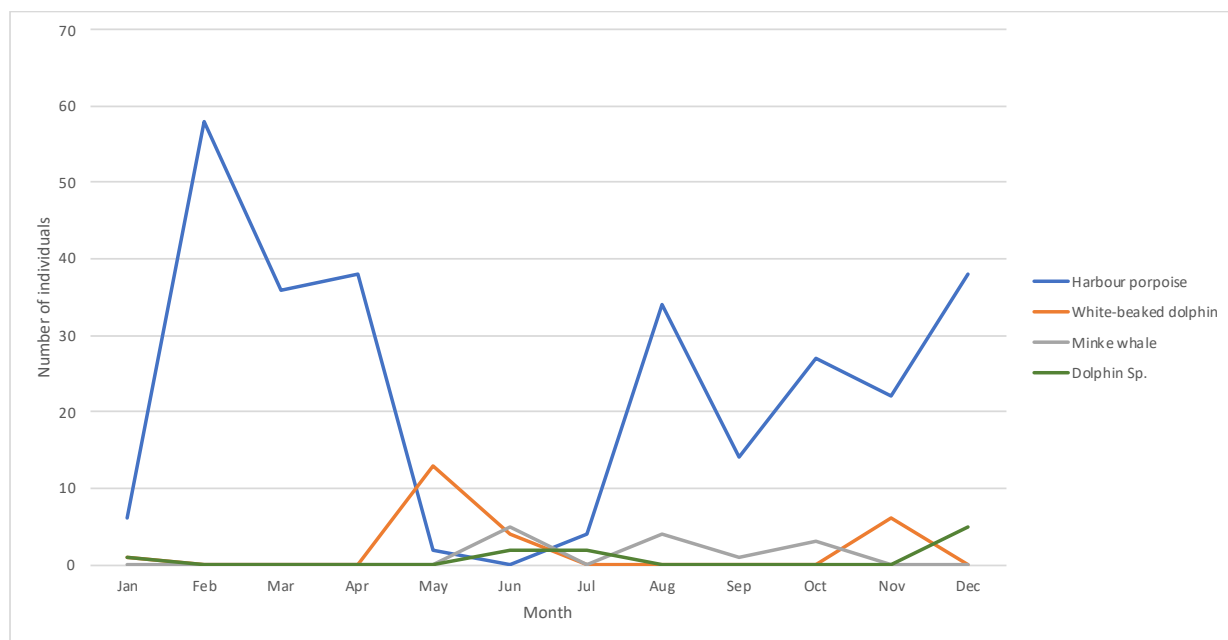


Figure 2: Combined total number of cetaceans recorded each month during three years of surveys.

13. The results show that during the period when the proposed survey will likely be undertaken between July and November, relatively small numbers of European Protected Species were observed during the three years of baseline data collection.
14. Harbour porpoise were recorded throughout the period with peak numbers occurring between December and April. During the proposed survey period peak counts occurred during August with up to 22 individuals recorded during any survey. No white-beaked dolphins were recorded during this period and no more than four minke whales were recorded during the survey period. The only Orca recorded during the three years of surveys was in September.
15. 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).

6 EPS Assessment

16. 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; and
 - 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

17. 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).
18. 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; and
 - supporting economic or social development (nationally important infrastructure development projects, employment, regeneration, mineral extraction, housing etc.).
19. The Project meets the criteria for the development to be considered as one of IROPI.
20. 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.
21. 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 CO₂ emissions. Over the operational period of the wind turbines, the Project will displace CO₂ from other energy sources by up to 12.61 million tonnes coal equivalent.

22. 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.
23. 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 (Scottish Government 2011).
 - 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*" (The 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.
24. 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.
25. The proposed geotechnical 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

26. Geotechnical surveys are required in order to characterise layers of sediment or rock below the seabed. They are essential when undertaking any offshore development work and projects cannot be constructed without geotechnical survey work being undertaken. In this instance, further geotechnical information is required to supplement data obtained from previous surveys. There are no alternative options to the use of the equipment proposed for this survey.

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

27. 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" (SNH and JNCC 2014).

28. 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

29. 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.* 2019). 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 19 kHz (Erbe 2002, Tubelli *et al.* 2012).
30. The frequencies at which equipment planned to be used will be operated at and the hearing frequency range of marine mammals are presented in Figure 3.

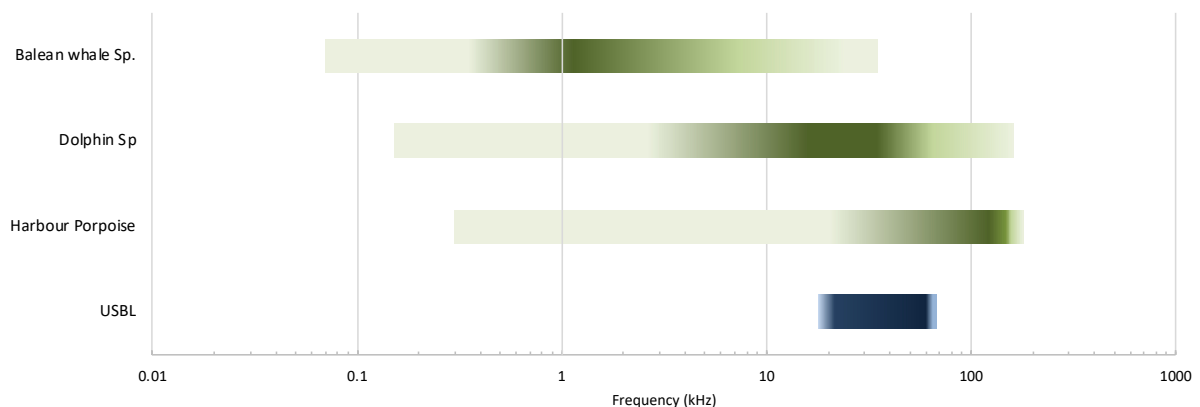


Figure 3: Marine mammal hearing frequencies and sound produced by USBL equipment.

6.3.2 Ultra-short Baseline (USBL)

31. 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" (SNH and JNCC 2014).
32. 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 on the towed equipment. 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. 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.
33. Reported sound levels produced by USBL range from between 188 and 192 dB (rms) and 191 and 207 (peak) (Table 1). These sound levels are relatively low compared with other sources. For all but one USBL system the maximum sound levels produced are below those at which the onset of PTS is predicted to occur for all EPS species. The exception is the HiPAP USBL that can be operated at sound source levels of 207 dB_(0-peak) (Table 1). However, the sound source for this equipment can be reduced, depending on the type of survey being undertaken. It is not known which USBL system will be used during the seabed preparation activities. However, in the event that the HiPAP USBL is used it will not be operated at levels capable of causing the onset of PTS, i.e. it will only be used at levels below 202 dB re 1 μ Pa (Southall *et al.* 2019). Consequently, there will be no risk of any hearing injury to EPS from the operation of USBL.

34. 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).
35. 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).
36. On the basis that the sound source levels will be at levels below which the onset of PTS is predicted to occur It is 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.

6.4 Mitigation

37. 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 will be operated at a level below which noise could cause the onset of PTS.
38. 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. If practical, the USBL equipment will be started at a lower level and ramped up over a period of time until operating at levels suitable for its purpose. This will allow any marine mammals within the potential range at which disturbance could occur to swim away.

6.5 Cumulative Effects

39. Within the Firth of Forth and Tay region there are a number of consented wind farms (Inch Cape and Seagreen) that could theoretically cause a cumulative impact. In addition, there are planned surveys being undertaken within the NnG Wind Farm Area and along the export cable corridor during this period (Figure 4). These surveys include the use of equipment that could cause a cumulative impact on European protected Species. These include the use of USBL, sub-bottom profilers and a mini-airgun. There is also potential for the clearance of Unexploded Ordnance (UXO) to commence in October. However, this activity will be subject to a separate assessment where the cumulative impacts will be considered; it is therefore not considered further in this assessment. The equipment to be used for each survey are presented in Table 6.
40. For the majority of the surveys the only equipment used that could potentially cause disturbance is USBL. However, for the geophysical surveys there is potential for other items of surveying equipment to be used at the same time as the proposed use of USBL during the offshore geotechnical surveys.

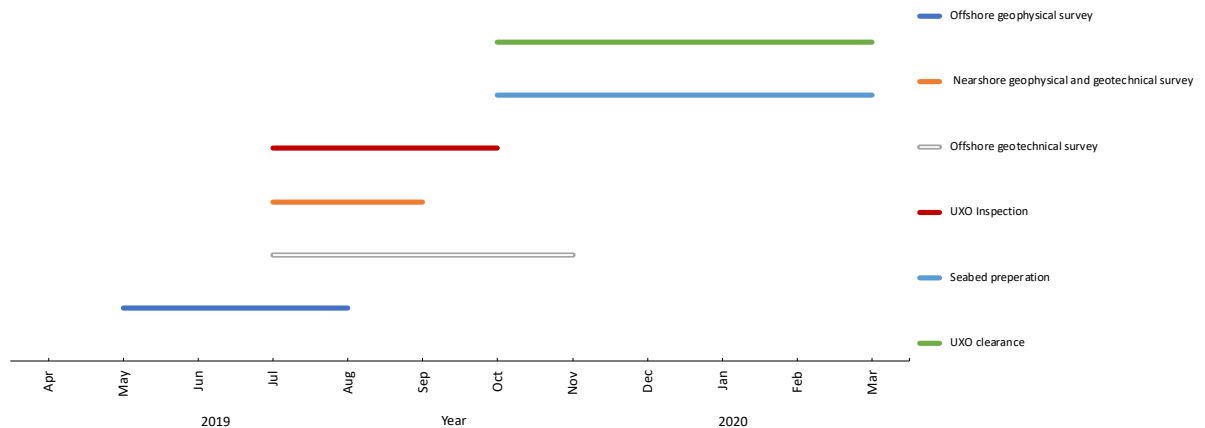


Figure 4: Planned NnGOWL activities between April 2019 and March 2020.

Table 6: Planned activities to be undertaken by NnGOWL between April 2019 and March 2020

| SURVEY NAME | COVERAGE/LOCATION | TIMING AND DURATION | EQUIPMENT/ACTIVITIES |
|--|--|---|---|
| Offshore geotechnical | Wind Farm area and Export Cable Corridor | July – November (2 month duration) | One survey vessel with: <ul style="list-style-type: none"> USBL |
| Offshore geophysical | Wind Farm Area and Export Cable Route to 1.5 km from landfall | May – September (4 month duration) | Two survey vessels each with: <ul style="list-style-type: none"> USBL SBP SSS MBES |
| Nearshore geophysical and geotechnical | Nearshore portion of export cable corridor to 1.5 km from landfall | July – September (3 month duration) | One survey vessel with: <ul style="list-style-type: none"> USBL SBP SSS MBES Mini Airgun Jack-up barge/vessel with: <ul style="list-style-type: none"> Boreholes CPT Vibrocores |
| UXO Inspection | Wind Farm Area and Export Cable Corridor | July – mid-October (12 – 15 weeks duration) | One vessel with: <ul style="list-style-type: none"> High Frequency Sonar Imagery USBL |
| Seabed preparation | Wind Farm Area and Export Cable Corridor | October – March (6 month duration) | Up to three vessels with: <ul style="list-style-type: none"> USBL |
| UXO Clearance | Wind Farm Area and Export Cable Corridor | October – March (6 month duration) | One survey vessel with: <ul style="list-style-type: none"> High Frequency Sonar Imagery USBL UXO detonation ADD |

USBL = Ultra Short Base Line, SBP = Sub-bottom Profiler, SSS = Sidescan Sonar, MBES = Multibeam Echosounder, CPT = Core Penetration Test, ADD = Acoustic Deterrent Device

41. Based on applications for Marine Licences published by Marine Scotland, there is the potential for a cumulative impact with a planned geophysical survey at Inch Cape offshore wind farm which will be undertaken between May and September 2019 (Marine Scotland 2019, ICOL 2019).
42. The proposed geophysical survey at Inch Cape includes the use of a sub-bottom profiler (a sparker), Ultra High Resolution sparker, Ultra High Resolution 2 x 20 cu. in. airguns, single-beam echosounder, USBL and beacons (Marine Scotland 2019, ICOL pers. com.). There is no further publicly available information for this geophysical survey and therefore the specifications for the equipment being used are not available nor are the sound source levels or the assessment of potential impacts from the survey. However, the use of the geophysical equipment at the same time as the planned use of USBL for seabed preparation could cause a cumulative disturbance impact.

43. Sub-bottom profilers, including sparkers, can cause noise capable of causing disturbance out to 1 to 2 km (e.g. BEIS 2018, Shell 2017). Similarly, the use of mini airguns will also cause a relatively localised area of disturbance. Echo-sounders typically operate at frequencies above which European Protected Species are able to detect and therefore do not cause any disturbance and the USBL is predicted to have the same localised impact as that proposed for the geotechnical survey. Consequently, it is predicted that any disturbance impacts arising from the planned within the NnG Wind Farm Area, including the export cable corridor and at Inch Cape geophysical survey will all be localised.
44. The use of USBL equipment is predicted to cause a very localised area of possible disturbance, in the order of some tens of metres. However, the multiple use of sub-bottom profilers could cause a wider area of potential disturbance. If the three sub-bottom profilers to be used by NnG and the one at Inch Cape are operated simultaneously and the area of disturbance extends 2 km, there is potential for a cumulative disturbance impact over an area of 50 km². In the event that this arises the proportion of the regional population impacted for each species is less than 0.1% for all species except for bottlenose dolphin, where an estimated 1.8% of the regional population could be disturbed (Table 7).

Table 7: Estimated number of European Protected Species impacted by cumulative impacts.

| SPECIES | DENSITY (IND./KM ²) | NO. OF INDIVIDUALS IMPACTED | PROPORTION OF POPULATION (%) |
|----------------------|---------------------------------|-----------------------------|------------------------------|
| Harbour porpoise | 0.599 | 30 | 0.009 |
| Bottlenose dolphin | 0.07 | 3.5 | 1.8 |
| White-beaked dolphin | 0.24 | 12 | 0.03 |
| Minke whale | 0.039 | <1 | 0.008 |

Densities of harbour porpoise, White-beaked dolphin and minke whale from SCANS III Block R (Hammond *et al.* 2017)
Bottlenose dolphin density from NnGOWL 2018.

45. The impacts from disturbance will be temporary and although it may cause an individual to relocate, the transitory nature of the surveys means that the affected individuals will be able to return to an area within a relatively short period of time.
46. Inch Cape offshore wind farm is located approximately 8 km from the NnG Wind Farm area and European Protected Species disturbed by either project will be able to locate away from the activities in waters beyond which disturbance is predicted to occur; there will be no overlapping areas of disturbance between the Inch Cape surveys and those being undertaken by NnGOWL.
47. It is recognised that there is potential for a cumulative impact that could cause disturbance. However, it is predicted that the relatively localised areas of disturbance and the short period of time that cumulative impacts could arise are such that they will not cause an impact that will affect the conservation status of any European Protected Species present.

7 Conclusions and Actions

48. Equipment to be used during the proposed geotechnical survey is widely used by the offshore industry.
49. Sound produced by the USBL will be audible to cetaceans. However, the likelihood of cetaceans occurring within the survey area is relatively low and the level of sound produced by the USBL equipment will be below that which is capable of causing the onset of PTS. Any disturbance impacts will be temporary with behaviour returning to normal once the vessel moves away from the area.
50. There is potential for a cumulative impact but the impacts will be relatively localised and temporary.
51. There will be no impact on the favourable conservation status of any European Protected Species.
52. This information supports the application for an EPS licence as requested by Marine Scotland.

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