



Neart na Gaoithe

Marine Licence Application for the Installation of a Pontoon Environmental Report

December 2020

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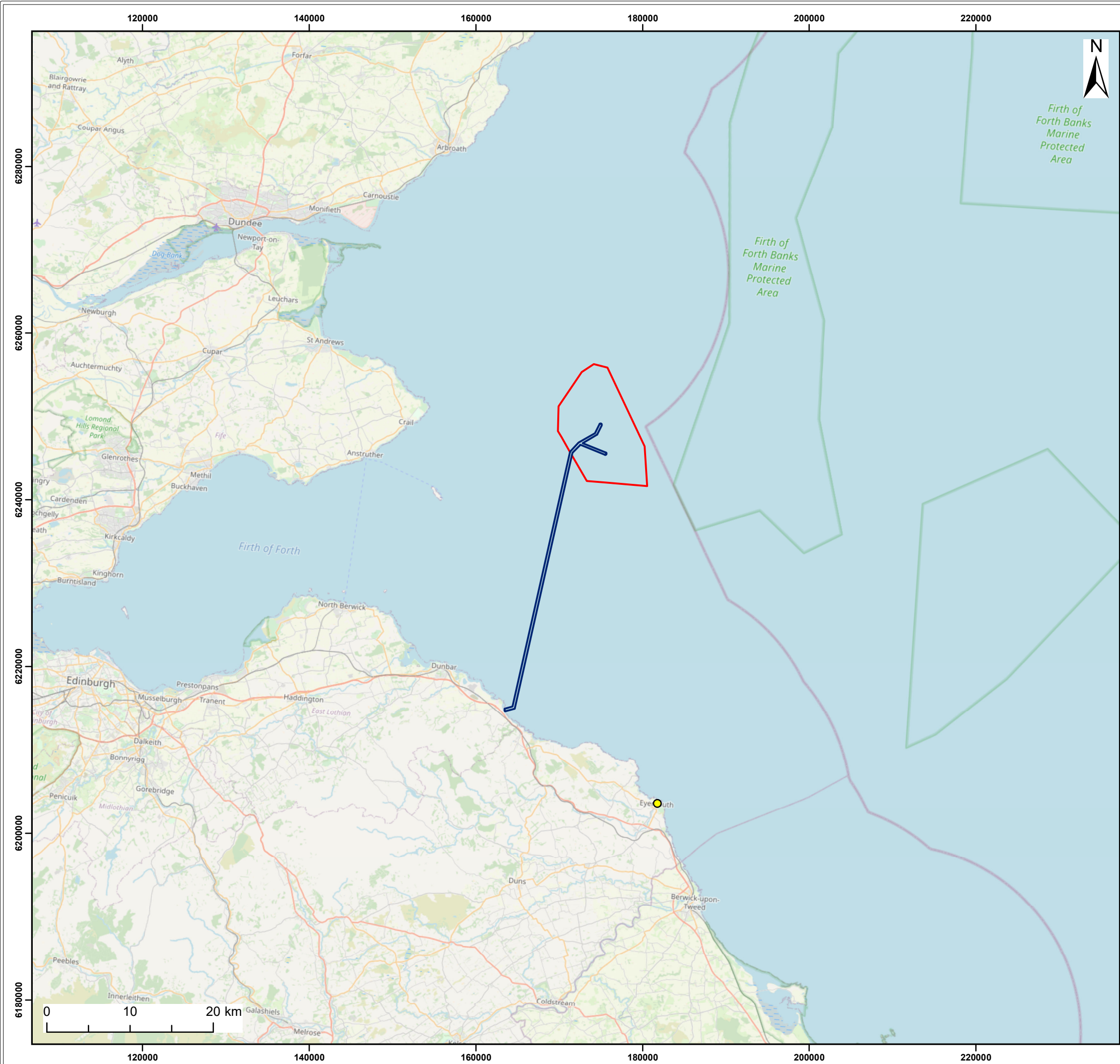
1 Introduction

1.1 Project Background

1. The Neart na Gaoithe (NnG) Offshore Wind Farm (Revised Design) received consent under Section 36 of the Electricity Act 1989 from the Scottish Ministers on 3 December 2018 and was granted two Marine Licences by the Scottish Ministers, for the Wind Farm and the associated Offshore Transmission Works (OfTW), on 3 December 2018. The S36 consent and Wind Farm Marine Licence were revised by issue of a variation to the S36 Consent and Marine Licence 06677/19/0 on 4 June 2019, and the OfTW Marine Licence by the issue of Marine Licence 06678/19/1 on the 5 June 2019 and subsequently by MS-00008954 on the 12 October 2020. The Project is being developed by Neart na Gaoithe Offshore Wind Limited (NnGOWL).
2. The Wind Farm Area is located to the northeast of the Firth of Forth, 15.5 kilometres (km) directly east of Fife Ness on the east coast of Scotland (see Figure 1). The Wind Farm Area covers approximately 105 km². Offshore Export Cables will be located within the 300 metre (m) wide Offshore Export Cable Corridor, running in an approximately southwest direction from the Wind Farm Area, making landfall at Thorntonloch beach to the south of Torness Power Station in East Lothian. Construction began in Quarter 3 of 2020 and is planned to be completed by Quarter 4 of 2022.
3. NnG Offshore Wind Farm comprises of the following main components:
 - 54 wind turbines with a maximum generating output of around 450 Megawatts (MW).
 - 54 jacket substructures installed on pre-piled foundations to support the wind turbines.
 - Two alternating current (AC) substation platforms, referred to as Offshore Substation Platforms (OSPs), to collect and transform the generated electricity from 66 kilovolts (kV) to 220 kV for transmission to shore.
 - Two jacket substructures installed on piled foundations, to support the OSPs.
 - A network of inter-array subsea cables, buried and/or mechanically protected, to connect strings of turbines together and to connect the turbines to the OSPs.
 - One interconnector cable connecting the OSPs to each other.
 - Two buried and/or mechanically protected subsea export cables to transmit the electricity from the OSPs to the onshore buried export cables at landfall at Thorntonloch. This will facilitate connection to the National Grid network.
 - Minor ancillary works such as the deployment of metocean buoys and permanent navigational marks.

1.2 Purpose of the Environmental Report

4. NnGOWL is seeking to apply for a Marine Licence from Marine Scotland Licensing Operations Team (MS-LOT) for the installation of a pontoon at their Operations & Maintenance (O&M) Base at Eyemouth Harbour. A Marine Licence is required for any marine construction works under the Marine (Scotland) Act 2010.
5. This Environmental Report is submitted in support of the Marine Licence application to provide an overview of the baseline environment and any potential impacts from the pontoon installation and operation. Consent for the onshore aspects of the O&M base at Eyemouth Harbour was granted on 14 September 2020 from the Scottish Borders Council under The Town and Country Planning (Scotland) Act 1997.
6. NnGOWL has secured exclusive use of the Gunsgreen Basin with existing pontoons for leisure craft and fishing vessels to be removed by Eyemouth Harbour Trust (EHT) prior to site handover.
7. A description of the pontoon is provided in Section 2, a description of the baseline environment is provided in Section 3 and an assessment of potential impacts is presented in Section 4.



- Legend:
- Neart na Gaoithe Offshore Wind Farm Area
 - Neart na Gaoithe Export Cable Route
 - Eyemouth Harbour

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Client:	Project:
Neart na Gaoithe Offshore Wind Limited	Marine Licence Application for the Installation of a Pontoon

Title:
Neart na Gaoithe Offshore Wind Farm

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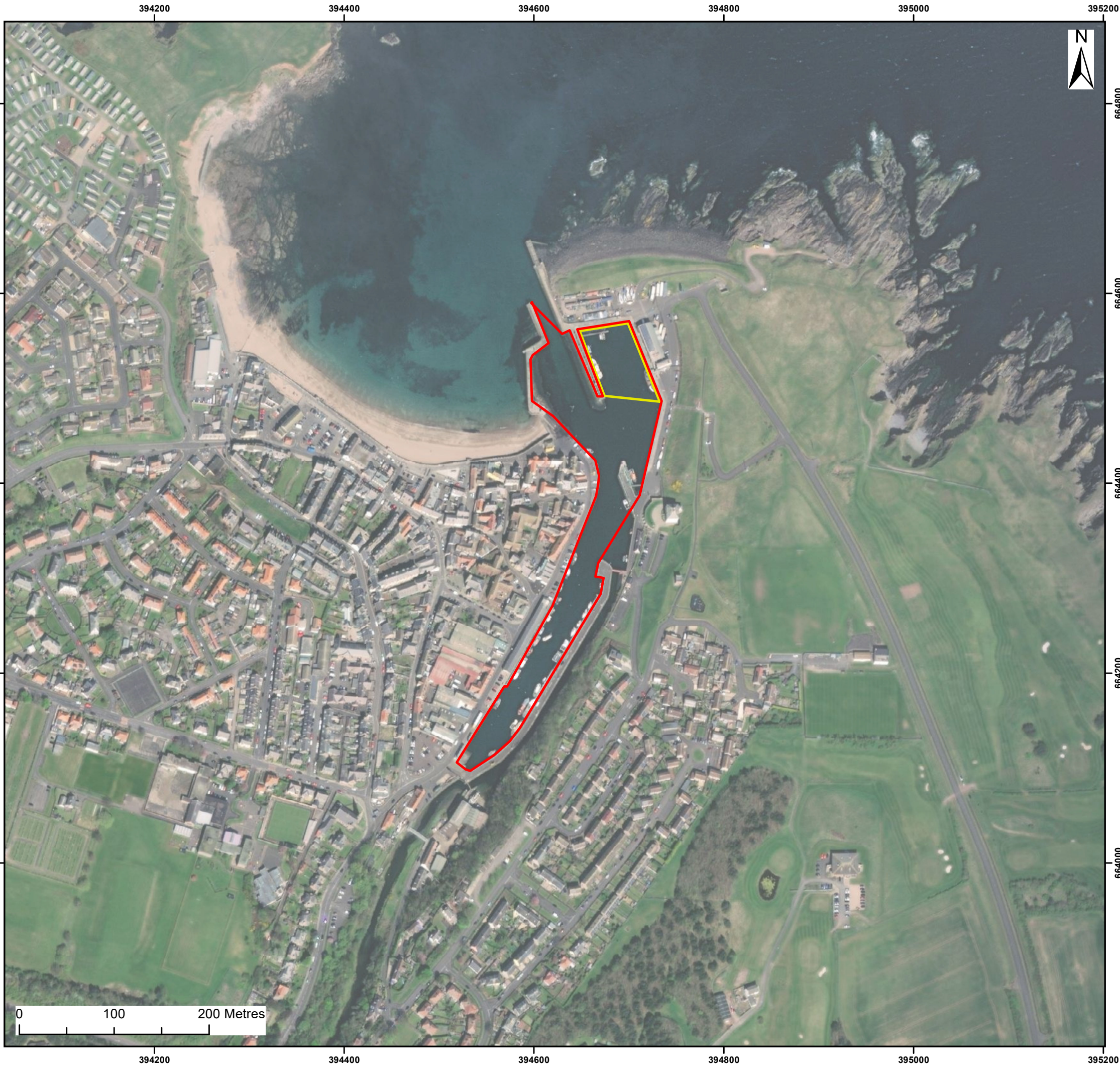
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2 Project Description

8. Once operational, NnG Offshore Wind Farm will require O&M support throughout its lifetime, approximately 25 years. Eyemouth Harbour has been selected as the O&M base due to its proximity to the Wind Farm Area and the suitability of the facilities present (see Figure 2 for an aerial view of Eyemouth Harbour and Gunsgreen Basin). The permanent O&M team based at Eyemouth Harbour will operate and monitor the windfarm, plan maintenance activities and coordinate marine access to the Wind Farm Area.
9. A concept design for the pontoons has been prepared as shown in Figure 3. This is based on attaching two lengths of pontoons to the quayside wall to the east and seawall to the west of Gunsgreen Basin and seeks to avoid any piling. The eastern pontoon will be a maximum of 60 m long and the western pontoon will be a maximum of 35 m long. Both pontoons will be 4 m wide. All works will be confined within the lease boundary area as shown in Figure 3 and are subject to a pre-construction engineering survey which will provide the necessary details to microsite the wall fixings.
10. Design criteria for the pontoon has been developed to cover the design, supply and installation of pontoons, linkspan, bankseat and associated restraints (mooring/fixing mechanisms) to accommodate a minimum of three vessels within Gunsgreen Basin. Design specifications are as follows:
 - vessel lengths of up to 3 m x 27 m;
 - a clear width of at least 1.5 m - 2.0 m without trip hazards on the pontoon deck, with a maximum width of 4.0 m;
 - to ensure that berths for vessels provide safe and suitable access facilities to enable vessel loading, personnel embarkation/disembarkation, minor vessel maintenance and fuelling;
 - minimising the crane reach from Smeaton Quay whilst ensuring that the rise and fall of the pontoon is not impeded;
 - the capability to berth vessels and leave them unattended when not in use;
 - to provide the capability to temporarily provide access for a fourth vessel (i.e. where rafting-up will occur); and
 - ensuring the access for personnel is possible at all states of the tide.
11. Access to the pontoons will be in the form of a linkspan bridge, or brow, of sufficient length to ensure a maximum gradient of 1:4 at Lowest Astronomical Tide (LAT). There will be sufficient clearance from the linkspan/brow over the pontoon deck to prevent damage at maximum water level, including flooding, sea level rise, storm surge, waves and pontoon freeboard of 1 m. During a 1:200-year flood level of +7.25 m above chart datum, the pontoon deck would sit at 8.25 m above chart datum and the linkspan base would be at 8.505 m above chart datum.
12. The pontoons will be fixed to the side of the existing quayside through the use of galvanised steel H-beams attached to the quayside wall and seawall concrete piles using three to four fixing plates that are 350 x 500 mm in size. The H-beams will sit approximately 150 mm off the quayside and will not reach the seabed. The H-beams will be installed during low tide, with no underwater construction activity taking place. The H-Beams will be lowered by crane into Gunsgreen Basin; for those H-Beams attached to the seawall, they will be towed across the Basin before being secured in place.
13. The pontoons will be delivered by truck/Heavy Goods Vehicle (HGV) to the harbour where they will then be lifted by crane from Smeaton Quay and lowered into Gunsgreen Basin. Once placed in the water, they will be towed by tug vessel or lowered by crane into place and fixed into position by attaching them to the H-Beams. It is anticipated that installation will take place over a four-week period between June and August 2021.
14. During operation, maintenance on the pontoons will be carried out on a regular basis. On a weekly basis, the pontoon will be visually inspected to ensure that they are cleaned of any flotsam or debris, the mooring cleats are not damaged, and the deck is inspected for any looseness or damage (tightening if necessary). On a monthly basis, visual inspection of all connector bolts and rubber pads will be carried out. Any loose nuts, etc. will be tightened. If the rubber pads are deformed, they will be replaced. A full visual inspection of the whole installation will be carried out on a yearly basis. Every five years, full maintenance inspection will be undertaken by a suitably

qualified person or company. At no point will the pontoon have to be removed from the water or placement of any equipment would be required on the seabed. Pontoon removal would only be necessary if the pontoon is severely damaged through unforeseen circumstances.

15. The pontoons will be used all year round with some vessel movements being undertaken in the hours of darkness. It is estimated that for each of the three crew transfer vessels (CTVs) there will be one vessel movement per day, with increased activity in the summer months when offshore conditions are more favourable for performing proactive maintenance tasks. As outlined above, there would be the possibility to temporarily provide access for a fourth vessel. As a worst-case scenario, it is assumed that this fourth CTV will also undertake one vessel movement per day.
16. The pontoons will remain in operation for the lifetime of the NnG Offshore Wind Farm, which is expected to be until 2071. Once the NnG Offshore Wind Farm is due for decommissioning, supporting infrastructure, such as the pontoon at Eyemouth Harbour, will also need to be decommissioned. There are currently two options for decommissioning; return the site to its original condition or pass pontoon responsibilities over to EHT. Should the pontoons be required to remain, the appropriate consents would be sought.



Legend:

- Eyemouth Harbour
- Gunsgreen Basin

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Client:	Project:
Neart na Gaoithe Offshore Wind Limited	Marine Licence Application for the Installation of a Pontoon

Title:
Eyemouth Harbour

Figure:	2	Drawing No:	PB9537-001-005
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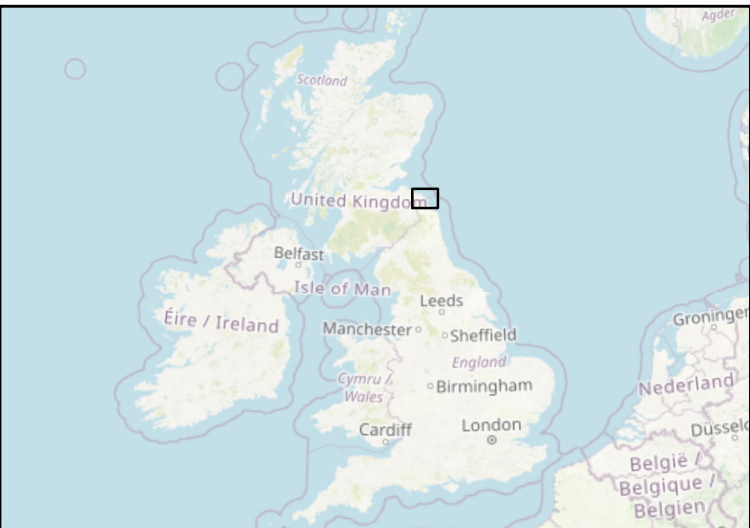
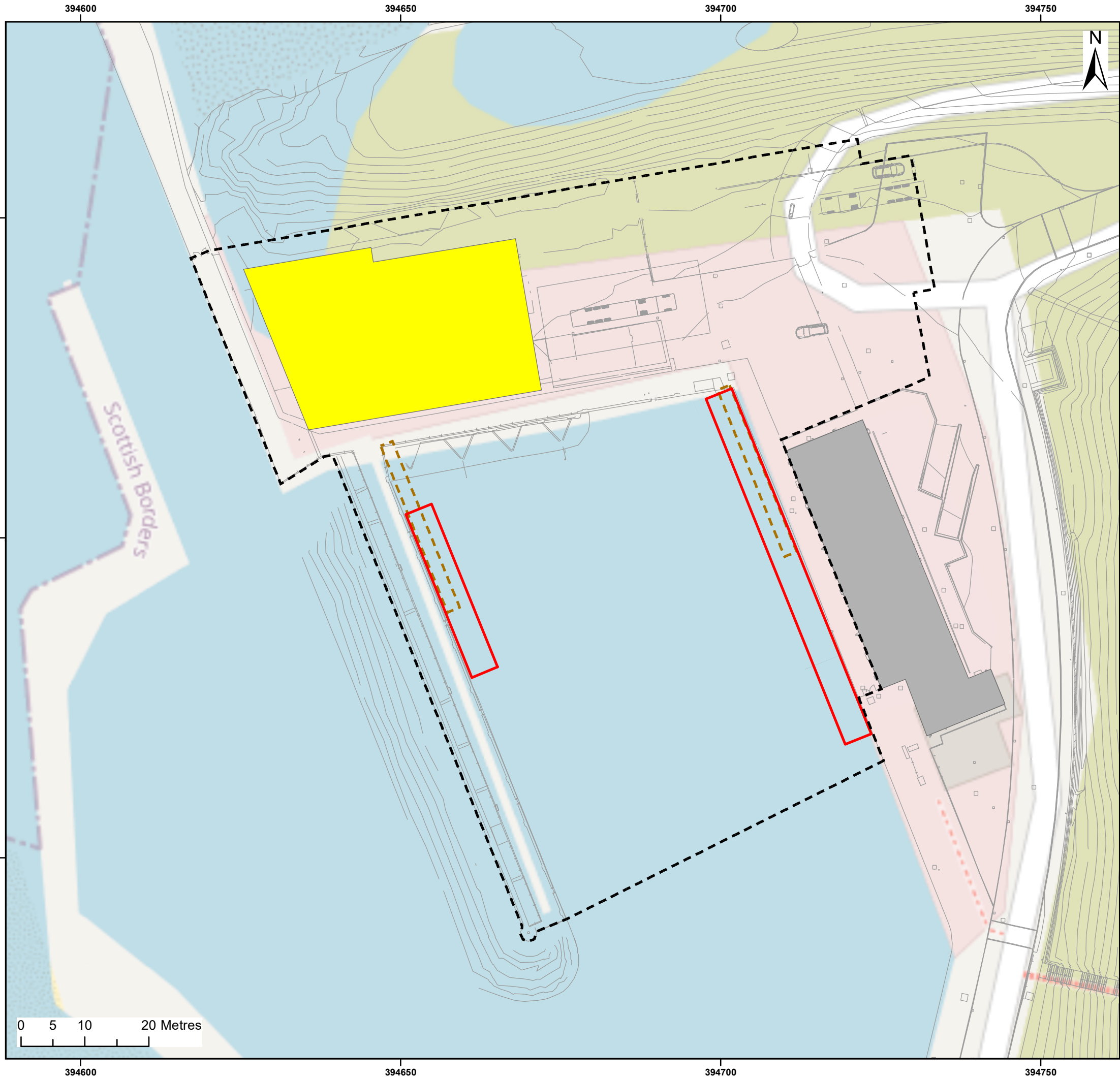
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- Legend:
- Proposed Lease Boundary
 - Proposed Pontoon Layout
 - Proposed Walkway
 - EHT Building
 - Proposed NnG O&M Building

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Client:	Project:
Neart na Gaoithe Offshore Wind Limited	Marine Licence Application – Pontoon at Eyemouth Harbour

Title:

Proposed Pontoon Layouts at Eyemouth Harbour

Figure:	3	Drawing No:	PB9537-001-006			
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3 Scotland's Marine National Plan

17. Scotland's National Marine Plan covers both Scottish inshore waters (out to 12 nautical miles (nm)) and offshore waters (12 to 200 nm). It also applies to the exercise of both reserved and devolved functions. Marine planning matters in Scotland's inshore waters are governed by the Marine (Scotland) Act 2010, and offshore waters by the Marine and Coastal Access Act 2009 (referred to as the Marine Acts).
18. The National Marine Plan sets out strategic policies for the sustainable development of Scotland's marine resources. Regional Marine Plans will be implemented at a local level within Scottish Marine Regions, to take into account local circumstances and smaller ecosystem units.
19. The following policies are relevant to this marine licence application:
 - GEN 1 General planning principle: There is a presumption in favour of sustainable development and use of the marine environment when consistent with the policies and objectives of this Plan.
 - GEN 2 Economic benefit: Sustainable development and use which provides economic benefit to Scottish communities is encouraged when consistent with the objectives and policies of this Plan.
 - GEN 4 Co-existence: Proposals which enable coexistence with other development sectors and activities within the Scottish marine area are encouraged in planning and decision making processes, when consistent with policies and objectives of this Plan.
 - GEN 7 Landscape/seascape: Marine planners and decision makers should ensure that development and use of the marine environment take seascape, landscape and visual impacts into account.
 - GEN 13 Noise: Development and use in the marine environment should avoid significant adverse effects of man-made noise and vibration, especially on species sensitive to such effects.
20. GEN 1 is relevant to all marine activities, but it is especially relevant to key growth sectors, including renewable energy activities. This principle seeks to ensure that the development and use of the marine area is consistent with the National Marine Plan, ensuring activities are undertaken in a sustainable manner that protects and enhances Scotland's natural and historic marine environment. The installation is part of NnGOWL O&M Base; therefore, the installation of the pontoon can be viewed as part of facilitating the NnG Offshore Wind Farm and wider sustainability goals.
21. GEN 2 looks at whether the Project or Development provides economic benefits at a community and national level, including economic growth, skills development and employment. Having the O&M base at Eyemouth Harbour will help benefit the local community through the improvement of Harbour facilities. In addition, NnGOWL is committed to having a local workforce as much as possible.
22. GEN 4 seeks to ensure that the proposed development takes into account other sectors and activities and seeks to encourage development proposals which bring together activities which are compatible or synergistic, to make good use of space. The exclusive use of the Gunsgreen Basin by NnGOWL means that current users of the Basin will be displaced. NnGOWL are working together with EHT to ensure that there is effective management to address the displacement of other vessels and that no vessel will be turned away from being able to use the Harbour. In addition, certain facilities, such as fuel dispensers, will be relocated to a more practical location and upgraded which will benefit all Harbour users. The proposed development will also provide EHT with a long-term income that will support the development of other areas of the harbour which will, in turn, benefit other harbour users.
23. GEN 7 considers the importance of landscape and seascape elements to people's enjoyment of the coastal and marine environment. The style, materials and layout of the proposed pontoons are in keeping with the current commercial use of the Gunsgreen Basin and wider Harbour.
24. GEN 13 states that the any man-made noise and vibration does not adversely affect those species sensitive to underwater noise. The proposed pontoon design and installation process is such that no underwater noise or vibration will be generated.

4 Assessment of Potential Impacts

4.1 Overview

25. Eyemouth Harbour is located on the Berwickshire Coast in the south east of Scotland. It is a natural, tidal harbour with a narrow, sheltered entrance called the Canyon. It has two main areas, the inner basin, also called the Old Harbour, and the Gunsgreen basin (EHT, 2020a).
26. The following sections provide an overview of the key receptors that have the potential to be affected by the O&M pontoon construction and operation activities. Data sources that have informed the baseline are as follows:
 - Environmental desk study and field walkover survey carried out for the O&M building planning permission application (Young Planning, 2020)
 - Eyemouth Harbourmaster personal communications (pers. comm.)
 - Sediment survey campaign for disposal of dredged material
 - Marine Licence application for the disposal of dredged material (ABPmer, 2019)
 - Other, publicly available information.
27. An assessment of the impacts from the installation and operation of the pontoon was carried out on the following receptors: marine habitats, birds (installation impacts only), otter, navigation, archaeology, and other marine users. The following receptors were 'scoped out' as no pathway of effect was determined: water quality, birds (operational impacts), and marine mammals. Any protected sites designated for these receptors have, therefore, also been scoped out. The following paragraphs provide further justification for scoping these receptors out.
28. Impacts upon water quality have been scoped out as there is no pathway of effect from the installation, operation and decommissioning of the pontoon. During the installation of the pontoon there will be no contact between the seabed and the pontoon infrastructure and installation equipment and, therefore, the possibility of disturbing potentially contaminated sediment releasing contaminants into the water column. Accidental pollution events during installation will be managed by the contractors following standard industry practices and protocols.
29. There is the potential for the movement of vessels from the O&M base to the offshore wind farm for maintenance purposes to cause disturbance to the breeding birds of St Abb's Head to Fast Castle Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI) and Berwickshire Coast (Intertidal) SSSI (for bird features). This potential effect was assessed during the Environmental Impact Assessment of the NnG Offshore Wind Farm. The NnG Environmental Impact Assessment (EIA) Report (2018) concluded that there is no significant effect during "construction, operation and decommissioning phases" of the wind farm from disturbance caused by vessels, including transiting vessels used for maintenance purposes during the operation of the wind farm. Therefore, this pathway of effect is scoped out of this assessment as it has already been assessed elsewhere.
30. Marine mammals have not been considered further as there is no discernable pathway of effect from the construction and operation of the pontoon to the receptor. Marine mammals are primarily impacted through the generation of underwater noise. As there is no generation of underwater noise, this receptor has been scoped out and, by default, any adjacent Special Areas of Conservation (SACs) and SSSIs for which marine mammals are a qualifying feature are also scoped out. This applies to Berwickshire and North Northumberland Coast SAC and Berwickshire Coast (Intertidal) SSSI (for grey seal).
31. For all receptors assessed, if the pontoon is decommissioned, impacts from the removal process will be the same as those for installation.

4.2 Physical Processes

32. The harbour entrance, the Canyon, is a narrow entrance 17 m wide and has depths varying from 2 m below chart datum to 7.5 m below chart datum with a tidal range of 5-6 m. Gunsgreen Basin depths range from a maximum

depth 7.5 m to a minimum depth of 2 m below chart datum. The inner basin, the Old Harbour, is shallower, with a minimum depth of 0.9 m below chart datum and a maximum depth of 6.5 m below chart datum (EHT, 2012).

33. The shape and location of Gunsreen Basin means that it is protected from significant wave disturbance and tidal flows will be weak. The Basin is, therefore, predominantly a depositional environment for sediments that enter the harbour, and tidal flushing will be limited (ABPmer, 2019). The bathymetry indicates the majority of sedimentation occurs in the north west corner of the Basin where current depths are approximately 0.6 m below chart datum (Aspect, 2018).
34. Currently within the Gunsreen Basin, the only physical substrates are the sea wall, which the pontoon will be alongside, and a parallel strip of intertidal boulders/rocks (Figure 4). The rest of the harbour is standing water, the levels of which fluctuate with the tides.



Figure 4: The harbour entrance, the Canyon, can be seen on the left side of the photograph, with Gunsreen Basin located on the right side of the photograph.

4.3 Marine Habitats

4.3.1 Baseline

35. Intertidal boulders acting as a sea wall are present along the western wall and part of the northern wall of Gunsreen basin, with the concrete walls also along the northern wall and eastside of the Basin. The rest of the harbour is a combination of boulder revetment and concrete walls (Figure 5 (a)).
36. The concrete quayside walls in Gunsreen Basin appear to be covered mainly in green filamentous algae (Figure 5 (b)). The concrete walls found throughout the rest of the harbour are also covered with green filamentous algae in the upper intertidal to splash zone, whilst the middle to lower intertidal zone are covered with fucoids, in particular the bladder wrack *Fucus vesiculosus* (Figure 5 (c-d)).
37. The intertidal boulders acting as a sea wall and rock revetments are also mainly covered in fucoids, particularly bladderwrack, with filamentous green algae found in the upper intertidal and splash zone (Figure 5 (e-f)).



(a) Gunsgreen Basin.



(b) Eastern concrete wall of Gunsgreen Basin showing lack of fauna or flora.



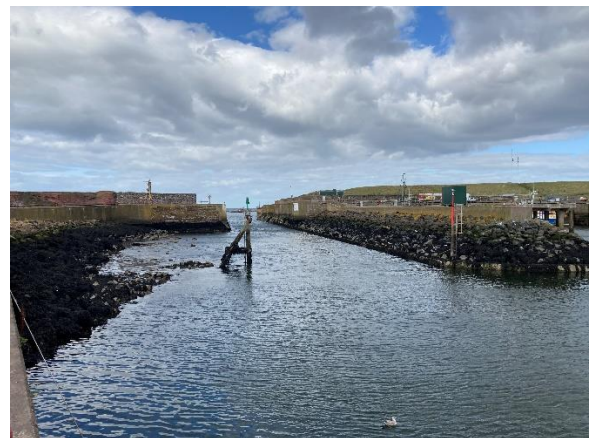
(c) Rocky revetment looking into Gunsgreen Basin.



(d) An example concrete wall within the Harbour.



(e) Intertidal boulders as a sea wall on the westside of Gunsgreen Basin.



(f) The Canyon – approach into the Harbour.

Figure 5: Photos around the Harbour showing the intertidal fauna and flora present. Photos taken on 09/09/2020 at low tide.

4.3.2 Potential Impacts

38. The installation and operation of the pontoon has the potential to adversely affect the intertidal marine habitats of Gunsreen Basin as the pontoon will be affixed to the quayside and seawalls of the Basin. As nothing will be placed on the seabed, subtidal habitats have not been assessed.
39. The concrete walls of Gunsreen Basin support limited species and are mostly covered by green filamentous algae. Therefore, there is no impact on the marine habitats of the eastern and northern concrete walls from the installation and presence of the pontoon.
40. The rock revetments of the northern and western walls of Gunsreen Basin are mainly covered with a fucoids. The installation of the pontoon will directly impact these habitats from to the installation of metal brackets to the seawall which will hold the pontoon. However, the footprint of the H-Beams is very small and full recovery of fucoids takes between one to three years (Holt *et al*, 1997). Therefore, there is no impact from the impact of the installation and operation of the pontoons on intertidal habitat.

4.4 Birds

4.4.1 Baseline

41. Records from The Wildlife Information Centre for Lothians and Borders (TWIC) were obtained within a 2 km buffer from the O&M site boundary (Young Planning, 2020). A total of 183 records of breeding, migratory and over-wintering bird species were returned following the desk study, and of these 16 species are listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), and 12 are listed within Annex 1 (five of which are also Schedule 1). Bird species recorded include merlin *Falco columbarius*, corncrake *Crex crex*, kingfisher *Alcedo atthis*, bittern *Botaurus stellaris*, and shag *Phalacrocorax aristotelis*.
42. It should be noted that all breeding bird species are protected under the Wildlife and Countryside Act 1981 (as amended).
43. During the field walkover survey (50 m buffer from the proposed O&M building), the following species were identified: pied wagtail *Motacilla alba*, woodpigeon *Columba palumbus*, blackbird *Turdus merula*, herring gull *Larus argentatus*, common eider *Somateria mollissima* and shag.

4.4.2 Potential Impacts

44. The delivery and installation of the pontoon has the potential to disturb any nesting birds, if present, during the breeding months between March and August, inclusive. The field walkover survey (Young Planning, 2020) found limited suitable habitat for nesting birds present within the survey area, which extended approximately 50 m from the O&M building site boundary. A pre-construction survey to assess for nesting birds present at the time of construction would be carried out, with appropriate mitigation applied based on current good practice guidance. The pre-construction survey would be carried out at the same time as that for the O&M building construction. Due to the lack of suitable nesting habitat and undertaking a pre-construction survey for the presence of nesting birds, no impact is predicted from the installation of the pontoon breeding birds.

4.5 Otter

4.5.1 Baseline

45. Records obtained from TWIC shows a single record of otter observed [Redacted] of the survey area, recorded in 2014 (Young Planning, 2020).
46. During the field walkover survey, no evidence of otter or suitable habitat for holt construction was identified within the survey area (50 m buffer from the proposed O&M building site); however, the harbour could be used for foraging and commuting.

4.5.2 Potential Impacts

47. The desk study carried out by Young Planning (2020) identified a record of otter [Redacted] (recorded in 2014). The connectivity of the harbour to the wider habitat provides suitable foraging and commuting habitat for otter, although the human activity associated with a functioning harbour may dissuade otter from regularly using the area. The field walkover survey found no suitable areas for holt construction within the survey site. Therefore, there is no impact from the construction and operation of the pontoon to otters.

4.6 Navigation

4.6.1 Baseline

48. Data on the number of vessel movements and use of the Harbour was provided by the Harbourmaster (pers. comm, September 2020). Data provided was for July 2019, which constituted a busy period for the Harbour. Therefore, this is considered to be a worst-case scenario of vessel movement in the Harbour. Peak busy periods are during the summer months, with significant reductions recorded during the winter months.
49. The vessel movement for July 2019 is shown in Table 1.

Table 1: Eyemouth Harbour Vessel Movements for July 2019 (Harbourmaster, pers. comm., September 2020)

Vessel type	Daily*	Weekly*	Monthly*
	In and out vessel movements included		
Fishing	58	406	1,624
Commercial Charter Vessels	24	168	672
Local Leisure Craft	12	84	336
Visiting Yachts	6	42	168
Lifeboat Movements	-	4	16
Other	-	4	16
Total	101	708	2,832

*All totals approximate

50. The Harbour is not on any ferry routes (Harbourmaster, pers. comm., September 2020).

4.6.2 Potential Impacts

51. During the installation of the pontoon, access to Gunsgreen Basin will be limited. However, as this is for a relatively short period of time, no impacts on other vessel movements are anticipated. In addition, EHT and NnGOWL have had continuous and ongoing consultation with other Harbour users in order to ensure that the disruption is minimal and have put in place alternative berthing arrangements for potentially displaced vessels.
52. Data on vessel movement for July 2019 was provided by the Harbourmaster; this month is representative of a busy period for the Harbour. In total, 2,832 vessel movements were recorded for the month. For the O&M of the wind farm, it is anticipated that there will be one vessel movement a day for each of the four CTVs, resulting in a total of 120 CTV movements in a month, potentially increasing during the summer months. The increase of 120

vessel movements in a month is minor in comparison to the overall total of vessel movements during the Harbour's busiest period.

53. Consultation with the Maritime and Coastguard Agency (MCA) and the Northern Lighthouse Board (NLB) recommend the following mitigation is implemented:
 - any proposed changes to Aids to Navigation will require the Statutory sanction of the NLB;
 - NnGOWL, with EHT, will issue marine safety information as considered appropriate, through the use of Notice to Mariners, clearly stating the nature and duration of pontoon installation works;
 - NnGOWL, with EHT, should advise the United Kingdom Hydrographic Office (UKHO) of the revised layout and water depths in order that chart updated are completed; and
 - NnGOWL, in collaboration with EHT, will follow the Port Marine Safety Code (MCA, 2016) and its Guide to Good Practice (MCA, 2018) to incorporate the pontoon within the Marine Safety Management Systems for Eyemouth Harbour; and
 - NNGOWL, in collaboration with EHT, will produce a Navigational Risk Assessment (NRA) which will identify any risks associated with the operation of the CTVs within and exiting the harbour. This will ensure that all the appropriate lightings, markings, buoys, and navigational systems are in place.
54. Based on the assessment above and the implementation of mitigation proposed by the MCA and NLB, it is anticipated that there is no impact from the installation and operation of the pontoon on navigation within the Harbour.

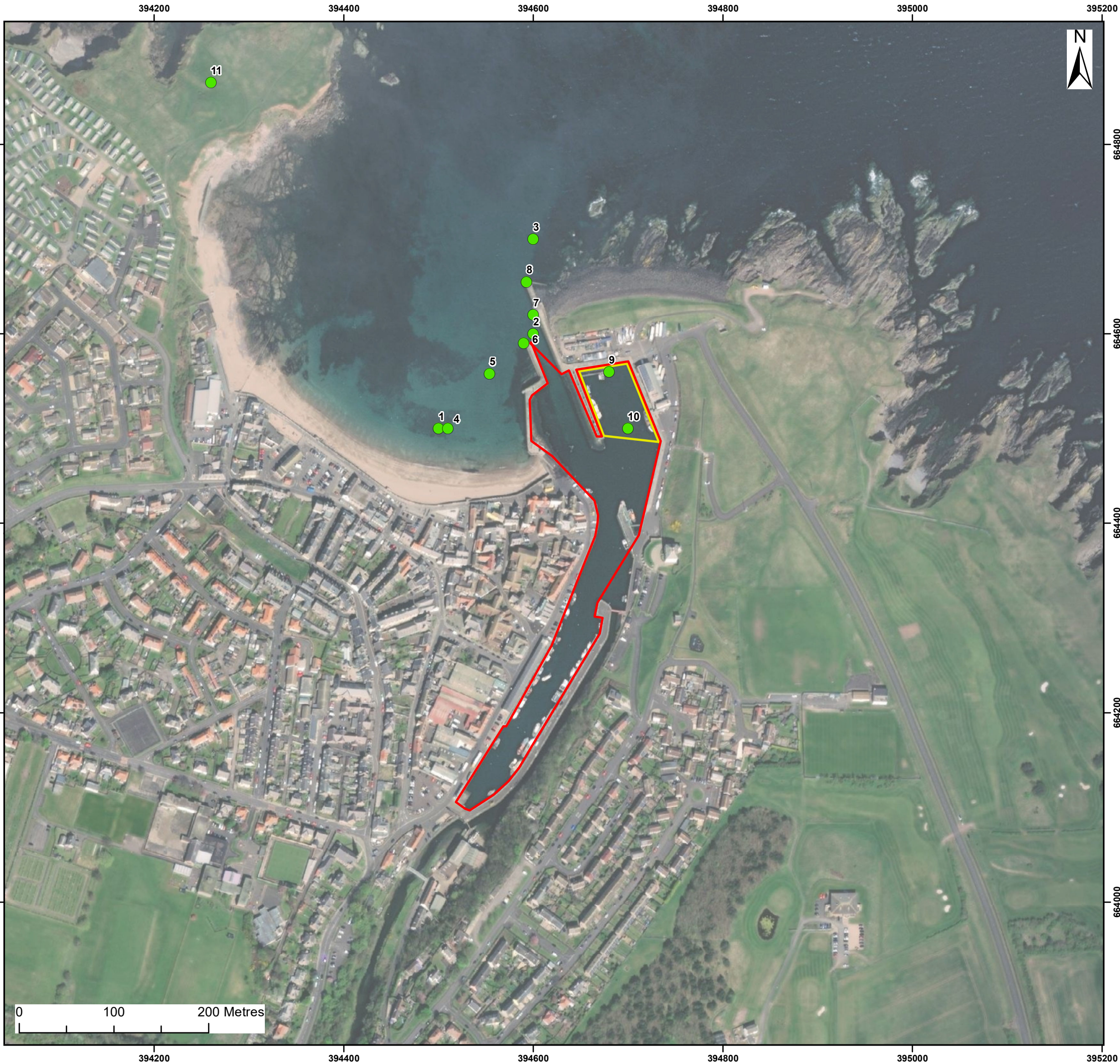
4.7 Archaeology

4.7.1 Baseline

55. The CANMORE (The National Record of the Historic Environment), Marine Scotland (Scottish Marine Environment) and Historic Environment Scotland, including their map viewers, have been used as the primary data sources initial Report. Other historic sources such as historic OS mapping, historic aerial photography and grey literature has been used in conjunction with these.
56. The underlying (bedrock) geology of the study site consist of Hawick Group – Wacke, a sedimentary bedrock formed approximately 427 to 444 million years ago in the Silurian Period (BGS Online, 2020). This is overlain by superficial deposits of Alluvium - Silt, Sand and Gravel. These formed up to 2 million years ago in the Quaternary Period. Much of this will likely have been removed through excavation during the creation of Gunsreen Basin which was completed in 1999 (EHT, 2020b).
57. Eyemouth was first recorded in the 12th century; however, a settlement is likely to have existed at Eyemouth prior to this. Throughout its history, Eyemouth Harbour has been an important factor in the social and economic development of Eyemouth, with a Harbour Master as early as 1214 (EHT, 2020b). The first artificial improvements were made to the Harbour in 1747 when a pier was constructed, designed to add additional shelter and stop sand building up in the mouth of the Harbour. With its completion, the Harbour saw a great increase in trade. A new pier known as Smeaton Pier was completed in 1773 (EHT, 2020b). The purpose of this was to serve as a breakwater. As a result of the Eyemouth European windstorm disaster in 1881, improvements were made to the Harbour including the deepening of the Harbour and Harbour mouth, the extension of the Harbour and improvements made to the Harbour walls. In 1963/1964, a new breakwater and deep harbour had been constructed which involved the use of a coffer dam (EHT, 2020b). By 1990s, due to the increased use of the Harbour, and the advent of larger fishing boats, congestion became problem, restricting the harbour entrance. As a result, work was started in 1997 for the creation of a new deep-water basin incorporating Smeaton Pier. This was completed in 1999 and involved the excavation of a large area of land, becoming known as Gunsreen Basin (EHT, 2020b).
58. In terms of known archaeological assets, there are no Historic Marine Protected Areas (HMPAs) or known wrecks sites located within the site, with the nearest HMPA located near Burntisland, approximately 73 km north west of the site. A number of reported losses are located within the wider area, including three located within

Eyemouth Bay (Figure 6). These are three 19th century luggers (sailing vessel): the Gem (CANMORE ID: 199916); the Graces (CANMORE ID: 199359) and the Welfare (CANMORE ID: 198926). Reported losses are records of loss for which the wrecks themselves are yet to be located and are, therefore an indicator of the potential for wreck remains to be present, and do not, except by chance, represent extant wreck remains.

59. A findspot of cow and sheep bones (CANMORE ID: 354620) was also recorded near to the potential site of the Gem.
60. In addition to the potential wrecks, there are a number of locations within the vicinity of the site which are associated with former harbour infrastructure (Figure 6). These have subsequently been removed due to the creation of the current basin in 1999. These include: the former harbour lights (CANMORE ID: 278719), two former piers (CANMORE ID: 128386 & CANMORE ID: 128387), a former beacon (CANMORE ID: 278720), the former lifeboat station (CANMORE ID: 120193) and a former rectangular tower said to have been erected by Oliver Cromwell (CANMORE ID: 60258).
61. Regarding potential geoarchaeological remains, no below ground intrusive works will occur during the installation of the pontoons. As such, should geoarchaeological remains be present within the site, they will not be impacted and therefore are not considered in relation to the application.
62. Additionally, a number of terrestrial designated assets are located within the wider area of the site (Figure 6). These include, the Scheduled Monument – Eyemouth Fort (SM3190) and Eyemouth Conservation Area (CA604) itself containing a large number of Category A, B and C listed buildings.
63. Based on the above, the potential for further archaeological remains to be present within the site is considered to be low. This is because prior to the creation of Gunsgreen Basin, the site was formed of land which has subsequently excavated. This will likely have resulted in the removal of any archaeological remains should they have been present within the site. Geoarchaeological remains may be present at deeper depths, however, these will not be impacted as no below ground intrusive works are taking place.
64. The installation of the pontoons has the potential to impact of the setting of these, which is discussed further below.



- Legend:
- Eyemouth Harbour
 - Gunsreen Basin
- Archaeological Assets**
1. CANMORE ID: 199916, 'Gem' (C19th lugger)
 2. CANMORE ID: 199359, 'Graces' (C19th lugger)
 3. CANMORE ID: 198926, 'Welfare' (C19th lugger)
 4. CANMORE ID: 354620, animal remains findspot
 5. CANMORE ID: 278719, former harbour lights
 6. CANMORE ID: 128386, former pier
 7. CANMORE ID: 128387, former pier
 8. CANMORE ID: 278720, former beacon
 9. CANMORE ID: 120193, former lifeboat station
 10. CANMORE ID: 60258, former rectangular tower
 11. ID SM3190, Eyemouth Fort

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Client:	Project:
Neart na Gaoithe Offshore Wind Limited	Marine Licence Application for the Installation of a Pontoon

Title:

Location of CANMORE
archaeological assets of note

Figure:	6	Drawing No:	PB9537-001-008		
Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	29/10/2020	JT	AC	A3	1:4,000

Co-ordinate system: British National Grid



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4.7.2 Potential Impacts

65. As has been discussed, there are no known designated or non-designated heritage assets located within the site. There is little potential for further unknown heritage assets to be located within the site, as prior to the creation of Gunsreen Basin in 1999 the site was formed of land which was subsequently excavated. This likely removed any archaeological material which may have been present. Geoarchaeological remains may be present within the site at deeper depths, however, as the installation of the pontoons will not involve any below ground intrusive works, these will not be impacted.
66. Additionally, the creation of the pontoons will have no direct below ground impact as they will be secured in place by being fastened to the harbour wall, which itself is not of historic interest and was created in 1999. As such, should any unknown heritage assets be present within the site, the installation on the pontoons will have no direct impact.
67. The installation of the pontoons has the potential to impact upon the setting of the wreck sites identified and the findspot; however, as the wrecks are recorded as known locations and the findspot has been excavated, they are not known to survive as extant remains and, therefore, are not considered to have a setting. As such, the installation of the pontoons will not have an impact on these assets.
68. Additionally, the installation of the pontoons may impact upon the setting of the terrestrial heritage assets that have been identified. In terms of Eyemouth Fort (SM3190), the site is screened from this by the existing harbour infrastructure and, therefore, the setting of Eyemouth Fort will not be impacted by the installation of the pontoons.
69. In terms of Eyemouth Conservation Area (CA604) and the listed buildings it contains, the site will be partially screened by the existing harbour infrastructure and the installation of the pontoons will be in keeping with the current commercial use of the Gunsreen Basin. As such, the installation of the pontoons will not represent a significant impact on the setting of these heritage assets.
70. In conclusion, as no impacts will occur to any heritage assets during the installation of the pontoons, it is considered unlikely that further archaeological mitigation measures will be required for the installation of the pontoons.

4.8 Other Users

4.8.1 Baseline

71. There are multiple users operating out of Eyemouth Harbour, ranging from fishing vessels, leisure craft and other recreational users.
72. The majority of vessels dock primarily in the Inner Basin (Old Harbour) as they do not require the depth of water in the Gunsreen basin. Occasionally, deeper drafted vessels such as larger fishing or cruise vessels require deeper waters. In this case the top of the inner harbour is used, depending on the state of the tide, or the Gunsreen basin is utilised (Harbourmaster, pers. comm., September 2020).
73. Different types of fishing vessels operate out of Eyemouth Harbour such as (Harbourmaster, pers. comm., September 2020):
 - trawl vessels, used for prawn and scallop fishing; and
 - creel vessels, used for lobster and crab fishing.
74. In addition, fishing vessels enter the Harbour for repair at the local boatyard, Eyemouth Marine Ltd.
75. A variety of other, commercial and recreational vessels operate out of Eyemouth Harbour (Harbourmaster, pers. comm., September 2020) including:
 - a Shannon class all-weather lifeboat and a D class inshore lifeboat, both operated by the Royal National Lifeboat Institution (RNLI);

- charter vessels for both diving and angling parties;
- commercial craft (excluding fishing) for windfarm, Ministry of Defence (MOD) training, survey and dredging operations;
- leisure craft such as those used for sailing, yachting and rowing;
- Berwick Amateur Rowing Club;
- Berwickshire Maritime Trust for historic boat restoration projects; and
- cruise ships.

4.8.2 Potential Impacts

76. Eyemouth Harbour has a range of recreational and commercial uses, ranging from fishing vessel operation, sailing, rowing, charter vessel operations, and commercial vessels such as the RNLI lifeboat. All Harbour usage, apart from certain fishing vessels, operate from other parts of the Harbour excluding Gunsreen Basin. Therefore, it is anticipated that there will be no impacts from the installation and operation of a pontoon on other users of the Harbour.
77. Some fishing vessels regularly use Gunsreen Basin due to requiring deeper waters. NnGOWL has secured exclusive use of Gunsreen Basin and EHT has provided alternative arrangements within the Harbour for such vessels. Alternative arrangements have been determined through extensive consultation with the regular users of the harbour; EHT started the informal consultation process in 2018 and is currently ongoing. Through this ongoing consultation, the following upgrades and amendments are being implemented by EHT in order to mitigate the exclusive use of Gunsreen Basin by NnGOWL:
 - improved waste facilities;
 - relocation and upgrading of fishermen's stores from Gunsreen basin close to the inner harbour (this is part of the O&M building mitigation);
 - new fuel dispenser close to the inner harbour;
 - a separate fuel dispenser for use only by NnGOWL, thus ensuring that there is a constant supply of fuel for all other users of the harbour;
 - relocation of fishing net rollers to the inner harbour;
 - long-term programme of capital and maintenance dredging within the entrance, basin and inner harbour; and
 - secure funds available for further improvements to other harbour facilities.
78. Therefore, it is anticipated that there is no impact from the installation and operation of the pontoon on other users of the Harbour.

5 Summary

- 79. NnGOWL is seeking to obtain a Marine Licence from MS-LOT for the installation of a pontoon at the O&M base in Eyemouth Harbour.
- 80. This Environmental Report is submitted in support of the Marine Licence application submitted by NnGOWL for the installation of the pontoon. An assessment of the potential impacts of the installation, operation and decommissioning of the pontoon has been carried out in relation to the following receptors: marine habitats, birds (installation and decommissioning only), otters, navigation, archaeology, and other users of the Harbour.
- 81. The following receptors were scoped out of the assessment as there is no pathway of effect from the installation, operation and decommissioning of the pontoon: marine mammals, birds (operation only), water quality, and designated sites.
- 82. No impacts were predicted from the installation, operation and decommissioning of the pontoon to the assessed receptors.

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