



BERWICK BANK WIND FARM OFFSHORE ENVIRONMENTAL IMPACT ASSESSMENT

APPENDIX 6.3: ENHANCEMENT, MITIGATION AND MONITORING COMMITMENTS

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1. INTRODUCTION

1. This chapter sets out a summary of the designed in measures, mitigation and monitoring commitments detailed within the Environmental Impact Assessment (EIA) Report for the offshore aspects of the Berwick Bank Wind Farm (hereafter referred to as ‘the Proposed Development’). For each commitment, the means of implementation is also specified.

2. SUMMARY OF DESIGNED IN MEASURES, MITIGATION AND MONITORING

2.1. PHYSICAL PROCESSES

Table 2.1: Physical Processes Designed In Measures, Mitigation and Monitoring Commitments

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
Designed In Measures			
7.1	Chapter 7: Physical Processes	<u>Scour protection</u> There is the potential for scouring of seabed sediments to occur due to interactions between metocean regime (wave, sand and currents) and foundations or other seabed structures. This scouring can develop into depressions around the structure. The use of scour protection around offshore structures and foundations will be employed, as described in detail in volume 1, chapter 3. The scour protection has been included in the modelled scenarios used within the assessment of effects.	Secured in the Section 36 Consent and/or Marine Licence, via the requirement for a Scour Protection Management Plan (SPMP) and Cable Plan (CaP).
7.2	Chapter 7: Physical Processes	<u>Cable burial depth</u> There is a potential for cable exposure to occur due to interactions between metocean regime (wave, sand and currents). The sediment transport can lead to exposure of cables and infrastructure, the use of a cable burial depth alongside the cable installation strategy should provide sufficient depth to avoid exposure.	Secured in the Section 36 Consent and/or Marine Licence, via the requirement for a CaP
Secondary Mitigation			
7.3	Chapter 7: Physical Processes	No physical processes mitigation is considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined) is not significant in EIA terms.	N/A

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
Monitoring			
7.4	Chapter 7: Physical Processes	Monitoring of the recovery of sand waves, at a representative number of locations where sand wave clearance activity has taken place, within the Firth of Forth Banks Complex MPA. Monitoring will be undertaken as part of wider Project pre- and post-construction geophysical surveys and are likely to involve a combination of multibeam echosounder and /or high-resolution side scan sonar. The approach to monitoring sand wave recovery within the MPA will be discussed post consent and agreed with Marine Scotland Licensing Operations Team (MS-LOT) in consultation with the Statutory Natural Conservation Bodies (SNCBs).	Detailed monitoring commitments will be agreed with MS- LOT post-consent and included in the Project Environmental Monitoring Plan (PEMP) and submitted to MS-LOT for approval.

2.2. BENTHIC SUBTIDAL AND INTERTIDAL ECOLOGY

Table 2.2: Benthic Subtidal and Intertidal Ecology Designed In Measures, Mitigation and Monitoring Commitments

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
Designed In Measures			
8.1	Chapter 8: Benthic Subtidal and Intertidal Ecology	<u>An EMP will be prepared and implemented during the construction, operation and maintenance and decommissioning phases of the Project.</u> Measures will be adopted to ensure that the potential for release of pollutants from construction, operation and maintenance and decommissioning plant is reduced so far as reasonably practicable. These will likely include designated areas for refuelling where spillages can be easily contained, storage of chemicals in secure designated areas in line with appropriate regulations and guidelines, double skinning of pipes and tanks containing hazardous substances, and storage of these substances in impenetrable bunds.	Secured in the Marine Licence via the requirement for an Environmental Management Plan (EMP), including Marine Pollution Contingency Plans (MPCP) and Invasive Non-Native Species Management Plan (INNSMP) to be submitted to MS-LOT for approval.
8.2	Chapter 8: Benthic Subtidal and Intertidal Ecology	<u>Code of Construction Practice (CoCP)</u> These measures have been identified during the design of the onshore and intertidal elements of the Proposed Development as part of the EIA process. They include strategies, control measures and monitoring procedures for managing the potential environmental impacts of constructing the Project and limiting disturbance from construction activities as far as reasonably practicable.	Secured in the Section 36 Consent and/or Marine Licence, via the requirement for a CoCP which will be submitted to MS-LOT for approval
8.3	Chapter 8: Benthic Subtidal and Intertidal Ecology	<u>Decommissioning Plan</u> The aim of this plan is to adhere to the existing UK and international legislation and guidance, with decommissioning industry practice applied. Overall, this will ensure the legacy of the Proposed Development will reduce the amount of long-term disturbance to the environment so far as reasonably practicable.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for a Decommissioning Plan. It is expected the Plan will be submitted to Scottish Ministers and approved prior to construction.

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
8.4	Chapter 8: Benthic Subtidal and Intertidal Ecology	<u>An INNS Management Plan will be implemented and is included in the Outline EMP</u> (see volume 3, appendix 22, annex B). The plan outlines measures to ensure vessels comply with the International Maritime Organisation (IMO) ballast water management guidelines, it will consider the origin of vessels and contain standard housekeeping measures for such vessels as well as measures to be adopted in the event that a high alert species is recorded.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for an EMP, including MPCP and INNSMP to be submitted to MS-LOT for approval.
8.5	Chapter 8: Benthic Subtidal and Intertidal Ecology	<u>Marine Pollution Contingency Plan</u> Measures will be adopted to ensure that the potential for release of pollutants from construction, operation and decommissioning plant is minimised. These will likely include: designated areas for refuelling where spillages can be easily contained; only using chemicals included on the approved Centre for Environment Fisheries and Aquaculture Science (Cefas) list under the Offshore Chemical Regulations 2002; storage of these in secure designated areas in line with appropriate regulations and guidelines; double skinning of pipes and tanks containing hazardous substances; and storage of these substances in impenetrable bunds. In this manner, the potential for release of contaminants from rigs and supply/service vessels will be strictly controlled, thus providing protection for marine life across all phases of the offshore wind farm development.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for an EMP, including a MPCP and INNSMP to be submitted to MS-LOT for approval.
8.6	Chapter 8: Benthic Subtidal and Intertidal Ecology	<u>Suitable implementation and monitoring of cables including those installed by burial, or those protected by external protection, and where target burial depths as identified via risk assessment have not been met.</u> The mobile nature of sedimentary environments found in the Proposed Development benthic subtidal and intertidal ecology study area could result in the exposure of previously buried infrastructure such as array, offshore substation platform (OSP) / Offshore	Secured in the Section 36 Consent and/or Marine Licence, via the requirement for a SPMP and a CaP to be submitted to MS-LOT for approval.

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
		converter station platform interconnector and offshore export cables. Monitoring these features ensures that repair and reburial are done efficiently so that no more than the assessed amount of new hard substrate habitat is created, and this infrastructure doesn't cause unnecessary damage to the environment. Approval would be sought to implement these repairs and reburial events as well as for deployment of cable protection in line with what has been assessed.	
8.7	Chapter 8: Benthic Subtidal and Intertidal Ecology	<u>A pre-construction Annex I reef survey will be undertaken to determine the location, extent and composition of any biogenic/geogenic reefs within the Proposed Development. Should such reef features be identified during pre-construction surveys, appropriate measures (e.g. micro-siting) will be discussed with statutory consultees and agreed with MS-LOT to avoid direct impacts to these features, where reasonably practicable, and on the basis of the extent of these features at the time of construction.</u> Rocky and stony reef was recorded within the Proposed Development export cable corridor and a localised patch of low potential <i>Sabellaria spinulosa</i> reef was recorded within the Proposed Development array area. This designed-in measure will ensure that direct impacts (e.g. habitat loss) to ecologically sensitive biogenic or geogenic reefs will be avoided or minimised where possible and reasonably practicable.	Secured in the Section 36 Consent and/or Marine Licence, via the requirement for an EMP which will be submitted to MS-LOT for approval.
8.8	Chapter 8: Benthic Subtidal and Intertidal Ecology	<u>Only drilling fluids that are on the PLONOR list (Poses Little or No Risk to the environment), the list is controlled and maintained by Cefas, will be used.</u> Due to the direction of the trenchless cable landfall being constructed from onshore to offshore there will be a potential interface between the sea and the drill fluids during physical punch out of the exit pits and potentially at break outs associated with the selected trenchless technique (e.g. horizontal	Secured in the Section 36 Consent and/or Marine Licence, via the requirement for an EMP which will be submitted to MS-LOT for approval.

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
		directional drilling, HDD). Small quantities of drill fluids may be released. To limit potential environmental damage only PLONOR listed drilling fluid will be used.	
Secondary Mitigation			
8.9	Chapter 8: Benthic Subtidal and Intertidal Ecology	No benthic subtidal and intertidal mitigation is considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined) are not significant in EIA terms.	
Monitoring			
8.10	Chapter 8: Benthic Subtidal and Intertidal Ecology	<u>Colonisation of hard structures</u> Commitment to engaging with Marine Scotland Science (MSS), NatureScot and other relevant key stakeholders to identify and deliver proportionate measures for contributing to strategic monitoring to understand the impact of hard structure colonisation and change in community structure and local species diversity in the immediate vicinity of hard structures.	Detailed monitoring commitments will be agreed post consent and included in the PEMP and submitted to MS-LOT for approval.
8.11	Chapter 8: Benthic Subtidal and Intertidal Ecology	Effects of temporary habitat disturbance to MPA features Commitment to engaging in discussions with MSS and the SNCBs post consent to identify opportunities for contributing to proportionate and appropriate strategic monitoring of temporary habitat disturbance to sensitive features of the Firth of Forth Banks Complex (FFBC) MPA features (e.g. ocean quahog).	Detailed monitoring commitments will be agreed post consent and included in the PEMP and submitted to MS-LOT for approval.

2.3. FISH AND SHELLFISH ECOLOGY

Table 2.3: Fish and Shellfish Ecology Designed In Measures, Mitigation and Monitoring Commitments

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
Designed In Measures			
9.1	Chapter 9: Fish and Shellfish Ecology	<u>Implementation of piling soft start and ramp up measures. During piling operations, soft starts will be used, involving the implementation of lower hammer energies (i.e. approximately 15% of the maximum hammer energy) at the beginning of the piling sequence before energy input is 'ramped up' (increased) over time to required higher levels.</u> This measure will minimise the risk of injury to fish species in the immediate vicinity of piling operations, allowing individuals to flee the area before noise levels reach a level at which injury may occur.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for a Construction Method Statement (CMS) which will be submitted to MS-LOT for approval.
9.2	Chapter 9: Fish and Shellfish Ecology	<u>Low order disposal of Unexploded Ordnance (UXOs).</u> Low order techniques will be adopted wherever practicable (e.g. deflagration and clearance shots) as mitigation to minimise noise levels and thereby injury and disturbance to fish and shellfish receptors. However, there is a small risk that low order could unintentionally arise in a high order detonation and therefore this scenario has also been considered in the assessment of effects.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for a CMS which will be submitted to MS-LOT for approval.
9.3	Chapter 9: Fish and Shellfish Ecology	<u>Development of, and adherence to, an EMP, including MPCP.</u> To reduce the potential for release of pollutants from construction, operation and maintenance, and decommissioning plant as far as reasonably practicable. These will likely include designated areas for refuelling where spillages can be easily contained, storage of chemicals in secure designated areas in line with appropriate regulations and guidelines, double skinning of pipes and tanks containing hazardous substances, and storage of these substances in	Secured in the Section 36 Consent and/or Marine Licence, via the requirement for an EMP which will be submitted to MS-LOT for approval.

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
		impenetrable bunds. The MPCP will require, in the unlikely event that a pollution even occurs, that plans are in place to respond quickly and effectively to ensure any spillage is reduced as far as reasonably practicable and effects on the environment are ideally avoided or reduced as far as reasonably practicable. Implementation of these measures will reduce the accidental release of contaminants from vessels as far as reasonably practicable, thus providing protection for marine life across all phases of the Project Development.	
9.4	Chapter 9: Fish and Shellfish Ecology	<u>Development of, and adherence to, an appropriate CoCP.</u> These measures have been identified during the design of the offshore and intertidal elements of the Project as part of the EIA process. They include strategies, control measures and monitoring procedures for managing the potential environmental impacts of constructing the Project and limiting disturbance from construction activities as far as reasonably practicable.	Secured in the Section 36 Consent and/or Marine Licence, via the requirement for a CoCP which will be submitted to MS-LOT for approval.
9.5	Chapter 9: Fish and Shellfish Ecology	<u>Preparation and implementation of a CaP, including a cable burial risk assessment (CBRA) to inform cable burial depth.</u> A CaP will be prepared prior to the construction phase and will include a detailed cable laying plan, including geotechnical data, cable laying techniques and a CBRA which will include details on target and minimum burial depths. While the sediments in which cables are buried will not reduce the strength of Electromagnetic Fields (EMFs), the burial of cables does increase the distance between cables and fish and shellfish Important Ecological Features (IEFs), with greater attenuation of EMFs with greater distance from the cable, thereby potentially reducing the effect of EMFs on those IEFs.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for a CMS and CaP which will be submitted to MS-LOT for approval.
9.6	Chapter 9: Fish and Shellfish Ecology	<u>Development of, and adherence to, a Decommissioning Plan.</u> The aim of this	Secured in the Section 36 Consent and/or Marine

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
		plan is to adhere to the existing UK and international legislation and guidance with decommissioning industry practice applied. Overall, this will reduce the amount of long-term disturbance to the environment as far as reasonably practicable. While this measure has been committed to as part of the Proposed Development, the maximum design scenario for the decommissioning phase has been considered in each of the assessments of effects.	Licence via the requirement for a Decommissioning Plan. It is expected the Plan will be submitted to Scottish Ministers and approved prior to construction.
Secondary Mitigation			
9.7	Chapter 9: Fish and Shellfish Ecology	No fish and shellfish ecology mitigation is considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined) is not significant in EIA terms.	N/A
Monitoring			
9.8	Chapter 9: Fish and Shellfish Ecology	Commitment to engaging in discussions with Marine Scotland – Licencing and Operations Team and the SNCBs post consent to identify opportunities for contributing to proportionate and appropriate strategic monitoring of diadromous fish species. This may include research priorities identified by ScotMER steering group.	Detailed monitoring commitments will be agreed post consent and included in the PEMP and submitted to MS-LOT for approval.

2.5. MARINE MAMMALS

Table 2.4: Marine Mammals Designed In Measures, Mitigation and Monitoring Commitments

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
Designed In Measures			
10.1	Chapter 10: Marine Mammals	<p><u>A Marine Mammal Mitigation Protocol (MMMP) (Outline MMMP volume 4, appendix 23) will be consulted on with NatureScot and/or MSS, approved by MS-LOT and implemented prior to construction. For the purpose of developing the MMMP, a mitigation zone will be defined based on the maximum predicted injury range from the dual metric noise modelling for any of the modelled scenarios (4,000 kJ for concurrent piling of wind turbines and 4,000 kJ for single piling OSPs/Offshore convertor station platforms) and across all marine mammal species. The MMMP will set out the designed-in measures to apply in advance of and during piling activity.</u></p> <p><u>A MMMP will also include geophysical surveys to ensure that appropriate measures are followed in line with JNCC guidance (JNCC, 2017).</u></p> <p>The implementation of an approved MMMP will mitigate for the risk of physical or permanent auditory injury to marine mammals within a 'mitigation zone'. The potential to mitigate for injury was considered with respect to the largest potential injury zone across all species (2,319 m based on predictions of injury for minke whale using the 4% reducing to 0.5% conversion factor). The use of an approved MMMP will also minimise the potential for collision risk, or potential injury to, marine mammals. Measures such as visual and acoustic monitoring will be applied.</p> <p>The measures outlined in Joint Nature Conservation Committee (JNCC) guidelines (JNCC, 2017) are designed to reduce the risk of injury to marine mammals during geophysical survey activities.</p>	Secured in the Section 36 Consent and/or Marine Licence via requirement for a MMMP which will be submitted to MS-LOT for approval.
10.2	Chapter 10: Marine Mammals	<p><u>Implementation of piling soft start and ramp up measures. During piling operations, soft starts will be used. This will involve the implementation of lower hammer energies (i.e. approximately 15% of the maximum hammer energy) at the beginning of the piling sequence before energy input is 'ramped up' (increased) over time to required higher levels. This measure will minimise the risk of injury to marine mammal and fish species in the immediate vicinity of piling operations, allowing individuals to flee the area before noise levels reach a level at which injury may occur. It is considered that compliance with these guidelines will, in most cases, reduce the risk of injury to marine mammals to negligible levels</u></p>	Secured in the Section 36 Consent and/or Marine Licence via the requirement for a CMS which will be submitted to MS-LOT for approval.

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
10.3	Chapter 10: Marine Mammals	<p><u>Detonation of UXO using low order techniques.</u> Low order techniques will be adopted where practicable. Given the small risk that a low order could unintentionally arise in a high order detonation (approximately 10% of the total number of UXOs could result in high order detonation), the MMMP (volume 4, appendix 23) will also include mitigation to reduce the risk of injury from UXO clearance. Measures such as visual and acoustic monitoring will be applied.</p>	Secured in the Section 36 Consent and/or Marine Licence via requirement for a MMMP which will be submitted to MS-LOT for approval.
10.4	Chapter 10: Marine Mammals	<p><u>Code of Conduct will be issued to all Project vessel operators, requiring them to:</u></p> <ul style="list-style-type: none"> not deliberately approach marine mammals; keep vessel speed to a minimum; and avoid abrupt changes in course or speed should marine mammals approach the vessel to bow-ride. <p><u>Code of Conduct will be adhered to at all times.</u></p> <p>To minimise the potential for collision risk, or potential injury to, marine mammals and megafauna.</p>	Secured in the Section 36 Consent and/or Marine Licence via the requirement for a Navigational Safety and Vessel Management Plan (NSVMP) which will be submitted to MS-LOT for approval.
10.5	Chapter 10: Marine Mammals	<p><u>Development of, and adherence to, an EMP, including MPCP.</u> To ensure that the potential for release of pollutants during construction, operation and maintenance, and decommissioning phases are minimised. These will likely include designated areas for refuelling where spillages can be easily contained, storage of chemicals in secure designated areas in line with appropriate regulations and guidelines, double skinning of pipes and tanks containing hazardous substances, and storage of these substances in impenetrable bunds. The MPCP will ensure that in the unlikely event that a pollution even occurs, that plans are in place to respond quickly and effectively to ensure any spillage is minimised and effects on the environment are ideally avoided or minimised. Implementation of these measures will ensure that accidental release of contaminants from vessels will be avoided or minimised, thus providing protection for marine life across all phases of the Proposed Development.</p>	Secured in the Section 36 Consent and/or Marine Licence via requirement for an EMP and MPCP which will be submitted to MS-LOT for approval...
10.6	Chapter 10: Marine Mammals	<p><u>Development of, and adherence to, an appropriate CoCP.</u> Measures within the CoCP have been identified during the design of the onshore and intertidal elements of the Proposed Development as part of the EIA process. They include strategies, control measures and monitoring procedures for managing the potential environmental impacts of constructing the Proposed Development and limiting disturbance from construction activities as far as reasonably practicable.</p>	Secured in the Section 36 Consent and/or Marine Licence, via the requirement for a CoCP which will be submitted to MS-LOT for approval.

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
10.7	Chapter 10: Marine Mammals	<u>Development of, and adherence to, a Decommissioning Plan.</u> The aim of this plan is to adhere to the existing UK and international legislation and guidance. Overall, this will ensure the legacy of the Proposed Development will result in the minimum amount of long-term disturbance to the environment. While this measure has been committed to as part of the Proposed Development, the maximum adverse scenario for the decommissioning phase has been considered in each of the assessments of effects.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for a Decommissioning Plan. It is expected the Plan will be submitted to Scottish Ministers and approved prior to construction.
Secondary Mitigation			
10.8	Chapter 10: Marine Mammals Marine Mammal Mitigation Protocol (MMMP)	Secondary mitigation will be applied in the form of an acoustic deterrent device (ADD) to deter animals from the area of impact. This additional mitigation will also reduce any risk of injury (albeit very low risk) to individuals of other marine mammal species which may arise due to the inherent uncertainties in applying the standard measures (visual and acoustic approaches), for example, problems with detecting animals in high sea states or low visibility due to adverse weather conditions.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for an MMMP which will be submitted to MS-LOT for approval.
10.9	Chapter 10: Marine Mammals Marine Mammal Mitigation Protocol (MMMP)	Low order techniques will be applied as the intended methodology for clearance of UXO, however there is a small risk that a low order clearance could result in high order detonation of UXO (approximately 10% of the total number of UXOs could result in high order detonation). Secondary mitigation will therefore be applied to reduce the potential for injury occurring during UXO clearance. This will take the form of scare charges, which will be tailored based on the size of the UXO and high order detonation scenario. A range of UXO munitions sizes have been considered for purpose of determining effective mitigation measure, up to a maximum scenario of a UXO size of 300 kg.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for an MMMP and a PEMP which will be submitted to MS-LOT for approval.
Monitoring			
10.10	Chapter 10: Marine Mammals	Noise monitoring will be carried out during UXO clearance to provide empirical data on the measured received levels as predicted in the noise model. In addition, in-field noise monitoring has been suggested by stakeholders at increasing distances from the piling location to enhance the understanding of noise characteristics from piling activities and allow comparisons between modelled predictions and real-world data. Any requirement for monitoring will be approved by MS-LOT.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for an MMMP and submitted to MS-LOT for approval.

2.6. OFFSHORE AND INTERTIDAL ORNITHOLOGY

Table 2.5: Offshore and Intertidal Ornithology Designed In Measures, Mitigation and Monitoring Commitments

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
Designed In Measures			
11.1	Chapter 11: Offshore and Intertidal Ornithology	<p>Increased air gap between the lower tip height and sea surface.</p> <p>Avoidance of relatively high densities of seabirds.</p> <p>Site boundary moved 2 km away from boundary of Outer Firth of Forth and St Andrews Bay Complex SPA.</p>	<p>Already implemented at design stage. Specific details of the design of the Proposed Development will be conditioned in the section 36 consent.</p>
Secondary Mitigation			
11.2	Chapter 11: Offshore and Intertidal Ornithology	N/A	N/A
Monitoring			
11.3	Chapter 11: Offshore and Intertidal Ornithology	Displacement - Post-construction monitoring of seabird distributions in relation to the Proposed Development using digital aerial surveys.	Detailed monitoring commitments will be agreed post consent at the Forth and Tay Regional Advisory Group – Ornithology (FTRAG-O) meetings and included in the PEMP. The PEMP will be submitted to MS-LOT for approval.
		Displacement and barrier effects - Co-funder of long-term breeding season GPS tracking studies on key species from key SPAs including kittiwake on Isle of May, Fowlsheugh and St Abb's Head, and guillemot, razorbill and puffin on Isle of May.	Detailed monitoring commitments will be agreed post consent at FTRAG-O meetings and included PEMP. The PEMP will be submitted to MS-LOT for approval.
		Collision effects - Co-funder of post-construction Seabirds Interaction Study at NnG offshore wind farm involving turbine mounted cameras and radar to investigate seabird interactions with offshore wind turbines	Detailed monitoring commitments will be agreed post consent at FTRAG-O

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
			meetings and included in the PEMP. The PEMP will be submitted to MS-LOT for approval.
		Population-level effects - Co-funder of long-term colour-ringing adult gannet study and resighting programme on Bass Rock, with Grassholm as control site	Detailed monitoring commitments will be agreed post consent at FTRAG-O meetings and included in the Project Environmental Monitoring Plan PEMP. The PEMP will be submitted to MS-LOT for approval.
		Ecosystem-level effects - In-principal support to PrePARED and EcoWind programmes of work involving access to the Berwick Bank offshore wind farm for data collection purposes, provision of data gathered on key seabird species and support of staff time to engage with the research team	Detailed monitoring commitments will be agreed post consent at FTRAG-O meetings and included in the Project Environmental Monitoring Plan PEMP. The PEMP will be submitted to MS-LOT for approval.

2.7. COMMERCIAL FISHERIES

Table 2.6: Commercial Fisheries Designed In Measures, Mitigation and Monitoring Commitments

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
Designed In Measures			
12.1	Chapter 12: Commercial Fisheries	<u>Appointment of a Fisheries Liaison Officer (FLO). Provides a project specific point of contact to liaise and engage with the fishing industry.</u>	Secured in the Section 36 Consent and/or Marine Licence via the requirement for appointment of a FLO.
12.2	Chapter 12: Commercial Fisheries	<u>Participation in the Forth and Tay Commercial Fisheries Working Group (FTCFWG). Provides a forum for information sharing and discussion of key issues with fisheries stakeholders and other developers in the region.</u>	The Applicant currently attends the working group and will continue this commitment. MS-LOT may also seek to include ongoing engagement as a condition of the Marine Licence.
12.3	Chapter 12: Commercial Fisheries	<u>A NSVMP (volume 4, appendix 25) will provide the details of the vessel management and navigational safety of the Proposed Development and mitigate the impact of project vessels and the navigational risk to other legitimate users of the sea. Under the NSVMP, the Applicant will ensure that details of the Proposed Development are promulgated in the Kingfisher fortnightly bulletins, as soon as reasonably practicable prior to the commencement of construction of the Proposed Development to inform the commercial fishing industry of vessels routes, timing and locations of construction works, and relevant details of the construction activities.</u>	Secured in the Section 36 Consent and/or Marine Licence via the requirement for an NSVMP which will be submitted to MS-LOT for approval.
		<u>Record hazards such as subsea cables.</u>	
		<u>Facilitates awareness and helps minimising disturbance to fishing activities, timely and efficient distribution of Notice to Mariners (NtM), Kingfisher notifications and other navigational warnings of the position and nature of works associated with the Proposed Development.</u>	
12.4	Chapter 12: Commercial Fisheries	<u>Compliance of all Project vessels with international marine regulations as adopted by the Flag State, notably the International Regulations for Preventing Collisions at Sea (COLREG) and International Convention for the Safety of Life at Sea</u>	Secured in the Section 36 Consent and/or Marine Licence via the requirement for an NSVMP which will be submitted to MS-LOT for approval.

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
		<u>(SOLAS). Minimises the risk introduced due to the presence of Project vessels.</u>	
12.5	Chapter 12: Commercial Fisheries	<u>Lighting and marking of the Proposed Development array area in agreement with the Northern Lighthouse Board (NLB) and in line with International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) G1162 (IALA, 2021). Maximises awareness of the Proposed Development in both day and night conditions including in restricted visibility and assists with Search and Rescue (SAR) operations.</u>	Secured in the Section 36 Consent and/or Marine Licence via the requirement for an Aid to Navigation Management Plan (ANMP) which will be submitted to MS-LOT for approval.
12.6	Chapter 12: Commercial Fisheries	<u>Appropriate marking of structures (both within the Proposed Development array area and export cable corridor) on United Kingdom Hydrographic Office (UKHO) Admiralty Charts. Maximises awareness of the Proposed Development allowing vessels to passage plan in advance.</u>	Secured in the Section 36 Consent and/or Marine Licence via the requirement for Lighting and Marking Plan (LMP) which will be submitted to MS-LOT for approval.
12.7	Chapter 12: Commercial Fisheries	<u>Adherence to appropriate guidance with regards to fisheries liaison and mitigation (i.e. Fishing Liaison with Offshore Wind and Wet Renewables Group (FLOWW) guidance). Facilitates the establishment of productive relationships with fisheries stakeholders and the implementation of an evidence-based approach to mitigation.</u>	Secured in the Section 36 Consent and/or Marine Licence via the requirement for a Fisheries Management and Mitigation Strategy (FMMS) which will be submitted to MS-LOT for approval.
12.8	Chapter 12: Commercial Fisheries	<u>Use of guard vessels and Offshore Fisheries Liaison Officers (OFLOs) where required and appropriate. Facilitates engagement with fisheries stakeholders during specific Project works and minimises potential for conflict between the Proposed Development and fishing activities.</u>	Secured in the Section 36 Consent and/or Marine Licence via the requirement for a FMMS which will be submitted to MS-LOT for approval.
12.9	Chapter 12: Commercial Fisheries	<u>Development of a Fisheries Management and Mitigation Strategy (FMMS) (volume 4, appendix 24) for MS-LOT approval and in consultation with fisheries stakeholders. Details the Applicant's proposed approach to fisheries liaison and to facilitating co-existence, including details on the measures which are proposed to be implemented to minimise impacts on commercial fishing.</u>	Secured in the Section 36 Consent and/or Marine Licence via the requirement for a FMMS which will be submitted to MS-LOT for approval.
12.10	Chapter 12: Commercial Fisheries	<u>Outline NSVMP will be provided at Application (volume 4, appendix 25). Details the Applicants proposed approach to navigation safety and vessel management to maximise safety considerations.</u>	Secured in the Section 36 Consent and/or Marine Licence via the requirement for an NSVMP which will be submitted to MS-LOT for approval.
12.11	Chapter 12: Commercial Fisheries	<u>Cables will be buried to a minimum depth of 0.5 m where reasonably practicable. Where cable burial target depths are not met cable</u>	Secured in the Section 36 Consent and/or Marine Licence via the requirement for CaP

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
		protection will be used. Minimises potential interactions between fishing gear and cables.	which will be submitted to MS-LOT for approval.
12.12	Chapter 12: Commercial Fisheries	<u>The location, extent and nature of the cable protection measures used will be communicated to the fishing industry.</u> Prevents potential damage to and from fishing gear and associated safety risks.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for CaP which will be submitted to MS-LOT for approval.
12.13	Chapter 12: Commercial Fisheries	<u>Where rock placement is used for cable protection, consideration will be given to designs that minimise potential gear snagging risk (i.e. used of graded rock and 1:3 profile berms).</u> Facilitates co-existence and minimises potential damage to and from fishing gear and associated safety risks.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for CaP which will be submitted to MS-LOT for approval.
12.14	Chapter 12: Commercial Fisheries	<u>Undertaking of post-lay and burial inspection surveys and, where appropriate and practicable, undertaking of rectification works.</u> Facilitates co-existence and prevents potential damage to and from fishing gear and minimises potential safety risks.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for CaP which will be submitted to MS-LOT for approval.
12.15	Chapter 12: Commercial Fisheries	<u>Undertaking of assessments to determine cable burial status (including cable protection) and identify potential changes to seabed conditions. Findings would be shared with the fishing industry to discuss requirements for any further surveys.</u> Facilitates co-existence and prevents potential damage to and from fishing gear and minimises potential safety risks.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for CaP which will be submitted to MS-LOT for approval.
12.16	Chapter 12: Commercial Fisheries	<u>Anticipated vessel transit routes and shelter/holding areas for construction vessels will be identified in the NSVMP.</u> Facilitates co-existence and minimises potential adverse interactions between Proposed Development vessels and fishing activities.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for a NSVMP which will be submitted to MS-LOT for approval.
12.17	Chapter 12: Commercial Fisheries	<u>Development of a Code of Good Practice for contracted vessels.</u> Facilitates co-existence between vessels undertaking works for the Proposed Development and fishing vessels and helps minimise potential adverse interactions.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for a NSVMP which will be submitted to MS-LOT for approval.
12.18	Chapter 12: Commercial Fisheries	<u>Development of suitable procedures to allow claims for loss or damage to gear.</u> Facilitates co-existence and minimises potential adverse interactions between Proposed Development vessels and fishing activities.	Ongoing Applicant commitment and implemented in the FMMS.

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
Secondary Mitigation			
12.19	Chapter 12: Commercial Fisheries	No commercial fisheries mitigation is considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined) is not significant in EIA terms.	N/A
Monitoring			
12.20	Chapter 12: Commercial Fisheries	Review of fisheries data in the commercial fisheries study area.	To be implemented through the FMMS.
12.21	Chapter 12: Commercial Fisheries	Assessment of burial status of cables (including cable protection) and of potential changes to seabed.	To be implemented through the FMMS.

2.8. SHIPPING AND NAVIGATION

Table 2.7: Shipping and Navigation Designed In Measures, Mitigation and Monitoring Commitments

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
Designed In Measures			
13.1	Chapter 13: Shipping and Navigation	<u>Application for Safety Zones up to 500 m around structures where vessels are undertaking construction work during construction and periods of major maintenance, and 50 m around partially completed or completed but not yet fully commissioned surface piercing structures during construction.</u> Protects third-party vessels from Project vessels involved in construction and major maintenance activities which may be Restricted in their Ability to Manoeuvre (RAM).	Secured via a separate application for safety zone prior to construction commencing.
13.2	Chapter 13: Shipping and Navigation	<u>Deployment of a buoyed construction area in agreement with the NLB.</u> Protects third-party vessels from Project vessels involved in construction and major maintenance activities which may be RAM.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for an ANMP which will be submitted to MS-LOT for approval.
13.3	Chapter 13: Shipping and Navigation	<u>Suitable implementation and monitoring of cable protection (via burial, or external protection where adequate burial depth as identified via risk assessment is not feasible) with any damage, destruction or decay of cables notified to the Maritime and Coastguard Agency (MCA), NLB, Kingfisher and UKHO no later than 24 hours after discovered.</u> Minimises the risks of underwater allision with cable protection, anchor or fishing gear interaction with subsea cables and interference with magnetic position fixing equipment.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for an ANMP and CaP which will be submitted to MS-LOT for approval.
13.4	Chapter 13: Shipping and Navigation	<u>Compliance with Marine Guidance Note (MGN) 654 and its annexes (in particular SAR annex 5 (MCA, 2021) and completion of a SAR checklist) where applicable.</u> Ensures the final array layout is suitable for SAR operations and that reductions in under keel clearance are acceptable.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for an ANMP and NSVMP which will be submitted to MS-LOT for approval.
13.5	Chapter 13: Shipping and Navigation	<u>Use of guard vessel(s) as required by risk assessment.</u> Maximises awareness of temporary hazards.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for a NSVMP which will be submitted to MS-LOT for approval.

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
13.6	Chapter 13: Shipping and Navigation	<u>Layout finalised through the Development Specification and Layout Plan (DSLPL) via consultation with the MCA and NLB.</u> Ensures the final array layout is suitable for both surface and air based (for SAR purposes) navigation.	Secured via the Section 36 Consent and/or Marine Licence.
13.7	Chapter 13: Shipping and Navigation	<u>Lighting and marking of the Proposed Development array area in agreement with the NLB and in line with IALA G1162 (IALA, 2021).</u> Maximises awareness of the Proposed Development in both day and night conditions including in restricted visibility and assists with SAR operations.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for LMP which will be submitted to MS-LOT for approval
13.8	Chapter 13: Shipping and Navigation	<u>Marine coordination and communication to manage project vessel movements.</u> Ensures project vessels are suitably managed to minimise the likelihood of involvement in incidents and maximise the ability to assist in the event of a third-party incident.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for a NSVMP which will be submitted to MS-LOT for approval.
13.9	Chapter 13: Shipping and Navigation	<u>Creation and implementation of a MPCP.</u> Minimises the environmental effects in the event of an incident involving pollution.	Secured in the Marine Licence via the requirement for an EMP, including a MPCP which will be submitted to MS-LOT for approval.
13.10	Chapter 13: Shipping and Navigation	<u>Appropriate marking of structures (both within the Proposed Development array area and export cable corridor) on UKHO Admiralty Charts.</u> Maximises awareness of the Proposed Development allowing vessels to passage plan in advance.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for LMP which will be submitted to MS-LOT for approval.
13.11	Chapter 13: Shipping and Navigation	<u>Minimum blade clearance of 22 m above mean height water spring (MHWS) (in line with Royal Yachting Association (RYA) policy (RYA, 2019).</u> Minimises the risk of blade allision particularly for sailing vessels with a mast, noting that the minimum blade clearance will be 37 m above LAT.	Specific details of the design of the Proposed Development is expected to be conditioned in the Section 36 consent and/ or marine licence.
13.12	Chapter 13: Shipping and Navigation	<u>Compliance of all project vessels with international marine regulations as adopted by the Flag State, notably the COLREGs (IMO, 1972/77) and SOLAS (IMO, 1974).</u> Minimises the risk introduced due to the presence of project vessels.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for a NSVMP which will be submitted to MS-LOT for approval.
13.13	Chapter 13: Shipping and Navigation	<u>Promulgation of information for vessel routes, timings and locations, Safety Zones and advisory safe passing distances as required via Kingfisher Bulletins.</u> Maximises awareness of the Proposed Development allowing vessels to passage plan in advance.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for issuing relevant notices and notifications.

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
Secondary Mitigation			
13.14	Chapter 13: Shipping and Navigation	No shipping and navigation mitigation is considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined) is not significant in EIA terms.	N/A
Monitoring			
13.15	Chapter 13: Shipping and Navigation	No additional monitoring is required.	N/A

2.10. AVIATION, MILITARY AND COMMUNICATIONS

Table 2.8: Aviation, Military and Communications Designed In Measures, Mitigation and Monitoring Commitments

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
Designed In Measures			
14.1	Chapter 14: Aviation, Military and Communications	<u>Adherence to Civil Aviation Authority, CAA (2016). CAP 393, Air Navigation: The Order and the Regulations (2016). This will require approval and implementation of a LMP (volume 4, appendix 27) which will set out specific requirements in terms of aviation lighting to be installed on the wind turbines. The LMP will be prepared in consultation with the CAA, Ministry of Defence (MoD) and MCA and will take into account requirements for aviation lighting as specified in Article 223 of the UK Air Navigation Order (ANO), 2016 and changes to International Civil Aviation Organization (ICAO) Annex 14 Volume 2, Chapter 6, paragraph 6.2.4 promulgated in November 2016. To comply with CAA (2016). CAP 393, Air Navigation: The Order and the Regulations (2016) which sets out the mandatory requirements for the lighting of offshore wind turbines, and to ensure appropriate lighting is in place to facilitate aeronautical safety. An outline LMP is provided with the Application (see volume 4, appendix 22).</u>	Secured in the Section 36 Consent and/or Marine Licence via the requirement for LMP which will be submitted to MS-LOT for approval.
14.2	Chapter 14: Aviation, Military and Communications	<u>All structures of more than 91.4 m in height will be charted on aeronautical charts and reported to the Defence Geographic Centre (DGC) which maintains the UK's database of tall structures (Digital Vertical Obstruction File) at least ten weeks prior to construction. Furthermore, any temporary obstacles associated with wind farms which are of more than 91.4 m in height (e.g. construction infrastructure such as</u>	Secured in the Section 36 Consent and/or Marine Licence via the requirement for notifications and promulgation of information.

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
		<u>cranes and/or meteorological masts) are to be alerted to aircrews by means of the Notice to Airmen (NOTAM) system. An object which is more than 91.4 m in height is considered to have significance for the en route operations of aircraft in UK airspace.</u>	
14.3	Chapter 14: Aviation, Military and Communications	<u>CAA will be informed of the locations, heights and lighting status of the wind turbines, including estimated and actual dates of construction and the maximum heights of any construction equipment to be used, prior to the start of construction, to allow inclusion on aviation charts and in the UK Integrated Aeronautical Information Package (IAIP). To comply with CAA (2016): CAP 764 - CAA Policy and Guidelines on Wind Turbines (Version 6, February 2016) which requires the CAA to be notified of the construction and location of wind turbines.</u>	Secured in the Section 36 Consent and/or Marine Licence via the requirement for notifications and promulgation of information.
Secondary Mitigation			
14.4	Chapter 14: Aviation, Military and Communications	NATS (En Route) Plc (NERL) has proven processes and techniques to mitigate the adverse impact of wind turbines on their Air Traffic Control (ATC) radars. The Applicant has commenced discussions with NERL about potential mitigation solutions and is likely that the proposed solution will be to use Multi-Radar Tracker (MRT) blanking, which is a technical mitigation solution routinely offered by NERL that removes wind turbines returns from the Air Traffic Control radar display. However, in combination, NERL are likely to request that the MRT blanking is accompanied by a Transponder Mandatory Zone (TMZ). This provides an added layer of mitigation by ensuring that all aircraft transiting overhead the 'blanked' area carry a serviceable transponder which enables them to be tracked by means of Secondary Surveillance	Implementation of a TMZ requires developers to submit an Airspace Change Proposal (ACP) to the CAA for which a formal airspace change process has to be followed. Secured in the Section 36 Consent and/or Marine Licence.

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
		Radar (SSR) without reliance on ATC radar.	
14.5	Chapter 14: Aviation, Military and Communications	The MoD has a recognised process for entering into agreement for ATC radar mitigation. Currently, no enduring radar mitigation solution has been accepted into service by MoD however, an interim solution has previously been negotiated for Seagreen. The Applicant has commenced discussions with MoD regarding the Proposed Development and it is expected that an interim solution will also be acceptable to MoD pending development of an enduring radar mitigation solution. The interim solution is expected to take the form of blanking and TMZ for mitigation of impacts on NERL's ATC radar.	Continuation of negotiations with MoD with the aim of delivering a suitable ATC radar mitigation solution prior to the operation and maintenance phase of the Proposed Development through the Applicant commitment. A Section 36 condition will likely be included which requires the details of the ATC scheme to be submitted to Scottish Ministers for approval.
Monitoring			
14.6	Chapter 14: Aviation, Military and Communications	No aviation, military and communications monitoring to test the predictions made within the assessment of likely significant effects on aviation, military and communications is considered necessary.	N/A

2.12. SEASCAPE, LANDSCAPE AND VISUAL IMPACT

Table 2.9: Seascape, Landscape and Visual Impact Designed In Measures, Mitigation and Monitoring Commitments

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
Designed In Measures			
15.1	Chapter 15: Seascape, landscape and visual impact	<u>The Proposed Development array area has been sited 37.8 km offshore from closest part of the Proposed Development array area to the closest section of coast. The eastern edge of the Proposed Development array area is generally located at distances over 60 km from the coast.</u> The siting of the Proposed Development at long distance offshore forms the key designed in measure which minimises potential for significant cultural heritage effects relating to setting.	Already implemented at design stage. The location and spatial extent of the Proposed Development will be conditioned in the Section 36 Consent and/or Marine Licence.
15.2	Chapter 15: Seascape, landscape and visual impact	<u>Maximum blade tip height is 355 m from lowest astronomical tide (LAT) and maximum rotor diameter of 310 m.</u> The height of the Proposed Development will not exceed the maximum blade top height.	Already implemented in design stage. Specific details of the design of the Proposed Development will be secured via the Section 36 Consent and/or Marine Licence.
15.3	Chapter 15: Seascape, landscape and visual impact	<u>The colour of the wind turbine tower and blades will be agreed with relevant stakeholders and will likely be RAL 7035 (light grey) above the interface level. The jacket foundation (including foundation piece) will likely be painted RAL 1023 (traffic yellow) up to the interface level at approximately +30 m above LAT.</u> The light grey (RAL 7035) colour of the Proposed Development wind turbines provides standard mitigation as a recessive colour in the seascape/sky backdrop. The brighter yellow jacket foundation will be limited to the jacket foundation (including transition piece) up to the interface level which is low lying and less visible in distant views from low lying areas.	Specific details of the design of the Proposed Development will be secured via the Section 36 Consent and/or Marine Licence.
Secondary Mitigation			
15.4	Chapter 15: Seascape, landscape and visual impact	No seascape, landscape and visual impact mitigation is considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined) is not significant in EIA terms.	N/A

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
Monitoring			
15.4	Chapter 15: Seascape, landscape and visual impact	No seascape, landscape and visual impact monitoring to test the predictions made within the assessment of likely significant effects on seascape, landscape and visual impact is considered necessary.	N/A

2.14. CULTURAL HERITAGE

Table 2.10: Cultural Heritage Designed In Measures, Mitigation and Monitoring Commitments

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
Designed In Measures			
16.1	Chapter 16: Cultural heritage	<u>The Proposed Development array area has been sited 37.8 km offshore from closest part of the Proposed Development array area to the closest section of coast. The eastern edge of the Proposed Development array area is generally located at distances over 60 km from the coast.</u> The siting of the Proposed Development at long distance offshore forms the key designed in measure which minimises potential for significant cultural heritage effects relating to setting.	Already implemented at design stage. The location and spatial extent of the Proposed Development will be conditioned in the Section 36 Consent and/or Marine Licence.
16.2	Chapter 16: Cultural heritage	<u>Maximum blade tip height is 355 m from lowest astronomical tide (LAT) and maximum rotor diameter of 310 m.</u> The height of the Proposed Development will not exceed the maximum blade top height.	Already implemented in design stage. Specific details of the design of the Proposed Development will be secured via the Section 36 Consent and/or Marine Licence.
16.3	Chapter 16: Cultural heritage	<u>The colour of the wind turbine tower and blades will be agreed with relevant stakeholders and will likely be RAL 7035 (light grey) above the interface level. The jacket foundation (including foundation piece) will likely be painted RAL 1023 (traffic yellow) up to the interface level at approximately +30 m above LAT.</u> The light grey (RAL 7035) colour of the Proposed Development wind turbines provides standard mitigation as a recessive colour in the seascape/sky backdrop. The brighter yellow jacket foundation will be limited to the jacket foundation (including transition piece) up to the interface level which is low lying and less visible in distant views from low lying areas.	Specific details of the design of the Proposed Development will be secured via the Section 36 Consent and/or Marine Licence.
16.4	Chapter 16: Cultural heritage	<u>The angle of the plane of the beam of peak intensity of aviation warning lights will be elevated to between 3-4° above the horizontal plane. The intensity of the emitted light will be reduced at the horizontal plane (20% to 45% of peak intensity) and below the horizontal plane (less than 10% of the minimum. This directional intensity focusses the lighting to 3° to 4° above the horizontal plane and reduces the intensity of the light from below the horizontal plane, thereby reducing the intensity of effects of light experienced in views at night from locations that are below the horizontal plane (e.g. from the seascape below the wind turbines or from a distant low lying coastline).peak intensity at 1.5° or more below horizontal plane).</u>	Secured in the Section 36 Consent and/or Marine Licence via the requirement for LMP which will be submitted to MS-LOT for approval.

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
16.5	Chapter 16: Cultural heritage	<u>Adherence to CAA (2016), CAP 393, Air Navigation: The Order and the Regulations (2016). This will require approval and implementation of a LMP which will set out specific requirements in terms of aviation lighting to be installed on the wind turbines. The LMP will be prepared in consultation with the CAA, MoD and MCA) will take into account requirements for aviation lighting as specified in Article 223 of the UK ANO, 2016 and changes to ICAO Annex 14 Volume 2, Chapter 6, paragraph 6.2.4 promulgated in November 2016. To comply with CAA (2016), CAP 393, Air Navigation: The Order and the Regulations (2016) which sets out the mandatory requirements for the lighting of offshore wind turbines, and to ensure appropriate lighting is in place to facilitate aeronautical safety.</u>	Secured in the Section 36 Consent and/or Marine Licence via the requirement for LMP which will be submitted to MS-LOT for approval.
Secondary Mitigation			
16.6	Chapter 16: Cultural heritage	No cultural heritage mitigation is considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined) is not significant in EIA terms.	N/A
Monitoring			
16.7	Chapter 16: Cultural heritage	No cultural heritage monitoring to test the predictions made within the assessment of likely significant effects on cultural heritage is considered necessary.	N/A

2.15. INFRASTRUCTURE AND OTHER USERS

Table 2.11: Infrastructure and Other Users Designed In Measures, Mitigation and Monitoring Commitments

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
Designed In Measures			
17.1	Chapter 17: Infrastructure and Other Users	<u>Application and use of Safety Zones during construction, operation and maintenance, and decommissioning activities associated with wind turbines and offshore platforms.</u> In the interests of safety to infrastructure and other users receptors.	Secured via a separate application for safety zones prior to construction commencing.
17.2	Chapter 17: Infrastructure and Other Users	<u>Timely and efficient distribution of NtM, Kingfisher notifications and other navigational warnings of the position and nature of works associated with the Proposed Development.</u> In the interests of safety to infrastructure and other users receptors.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for notifications and promulgation of information.
17.3	Chapter 17: Infrastructure and Other Users	<u>Promulgation of information and implementation of Safety Zones and advisory safety distances regarding the displacement of recreational marine vessels.</u> The construction of infrastructure and implementation of safety distances around construction vessels may displace recreation vessels. Likewise, maintenance and decommissioning activities may also displace recreation vessels.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for notifications and promulgation of information.
17.4	Chapter 17: Infrastructure and Other Users	<u>Crossing or laying of cables over or adjacent to known or future cables will be subject to crossing and/or proximity agreements.</u> In the interests of safety to infrastructure and other users receptors and to potential maintenance works being undertaken (e.g. Neart Na Gaoithe (NnG) offshore export cables).	Through the Applicants commitment to discuss and enter into cable crossing agreements.
17.5	Chapter 17: Infrastructure and Other Users	<u>Promulgation of information and implementation of Safety Zones and advisory safety distances regarding the displacement of recreational marine fishing and other marine activities not related to utilising watercraft.</u> The construction of infrastructure and implementation of safety distances around the landfall location may prevent access to the area for recreation users. Likewise, maintenance and decommissioning activities may also restrict access.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for notifications and promulgation of information.
17.6	Chapter 17: Infrastructure and Other Users	<u>Promulgation of information and crossing and/or proximity agreements regarding restricted access to NnG infrastructure.</u> The construction of offshore export cables and implementation of safety distances around vessels may affect or restrict access to existing cables. Likewise, maintenance and decommissioning activities may also restrict access.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for notifications and promulgation of information.

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
17.7	Chapter 17: Infrastructure and Other Users	<u>Presence of 500 m construction safety zones around structures undergoing installation, 500 m operational safety zones for major maintenance activities and 50 m advisory safety zones around all structures until the point of commissioning. Advisory clearance distances of up to 500 m in radius around installation vessels. Advisory clearance distances along vulnerable sections of cables (i.e. cables waiting burial or protection).</u> In the interests of safety to infrastructure and other users receptors.	Secured via a separate application for safety zones prior to construction commencing.
17.8	Chapter 17: Infrastructure and Other Users	<u>Creation of a database of known users (including local yacht clubs, local dive clubs and local recreational activity centres) to act as a mailing list for direct issue of NtMs.</u> To ensure that as many interested parties as possible are aware of Proposed Development activities.	The Applicant commitment to create and maintain database. Requirement secured in Section 36 Consent and/or Marine Licence to issue NtMs and ensure promulgation of information.
Secondary Mitigation			
17.9	Chapter 17: Infrastructure and Other Users	No infrastructure and other users mitigation is considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined) is not significant in EIA terms.	N/A
Monitoring			
17.10	Chapter 17: Infrastructure and Other Users	No infrastructure and other users monitoring to test the predictions made within the assessment of likely significant effects on infrastructure and other users receptors is considered necessary.	N/A

- In addition, and as agreed with Transport Scotland during pre-application engagement (see volume 3, appendix 5.1) the Applicant agreed to produce a Construction Traffic Management Plan post consent as a requirement of the Section 36 Consent and / or Marine Licence. On this basis, Transport Scotland were content to scope out the need for onshore traffic and transport assessments from the Offshore EIA Report.

2.16. OFFSHORE SOCIO-ECONOMICS AND TOURISM

Table 2.12: Offshore Socio-economic and Tourism Designed In Measures, Mitigation and Monitoring Commitments

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
Designed In Measures			
18.1	Chapter 18: Offshore socio-economic and tourism	<u>Supply Chain Engagement Plan: setting out initiatives to enhance opportunities for procurement from local and Scottish suppliers and to drive the investment in new facilities associated with the development, manufacturing and supply, and construction/installation supply chain.</u> This looks to act on the opportunity presented by a more reliable pipeline of offshore wind sector activity, and tackle the historic lack of investment in supply chain capacity – this is observed by Scottish Offshore Wind Energy Council (SOWEC), and aligns with the Scottish Government’s commitment to deliver on the ambitions of Scotland’s offshore wind programme. This pipeline of activity can create market certainty for investors to facilitate the establishment of new and increased supply chain capabilities in Scotland – as pointed out by Highlands and Islands Enterprise and Scottish Enterprise during consultation.	Through the Applicant commitment to produce Plan to enhance opportunities for local and Scottish supply chains. This requirement is also included in the onshore EIA Report and the relevant onshore consent may provide an appropriate means for securing the commitment should it be necessary.
18.2	Chapter 18: Offshore socio-economic and tourism	<u>A Berwick Bank Community Benefit Fund would be established in partnership with local stakeholders to ensure that local communities help set the priorities for the fund, as well as decide on what gets funded. The details of the Community Benefit Fund would be established after a consent determination has been made.</u> Ahead of establishing any formal Fund, the Project team are keen to support local initiatives where possible and have invited local stakeholders to discuss opportunities directly with the Project team. To date the Project has supported various local organisations and initiatives such as the North Berwick Fringe By The Sea Festival, the Scottish Seabird Centre and the National Merlin Rocket Yachting Championship, held in East Lothian. In addition to this the Project team are working	Through the Applicant commitment to establish fund post consent determination. This requirement is also included in the onshore EIA Report and the relevant onshore consent may provide an appropriate means for securing the commitment should it be necessary.

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
		alongside local education partners to explore a variety of Science, Technology, Engineering and Mathematics (STEM) benefits that the Project can bring to the East Lothian area. The Project team are members of the East Lothian Industry and Education Partnership and are also members of the Mid and East Lothian Chamber of Commerce.	
Secondary Mitigation			
18.3	Chapter 18: Offshore socio-economic and tourism	No offshore socio-economic and tourism mitigation is considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined) is not significant in EIA terms.	N/A
Monitoring			
18.4	Chapter 18: Offshore socio-economic and tourism	No offshore socio-economic and tourism monitoring to test the predictions made within the assessment of likely significant effects on cultural heritage is considered necessary.	N/A

2.18. WATER QUALITY

Table 2.13: Water Quality Designed In Measures, Mitigation and Monitoring Commitments

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
Designed In Measures			
19.1	Chapter 19: Water Quality	<u>An EMP will be prepared and implemented during the construction, operation and maintenance and decommissioning phases of the Proposed Development. The EMP will include Proposed Development mitigation/monitoring measures and commitments and a MPCP which will include key emergency contact details (e.g. SEPA, Scottish Environment Protection Agency).</u> Measures will be adopted to ensure that the potential for release of pollutants from construction, operation and maintenance and decommissioning plant is minimised. These will likely include: designated areas for refuelling where spillages can be easily contained, storage of chemicals in secure designated areas in line with appropriate regulations and guidelines, double skinning of pipes and tanks containing hazardous substances, and storage of these substances in impenetrable bunds.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for an EMP, including MPCP and INNSMP which will be submitted to MS-LOT for approval.
19.2	Chapter 19: Water Quality	<u>CoCP.</u> These measures have been identified during the design of the onshore and intertidal elements of the Proposed Development as part of the EIA process. They include strategies, control measures and monitoring procedures for managing the potential environmental impacts of constructing the Proposed Development and limiting disturbance from construction activities as far as reasonably practicable.	Secured in the Section 36 Consent and/or Marine Licence, via the requirement for a CoCP which will be submitted to MS-LOT for approval.
19.3	Chapter 19: Water Quality	<u>Decommissioning Plan.</u> The aim of this plan is to adhere to the existing Scottish and international legislation and guidance, with decommissioning industry practice applied. Overall, this will ensure the legacy of the Proposed Development will reduce the amount of long-term disturbance to the environment so far as reasonably practicable.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for a Decommissioning Plan. It is expected the Plan will be submitted to Scottish Ministers and approved prior to construction.
19.4	Chapter 19: Water Quality	<u>An INNS Management Plan will be implemented and is included in the EMP (see volume 4, appendix 22, annex B). The plan outlines measures to ensure vessels comply with the IMO ballast water management guidelines (IMO, 2004), it will consider the origin of vessels and contain standard housekeeping measures for such vessels as well as measures to be adopted in the event that a high alert species is recorded.</u> To manage and reduce the risk of	Secured in the Section 36 Consent and/or Marine Licence via the requirement for an EMP, including MPCP and INNSMP

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
		potential introduction and spread of INNS so far as reasonably practicable.	which will be submitted to MS-LOT for approval.
19.5	Chapter 19: Water Quality	<u>Marine Pollution Contingency Plan.</u> Measures will be adopted to ensure that the potential for release of pollutants from construction, operation and decommissioning plant is minimised. These will likely include: designated areas for refuelling where spillages can be easily contained; only using chemicals included on the approved Cefas list under the Offshore Chemical Regulations 2002; storage of these in secure designated areas in line with appropriate regulations and guidelines; double skinning of pipes and tanks containing hazardous substances; and storage of these substances in impenetrable bunds. In this manner, the potential for release of contaminants from rigs and supply/service vessels will be strictly controlled, thus providing protection for marine life across all phases of the offshore wind farm development.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for an EMP, including MPCP and INNSMP which will be submitted to MS-LOT for approval.
19.6	Chapter 19: Water Quality	<u>Suitable implementation and monitoring of cable protection (via burial, or external protection where adequate burial depth as identified via risk assessment is not feasible).</u> The mobile nature of sedimentary environments found in the Proposed Development benthic subtidal and intertidal ecology study area could result in the exposure of previously buried infrastructure such as array, OSP/Offshore converter station platform interconnector and offshore export cables. Monitoring these features ensures that repair and reburial are done efficiently so that no more than the declared amount of new hard substrate habitat is created, and this infrastructure doesn't cause unnecessary damage to the environment.	Secured in the Section 36 Consent and/or Marine Licence via the requirement for an ANMP which will be submitted to MS-LOT for approval.
19.7	Chapter 19: Water Quality	<u>Only drilling fluids that are on the PLONOR list, the list is controlled and maintained by Cefas, will be used.</u> Due to the direction of the trenchless cable landfall being constructed from onshore to offshore there will be a potential interface between the sea and the drill fluids during physical punch out of the exit punches out associated with the selected trenchless technique (e.g. HDD). Small quantities of drill fluids may be released. To limit potential environmental damage only PLONOR listed drilling fluid will be used.	Secured in the Section 36 Consent and/or Marine Licence, via the requirement for an EMP which will be submitted to MS-LOT for approval.
Secondary Mitigation			
19.8	Chapter 19: Water Quality	No water quality mitigation is considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined) is not significant in EIA terms.	N/A
Monitoring			
19.9	Chapter 19: Water Quality	<u>Introduction and colonisation of INNS upon hard structures</u> Commitment to engaging with MSS, MS-LOT, NatureScot and other relevant key stakeholders to identify and deliver measures for	Detailed monitoring commitments will be agreed post-consent

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
		contributing to strategic monitoring to understand the impact of hard structure colonisations and change in community structure and local species diversity.	and included in the PEMP which will be submitted to MS-LOT for approval.

2.19. INTER-RELATED EFFECTS

3. There are no enhancement, mitigation and monitoring commitments related to this chapter.

2.20. MAJOR ACCIDENTS AND DISASTERS

Table 2.14: Major Accidents and Disasters Designed In Measures, Mitigation and Monitoring Commitments

Reference	Cross-reference to Offshore EIA Report	Commitment	Means of Implementation
Designed In Measures			
21.1	Chapter 21: Major Accidents and Disasters	<u>Preparation of an Emergency Response Co-Operation Plan (ERCoP).</u> Preparation of an ERCoP which will set out the process and procedures to be implemented in the event of a major accident or emergency occurring during construction, operation and maintenance or decommissioning phases of the Proposed Development.	Requirement to produce the ERCoP will be secured in the Section 36 Consent. The plan will be prepared in consultation with the MCA and will be submitted for to MS-LOT approval.
21.2	Chapter 21: Major Accidents and Disasters	<u>UXO Risk Assessment.</u> In addition to using low order techniques, all UXO detonation will be subject to a risk assessment completed in accordance with relevant guidance including PUB C754 Assessment and management of UXO risk in the marine environment (Construction Industry Research and Information Association (CIRIA), 2015).	The Applicant commitment to undertake Risk Assessment.
Secondary Mitigation			
21.3	Chapter 21: Major Accidents and Disasters	No major accidents and disasters mitigation is considered necessary because the likely effect in the absence of further mitigation (beyond the designed in measures outlined) is not significant in EIA terms.	N/A
Monitoring			
21.4	Chapter 21: Major Accidents and Disasters	No major accidents and disasters monitoring to test the predictions made within the assessment of likely significant effects on cultural heritage is considered necessary.	N/A

3. REFERENCES

Environmental Protection Agency (EPA) (2017) *Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports*.

IALA (2013) *IALA Recommendation O-139 on The Marking of Man-Made Offshore Structures*. Edition 2. Saint Germain en Laye, France: IALA.

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The Crown Estate (2014) *Protocol for Archaeological Discoveries: Offshore Renewables Projects*. Available at: https://www.wessexarch.co.uk/sites/default/files/field_file/2_Protocol%20For%20Archaeological%20Discoveries.pdf Accessed on: 19/03/2021].

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