Cyfoeth Naturiol Cymru
Natural Resources Wales

Form

Record of a Habitats Regulations Assessment of a project
March 2016

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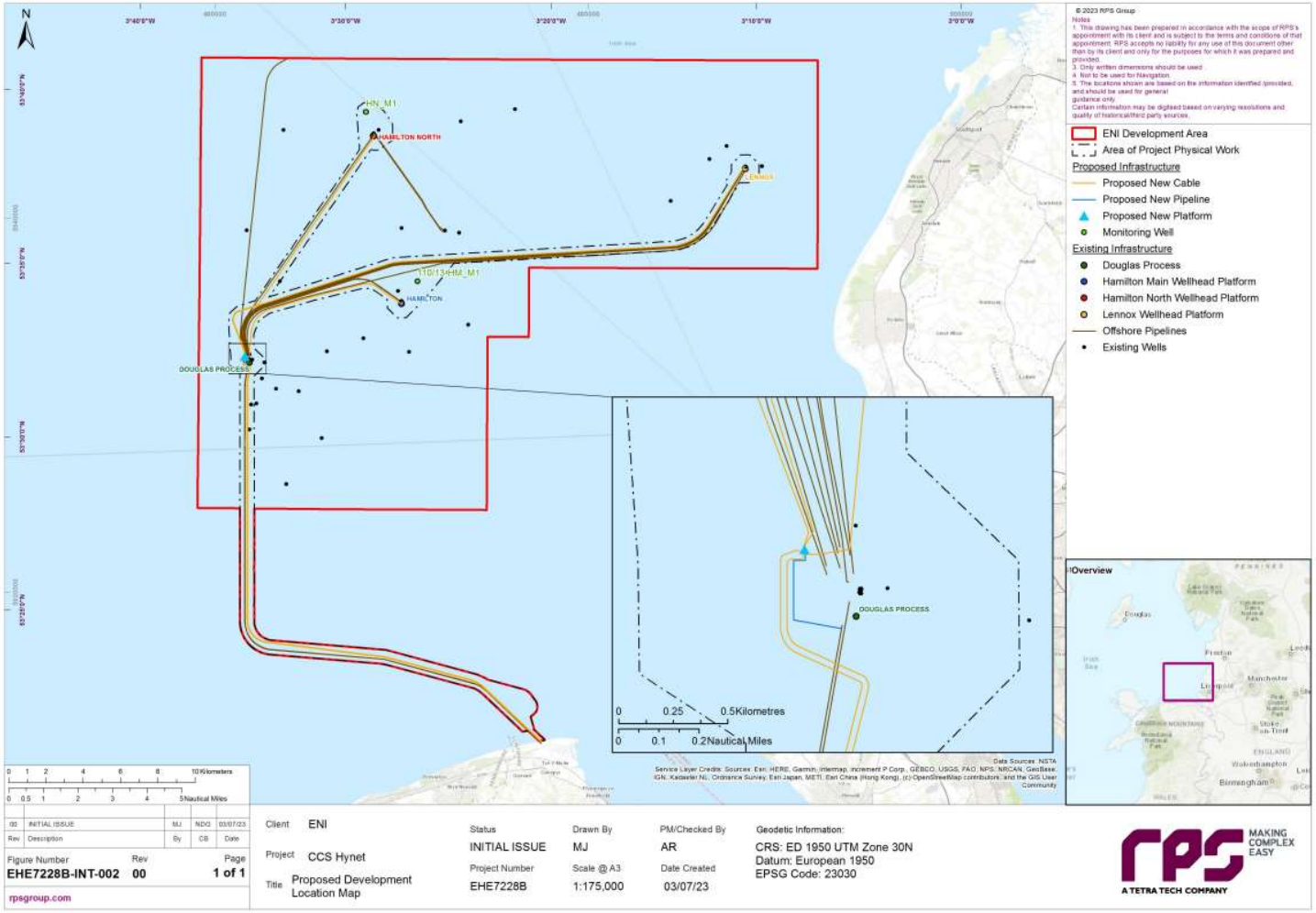
1. Project Details

1(a): Project details where an external party has applied to NRW for any form of authorisation	
Application reference number (if applicable)	CML2365
Date application received	07/11/2023
Applicant details	Liverpool Bay CCS Limited
Activity proposed	The HyNet Carbon Dioxide Transportation and Storage Project - Offshore (hereafter the "Proposed Development") is being developed in parallel with, and as a key part of, the HyNet Northwest full-chain hydrogen and Carbon Capture and Storage (CCS) industrial decarbonisation project (the HyNet Project). The HyNet Project is designed to transform a region of the UK into the world's first low carbon industrial cluster by 2030. The Proposed Development will repurpose the existing Eni offshore assets in Liverpool Bay, which will include the natural gas import pipeline from the Douglas platform to Point of Ayr (PoA) Gas Terminal to become an export pipeline to transport CO_2 to a newly constructed Douglas CCS platform. From the new Douglas CCS platform, CO_2 will be transported along the re-purposed natural gas pipelines to the Hamilton Main platform for injection into the Hamilton Main reservoir, to the Hamilton North platform for injection into the Hamilton North reservoir, and to the Lennox platform for injection into the Lennox reservoir. The Proposed Development will also require new electrical and fibre optic transmission infrastructure seawards of Mean High Water Spring (MHWS), connecting the PoA Terminal to the offshore infrastructure. The following Marine Licensable activities will be required in Welsh Waters: • Installation of a new Douglas CCS platform jacket and topsides to replace the existing Douglas Process platform. This CCS platform will receive CO_2 from the onshore PoA Terminal and distribute to Hamilton Main, Hamilton North, and Lennox wellhead platforms. Installation of the new Douglas CCS platform jacket will include up to eight driven piles; • Repurposing of existing subsea natural gas pipelines for their change of use to transport CO_2; • Installation of new sections of pipeline spools to connect the new Douglas CCS platform to the existing subsea natural gas pipelines, which includes some installation of concrete mattresses and external rock protection; • Implementation of a programme of Monitoring, Measurement and Verification activities, should they involve a disposal of equipment or removal from the seabed;

	• Laying, burial, and some sidecast dredging, of two submarine 33kV armoured cables, with integrated fibre-optic cable connections (35 km from PoA Terminal onshore to the new Douglas CCS platform, including within the intertidal/foreshore area up to MHWS, within Welsh waters only); • Laying, and burial, of new power cables with integrated fibre-optic cable connections, one each from the new Douglas CCS platform connecting with the Hamilton Main, Hamilton North and Lennox platforms; and • Installation of concrete mattresses and external rock protection at cable crossing points. **This HRA considers the licensable activities associated with the marine licence in Welsh Waters as detailed above. In line with Regulation 67(2) of The Conservation of Habitats and Species Regulations 2017, this HRA does not consider the works falling outside the marine licence application, as these will be assessed as part of the HRA conducted by another Competent Authority (e.g., the Offshore Petroleum Regulator for Environment and Decommissioning, OPRED). Neither there is a detailed consideration of decommissioning activities as part of this HRA as this is an assessment that will be conducted at the time consent for the decommissioning activity is sought. Furthermore, seismic surveys are not marine licensable activities and are therefore not considered in this HRA. Seismic surveys are non marine licensable activities and as per regulation 67(2) of The Conservation of Habitats and Species Regulations 2017, we consider the European Protected Species licensing will be better placed to assess this impact on marine mammals.**
Relevant legislation	The consents, licences, and permissions that will be sought include: • A Marine Licence under the Marine and Coastal Access Act (MCAA) 2009; and • A Storage Permit from Offshore Petroleum Regulator for Environment and Decommissioning (OPRED), in accordance with the Storage of Carbon Dioxide (Licensing etc.) Regulations 2010 (SI 2010/2221).
Location	Douglas/Hamilton/Lennox gas platforms in Liverpool Bay to PoA gas terminal. The Co-ordinates for the Eni Development Area (Red Line Boundary) are set out in the Attachment 6(b)1 of the Marine Licence Application, and those for the Area of Project Physical Works are set out in the Attachment 6(b)2. Easting and Northing are provided in ED50 30N, and Latitude and Longitude in WGS84. A map of the Project is shown below from the following link: CML2365 - Proposed Development Location Map.pdf.

	
Application documents	The application documents that have informed this HRA are as follows: • Application for a Marine Licence for Marine Works (CML2365 - LBA CCS Ltd - PA2211-marine-works-application-form-FINAL - signed); • Marine Licence Application Form Attachment 6(C) – Application supporting documents (CML2365 LBA CCS Ltd-ML Application-Attachment -6(c) Supporting documentation.FIN.pdf);

	• Liverpool Bay CCS LTD HyNet Carbon Dioxide Transportation and Storage Project- Offshore. Environmental Statement - Table of Contents (CML2365-LBA CCS Ltd_ES_ToC_NRW_FINAL); • Environmental Statement. Non-Technical Summary - Liverpool Bay CCS Ltd HyNet Carbon Dioxide Transportation and Storage Project- Offshore (CML2365-LBA CCS Ltd_OFFSHORE ES_NTS_NRW-FINAL); • Introductory Chapters: Chapter 1: Introduction; Chapter 2: Policy and Legislative Context; Chapter 3: Proposed Development Description; Chapter 4: Site Selection and Consideration of Alternatives; Chapter 5: Environmental Impact Assessment Methodology (CML2365-LBA CCS Ltd_Offshore ES_CH1-5_INTRO_NRW-UPDATE); • Chapter 6: Physical Processes (CML2365-LBA CCS Ltd_ES_CH6_PP_NRW_FINAL); • Chapter 7: Marine Biodiversity (CML2365-LBA CCS Ltd_ES_CH7_MB_NRW_FINAL); • Chapter 8: Offshore Ornithology (CML2365-LBA CCS Ltd_ES_CH8_OO_NRW_FINAL); • Chapter 14: Inter-Related Effects (CML2365-LBA CCS Ltd_ES_CH14_IRE_NRW_FINAL); • Appendix H: Physical Processes Technical Report (CML2365-LBA CCS Ltd_ES_Appendix H_PP TR_NRW_FINAL); • Appendix I: Marine Biodiversity Technical Report (CML2365-LBA CCS Ltd_ES_Appendix I_MBTR_NRW__FINAL); • Appendix I1: Marine Biodiversity Subtidal Survey Report (CML2365-LBA CCS Ltd_ES_Appendix I1_MB ST_NRW_FINAL); • Appendix I2: Marine Biodiversity Intertidal Survey Report (CML2365-LBA CCS Ltd_ES_Appendix I2_MB IT_NRW_FINAL); • Appendix J: Underwater Noise Technical Report (CML2365-LBA CCS Ltd_ES_Appendix J_UWN TR_NRW_FINAL); • Appendix K1: Offshore Ornithology Baseline Technical Report (CML2365-LBA CCS Ltd_ES_Appendix K1_OOB TR_NRW_FINAL); • Appendix K2: Offshore Ornithology Displacement Technical Report (CML2365-LBA CCS Ltd_ES_Appendix K2_OOD TR_NRW_FINAL); • Appendix K3: Intertidal Ornithology Technical Report (CML2365-LBA CCS Ltd_ES_Appendix K3_OOI_NRW_FINAL); • Appendix K4: Little Tern Foraging Distribution Technical Report (CML2365-LBA CCS Ltd_ES_Appendix K4_LT FTR_NRW_FINAL); • Appendix P: Habitats Regulations Assessment Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL); • Appendix R – Environmental Management Plan (CML2365-LBA CCS Ltd_OFFSHORE ES_Appendix R EMP_NRW_FINAL); • Appendix S – Marine Mammal Mitigation Plan (CML2365-LBA CCS Ltd_OFFSHORE ES_Appendix S MMMP_NRW_FINAL); • Appendix T – Invasive Non-Native Species Management Plan (CML2365-LBA CCS Ltd_OFFSHORE ES_Appendix T INNS_NRW_FINAL); • Consultation log - Further Information (CML2365 Consultation log to applicant-Rev_2.0.26.07.2024 Further Information); • Marine Mammals - Further Information (CML2365 EHE7228B_TN_MM_Rev02 Further Information); • Benthic - Further Information (CML2365 MC000025_TN_Benthic_MBTN01_Rev02 Further Information); • Fish - Further Information (CML2365 MC000025_TN_Fish_MBTN02_Rev02 Further Information); and • RIAA - Further Information (CML2365 MC000025_TN_RIAA_MBTN04_Rev02 Further Information). • Further clarifications (CML2365 Further Clarification response November 2024)

Environmental Statement	The Environmental Statement (ES) can be accessed through the Public Register Public register - Customer Portal (naturalresources.wales)
Pre-application correspondence	The Applicant has been engaged in email correspondence with the NRW-MLT since inquiring in late October 2022 about the marine licensing requirements for the Hynet Carbon Dioxide Transportation and Storage Project – Offshore. Subsequent correspondence from NRW-MLT confirmed that pre application number (PA2211), and that Dr Maria Alvarez had been assigned as the Case Officer. The correspondence with NRW-MLT regarding the licensing requirements is included in Attachment 12(a) of the Marine Licence application. The activities in the Marine Licence application between MHWS and MLWS have also been included within a Town and Country Planning Application (TCPA) to Flintshire County Council (FUL/000246/23) for works at Eni's PoA gas terminal. A meeting was held with NRW Advisory to discuss the TCPA intertidal ecological survey approach. The findings from this survey were also used to inform the baseline and EIA reported in the ES supporting the Marine Licence application. The minutes from this meeting are included in Attachment 12(a) of the Marine Licence application. NRW commented on the TCPA application (FUL/000246/23), and the NRW letter is included within Attachment 12(a). The Applicant responded to these comments and the technical responses on Biodiversity, and on Water are included in Attachment 12(a). A summary of the key consultation undertaken to date on the HRA for the Proposed Development is included in Table 1.1 of the Liverpool Bay CCS LTD HyNet Carbon Dioxide Transportation and Storage Project- Offshore. Volume 3 Appendix P: Habitats Regulations Assessment Stage 2. Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).
NRW team responsible for drafting this HRA report, and name of lead officer	Marine Licensing Team: Maria Alvarez (Elena San Martin – ABPmer).

2. Determining the need for a Habitats Regulations Assessment

2.1 Is the whole of the project directly connected with or necessary to the management of one or more Natura 2000 sites, for the purposes of conserving the habitats or species for which the Natura 2000 site(s) is/are designated?	NO
2.2 Is there a possibility that the project could affect a different Natura 2000 site to the one(s) the project is intended to conserve?	NA
2.3 Is it necessary to carry out an HRA?	YES

3. Considering the likelihood of a significant effect (LSE)

3.1 Renewal of a permission on the same or more restrictive terms as the extant permission

Is this project a renewal of a current permission which complies with NRW approved criteria for ruling out significant effects of renewals (see section 6.2A of OGN 200) without conducting a project-specific LSE test?	NO

3.2 Likelihood of significant effects (LSE) test

3.2.1 Which Natura 2000 sites might be affected by the proposal?	Based on the project specification or information provided in the application, it is considered that the following Natura 2000 sites have features which could be affected by the project: • Dee Estuary/Aber Dyfrdwy SAC (hereinafter referred to as Dee Estuary SAC) [UK0030131]; • River Dee and Bala Lake/Afon Dyfrdwy a Llyn Tegid SAC (hereinafter referred to as River Dee and Bala Lake SAC) [UK0030252]; • Afon Gwyrfai a Llyn Cwellyn SAC [UK0030046]; • Afon Eden - Cors Goch Trawsfynydd SAC [UK0030075]; • River Teifi/Afon Teifi SAC (hereinafter referred to as River Teifi SAC) [UK0012670]; • North Anglesey Marine/Gogledd Môn Forol SAC (hereinafter referred to as North Anglesey Marine SAC) [UK0030398]; • North Channel SAC [UK0030399]; • Lleyn Peninsula and the Sarnau SAC [UK0013117]; • West Wales Marine SAC [UK0030397]; • Strangford Lough SAC [UK0016618]; • Murlough SAC [UK0016612]; • Cardigan Bay/Bae Ceredigion SAC (hereinafter referred to as Cardigan Bay SAC) [UK0012712]; • The Maidens SAC [UK0030384]; • Pembrokeshire Marine/Sir Benfro Forol SAC (hereinafter referred to as Pembrokeshire Marine SAC) [UK0013116]; • Bristol Channel Approaches/Dynesfeydd Môr Hafren SAC (hereinafter referred to as Bristol Channel Approaches SAC) [UK0030396]; • Lundy SAC [UK0013114]; • Rockabill to Dalkey Island SAC [IE0003000]; • Saltee Islands SAC [IE000707]; • Roaringwater Bay and Islands SAC [IE000101]; • Liverpool Bay/Bae Lerpwl SPA (hereinafter referred to as Liverpool Bay SPA) [UK9020294]; • Dee Estuary SPA [UK9013011];

	• Ribble and Alt Estuaries SPA [UK9005103]; • Anglesey Terns/Morwenoliaid Ynys Môn SPA (hereinafter referred to as Anglesey Terns SPA) [UK9013061]; • Morecambe Bay and Duddon Estuary SPA [UK9020326]; • Aberdaron Coast and Bardsey Island/Glannau Aberdaron ac Ynys Enlli SPA (hereinafter referred to as Aberdaron Coast and Bardsey Island SPA) [UK9013121]; • Ailsa Craig SPA [UK9003091]; • Skomer, Skokholm and the Seas off Pembrokeshire/Sgomer, Sgogwm a Moroedd Penfro SPA (hereinafter referred to as Skomer, Skokholm and the Seas off Pembrokeshire SPA) [UK9014051]; • Grassholm SPA [UK9014041], and • Saltee Islands SPA [IE0004002]. The potential for the project to affect the following Natura 2000 sites was also initially considered, but can be ruled out without further consideration: N/A
Key for table below:	There is no impact pathway from the proposal to the designated feature (green) There is an impact pathway in principle, but significant effects from the proposal when considered alone can be ruled out (blue) There is an impact pathway and significant effects cannot be ruled out (red)

3.2.2 Screening assessment

	Assessment of likelihood of significant effect	
	I **Relevant conservation objectives**	**II** **Potential impact pathway**

1) Dee Estuary SAC (0.00 km)

Estuaries	**NRW conservation objectives:** Dee Estuary-Reg33-Volume 1-English-091209_1.pdf (naturalresources.wales) **Natural England conservation objectives:** European Site Conservation Objectives for Dee Estuary SAC - UK0030131 (naturalengland.org.uk)	Temporary habitat loss and/or disturbance (along cable connection only) during construction, and operation and maintenance
		Increased SSC and associated deposition (along cable connection only) during construction, and operation and maintenance
		Impacts resulting from the release of sediment bound benthic contaminants (along cable connection only) during construction
		Increased temperature impacting benthic and marine communities (along pipeline only) during operation and maintenance

		Increased risk of introduction and spread of Invasive Non-Native Species (INNS)
		Accidental pollution to the surrounding area
Mudflats and sandflats not covered by seawater at low tide; ***Intertidal mudflats and sandflats***	**NRW conservation objectives:** Dee Estuary-Reg33-Volume 1-English-091209_1.pdf (naturalresources.wales) **Natural England conservation objectives:** European Site Conservation Objectives for Dee Estuary SAC - UK0030131 (naturalengland.org.uk)	Temporary habitat loss and/or disturbance (along cable connection only) during construction, and operation and maintenance
		Increased SSC and associated deposition (along cable connection only) during construction, and operation and maintenance
		Impacts resulting from the release of sediment bound benthic contaminants (along cable connection only) during construction
		Increased temperature impacting benthic and marine communities (along pipeline only) during operation and maintenance
		Increased risk of introduction and spread of INNS
		Accidental pollution to the surrounding area
Salicornia and other annuals colonising mud and sand; ***Glasswort and other annuals colonising mud and sand***	**NRW conservation objectives:** Dee Estuary-Reg33-Volume 1-English-091209_1.pdf (naturalresources.wales) **Natural England conservation objectives:** European Site Conservation Objectives for Dee Estuary SAC - UK0030131 (naturalengland.org.uk)	Temporary habitat loss and/or disturbance (along cable connection only) during construction, and operation and maintenance
		Increased SSC and associated deposition (along cable connection only) during construction, and operation and maintenance
		Impacts resulting from the release of sediment bound benthic contaminants (along cable connection only) during construction
		Increased risk of introduction and spread of INNS
		Accidental pollution to the surrounding area
Atlantic salt meadows	**NRW conservation objectives:** Dee Estuary-Reg33-Volume 1-English-091209_1.pdf (naturalresources.wales) **Natural England conservation objectives:** European Site Conservation Objectives for Dee Estuary SAC - UK0030131 (naturalengland.org.uk)	Temporary habitat loss and/or disturbance (along cable connection only) during construction, and operation and maintenance
		Increased SSC and associated deposition (along cable connection only) during construction, and operation and maintenance
		Impacts resulting from the release of sediment bound benthic contaminants (along cable connection only) during construction
		Increased risk of introduction and spread of INNS
		Accidental pollution to the surrounding area
Sea lamprey	**NRW conservation objectives:** Dee Estuary-Reg33-Volume 1-English-091209_1.pdf (naturalresources.wales)	Temporary habitat loss and/or disturbance (along cable connection only) during construction, and operation and maintenance
		Underwater noise impacting fish receptors during construction

	Natural England conservation objectives: European Site Conservation Objectives for Dee Estuary SAC - UK0030131 (naturalengland.org.uk)	Increased SSC and associated deposition (along cable connection only) during construction, and operation and maintenance
		Accidental pollution to the surrounding area
		EMF impacts during operation and maintenance phase: EMF impacts have been scoped out of HRA as there is limited scope for impacts from EMFs on Annex II diadromous fish ecology. This is because although low-frequency EMFs will be present along subsea cables used to transmit electricity and fish receptors may be receptive to EMF; a recent study has demonstrated increased cable burial depth reduces the intensity of EMF for receptive species due to increasing the distance between the source and receptor (Hutchison *et al*., 2021). Further, EMFs are expected to be elevated within a range of metres of the cable, returning to baseline levels at close range, thereby reducing the potential footprint of impact to the immediate vicinity of the cable itself. The cables within the development area will be buried to a target burial depth of 2 to 3m and/or protected, as per the Cable Specification and Installation Plan (CSIP). Therefore, there are no likely significant effects due to EMF on Annex II diadromous fish species (CML2365 MC000025_TN_RIAA_MBTN04_Rev02 Further Information).
River lamprey	**NRW conservation objectives:** Dee Estuary-Reg33-Volume 1-English-091209_1.pdf (naturalresources.wales) **Natural England conservation objectives:** European Site Conservation Objectives for Dee Estuary SAC - UK0030131 (naturalengland.org.uk)	Temporary habitat loss and/or disturbance (along cable connection only) during construction, and operation and maintenance
		Underwater noise impacting fish receptors during construction
		Increased SSC and associated deposition (along cable connection only) during construction, and operation and maintenance
		Accidental pollution to the surrounding area
		EMF impacts during operation and maintenance phase: EMF impacts have been scoped out of HRA as there is limited scope for impacts from EMFs on Annex II diadromous fish ecology. This is because although low-frequency EMFs will be present along subsea cables used to transmit electricity and fish receptors may be receptive to EMF; a recent study has demonstrated increased cable burial depth reduces the intensity of EMF for receptive species due to increasing the distance between the source and receptor (Hutchison et al., 2021). Further, EMFs are expected to be elevated within a range of metres of the

		cable, returning to baseline levels at close range, thereby reducing the potential footprint of impact to the immediate vicinity of the cable itself. The cables within the development area will be buried to a target burial depth of 2 to 3m and/or protected, as per the Cable Specification and Installation Plan (CSIP). Therefore, there are no likely significant effects due to EMF on Annex II diadromous fish species (CML2365 MC000025_TN_RIAA_MBTN04_Rev02 Further Information).

2) River Dee and Bala Lake SAC (22.53 km)

Sea lamprey	**NRW conservation objectives:** CONSERVATION OBJECTIVES FOR N2K SITES (naturalresources.wales) **Natural England conservation objectives:** European Site Conservation Objectives for River Dee and Bala Lake SAC - UK0030252 (naturalengland.org.uk)	Underwater noise impacting fish receptors during construction
River lamprey	**NRW conservation objectives:** CONSERVATION OBJECTIVES FOR N2K SITES (naturalresources.wales) **Natural England conservation objectives:** European Site Conservation Objectives for River Dee and Bala Lake SAC - UK0030252 (naturalengland.org.uk)	Underwater noise impacting fish receptors during construction
Atlantic salmon	**NRW conservation objectives:** CONSERVATION OBJECTIVES FOR N2K SITES (naturalresources.wales) **Natural England conservation objectives:** European Site Conservation Objectives for River Dee and Bala Lake SAC - UK0030252 (naturalengland.org.uk)	Underwater noise impacting fish receptors during construction

3) Afon Gwyrfai a Llyn Cwellyn SAC (113.40 km)

Atlantic salmon	**NRW conservation objectives:** CORE MANAGEMENT PLAN INCLUDING CONSERVATION OBJECTIVES FOR Afon Gwyrfai a Llyn Cwellyn Special Area of Conservation (naturalresources.wales)	Underwater noise impacting fish receptors during construction

4) Afon Eden – Cors Goch Trawsfynydd SAC (197.35 km)

Atlantic salmon	**NRW conservation objectives:** CONSERVATION OBJECTIVES FOR N2K SITES (naturalresources.wales)	Underwater noise impacting fish receptors during construction

5) River Teifi SAC (211.80 km)

Atlantic salmon	**NRW conservation objectives:** CONSERVATION OBJECTIVES FOR N2K SITES (naturalresources.wales)	Underwater noise impacting fish receptors during construction
Sea lamprey	**NRW conservation objectives:** CONSERVATION OBJECTIVES FOR N2K SITES (naturalresources.wales)	Underwater noise impacting fish receptors during construction
River lamprey	**NRW conservation objectives:** CONSERVATION OBJECTIVES FOR N2K SITES (naturalresources.wales)	Underwater noise impacting fish receptors during construction

6) North Anglesey Marine SAC (39.60 km)

Harbour porpoise	**JNCC and NRW conservation objectives:** North Anglesey Marine pSAC: Draft Conservation Objectives And Advice On Activities (naturalresources.wales)	Injury and disturbance from underwater noise generated by piling during construction
		Injury and disturbance from underwater noise generated by Unexploded Ordnance (UXO) detonation during construction
		Injury and disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance
		Effects on marine mammals due to changes in prey availability during construction, and operation and maintenance

7) North Channel SAC (91.40 km)

Harbour porpoise	**JNCC conservation objectives:** North Channel MPA: Conservation Objectives And Advice On Operations (jncc.gov.uk)	Injury and disturbance from underwater noise generated by piling during construction
		Injury and disturbance from underwater noise generated by UXO detonation during construction
		Injury and disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance

8) Lleyn Peninsula and the Sarnau SAC (115.39 km)

Bottlenose dolphin	**NRW conservation objectives:** Contents (naturalresources.wales)	Injury and disturbance from underwater noise generated by piling during construction
		Injury and disturbance from underwater noise generated by UXO detonation during construction
Grey seal	**NRW conservation objectives:** Contents (naturalresources.wales).	Disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance
		Injury and disturbance from underwater noise generated by piling during construction
		Injury and disturbance from underwater noise generated by UXO detonation during construction

9) West Wales Marine SAC (116.68 km)

Harbour porpoise	**JNCC and NRW draft conservation objectives:** West Wales Marine pSAC: Draft Conservation Objectives And Advice On Activities (naturalresources.wales)	Injury and disturbance from underwater noise generated by piling during construction
		Injury and disturbance from underwater noise generated by UXO detonation during construction
		Injury and disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance

10) Strangford Lough SAC (142.70 km)

Harbour seal	**Department of Agriculture, Environment and Rural Affairs (DAERA) conservation objectives:**	Injury and disturbance from underwater noise generated by piling during construction
		Injury and disturbance from underwater noise generated by UXO detonation during construction

	Strangford Lough SAC Conservation Objectives 2015 (daera-ni.gov.uk)	Injury and disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance

11) Murlough SAC (146.97 km)

Harbour seal	**Department of Agriculture, Environment and Rural Affairs (DAERA) conservation objectives:** Murlough SAC Conservation Objectives 2015 (daera-ni.gov.uk)	Injury and disturbance from underwater noise generated by piling during construction
		Injury and disturbance from underwater noise generated by UXO detonation during construction
		Injury and disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance

12) Cardigan Bay SAC (183.99 km)

Sea lamprey ***River lamprey***	**NRW conservation objectives:** Contents (naturalresources.wales)	Underwater noise impacting fish receptors during construction
Bottlenose dolphin	**NRW conservation objectives:** Contents (naturalresources.wales)	Injury and disturbance from underwater noise generated by piling during construction
		Injury and disturbance from underwater noise generated by UXO detonation during construction
		Injury and disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance
Grey seal	**NRW conservation objectives:** Contents (naturalresources.wales)	Injury and disturbance from underwater noise generated by piling during construction
		Injury and disturbance from underwater noise generated by UXO detonation during construction
		Disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance

13) The Maidens SAC (190.72 km)

Grey seal	**Department of Agriculture, Environment and Rural Affairs (DAERA) conservation objectives[1]:** Maidens SAC Conservation Objectives 2017 (daera-ni.gov.uk)	Injury and disturbance from underwater noise generated by piling during construction
		Injury and disturbance from underwater noise generated by UXO detonation during construction
		Disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance

14) Pembrokeshire Marine SAC (233.18 km)

Grey seal	**NRW conservation objectives:** Contents (cyfoethnaturiol.cymru)	Injury and disturbance from underwater noise generated by piling during construction
		Injury and disturbance from underwater noise generated by UXO detonation during construction
		Disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance

15) Bristol Channel Approaches SAC (296.20 km)

Harbour porpoise	**JNCC and NRW draft conservation objectives:** Bristol Channel Approaches pSAC: Draft Conservation Objectives and Advice on Activites (naturalresources.wales)	Injury and disturbance from underwater noise generated by piling during construction
		Injury and disturbance from underwater noise generated by UXO detonation during construction
		Injury and disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance

16) Lundy SAC (330.73 km)

Grey seal	**Natural England conservation objectives:** European Site Conservation Objectives for Lundy SAC - UK0013114 (naturalengland.org.uk)	Injury and disturbance from underwater noise generated by piling during construction
		Injury and disturbance from underwater noise generated by UXO detonation during construction
		Disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance

17) Rockabill to Dalkey Island SAC (155.10 km)

Harbour porpoise	**National Parks and Wildlife Service (NPWS) conservation objectives:** ConservationObjectives.rdl (npws.ie)	Injury and disturbance from underwater noise generated by piling during construction
		Injury and disturbance from underwater noise generated by UXO detonation during construction

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		Injury and disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance

18) Saltee Islands SAC (239.28 km)

Grey seal	**National Parks and Wildlife Service (NPWS) conservation objectives:** Site_specific_cons_obj (npws.ie)	Injury and disturbance from underwater noise generated by piling during construction
		Injury and disturbance from underwater noise generated by UXO detonation during construction
		Disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance

19) Roaringwater Bay and Islands SAC (445.50 km)

Harbour porpoise	**National Parks and Wildlife Service (NPWS) conservation objectives:** Site_specific_cons_obj (npws.ie)	Injury and disturbance from underwater noise generated by piling during construction
		Injury and disturbance from underwater noise generated by UXO detonation during construction
		Injury and disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance
Grey seal	**National Parks and Wildlife Service (NPWS) conservation objectives:** Site_specific_cons_obj (npws.ie)	Injury and disturbance from underwater noise generated by piling during construction
		Injury and disturbance from underwater noise generated by UXO detonation during construction
		Disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance

20) Liverpool Bay SPA (0.00 km)

Red-throated diver	**JNCC, Natural England and NRW conservation objectives:** liverpool-bay-bae-lerpwl-spa-conservation-advice.pdf (naturalresources.wales)	Temporary habitat loss leading to displacement/disturbance during construction
		Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction
		Indirect impacts from changes in prey availability during construction, and operation and maintenance
		Accidental pollution in the surrounding area during construction, and operation and maintenance
Little gull	**JNCC, Natural England and NRW conservation objectives:**	Temporary habitat loss leading to displacement/disturbance during construction

	liverpool-bay-bae-lerpwl-spa-conservation-advice.pdf (naturalresources.wales)	Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction
		Indirect impacts from changes in prey availability during construction, and operation and maintenance
		Accidental pollution in the surrounding area during construction, and operation and maintenance
Common scoter	**JNCC, Natural England and NRW conservation objectives:** liverpool-bay-bae-lerpwl-spa-conservation-advice.pdf (naturalresources.wales)	Temporary habitat loss leading to displacement/disturbance during construction
		Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction
		Indirect impacts from changes in prey availability during construction, and operation and maintenance
		Accidental pollution in the surrounding area during construction, operation and maintenance
Little tern	**JNCC, Natural England and NRW conservation objectives:** liverpool-bay-bae-lerpwl-spa-conservation-advice.pdf (naturalresources.wales)	Temporary habitat loss leading to displacement/disturbance during construction
		Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction
		Indirect impacts from changes in prey availability during construction, operation and maintenance
		Accidental pollution in the surrounding area during construction, and operation and maintenance
Common tern	**JNCC, Natural England and NRW conservation objectives:** liverpool-bay-bae-lerpwl-spa-conservation-advice.pdf (naturalresources.wales)	Temporary habitat loss leading to displacement/disturbance during construction
		Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction
		Indirect impacts from changes in prey availability during construction, operation and maintenance
		Accidental pollution in the surrounding area during construction, and operation and maintenance
Waterbird assemblage	**JNCC, Natural England and NRW conservation objectives:** liverpool-bay-bae-lerpwl-spa-conservation-advice.pdf (naturalresources.wales)	Temporary habitat loss leading to displacement/disturbance during construction
		Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction
		Indirect impacts from changes in prey availability during construction, and operation and maintenance
		Accidental pollution in the surrounding area during construction, and operation and maintenance

21) Dee Estuary SPA (0.00 km)

Sandwich tern	**NRW conservation objectives:** Natural England & the Countryside Council for Wales' advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994 (naturalresources.wales) **Natural England conservation objectives:** https://publications.naturalengland.org.uk/file/5008539580104704	Temporary habitat loss leading to displacement/disturbance during construction Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction Indirect impacts from changes in prey availability during construction, and operation and maintenance Accidental pollution in the surrounding area during construction, and operation and maintenance
Common tern	**NRW conservation objectives:** Natural England & the Countryside Council for Wales' advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994 (naturalresources.wales) **Natural England conservation objectives:** https://publications.naturalengland.org.uk/file/5008539580104704	Temporary habitat loss leading to displacement/disturbance during construction Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction Indirect impacts from changes in prey availability during construction, and operation and maintenance Accidental pollution in the surrounding area during construction, and operation and maintenance
Little tern	**NRW conservation objectives:** Natural England & the Countryside Council for Wales' advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994 (naturalresources.wales) **Natural England conservation objectives:** https://publications.naturalengland.org.uk/file/5008539580104704	Temporary habitat loss leading to displacement/disturbance during construction Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction Indirect impacts from changes in prey availability during construction, and operation and maintenance Accidental pollution in the surrounding area during construction, and operation and maintenance
Pintail	**NRW conservation objectives:** Natural England & the Countryside Council for Wales' advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994 (naturalresources.wales) **Natural England conservation objectives:** https://publications.naturalengland.org.uk/file/5008539580104704	Temporary habitat loss leading to displacement/disturbance during construction Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction Indirect impacts from changes in prey availability during construction, and operation and maintenance Accidental pollution in the surrounding area during construction, and operation and maintenance
Teal	**NRW conservation objectives:**	Temporary habitat loss leading to displacement/disturbance during construction

	Natural England & the Countryside Council for Wales' advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994 (naturalresources.wales) **Natural England conservation objectives:** https://publications.naturalengland.org.uk/file/5008539580104704	Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction
		Indirect impacts from changes in prey availability during construction, and operation and maintenance
		Accidental pollution in the surrounding area during construction, and operation and maintenance
Dunlin	**NRW conservation objectives:** Natural England & the Countryside Council for Wales' advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994 (naturalresources.wales) **Natural England conservation objectives:** https://publications.naturalengland.org.uk/file/5008539580104704	Temporary habitat loss leading to displacement/disturbance during construction
		Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction
		Indirect impacts from changes in prey availability during construction, and operation and maintenance
		Accidental pollution in the surrounding area during construction, and operation and maintenance
Knot	**NRW conservation objectives:** Natural England & the Countryside Council for Wales' advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994 (naturalresources.wales) **Natural England conservation objectives:** https://publications.naturalengland.org.uk/file/5008539580104704	Temporary habitat loss leading to displacement/disturbance during construction
		Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction
		Indirect impacts from changes in prey availability during construction, and operation and maintenance
		Accidental pollution in the surrounding area during construction, and operation and maintenance
Oystercatcher	**NRW conservation objectives:** Natural England & the Countryside Council for Wales' advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994 (naturalresources.wales) **Natural England conservation objectives:** https://publications.naturalengland.org.uk/file/5008539580104704	Temporary habitat loss leading to displacement/disturbance during construction
		Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction
		Indirect impacts from changes in prey availability during construction, and operation and maintenance
		Accidental pollution in the surrounding area during construction, and operation and maintenance
Bar-tailed godwit	**NRW conservation objectives:** Natural England & the Countryside Council for Wales' advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994 (naturalresources.wales)	Temporary habitat loss leading to displacement/disturbance during construction
		Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction
		Indirect impacts from changes in prey availability during construction, and operation and maintenance

	Natural England conservation objectives: https://publications.naturalengland.org.uk/file/5008539580104704	Accidental pollution in the surrounding area during construction, and operation and maintenance
Black-tailed godwit	**NRW conservation objectives:** Natural England & the Countryside Council for Wales' advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994 (naturalresources.wales) **Natural England conservation objectives:** https://publications.naturalengland.org.uk/file/5008539580104704	Temporary habitat loss leading to displacement/disturbance during construction Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction Indirect impacts from changes in prey availability during construction, and operation and maintenance Accidental pollution in the surrounding area during construction, and operation and maintenance
Curlew	**NRW conservation objectives:** Natural England & the Countryside Council for Wales' advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994 (naturalresources.wales) **Natural England conservation objectives:** https://publications.naturalengland.org.uk/file/5008539580104704	Temporary habitat loss leading to displacement/disturbance during construction Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction Indirect impacts from changes in prey availability during construction, and operation and maintenance Accidental pollution in the surrounding area during construction, and operation and maintenance
Grey plover	**NRW conservation objectives:** Natural England & the Countryside Council for Wales' advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994 (naturalresources.wales) **Natural England conservation objectives:** https://publications.naturalengland.org.uk/file/5008539580104704	Temporary habitat loss leading to displacement/disturbance during construction Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction Indirect impacts from changes in prey availability during construction, and operation and maintenance Accidental pollution in the surrounding area during construction, and operation and maintenance
Shelduck	**NRW conservation objectives:** Natural England & the Countryside Council for Wales' advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994 (naturalresources.wales) **Natural England conservation objectives:** https://publications.naturalengland.org.uk/file/5008539580104704	Temporary habitat loss leading to displacement/disturbance during construction Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction Indirect impacts from changes in prey availability during construction, and operation and maintenance Accidental pollution in the surrounding area during construction, and operation and maintenance
Redshank	**NRW conservation objectives:**	Temporary habitat loss leading to displacement/disturbance during construction

	Natural England & the Countryside Council for Wales' advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994 (naturalresources.wales) **Natural England conservation objectives:** https://publications.naturalengland.org.uk/file/5008539580104704	Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction Indirect impacts from changes in prey availability during construction, and operation and maintenance Accidental pollution in the surrounding area during construction, and operation and maintenance
Waterbird assemblage species in addition to those above: Sanderling, Cormorant, Great crested grebe, Lapwing	**NRW conservation objectives:** Natural England & the Countryside Council for Wales' advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994 (naturalresources.wales) **Natural England conservation objectives:** https://publications.naturalengland.org.uk/file/5008539580104704	Temporary habitat loss leading to displacement/disturbance during construction Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction Indirect impacts from changes in prey availability during construction, and operation and maintenance Accidental pollution in the surrounding area during construction, and operation and maintenance

22) Ribble and Alt Estuaries SPA (1.00 km)

Lesser black-backed gull	**Natural England conservation objectives:** https://publications.naturalengland.org.uk/file/5617578676584448	Indirect impacts from changes in prey availability during construction, and operation and maintenance Collision with static offshore infrastructure during operation and maintenance Creation of roosting and nesting habitats among project infrastructure during operation and maintenance
Common tern	**Natural England conservation objectives:** https://publications.naturalengland.org.uk/file/5617578676584448	Disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance Indirect impacts from changes in prey availability during construction, and operation and maintenance

23) Anglesey Terns SPA (30.00 km)

Sandwich tern	**NRW draft conservation objectives:** CONSERVATION OBJECTIVES FOR N2K SITES (naturalresources.wales)	Disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance
		Changes in prey availability during construction, and operation and maintenance

24) Morecambe Bay and Duddon Estuary SPA (22.00 km)

Lesser black-backed gull	**Natural England conservation objectives:** https://publications.naturalengland.org.uk/file/6353663526436864	Indirect impacts from changes in prey availability during construction, and operation and maintenance
		Collision with offshore infrastructure during operation and maintenance
		Creation of roosting and nesting habitats among project infrastructure during operation and maintenance

25) Aberdaron Coast and Bardsey Island SPA (98.00 km)

Manx shearwater	**NRW conservation objectives:** Glannau Aberdaron Plan (naturalresources.wales)	Disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance
		Collision with offshore infrastructure during operation and maintenance

26) Ailsa Craig SPA (196.00 km)

Northern gannet	**NatureScot conservation objectives:** https://apps.snh.gov.uk/sitelink-api/v1/sites/8463/documents/29	Disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance
		Indirect impacts from changes in prey availability during construction, and operation and maintenance

27) Skomer, Skokholm and the Seas off Pembrokeshire SPA (213.00 km)

European storm petrel	**NRW and JNCC draft conservation objectives:**	Disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance

	Microsoft Word - Skomer.Skokholm management plan 07.doc (naturalresources.wales)	Indirect impacts from changes in prey availability during construction, and operation and maintenance
		Collision with offshore infrastructure during operation and maintenance
Manx shearwater	**NRW and JNCC draft conservation objectives:** Microsoft Word - Skomer.Skokholm management plan 07.doc (naturalresources.wales)	Disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance
		Collision with offshore infrastructure during operation and maintenance
		Indirect impacts from changes in prey availability during construction, and operation and maintenance

28) Grassholm SPA (224.00 km)

Northern gannet	**NRW conservation objectives:** Core Management Plan Including Conservation Objectives For Grassholm Spa (naturalresources.wales)	Disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance
		Indirect impacts from changes in prey availability during construction, and operation and maintenance

29) Saltee Islands SPA (246.00 km)

Northern fulmar	**NPWS conservation objectives:** https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004002.pdf	Disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance
		Collision with offshore infrastructure during operation and maintenance
Northern gannet	**NPWS conservation objectives:** https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004002.pdf	Disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance
		Indirect impacts from changes in prey availability during construction, and operation and maintenance

3.2.3 Screening decision of the project 'alone'	
(c) If ANY rows in Column II of Table 3.2.2 are RED	The project is likely have a significant effect on one or more Natura 2000 sites and therefore an appropriate assessment is required.

4. Appropriate assessment of the project when considered alone

4.1 Assessment of project as currently defined

1) Dee Estuary SAC

Natura 2000 site feature (from Table 3.2.2 – RED rows only)	Impact pathway(s) (from Table 3.2.2)	Description of impacts	Assessment in view of conservation objectives	Can adverse effect on site integrity be ruled out?
Dee Estuary SAC (0.00 km)				
Estuaries ***Salicornia and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand*** ***Atlantic salt meadows***	Temporary habitat loss and/or disturbance (along cable connection only) during construction, and operation and maintenance	Subsea cable installation may result in up to 39,000 m^2 and 72,000 m^2 of temporary habitat loss and/or disturbance in the construction and operations and maintenance phases, respectively. The Proposed Development overlaps only with 0.21 km^2 of the Dee Estuary SAC, corresponding to 0.13% of the SAC's total area. As such, habitats of qualifying species (e.g. habitats of prey species) within the site would be only temporarily affected over a small spatial scale. This impact is therefore highly unlikely to adversely affect natural processes within the estuarine environment. The temporary habitat loss/disturbance associated with offshore export cable during all phases of the Proposed Development will be temporary, of short term duration and reversible. As such, this pressure is not expected to adversely affect the extent and distribution or the structure and function of habitats of qualifying species, nor impact the physical processes on which aforementioned habitats rely. Further supporting evidence is provided in Section 1.6.2.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS	Adverse effects on the qualifying Annex I habitats as well as habitats of qualifying features which undermine the following conservation objectives of the Dee Estuary SAC will not occur as a result of impacts resulting from the temporary habitat loss and/or disturbance (along cable connection only) during construction, and operation and maintenance: • the extent and distribution of qualifying natural habitats and habitats of qualifying species; • the structure and function (including typical species) of qualifying natural habitats; • the structure and function of the habitats of qualifying species; • the supporting processes on which qualifying	YES

		Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf) and Technical Note Report To Inform Appropriate Assessment (RIAA)- CML2365 MC000025_TN_RIAA_MBTN04_Rev02 Further Information.	natural habitats and the habitats of qualifying species rely.	
Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats	Temporary habitat loss and/or disturbance (along cable connection only) during construction, and operation and maintenance	It is anticipated that the offshore cables will be installed via either ploughing, or cable trenching, or a combination of both these techniques, depending on ground conditions along the specific cable route. The total extent of mudflats and sandflats not covered by the seawater at low tide within the Dee Estuary SAC is 104.06 km^2, as such temporary habitat loss and disturbance could potentially impact only 0.2% of the extent of this habitat within the SAC. Natural England and Countryside Council for Wales (2010) marked intertidal mudflats and sandflats as vulnerable to physical loss (removal) and damage (abrasion). Elliott *et al.* (1998) provide a detailed overview of the sensitivity characteristics of intertidal sandflats and mudflats and note that the greatest threats to biotopes in these habitats are through large-scale loss and/or removal. No large-scale loss or removal of habitat will occur due to cable trenching which avoids West Hoyle Spit, nor for cable installation in the intertidal zone itself, due to natural and mitigated backfilling. In the Oslo Paris Convention (OSPAR) 2023 status assessment on intertidal mudflat habitats, these habitats were noted to have natural resilience and the ability to recover well from isolated physical and chemical disturbance (OSPAR Assessment Portal, 2024). While it is not currently possible to provide a specific timeframe for habitat recovery, the updated cable route around the sandbank will	Adverse effects on the qualifying Annex I habitats as well as habitats of qualifying features which undermine the following conservation objectives of the Dee Estuary SAC have the potential to occur as a result of impacts resulting from the temporary habitat loss and/or disturbance (along cable connection only) during construction, and operation and maintenance: • the extent and distribution of qualifying natural habitats and habitats of qualifying species; • the structure and function (including typical species) of qualifying natural habitats; • the structure and function of the habitats of qualifying species; • the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely.	NO

		greatly reduce the (already low) level of temporary habitat loss and/or disturbance. The temporary habitat loss/disturbance associated with offshore export cable during all phases of the Proposed Development will be temporary, of short term duration and reversible. However, in advance of any mitigation, this pressure has the potential to adversely affect the mudflats and sandflats not covered by the seawater at low tide. Further supporting evidence is provided in Section 1.6.2.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf) and Technical Note Report To Inform Appropriate Assessment (RIAA)- CML2365 MC000025_TN_RIAA_MBTN04_Rev02 Further Information.		
Estuaries ***Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats*** ***Salicornia and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand*** ***Atlantic salt meadows***	Increased SSC and associated deposition (along cable connection only) during construction, and operation and maintenance	Sand waves are to be cleared along the cable route, south of the existing Douglas platforms, however this will happen at significant distance from the Dee Estuary SAC and therefore will not affect the SAC. Trenching during cable installation may result in the plume extending up to 15 km to the west and that the suspended sediments may reach into the estuary, but suspended sediments are expected to be within the background levels, (i.e. 30 mg/l). This impact is therefore highly unlikely to adversely affect natural processes within the estuarine environment. Furthermore, this impact will not result in changes in sediment character that would affect physical processes acting on the structure of qualifying features and habitats of qualifying species. Natural England and Countryside Council for Wales (2010) marked intertidal mudflats and sandflats as vulnerable to siltation and changes to turbidity. However, given that the sediment plumes resulting from activities along the cable route will	Adverse effects on the qualifying Annex I habitats as well as habitats of qualifying features which undermine the following conservation objectives of the Dee Estuary SAC will not occur as a result of impacts resulting from the increased SSCs and associated deposition (along cable connection only) during construction, and operation and maintenance: • the extent and distribution of qualifying natural habitats and habitats of qualifying species; • the structure and function (including typical species) of qualifying natural habitats;	YES

		stay within background levels of the naturally turbid system of the Dee Estuary, it can be anticipated that this pressure will not alter the total extent of mudflat and sandflat communities nor the abundance of typical species within the site. This pressure is also unlikely to influence the proportion of individual mudflat and sandflat communities or the topography of the intertidal flats and dynamic processes across the flats. As per the Regulation 33 Advice, cockle beds are part of the mudflats and sandflats no covered by sea water at low tide sub-feature: 'intertidal muddy sand communities including cockle beds' (Natural England and NRW, 2010). The common cockle *Cerastoderma edule* has been assessed in the MarESA as having low sensitivity to smothering and not sensitive to increases in SSCs and turbidity (Tyler-Walters, 2007). This is because the species naturally inhabits sedimentary and turbid environments and is therefore considered to be tolerant to these impacts (Navarro and Widdows, 1997, Tyler-Walters, 2007). The common cockle also has intermediate tolerance to smothering of up to 5 cm of deposited sediment, with a high recovery rate, and thus an overall low sensitivity to smothering and siltation effects associated with increased SSCs and associated deposition (Tyler-Walters, 2007). For example, in laboratory and field conditions, individuals have been observed to burrow quickly to the surface if smothered by 2 to 5 cm of sediment (Jackson and James, 1979, Richardson et al., 1993). Therefore, the cockle beds of the Annex I estuaries habitat are considered to have a high tolerance to the impact of increased SSCs and associated deposition. Dredging is not expected to result in sedimentation levels exceeding the MarESA pressure benchmark for common cockle of 5 cm of deposited sediment. Finally, the Dee Estuary itself is a naturally turbid	• the structure and function of the habitats of qualifying species; • the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely.	

		system; therefore any increases in turbidity from anthropogenic actions typically fall within the natural range that the estuary communities (such as cockle beds) generally experience (Natural England and NRW, 2010). As the worst-case cable route option, across the West Hoyle Spit, will no longer be pursued, the worst-case SSCs and subsequent sedimentation associated with the trench excavation that were presented in the applicant's ES and HRA, are not predicted to occur within the Dee Estuary SAC and the associated Cockle Beds. This is because the cable will be installed through a simultaneous lay and burial using a trencher of plough pulled behind the cable lay vessel. The installation of the cable from the landfall across the Welsh Channel and around the eastern end of the West Hoyle Spit activity is likely to be completed within a period of between 24 to 48 hours, thereby resulting in a much reduced volume and duration of potential suspended sediment. *Salicornia* and other annuals colonizing mud and sand and Atlantic salt meadows are located approximately 1.78 km and 2.21 km from the Proposed Development. These qualifying Annex I habitats are not sensitive to sediment plumes as well as associated changes in turbidity and siltation (BSH, 2012, Doody, 2008, Hough et al., 1999a, Natural England and Countryside Council for Wales, 2010). As such, the extent of pioneer saltmarsh and Atlantic salt meadow vegetation communities as well as the abundance of typical and notable species of both vegetation communities within the site is unlikely to be affected. Given the distance from the Proposed Development, abundance of typical species of characteristic pioneer marsh communities as well as zonation of saltmarsh and Atlantic salt meadow		

		communities is unlikely to deviate from baseline conditions. Sediment plumes resulting from trenching activities will not result in a significant variation in water quality (e.g. turbidity, dissolved oxygen levels) that could affect habitats of qualifying species. The area of impact during the operation and maintenance phase is considered minimal when compared to the construction phase, with potentially 500m of cable subject to reburial every 5-10 years. The effects from this impact during the operation and maintenance phase are expected to be of highly localised spatial extent, with each reburial event of very short term duration, intermittent (i.e. every 5-10 years) and of high reversibility. Considering the sensitivity and location of Annex I features within the SAC, as well as the negligible magnitude, short term duration and reversible nature of any increases in SSCs, this pressure is not expected to adversely affect the extent and distribution or the structure and function of habitats of qualifying species as well as mudflats and sandflats not covered by the seawater at low tide, *Salicornia* and other annuals colonizing mud and sand and Atlantic salt meadows, as well as habitats of qualifying species nor impact the physical processes on which aforementioned habitats rely. Further supporting evidence is provided in Section 1.6.2.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf) and Technical Note Report To Inform Appropriate Assessment (RIAA)- MBTN04 (CML2365		

		MC000025_TN_RIAA_MBTN04_Rev02 Further Information.pdf)..		
Estuaries ***Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats***	Increased temperature impacting benthic and marine communities (along pipeline only) during operation and maintenance	Although minimal increase in water temperature around the unburied pipeline is likely, natural mixing of seawater ensures that the temperature will reach equilibrium with the surrounding water within 0.5 to 1 m after crossing the pipeline (Ramboll, 2017). Further, the sand temperature study included modelling in the intertidal zone at both high and low tide (Wood, 2023). The results concluded that pipeline temperature did not significantly impact sand temperature near the surface in either high or low tide conditions, due to the low thermal capacity of sand (Wood, 2023). It is anticipated that due to the natural fluctuations in temperature throughout the year, benthic receptors will be tolerant to small temperature increases associated with this impact. The temperature of the subsea pipelines will be lower than when the pipelines were used for natural gas transportation during hydrocarbon extraction as a part of the previous project which used the same pipelines. Intertidal mudflats and sandflats were not recognised as vulnerable to changes in thermal regime (Natural England and Countryside Council for Wales, 2010). Temperature increase around the pipeline will not result in a significant variation in water quality that could affect habitats of qualifying species. This impact is highly unlikely to adversely affect natural processes within the estuarine environment. Given potential for very narrow footprint of temperature increases as a result of pipeline operation as well as natural temperature fluctuations, this pressure is not expected to adversely affect the extent and distribution or the structure and function of habitats of qualifying species as well as mudflats and sandflats not covered by the seawater at low tide nor impact the	Adverse effects on the qualifying Annex I habitats as well as habitats of qualifying features which undermine the following conservation objectives of the Dee Estuary SAC will not occur as a result of impacts resulting from the increased temperature impacting benthic and marine communities (along pipeline only) during operation and maintenance: • the extent and distribution of qualifying natural habitats and habitats of qualifying species; • the structure and function (including typical species) of qualifying natural habitats; • the structure and function of the habitats of qualifying species; • the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely.	YES

		physical processes on which aforementioned habitats rely. Further supporting evidence is provided in Section 1.6.2.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		
Estuaries ***Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats*** ***Salicornia and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand*** ***Atlantic salt meadows***	Impacts resulting from the release of sediment bound benthic contaminants (along cable connection only) during construction	Cable installation is planned during July- August period at low water when the substrate is exposed, therefore sediment will be naturally reworked in line with the local hydrodynamic regime when the tides come in/out again from September to March. Consideration needs to be given to the burial method of the cable by either the plough or cable trencher. The plough and trencher either 'slice' or 'cut' a trench approximately 1 m to 1.5 m in width, while simultaneously burying the cable to the desired burial depth of 2 m to 3 m. This area of disturbance is localised between the plough skis or trencher tracks. On this basis, the potential zone of disturbance under the cable burial equipment through the intertidal area would be approximately 18,000 m², with around 1,800 m² (10%) of this area disturbed by either the plough or cutter blades. Some spoil does arise in this instance from the shearing action caused by the plough or cutting by the trencher blades. Most of the sediment falls back into the trench as the machine progresses forwards, and the cable is placed at the base of the trench. Sediment sampling has been undertaken throughout the Eni Development Area, and no sediment contamination by PAHs or heavy metals was observed above Cefas Action Level 1 at any sampling stations within 12 nm of MHWS. Similarly, THCs and PCBs were below detectable limits at all sampling stations within 12 nm of MHWS.	Adverse effects on the qualifying Annex I habitats as well as habitats of qualifying features which undermine the following conservation objectives of the Dee Estuary SAC will not occur as a result of impacts resulting from the release of sediment bound benthic contaminants (along cable connection only) during construction: • the extent and distribution of qualifying natural habitats and habitats of qualifying species; • the structure and function (including typical species) of qualifying natural habitats; • the structure and function of the habitats of qualifying species; • the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely.	YES

		Given the highly mobile nature of the seabed in the Proposed Development area, the method of cable installation, and the short duration of the installation activities and resulting sediment plumes, the Applicant does not consider that there is a risk of contaminant mobilisation resulting in any deterioration in water quality within Liverpool Bay. This is because, although contaminant sampling was taken from the seabed surface, the high turnover of sediment throughout Liverpool Bay, gives reasonable grounds to assume that any subsea contamination would show up in these samples, and as reported above, sediment-bound contaminants do not give cause for concern. The effect of this impact during the operation and maintenance phase is considered minimal when compared to the construction phase, with potentially 500m of cable subject to reburial every 5-10 years. The effects from this impact during the operation and maintenance phase are expected to be of highly localised spatial extent, with relatively small amounts of sediment mobilised within a high energy hydrodynamic regime. Each reburial event will be of very short term duration, highly intermittent (i.e. every 5-10 years) and of high reversibility. The magnitude is predicted to be negligible. Overall this pressure is not expected to adversely affect the extent and distribution or the structure and functioning of habitats of qualifying species as well as mudflats and sandflats not covered by seawater at low tide, *Salicornia* and other annuals colonizing mud and sand, Atlantic salt meadows; and estuaries, nor impact the physical processes on which aforementioned habitats rely. Further supporting evidence is provided in Section 1.6.2.1 of the HRA Stage 2 Report to Inform		

		Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		
Estuaries ***Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats*** ***Salicornia and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand*** ***Atlantic salt meadows***	Increased risk of introduction and spread of INNS	The installation of artificial hard substrates and the presence of vessels may lead to an increased risk of introduction and spread of INNS. The Maximum Design Scenario (MDS) is represented by up to 236 vessel round trips during the construction phase, including those required during site preparation activities, and 750 vessel return trips during the 25-year operations and maintenance phase. The addition of the Proposed Development traffic to this region does not represent a level of vessel activity uncommon to this area, therefore it does not represent a large increase in risk. The majority of the vessels used for the Proposed Development are likely to be from within the vicinity of the Proposed Development, therefore the introduction of species from outside the region is unlikely. Some of the INNS already in the region however are known to spread as fouling on ships hulls which could introduce them to the Proposed Development. The risk of introduction and spread of INNS will be increased due to the creation of 64,169 m^2 of artificial substrate from the installation of foundations for the new Douglas platform, cable crossing protection, pipeline spools, pipeline mattresses, and rock placement. The applicant's assessment of effects takes account of embedded mitigation measures that have been adopted as part of the project. In the absence of any mitigation measures, however, there is a potential to compromise these conservation objectives.	Adverse effects on the qualifying Annex I habitats as well as habitats of qualifying features which undermine the following conservation objectives of the Dee Estuary SAC have the potential to occur as a result of impacts resulting from the release of sediment bound benthic contaminants (along cable connection only) during construction: • the extent and distribution of qualifying natural habitats and habitats of qualifying species; • the structure and function (including typical species) of qualifying natural habitats; • the structure and function of the habitats of qualifying species; • the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely.	NO

		Further supporting evidence is provided in Section 7.12.6 in Chapter 7: Marine Biodiversity of the ES (CML2365-LBA CCS Ltd_ES_CH7_MB_NRW_FINAL).		
Estuaries ***Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats*** ***Salicornia and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand*** ***Atlantic salt meadows***	Accidental pollution to the surrounding area	There is a risk of pollution to water and sediment through accidental release of chemicals and pollutants from vessels, equipment, and machinery used during construction activities. The MDS for this impact assumes a total of 236 round trips by vessels over the duration of the construction phase. These include cable installation vessels, jack-ups, and support vessels. There is also potential for accidental pollution through discharges of drill cuttings, drilling mud, and cement, during the drilling of monitoring wells. Accidental pollution may arise in the Dee Estuary/Aber Dyfrdwy SAC due to the use of cable installation ploughs within the intertidal zone. During the operation and maintenance phase, the MDS for this impact assumes a total of 750 return trips by vessels over the 25-year duration of this phase. These include geophysical survey, maintenance, and support vessels. The risk of accidental pollution during this phase will be lower than that of the construction phase, due to the lack of drilling in the operation and maintenance phase. Thereby, the risk of accidental pollution through the release of drill cuttings, drilling mud, and cement products, will not apply in the operation and maintenance phase. The applicant's assessment of effects takes account of embedded mitigation measures that have been adopted as part of the project. In the absence of any mitigation measures, however, there is a potential to compromise these conservation objectives.	Adverse effects on the qualifying Annex I habitats as well as habitats of qualifying features which undermine the following conservation objectives of the Dee Estuary SAC have the potential to occur as a result of impacts resulting from the release of sediment bound benthic contaminants (along cable connection only) during construction: • the extent and distribution of qualifying natural habitats and habitats of qualifying species; • the structure and function (including typical species) of qualifying natural habitats; • the structure and function of the habitats of qualifying species; • the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely.	NO

		Further supporting evidence is provided in Section 7.12.8 in Chapter 7: Marine Biodiversity of the ES (CML2365-LBA CCS Ltd_ES_CH7_MB_NRW_FINAL).		
Sea lamprey ***River lamprey***	Temporary habitat loss and/or disturbance (along cable connection only) during construction, and operation and maintenance	Subsea cable installation may result in up to 39,000 m^2 and 72,000 m^2 of temporary habitat loss and/or disturbance in the construction and operations and maintenance phases, respectively. The Proposed Development overlaps only with 0.21 km^2 of the Dee Estuary SAC, corresponding to 0.13% of the SAC's total area. Although relatively high levels of information are available on the biology of the river and sea lamprey in freshwater, much less is known about their habits in estuaries and the sea (Natural England and Countryside Council for Wales, 2010). Sea and river lampreys spawn and spend their juvenile phase in rivers and therefore nursery and spawning areas will not be affected by the Proposed Development. Young river lamprey are known to congregate in large numbers in the estuaries of major rivers, however the cable corridor will be installed to the west of the mouth of the River Dee and this area is not known for any particular importance to river or sea lamprey. River and sea lamprey may avoid areas subject to temporary habitat loss during installation or repair, but these activities will be short term and both species are expected to return to the area following the cessation of activities. As such, it is unlikely that temporary habitat loss will significantly affect the distribution of species within the site. Both species of lamprey are considered to have moderate vulnerability to physical removal but were not identified as vulnerable to selective extraction. Considering the small spatial extent and the location of cable related activities, it is unlikely that individual fish or their habitat could be	Adverse effects on the qualifying Annex II diadromous fish which undermine the following conservation objectives of the Dee Estuary SAC will not occur through impacts resulting from temporary habitat loss and/or disturbance (along cable connection only) during construction, and operation and maintenance: • the populations of qualifying species; • the distribution of qualifying species within the site.	YES

		lost to the extent that could impact the populations of either species. The subtidal zone of the Dee is believed to provide an important breeding, sheltering and nursery area for coastal fish species, which may be important prey for river and sea lamprey, including herring, sprat, flounder, cod and haddock *Melanogrammus aeglefinus*. However, given that this impact will be of a limited spatial extent and of high reversibility, it is not anticipated that prey resources will be significantly impacted during any of the phases of the Proposed Development. The temporary habitat loss/disturbance associated with the offshore cable during all phases of the Proposed Development will be temporary, of short term duration and reversible. As such, this pressure is not expected to adversely affect the population of river and sea lamprey. Further supporting evidence is provided in Section 1.7.2.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		
Sea lamprey ***River lamprey***	Increased SSC and associated deposition (along cable connection only) during construction, and operation and maintenance	Sand waves are to be cleared along the cable corridor, south of the existing Douglas platforms, however this will happen at a significant distance from the nearest boundary of the Dee Estuary SAC and therefore is not considered to have potential to affect the SAC. Trenching during cable installation may result in the plume extending up to 15 km to the west and that the suspended sediments may reach into the estuary, but suspended sediments are expected to be within the background levels (i.e. 30 mg/l). Natural England and Countryside Council for Wales (2010) identified both species of lamprey as not vulnerable to changes in turbidity or siltation due to their mobility. The subtidal zone of the Dee	Adverse effects on the qualifying Annex II diadromous fish which undermine the following conservation objectives of the Dee Estuary SAC will not occur through impacts resulting from increased SSC and associated deposition (along cable connection only) during construction, and operation and maintenance: • the populations of qualifying species;	YES

		is believed to provide an important breeding, sheltering and nursery area for coastal fish species, which may be important prey for river and sea lamprey. However, given that the sediment plumes resulting from activities along the cable route will stay within background levels of the naturally turbid system of the Dee Estuary, it can be anticipated that this pressure will not alter the availability of prey species during any of the phases of the Proposed Development and therefore have no effect on the population of the Annex II diadromous fish. The area of impact during the operation and maintenance phase is considered minimal when compared to the construction phase, with potentially 500m of cable subject to reburial every 5-10 years. The effects from this impact during the operation and maintenance phase are expected to be of highly localised spatial extent, with each reburial event of very short term duration, intermittent (i.e. every 5-10 years) and of high reversibility. Given the low vulnerability of Annex II diadromous fish to this impact, as well as the negligible magnitude and short term nature of any increases in SSCs, this pressure is not expected to adversely affect the population of river and sea lamprey. Further supporting evidence is provided in Section 1.7.2.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	• the distribution of qualifying species within the site.	
Sea lamprey ***River lamprey***	Underwater noise impacting fish receptors during construction	Based on maximum peak experience (SPLpk) and maximum hammer energy (i.e. 3,000kJ), mortality and recoverable injury to fish may occur within a maximum of 184 m of the piling activity for sea and river lamprey. The cumulative mortality thresholds for consecutive piling (SELcum) were not	Adverse effects on the qualifying Annex II diadromous fish which undermine the following conservation objectives of the Dee Estuary SAC have the	NO

		exceeded for fleeing fish, based on a swim speed of 0.5 m/s. If modelled as static receptors, the threshold for mortality was 204 m for lampreys. Although it is highly unlikely that fish will remain static in the water column, consecutive pin pile installation based on the SELcum threshold for static fish represents the worst case scenario based on the piling parameters provided in the MDS. The outputs of underwater noise modelling for UXO clearance concluded that injury effects may occur at range of tens to hundreds of metres, depending on the size of the UXO cleared and the method of detonation with a maximum range of up to approximately 985 m. It should be noted that these ranges are the maximum ranges for the MDS and are therefore very precautionary. It is unlikely that injury will occur within these ranges due to the implementation of embedded mitigation measures during piling and UXO, including soft starts, which will allow some fish to move away from the areas of highest sound levels, before they reach a level that would cause an injury. In terms of behavioural disturbance as a result of piling, it may potentially affect diadromous fish up to 33 km from the source. This is a highly conservative value for lampreys as they are group 1 fish species and are known to be less sensitive to underwater noise. The Popper et al. (2014) guidelines provide qualitative behavioural criteria for fish from a range of sound sources, with the risk of behavioural effects on group 1 fish from piling operations considered to be moderate to high in the near to intermediate field (i.e. <1km from piling operations) and low in the far field (i.e. in the range of kilometres form piling operations). Although the risk of barrier to migration and changes in the distribution of sea and river lamprey within the site due to behavioural	potential to occur through impacts resulting from the underwater noise impacting fish receptors during construction: • the populations of qualifying species; • the distribution of qualifying species within the site.	

		responses cannot be discounted, piling will take place over a short duration (up to 13.5 hours, based upon up to 100 m minutes of piling at each of eight pin piles), intermittently and therefore unlikely to adversely affect the population of river and sea lamprey, or their distribution outside the SAC in the long term. The applicant's assessment of effects takes account of embedded mitigation measures that have been adopted as part of the project. In the absence of any mitigation measures, however, there is a potential to compromise these conservation objectives. Further supporting evidence is provided in Section 1.7.2.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		
Sea lamprey ***River lamprey***	Accidental pollution to the surrounding area	There is a risk of pollution to water and sediment through accidental release of chemicals and pollutants from vessels, equipment, and machinery used during construction activities. The MDS for this impact assumes a total of 236 round trips by vessels over the duration of the construction phase. These include cable installation vessels, jack-ups, and support vessels. There is also potential for accidental pollution through discharges of drill cuttings, drilling mud, and cement, during the drilling of monitoring wells. Accidental pollution may arise in the Dee Estuary/Aber Dyfrdwy SAC due to the use of cable installation ploughs within the intertidal zone. During the operation and maintenance phase, the MDS for this impact assumes a total of 750 return trips by vessels over the 25-year duration of this phase. These include geophysical survey, maintenance, and support vessels. The risk of accidental pollution during this phase will be lower	Adverse effects on the qualifying Annex II diadromous fish which undermine the following conservation objectives of the Dee Estuary SAC have the potential to occur through impacts resulting from the underwater noise impacting fish receptors during construction: • the populations of qualifying species; • the distribution of qualifying species within the site.	NO

		than that of the construction phase, due to the lack of drilling in the operation and maintenance phase. Thereby, the risk of accidental pollution through the release of drill cuttings, drilling mud, and cement products, will not apply in the operation and maintenance phase. The applicant's assessment of effects takes account of embedded mitigation measures that have been adopted as part of the project. In the absence of any mitigation measures, however, there is a potential to compromise these conservation objectives. Further supporting evidence is provided in Section 7.12.8 in Chapter 7: Marine Biodiversity of the ES (CML2365-LBA CCS Ltd_ES_CH7_MB_NRW_FINAL).		

2) Other Diadromous Fish SACs

Natura 2000 site feature (from Table 3.2.2 – RED rows only)	Impact pathway(s) (from Table 3.2.2)	Description of impacts	Assessment in view of conservation objectives	Can adverse effect on site integrity be ruled out?
River Dee and Bala Lake SAC (22.53 km) ***Afon Gwyrfai a Llyn Cwellyn SAC (113.40 km)*** ***Afon Eden – Cors Goch Trawsfynydd SAC (197.35 km)*** ***River Teifi SAC (211.80 km)*** ***Cardigan Bay SAC (183.99 km)***				
Sea lamprey ***River lamprey*** ***Atlantic salmon***	Underwater noise impacting fish receptors during construction	Based on maximum peak experience (SPLpk) and maximum hammer energy (i.e. 3,000kJ), mortality and recoverable injury to fish may occur within a maximum of 184 m and 314 m of the piling activity for lamprey species and Atlantic salmon, respectively. The cumulative mortality thresholds for consecutive piling (SELcum) were not exceeded for fleeing fish, based on a swim speed of 0.5 m/s. If modelled as static receptors, the threshold for mortality was 204 m for lampreys and 625 m for salmonids. Although it is highly unlikely that fish will remain static in the water column, consecutive pin pile	Adverse effects on the qualifying Annex II diadromous fish which undermine the following conservation objectives (or similar as applicable) have the potential to occur:	NO

		installation based on the SELcum threshold for static fish represents the worst-case scenario based on the piling parameters provided in the MDS. The outputs of underwater noise modelling for UXO clearance concluded that injury effects may occur at range of tens to hundreds of metres, depending on the size of the UXO cleared and the method of detonation with a maximum range of up to approximately 985 m. It should be noted that these ranges are the maximum ranges for the MDS and are therefore very precautionary. It is unlikely that injury will occur within these ranges due to the implementation of embedded mitigation measures during piling and UXO, including soft starts, which will allow some fish to move away from the areas of highest sound levels, before they reach a level that would cause an injury. Additionally, these activities will be taking place within the Proposed Development, which is taking place some distance from these SACs. In terms of behavioural disturbance as a result of piling, it may potentially affect diadromous fish up to 33 km from the source. This is a highly conservative value for lamprey species and Atlantic salmon as they are group 1 and 2 fish species and are known to be less sensitive to underwater noise. There will be no overlap of injury and/or disturbance ranges with the boundaries of the SAC. Atlantic salmon, sea and river lamprey may potentially be temporarily deterred from the areas outside of the SAC, which may constitute their natural range or represent their habitat during certain life cycle stages, although lamprey species and Atlantic salmon are group 1 and 2 fish species and are known to be less sensitive to underwater noise. Although the risk of barrier to migration due to behavioural responses to underwater noise cannot be discounted, impacts such as piling and UXO clearance will take place over a short duration, intermittently and therefore unlikely to adversely affect the populations of Atlantic salmon, river and sea lamprey in the long term. It is also unlikely	• Population to be maintained, stable or increasing; • The natural range of the features in the SAC is neither being reduced nor is likely to be reduced for the foreseeable future; • The presence, abundance, condition and diversity of habitats and species required to support this species is maintained.	

		that natural range, area or quality of habitat of the diadromous fish will be reduced in the long term. The applicant's assessment of effects takes account of embedded mitigation measures that have been adopted as part of the project. In the absence of any mitigation measures, however, there is a potential to compromise these conservation objectives. Further supporting evidence is provided in Section 1.7.2.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		

3) Harbour Porpoise SACs

Natura 2000 site feature (from Table 3.2.2 – RED rows only)	Impact pathway(s) (from Table 3.2.2)	Description of impacts	Assessment in view of conservation objectives	Can adverse effect on site integrity be ruled out?
North Anglesey Marine/Gogledd Môn Forol SAC (39.60 km) ***North Channel SAC (91.40 km)*** ***West Wales Marine/Gorllewin Cymru Forol SAC (116.68 km)*** ***Bristol Channel Approaches/Dynesfeydd Môr Hafren SAC (296.20 km)*** ***Rockabill to Dalkey Island SAC (115.10 km)*** ***Roaringwater Bay and Islands SAC (445.50 km)***				
Harbour porpoise	Injury and disturbance from underwater noise generated by piling during construction	Considering the maximum injury ranges for harbour porpoise, as a result of piling (up to 490 m) and the distance to the nearest SAC (39.60 km), there will be no overlap of the injury range with any site boundaries. Considering the behavioural disturbance using approaches recommended to be used in the HRA, namely 143 dB SELss threshold recommended by NRW (2023) or 15 km for pin-piles EDR recommended by JNCC (2020), there would be no potential of behavioural disturbance ranges with the boundary of the nearest SAC. However, when considering the most precautionary approach to behavioural disturbance based on 5dB SELss noise contours (which so far has been only	Adverse effects on the qualifying Annex II marine mammal species, harbour porpoise, which undermine the following conservation objectives of SACs have the potential to occur as a result of injury and disturbance from underwater noise generated by piling during construction: • The species is a viable component of the site;	NO

		recommended for use in the ES), there is a potential for overlap of noise disturbance contours with the boundary of the nearest SAC. Additionally, harbour porpoises outside the site boundary are also at risk of experiencing behavioural disturbance. Based on the most precautionary approach using the extent of 5 dB SELss noise contours, up to 158 harbour porpoises (up to 0.25% of the Celtic and Irish Seas MU population) based on SCANS-III density estimates (Hammond et al., 2021), or up to 945 animals (up to 1.51% of the Celtic and Irish Seas MU) based on SCANS-IV density estimates could experience disturbance as a result of pilling. Prolonged behavioural disturbance as a result of underwater noise may have an effect on reproductive success of some individuals. However, considering the duration of the impact (up to 13.5 hours for the Proposed Development) and the reversibility of the effect, it can be anticipated that harbour porpoise would be able to tolerate the effect without any impact on reproduction or survival rates with ability to return to previous behavioural states or activities once the impacts had ceased. Underwater noise associated with piling is therefore not predicted to prevent the population from being able to maintain itself as a viable component of its natural habitat over the long term. Furthermore, there is no potential for piling activities to exclude harbour porpoise from the significant proportion of the site for a significant period of time. The applicant's assessment of effects takes account of embedded mitigation measures that have been adopted as part of the project. In the absence of any mitigation measures, however, there is a potential to compromise these conservation objectives. Further supporting evidence is provided in Section 1.8.2.1 of the HRA Stage 2 Report to Inform Appropriate	• There is no significant disturbance of the species.	

		Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		
	Injury and disturbance from underwater noise generated by UXO detonation during construction	Given that the maximum injury ranges do not overlap with any site boundaries, there is no potential for harbour porpoise within the site to experience auditory injury. However, the injury range for harbour porpoise as a result of high order detonation of 907 kg UXO is 15,370 m. There will be no overlap of disturbance ranges with the boundary of any SAC and therefore only harbour porpoises outside site boundaries are at risk of experiencing behavioural disturbance. Considering that the distance to the nearest SAC (39.60 km), there will be no overlap of the injury range with any site boundaries using the 140 db SEL (NRW 2023) or 26 km EDR for high order detonation (JNCC 2020) . Prolonged behavioural disturbance as a result of underwater noise may have an effect on reproductive success of some individuals. However, unlike most impulsive noise sources, detonations of UXO are generally single events, and a detonation will only cause temporary startle responses (Finneran & Jenkins 2012; JNCC 2020; NRW 2023). Considering the short term duration of UXO clearance activities (approximately two days onsite per clearance) associated with the Proposed Development and the reversibility of this effect, it is unlikely that this activity has the potential to affect reproduction rates and/or probability of survival that may affect the population of the species within any site. Underwater noise associated with UXO clearance is therefore not predicted to prevent the population from being able to maintain itself as a viable component of its natural habitat over the long term. Furthermore, there is no potential for UXO clearance activities to exclude harbour porpoise from a significant proportion of a site as there will be no overlap of disturbance ranges with the boundaries of any site. The applicant's assessment of effects takes account of embedded mitigation measures that have been adopted as part of the project. In the absence of any mitigation	Adverse effects on the qualifying Annex II marine mammal species, harbour porpoise, which undermine the following conservation objectives of SACs have the potential to occur as a result of injury and disturbance from underwater noise generated by UXO detonation during construction: • The species is a viable component of the site; • There is no significant disturbance of the species.	NO

		measures, however, there is a potential to compromise these conservation objectives. Further supporting evidence is provided in Section 1.8.2.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		
	Injury and disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance	There is no risk to harbour porpoise to experience injury (PTS) as a result of vessel movements and other activities. Harbour porpoises may experience TTS within up to 6,740 m from the survey, crew transfer or support vessel. However, TTS is temporary and reversible, and animals are likely to respond by moving away from (fleeing) the ensonified area. There will be no overlap of TTS with the boundary of the SAC. As such, the ability of harbour porpoise to access foraging/breeding/calving habitat within the site won't be affected. Based on the most precautionary scenario, harbour porpoises could be at risk of experiencing mild disturbance outside of the site boundary within 20 km from the source. Although harbour porpoises need to forage frequently and are vulnerable to disturbance if their foraging is interrupted, behavioural effects may take place only outside of the site boundary and are reversible. Prolonged behavioural disturbance as a result of underwater noise may have an effect on reproductive success of some individuals. Vessels and other noise producing activities will be temporary and largely transitory, as opposed to permanent and fixed. As such, this is unlikely that this activity has the potential to influence reproduction rates and/or probability of survival that may affect the population of the species within the site, especially in the context of high vessel traffic in the Irish Sea. Underwater noise associated with vessels and other activities is therefore not predicted to prevent the population from being able to maintain itself as a viable component of its natural habitat over the long term. However, studies show that at a distance of 3 km from the vessels, there was a 24% chance of a behavioural	Adverse effects on the qualifying Annex II marine mammal species, harbour porpoise, which undermine the following conservation objectives of SACs will not occur as a result of injury and disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance: • The species is a viable component of the site; • There is no significant disturbance of the species.	YES

		reaction and this dropped to zero at 4 km (Benhemma le Gall et al 2021). Therefore, no overlap with the SAC is expected from vessel. Moreover, the Applicant is committing to a Vessel Traffic Management Plan (VTMP), with mitigation measures such as the use of established shipping routes to transit through the SPA, slow vessel speeds, and avoiding the over-revving of engines. This will be agreed in writing with SNCBs in advance. Further supporting evidence is provided in Section 1.8.2.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		
	Effects on marine mammals due to changes in prey availability during construction, and operation and maintenance (only relevant to North Anglesey Marine SAC)	The majority of impacts on fish and shellfish associated with all phases of the Proposed Development will be highly localised and largely restricted to the boundaries of the Proposed Development. There will be no impacts on supporting habitats and processes within the boundary of the nearest SAC (the North Anglesey Marine SAC). Outside of the SAC, only a small area will be affected when compared to available foraging habitat in the Irish Sea. Harbour porpoise feed on a variety of prey including gobies, sandeel, whiting, herring and sprat (JNCC et al., 2019c). There may be an energetic cost associated with increased travelling and due to harbour porpoise high metabolic rate, this species may be particularly vulnerable to this effect. However, harbour porpoises have a widespread distribution and individuals have been documented either switching to different prey species depending on the prey availability (Santos and Pierce, 2003) or moving relatively large distances on a daily basis (Nabe-Nielsen et al., 2013). Based on findings of Benhemma-Le Gall et al. (2021), it can be anticipated that harbour porpoise can compensate for any resulting loss in energy intake by increasing foraging activities beyond the impact zone. The availability of wider suitable habitat across the Celtic and Irish Sea MU suggest that individuals may move to alternative foraging grounds without affecting animals' health. As such, effects due to changes in prey availability are not predicted to prevent	Adverse effects on the qualifying Annex II marine mammal species, harbour porpoise, which undermine the following conservation objectives of the North Anglesey Marine SAC will not occur as a result of effects on marine mammals due to changes in prey availability during construction, and operation and maintenance: • The species is a viable component of the site; • The supporting habitats and processes relevant to harbour porpoises and their prey are maintained.	YES

		the population from being able to maintain itself as a viable component of its natural habitat over the long term. They are also not predicted to adversely affect the maintenance of supporting habitats and processes relevant to harbour porpoises and their prey. Further supporting evidence is provided in Section 1.8.2.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		

4) Bottlenose Dolphin SACs

Natura 2000 site feature (from Table 3.2.2 – RED rows only)	Impact pathway(s) (from Table 3.2.2)	Description of impacts	Assessment in view of conservation objectives	Can adverse effect on site integrity be ruled out?
Lleyn Peninsula and the Sarnau SAC (115.39 km) ***Cardigan Bay SAC (183.99 km)***				
Bottlenose dolphin	Injury and disturbance from underwater noise generated by piling during construction	Considering the maximum injury ranges for bottlenose dolphin as a result of piling (up to 41 m) and the distance to the SAC (115 km), there will be no overlap of the injury range with the site boundary. There will be no residual risk of injury to bottlenose dolphin following the application of embedded mitigation measures. Considering the behavioural disturbance using SELss noise contours presented in 5 dB increments, there would be no potential of behavioural disturbance ranges with the boundary of the SAC. However, bottlenose dolphins outside the site boundary are at risk of experiencing behavioural disturbance. Based on the most precautionary approach, up to 65 bottlenose dolphins could experience disturbance as a result of piling. As such, although their range within the site will not be constrained, the accessibility to other areas within the Irish sea may be hindered during piling activities due to barrier effects. Prolonged behavioural disturbance as a result of underwater noise may also have an effect on reproductive success of some individuals. However, considering the duration of the piling activities (up to 13.5	Adverse effects on the qualifying Annex II marine mammal species, bottlenose dolphin, which undermine the following conservation objectives of SACs have the potential to occur as a result of injury and disturbance from underwater noise generated from piling during construction: • Populations; • Range; • Supporting habitats and species; • Restoration and recovery.	NO

		hours for the Proposed Development) and the reversibility of the effect, it can be anticipated that bottlenose dolphin would be able to tolerate the effect without any impact on reproduction or survival rates with ability to return to previous behavioural states or activities once the impacts had ceased. The Irish Sea provide an important breeding and nursery areas for fish species, which may be important prey for bottlenose dolphin, including cod and haddock. The assessment of fish and shellfish presented in volume 2, chapter 7 of the Offshore ES concluded no significant effects on fish and shellfish receptors. As such, consequential impacts on food resources that could affect the bottlenose dolphin population within the SAC or beyond are not anticipated. Bottlenose dolphins are generalist and opportunistic feeders eating a wide range of pelagic and benthic (demersal) fish, crustaceans and molluscs (NRW, 2018g). The distribution and movement of prey are believed to influence the distribution and movement patterns of bottlenose dolphins and feeding activities. The maximum injury ranges as a result of piling do not overlap with the site boundary of any bottlenose dolphin SACs and there is no residual risk of injury to bottlenose dolphin. There will be also no overlap of disturbance ranges with SAC boundaries. As such, within the SACs, the presence, abundance, condition and diversity of habitats and the access to these habitats will not be altered. Nevertheless, bottlenose dolphins outside site boundaries are at risk of experiencing behavioural disturbance. Although their range within the sites will not be constrained, the accessibility to other areas within the sea may be temporarily hindered during piling due to barrier effects. Considering the duration of the impact (up to 13.5 hours for the Proposed Development) and the reversibility		

		of the effect, the disturbance is anticipated to be below levels that suppress long term behaviour. Although there is a potential for behavioural disturbance outside of the SAC boundaries, it is anticipated that bottlenose dolphins would be able to tolerate the effect without any impact on reproduction or survival rates with ability to return to previous behavioural states or activities once the impacts had ceased. Overall, underwater noise associated with piling is therefore not predicted to occur at levels that could adversely affect the ability of bottlenose dolphin population to maintain itself as a viable component of its natural habitat or the natural range of the bottlenose dolphin population. It is also not predicted to adversely affect the presence, abundance, condition and diversity of habitats and species required to support bottlenose dolphins, nor the restoration and recovery of bottlenose dolphin population. The applicant's assessment of effects takes account of embedded mitigation measures that have been adopted as part of the project. In the absence of any mitigation measures, however, there is a potential to compromise these conservation objectives. Further supporting evidence is provided in Section 1.8.2.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		
	Injury and disturbance from underwater noise generated by UXO detonation during construction	The maximum injury range for bottlenose dolphin as a result of high order detonation of UXO is 890 m. As such, there is no potential for overlap of injury ranges with any bottlenose dolphin SACs. There is no residual risk of injury following the application of embedded mitigation measures. There will be no overlap of disturbance ranges with the boundary of the SAC and therefore there is no risk of adverse impact on condition of the species within the site.	Adverse effects on the qualifying Annex II marine mammal species, bottlenose dolphin, which undermine the following conservation objectives of SACs have the potential to occur as a result of injury and disturbance from underwater noise generated by UXO	NO

		Nevertheless, bottlenose dolphins outside the site boundary are at risk of experiencing behavioural disturbance. Based on the precautionary densities, up to one bottlenose dolphin may experience disturbance during the UXO clearance. In general, prolonged behavioural disturbance as a result of underwater noise may have an effect on reproductive success of some individuals. However, considering the duration of the impact and the reversibility of the effect, it can be anticipated that bottlenose dolphins would be able to tolerate the effect without any impact on reproduction or survival rates with ability to return to previous behavioural states or activities once the impacts had ceased. The accessibility to other areas within the Irish sea may be hindered during the UXO clearance due to barrier effects. However, considering the duration of the impact and the reversibility of the effect, it can be anticipated that bottlenose dolphins would be able to tolerate the effect without any impact on reproduction or survival rates with ability to return to previous behavioural states or activities once the impacts had ceased. Furthermore, considering the duration of the impact and the reversibility of the effect, the disturbance is anticipated to be below levels that suppress long term behaviour. The Irish Sea provides an important breeding and nursery areas for fish species, which may be important prey for bottlenose dolphin, including cod and haddock. The assessment of fish and shellfish presented in volume 2, chapter 7 of the Offshore ES concluded no significant effects on fish and shellfish receptors. As such, consequential impacts on food resources that could affect bottlenose dolphin population within the SAC or beyond are not anticipated. Underwater noise associated with UXO clearance is therefore not predicted to occur at levels that could adversely affect the ability of bottlenose dolphin population to maintain itself as a viable component of its	detonation during construction: • Populations; • Range; • Supporting habitats and species; • Restoration and recovery.	

		natural habitat, or the restoration and recovery of bottlenose dolphin population. The applicant's assessment of effects takes account of embedded mitigation measures that have been adopted as part of the project. In the absence of any mitigation measures, however, there is a potential to compromise these conservation objectives. Further supporting evidence is provided in Section 1.8.2.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		
	Injury and disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance	During the construction phase of the Proposed Development, the increased levels of vessel activity could contribute to total underwater noise levels. The MDS for construction activities is up to a total of 236 construction vessels round trips over the two year construction phase. Vessel traffic associated with operation and maintenance activities will result in up to 750 return trips by vessels to and from the Eni Development Area over the 25-year lifetime of the Proposed Development. Over a 25-year period this equates to just 2.5 vessel return trips per month. These include heavy lift vessels, tug/anchor handlers, survey vessels, cable lay and installation vessels, and support vessels. Whilst this will result in an increase in vessel presence, movement will be limited to within the Eni Development Area and are likely to follow existing shipping routes while travelling to and from ports. These routes have been long established during existing Eni operations within Liverpool Bay. Currently, approximately 54 vessels per day in total pass through the Eni Development Area. The underwater noise modelling results indicate that the threshold for PTS was not exceeded for any species for all vessels and activities associated with the Eni Development Area alone. The threshold for TTS was also not exceeded for all species except harbour porpoise (in the Very High Frequency (VHF) hearing group) (Appendix J Underwater Noise Modelling).	Adverse effects on the qualifying Annex II marine mammal species, bottlenose dolphin, which undermine the following conservation objectives of SACs have the potential to occur as a result of injury and disturbance from vessel activity and other noise producing activities during construction and operation and maintenance: • Populations; • Range; • Supporting habitats and species; Restoration and recovery.	YES

		However, in a precautionary approach a 3 km buffer has been used for a 3km route to the ENI development which will result in 23.56 km2 of a possible precautionary disturbance area from each vessel trip. With a bottlenose dolphin density of 0.0104 animals per km2 (SCANS-IV Block CS-E (Gilles et al., 2023) and a Management Unit population of 293 individuals(as per the Welsh Marine Mammal Atlas (Evans and Waggitt, 2023), a 0.085% of the population will be disturbed per trip. Moreover, looking at the density maps in the Welsh Marine Mammal Atlas (Evans and Waggitt, 2023), the inshore bottlenose dolphin population is general found within Cardigan Bay, with densities in Liverpool Bay being very low. Therefore, there will be no adverse effect on site integrity from the pressure.		

5) Grey Seal SACs

Natura 2000 site feature (from Table 3.2.2 – RED rows only)	Impact pathway(s) (from Table 3.2.2)	Description of impacts	Assessment in view of conservation objectives	Can adverse effect on site integrity be ruled out?
Lleyn Peninsula and the Sarnau SAC (115.39 km) ***Cardigan Bay SAC (183.99 km)*** ***The Maidens SAC (190.72 km)*** ***Pembrokeshire Marine SAC (233.18 km)*** ***Lundy SAC (330.73 km)*** ***Saltee Islands SAC (239.28 km)***				
Grey seal	Injury and disturbance from underwater noise generated by piling during construction	Considering the maximum injury ranges for seals as a result of piling (up to 118 m), there will be no overlap of the injury ranges with any grey seal SAC boundaries. There will be no residual risk of injury to grey seal following the application of embedded mitigation measures. Considering the behavioural disturbance using SELss noise contours presented in 5 dB increments, there would	Adverse effects on the qualifying Annex II marine mammal species, grey seal, which undermine the following conservation objectives of SACs have the potential to occur as a result of injury and disturbance from underwater noise	NO

		be no potential of behavioural disturbance ranges with the boundary of the SAC. However, grey seal outside the site boundary are at risk of experiencing behavioural disturbance. Based on the most precautionary approach, up to 1,084 grey seals could experience disturbance as a result of pilling. It should be noted that highly conservative densities of 4.06 animals per km^2 were used for these calculations. If we assume more realistic scenario and a density of 0.467 animals per km^2, up to 125 grey seals would be at a risk of disturbance. Prolonged behavioural disturbance as a result of underwater noise may have an effect on reproductive success of some individuals. However, considering the duration of the piling activities (up to 13.5 hours for the Proposed Development) and the reversibility of the effect, it can be anticipated that grey seal would be able to tolerate the effect without any impact on reproduction or survival rates with ability to return to previous behavioural states or activities once the impacts had ceased. Although their range within the site will not be constrained, the accessibility to other areas within the Irish sea may be hindered during piling activities due to barrier effects. However, considering the duration of the impact and the reversibility of the effect, this is unlikely that this activity has the potential to affect the ability of grey seal to access suitable habitats in the long term. The Irish Sea provide an important breeding and nursery areas for fish species, which may be important prey for grey seal, including cod and haddock. The assessment of fish and shellfish presented in volume 2, chapter 7 of the Offshore ES concluded no significant effects on fish and shellfish receptors. As such, consequential impacts on food resources that could affect grey seal population within the SAC or beyond are not anticipated. Within site boundaries, the presence, abundance, condition and diversity of habitats and the access to these habitats will not be altered. Although their range within the site will not be constrained, the accessibility to other areas	generated from piling during construction (or similar as applicable): • Populations; • Range; • Supporting habitats and species.	

		within the Irish sea may be temporarily hindered during piling due to barrier effects. Considering the duration of the impact (up to 13.5 hours for the Proposed Development) and the reversibility of the effect, the disturbance is anticipated to be below levels that suppress long term behaviour. Underwater noise associated with piling is therefore not predicted to occur at levels that could adversely affect the ability of grey seal population to maintain itself as a viable component of its natural habitat or the natural range of the grey seal population. It is also not predicted to occur at levels that could adversely affect the presence, abundance, condition and diversity of habitats and species required to support grey seal The applicant's assessment of effects takes account of embedded mitigation measures that have been adopted as part of the project. In the absence of any mitigation measures, however, there is a potential to compromise these conservation objectives. Further supporting evidence is provided in Section 1.8.2.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		
	Injury and disturbance from underwater noise generated by UXO detonation during construction	Given that the maximum injury ranges do not overlap with any SAC boundaries, there is no potential for grey seal within a SAC to experience auditory injury. There will be no overlap of disturbance ranges with the boundary of the SAC and therefore only grey seals outside the site boundary are at risk of experiencing behavioural disturbance. There is no risk of adverse impact on condition of the species within the site. Based on highly precautionary densities (the maximum mean density of grey seal based on one 5 km x 5 km cell that overlaps with the Proposed Development), up to 534 grey seals may experience disturbance during the UXO clearance. In general, prolonged behavioural disturbance as a result of underwater noise may have an effect on	Adverse effects on the qualifying Annex II marine mammal species, grey seal, which undermine the following conservation objectives of SACs have the potential to occur as a result of injury and disturbance from underwater noise generated by UXO detonation during construction (or similar as applicable): • Populations;	NO

		reproductive success of some individuals. However, considering short term duration of UXO clearance activities (approximately two days onsite per clearance) associated with UXO clearance is therefore not predicted to occur at levels that could adversely affect the ability of grey seal population to maintain itself as a viable component of its natural habitat. Although their range within the site will not be constrained, the accessibility to other areas within the Irish sea may be hindered during the UXO clearance due to barrier effects. However, considering the duration of the impact and the reversibility of the effect, this is unlikely that this activity has the potential to affect the ability of grey seal to access suitable habitats in the long term. The Irish Sea provides an important breeding and nursery areas for fish species, which may be important prey for grey seal, including cod and haddock. The assessment of fish and shellfish presented in volume 2, chapter 7 of the Offshore ES concluded no significant effects on fish and shellfish receptors. As such, consequential impacts on food resources that could affect grey seal population within the SAC or beyond are not anticipated Underwater noise associated with UXO clearance is therefore not predicted to occur at levels that could adversely affect the natural range of the grey seal population. Within the site, the presence, abundance, condition and diversity of habitats will not be altered. However, grey seals outside the site boundary are at risk of experiencing behavioural disturbance. As such, although their range within the site will not be constrained, the accessibility to other areas within the Irish sea may be temporarily hindered during the UXO clearance due to barrier effects. Considering the duration of the impact and the reversibility of the effect, the disturbance is anticipated to be below levels that suppress long term behaviour.	• Range; • Supporting habitats and species.	

		Prolonged behavioural disturbance as a result of underwater noise may have an effect on reproductive success of some individuals. However, considering short term duration of UXO clearance activities (approximately two days onsite per clearance) associated with the Proposed Development and the reversibility of this effect, this is unlikely that this activity has the potential to affect reproductive success. Underwater noise associated with UXO clearance is also not predicted to occur at levels that could adversely affect the presence, abundance, condition and diversity of habitats and species required to support this species. The applicant's assessment of effects takes account of embedded mitigation measures that have been adopted as part of the project. In the absence of any mitigation measures, however, there is a potential to compromise these conservation objectives. Further supporting evidence is provided in Section 1.8.2.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		
	Disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance	Annex II grey seals may become disturbed from haul-out sites due to the presence of vessels and other activities (such as cable laying), which, if occurring in the breeding season, can result in the abandonment of pups. Due to this, grey seals are considered sensitive to vessel disturbance at haul-out sites, particularly during the breeding season. Based on a review of available studies, it is considered that, for grey seal, individuals may flee into the water as a response to vessels travelling within 300 m of a haul-out site, but significant disturbance would be expected at a distance of less than 150 m. Increased activity around West Hoyle Bank haul-out site during cable laying, including an increase in vessel and human activity, has the potential to disturb grey seals,	Adverse effects on the qualifying Annex II marine mammal species, grey seal, which undermine the following conservation objectives of the SACs have the potential to occur as a result of disturbance to grey seal haul-out sites due to presence of vessels and other activities (or similar as applicable): • Populations; • Range; and • Supporting habitats and species.	YES

		particularly during sensitive periods, such as the breeding season and moult period. The grey seal moult period is between December and April, and their pupping occurs mainly between early November and mid-December. The West Hoyle Bank haul-out site is located close to Hilbre Island on the east side of the Dee Estuary, approximately 5.5 km to the east of the export cable corridor of the Project. Based on the data available, it is hard to conclude the level of connectivity between the Project and the haul-out sites located in the Dee Estuary. However, the information available does show, connectivity between the Dee Estuary and the Skerries, with some connectivity with Cardigan Bay and Skomer (Langley et al., 2018) and areas of high at-sea usage for grey seals around Liverpool Bay, the east coast of Ireland, and to the north-west of the Isle of Man. During the construction phase of the Proposed Development, the increased levels of vessel activity could contribute to total underwater noise levels. The MDS for construction activities is up to a total of 236 construction vessels round trips over the two year construction phase. Vessel traffic associated with operation and maintenance activities will result in up to 750 return trips by vessels to and from the Eni Development Area over the 25-year lifetime of the Proposed Development. Over a 25-year period this equates to just 2.5 vessel return trips per month. These include heavy lift vessels, tug/anchor handlers, survey vessels, cable lay and installation vessels, and support vessels. Whilst this will result in an increase in vessel presence, movement will be limited to within the Eni Development Area and are likely to follow existing shipping routes while travelling to and from ports. These routes have been long established during existing Eni operations within Liverpool Bay. Currently, approximately 54 vessels per day in total pass through the Eni Development Area. The underwater noise		

		modelling results indicate that the threshold for PTS was not exceeded for any species for all vessels and activities associated with the Eni Development Area alone. The threshold for TTS was also not exceeded for all species except harbour porpoise (in the Very High Frequency (VHF) hearing group) (Appendix J Underwater Noise Modelling). However, in a precautionary approach a 3 km buffer has been used for a 3km route to the ENI development which will result in 23.56 km2 of a possible precautionary disturbance area from each vessel trip. With a grey seal density of 0.467 animals per km2 (SCANS-IV Block CS-E (Gilles et al., 2023) and a Management Unit population of 60,780 individuals (OSPAR Region III), a 0.018% of the population will be disturbed per trip. Therefore, there will be no adverse effect on site integrity from the pressure. Further supporting evidence is provided in Section 1.5.2.1 of the Technical Note: RIAA MBTN04 (CML2365 MC000025_TN_RIAA_MBTN04_Rev02 Further Information.pdf).		

6) Harbour Seal SACs

Natura 2000 site feature (from Table 3.2.2 – RED rows only)	Impact pathway(s) (from Table 3.2.2)	Description of impacts	Assessment in view of conservation objectives	Can adverse effect on site integrity be ruled out?
Strangford Lough SAC (142.70 km) Murlough SAC (146.97 km)				
Harbour seal	Injury and disturbance from underwater noise generated by piling during construction	Considering the maximum injury ranges for seals as a result of piling (up to 190 m) and the distance to the harbour seal SACs, there will be no overlap of the injury ranges with any site boundaries. There will be no residual risk of injury to harbour seal following the application of embedded mitigation measures. Considering the behavioural disturbance based on 5dB SELss noise contours, there is a potential for overlap of	Adverse effects on the qualifying Annex II marine mammal species, harbour seal, which undermine the following conservation objectives of SACs have the potential to occur as a result of injury and disturbance from underwater noise	NO

		noise disturbance contours with the boundary of the SAC. The highest overlapping noise disturbance contour is 120 dB and based on Graham et al. (2019), only approximately 1% animals within this noise contour may respond behaviourally to the piling noise. This level of noise constitutes mild disturbance which could lead to temporary effects such as changes in swimming speed and direction, minor disruptions in communication, interruptions in foraging, or disruption of parental attendance/nursing behaviour (Southall et al., 2021) but it is unlikely to deter harbour seal from the affected area. Harbour seal outside the site boundary are also at risk of experiencing behavioural disturbance. Based on the most precautionary approach, up to 159 harbour seals could experience disturbance as a result of pilling. It should be noted that highly conservative densities of 0.593 animals per km^2 were used for these calculations. If we assume a more realistic scenario and a density of 0.0049 animals per km^2, up to 2 harbour seals would be at a risk of disturbance. Prolonged behavioural disturbance as a result of underwater noise may have an effect on reproductive success of some individuals. The accessibility to other areas within the Irish sea may be hindered during piling activities due to barrier effects. However, considering the duration of the impact (up to 13.5 hours) and the reversibility of the effect, it can be anticipated that harbour seal would be able to tolerate the effect without any impact on reproduction or survival rates with ability to return to previous behavioural states or activities once the impacts had ceased. This is also unlikely that this activity has the potential to affect the ability of harbour seal to access suitable habitats in the long term. The Irish Sea provides an important breeding and nursery areas for fish species, which may be important prey for harbour seal, including cod and haddock. The assessment of fish and shellfish presented in volume 2, chapter 7 of the Offshore ES concluded no significant effects on fish and shellfish receptors. As such, consequential impacts on food resources that could affect	generated by piling during construction (or similar as applicable): • Maintain and enhance, as appropriate, the Harbour (Common) Seal population.	

		harbour seal population within the SAC or beyond are not anticipated. Underwater noise associated with piling is therefore not predicted to occur at levels that could adversely affect the population numbers and distribution of harbour seal. The applicant's assessment of effects takes account of embedded mitigation measures that have been adopted as part of the project. In the absence of any mitigation measures, however, there is a potential to compromise these conservation objectives. Further supporting evidence is provided in Section 1.8.2.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		
	Injury and disturbance from underwater noise generated by UXO detonation during construction	Given that the maximum injury ranges do not overlap with any site boundaries, there is no potential for harbour seal within the site to experience auditory injury. However, the injury range for harbour seal as a result of high order detonation of 907 kg UXO is 3,015 m. There will be no overlap of disturbance ranges with the boundary of the SAC and therefore only harbour seals outside the site boundary are at risk of experiencing behavioural disturbance. There is no risk of adverse impact on condition of the species within the site. Based on highly precautionary densities (the maximum mean density of harbour seal based on one 5 km x 5 km cell that overlaps with the Proposed Development), up to eight harbour seals may experience disturbance during the UXO clearance. Prolonged behavioural disturbance as a result of underwater noise may have an effect on reproductive success of some individuals. However, considering short term duration of UXO clearance activities (approximately two days onsite per clearance) associated with the Proposed Development and the reversibility of this effect, it is unlikely that this activity has the potential to affect reproduction rates and therefore population numbers.	Adverse effects on the qualifying Annex II marine mammal species, harbour seal, which undermine the following conservation objective of the Strangford Lough SAC have the potential to occur as a result of injury and disturbance from underwater noise generated by UXO detonation during construction: • Maintain and enhance, as appropriate, the Harbour (Common) Seal population.	NO

		Although harbour seal distribution within the SAC boundaries will not be altered, the accessibility to other areas within the Irish sea, and subsequently its distribution within these areas, may be hindered during the UXO clearance due to barrier effects. Harbour seals are likely to return to sites following the cessation of UXO clearance activities. Underwater noise associated with UXO clearance is therefore not predicted to occur at levels that could adversely affect the population numbers and distribution of harbour seal. The applicant's assessment of effects takes account of embedded mitigation measures that have been adopted as part of the project. In the absence of any mitigation measures, however, there is a potential to compromise these conservation objectives. Further supporting evidence is provided in Section 1.8.2.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		
	Injury and disturbance from vessel activity and other noise producing activities during construction, operation and maintenance	There is no risk to harbour seal of experiencing injury as a result of vessel movements and other activities. Based on the most precautionary scenario, harbour seal could be at risk of experiencing mild disturbance outside of the site boundary within 20 km from the source. As such, there will be no overlap of disturbance ranges with the boundary of the SAC and the ability of harbour seal to access breeding/resting haul out/moulting haul out sites within the SAC won't be affected. Although harbour seal distribution within the site will not be altered, the accessibility to other areas within the Irish sea, and subsequently its distribution within these areas, may be hindered during vessel movements and other activities due to barrier effects. However, harbour seals are likely to return to sites following the cessation of activities.	Adverse effects on the qualifying Annex II marine mammal species, harbour seal, which undermine the following conservation objective of the Strangford Lough SAC will not occur as a result of injury and disturbance from vessel activity and other noise producing activities during construction, operation and maintenance: • Maintain and enhance, as appropriate, the	YES

		Prolonged behavioural disturbance as a result of underwater noise may have an effect on reproductive success of some individuals. Vessels and other noise producing activities will be temporary and largely transitory, as opposed to permanent and fixed. As such, it is unlikely that this activity has the potential to influence reproduction rates and/or probability of survival that may affect the population of the species within the site, especially in the context of high vessel traffic in the Irish Sea. It is therefore unlikely that the underwater noise associated with vessels and other activities has the potential to affect reproduction rates and/or probability of survival that may affect the population of the species of the site. Underwater noise from vessel activity and other noise producing activities is therefore not predicted to prevent the population from being able to maintain (and if feasible enhance) population numbers and distribution of harbour seal. Further supporting evidence is provided in Section 1.8.2.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Harbour (Common) Seal population.	

7) **Liverpool Bay SPA**

Natura 2000 site feature (from Table 3.2.2 – RED rows only)	**Impact pathway(s) (from Table 3.2.2)**	**Description of impacts**	**Assessment in view of conservation objectives**	**Can adverse effect on site integrity be ruled out?**
Liverpool Bay SPA (0.00 km)				
Red-throated diver ***Little gull*** ***Common scoter***	Temporary habitat loss leading to displacement/disturbance during construction	37.02 km^2 of the proposed works sits within the Liverpool Bay SPA, this equates to 1.47% of available habitats that will be temporarily unavailable. However, this is short term and reversible and works will not be taking place within the entire 1.47% of affected habitats at any one time.	Adverse effects on the qualifying bird interest features which undermine the following conservation objectives of the Liverpool Bay SPA will not occur as a result of temporary habitat	YES

Common tern ***Waterbird assemblage***		Negligible adverse effects upon the extent and distribution of habitats and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	loss leading to displacement/disturbance during construction: • The extent and distribution of the habitats of the qualifying features; • The structure and function of the habitats of the qualifying features; • The supporting processes on which the habitats of the qualifying features rely; • The population of each of the qualifying features; • The distribution of the qualifying features within the site.	
Little tern		The proportion of habitat that will be temporarily lost to little tern is 0.167%. As this temporary loss is less than 1%, will not impact the extent and distribution of habitats. Negligible adverse effects upon the extent and distribution of habitats and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		
Red-throated diver	Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction	Disturbance will be mostly temporary and reversible and excess mortality caused by disturbance was calculated at 0.89%. In advance of any mitigation measures, there is the potential for significant disturbance and displacement of this species. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objectives of the Liverpool Bay SPA have the potential to occur as a result of disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction: • The population of each of the qualifying features; • The distribution of the qualifying features within the site.	NO

Common scoter	Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction	Disturbance will be mostly temporary and reversible and excess mortality caused by disturbance was calculated at 0.98%. In advance of any mitigation measures, there is the potential for significant disturbance and displacement of this species. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objectives of the Liverpool Bay SPA have the potential to occur as a result of disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction: • The population of each of the qualifying features; • The distribution of the qualifying features within the site.	NO
Little tern	Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction	Disturbance will be mostly temporary and reversible, and excess mortality was calculated at 0.06%. There are concerns regarding the timings of the proposed works and the impacts associated with these timings to Little Terns and their prey. In advance of any mitigation measures, there is the potential for significant disturbance and displacement of this species. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objectives of the Liverpool Bay SPA have the potential to occur as a result of disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction: • The population of each of the qualifying features; • The distribution of the qualifying features within the site.	NO
Little gull	Disturbance and displacement from airborne sound and presence of vessels and	Disturbance will be mostly temporary and reversible and excess mortality caused by disturbance was calculated at 0.040%.	Adverse effects on the qualifying bird interest features which undermine the following conservation	YES

	infrastructure during construction	No adverse effects on the population and therefore no adverse effect on site integrity. Negligible adverse effects on the distribution and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	objectives of the Liverpool Bay SPA will not occur as a result of disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction: • The population of each of the qualifying features; • The distribution of the qualifying features within the site.	
Common tern		Disturbance will be mostly temporary and excess mortality was calculated at 0.006%. No adverse effects on the population and therefore no adverse effect on site integrity. Negligible adverse effects on the distribution and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		
Waterbird assemblage		The small scale of displacement around the vessels is not likely to impact any of the assemblage features to a greater extent than the highly sensitive common scoter and red-throated diver and therefore the conclusion for these features is relevant to the assemblage also. No adverse effects on the population and therefore no adverse effect on site integrity. Negligible adverse effects on the distribution and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		
Red-throated diver ***Little gull***	Indirect impacts from changes in prey availability during construction, and	Impacts to prey populations will be localised and temporary in nature and are therefore unlikely to impact mobile non-breeding features or features with a large enough foraging range to alter their foraging strategy.	Adverse effects on the qualifying bird interest features which undermine the following conservation objectives of the Liverpool	YES

Common scoter ***Common tern*** ***Waterbird assemblage***	operation and maintenance	No adverse effects on the population and therefore no adverse effect on site integrity. Negligible adverse effects on the distribution and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Bay SPA will not occur as a result of indirect impacts from changes in prey availability during construction, and operation and maintenance: • The population of each of the qualifying features; • The distribution of the qualifying features within the site.	
Little tern	Indirect impacts from changes in prey availability during construction, and operation and maintenance	With construction during the breeding period, up to 2.9% of little tern's foraging range may be affected by temporary changes in prey availability caused by underwater noise. In addition, cable laying activities may result in SSCs of over 1,000 mg/l. Therefore, a moderate adverse effect is predicated upon this feature for temporary habitat loss. During operation and maintenance there will be no impact. Moderate adverse effects upon the extent and distribution of habitats and therefore moderate adverse effects on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objectives of the Liverpool Bay SPA have the potential to occur as a result of indirect impacts from changes in prey availability during construction, and operation and maintenance: • The population of each of the qualifying features; • The distribution of the qualifying features within the site.	NO
Red-throated diver ***Little gull*** ***Common scoter*** ***Common tern*** ***Little tern***	Accidental pollution in the surrounding area during construction, operation and maintenance	Any effects would be limited both temporally and spatially with necessary action plans already in place. Therefore, for all receptors, any effects to population would be negligible. If an event were to occur, the distributional impacts would be short term and reversible. No adverse effects on the population and therefore no adverse effect on site integrity. Negligible adverse effects on the distribution and therefore no adverse effect on site integrity.	Adverse effects on the qualifying bird interest features which undermine the following conservation objectives of the Liverpool Bay SPA have the potential to occur as a result of accidental pollution in the surrounding area during construction, and operation and maintenance:	NO

Waterbird assemblage		The applicant's assessment of effects takes account of embedded mitigation measures that have been adopted as part of the project. In the absence of any mitigation measures, however, there is a potential to compromise these conservation objectives. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	• The population of each of the qualifying features; • The distribution of the qualifying features within the site.	

8) Dee Estuary SPA

Natura 2000 site feature (from Table 3.2.2 – RED rows only)	Impact pathway(s) (from Table 3.2.2)	Description of impacts	Assessment in view of conservation objectives	Can adverse effect on site integrity be ruled out?
Dee Estuary SPA (0.00 km)				
Sandwich tern	Temporary habitat loss leading to displacement/disturbance during construction	The proportion of habitat that will be temporarily lost to sandwich tern is 0.146%. For this passage species, there is a vast range of other habitats available and this temporary loss of less than 1%, will not impact the over extent of distribution. Negligible adverse effects upon the extent and distribution, the structure and function of habitats, and the supporting processes of habitats, and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objectives of the Dee Estuary SPA will not occur as a result of temporary habitat loss leading to displacement/disturbance during construction: • The extent and distribution of the habitats of the qualifying features; • The structure and function of the habitats of the qualifying features; • The supporting processes on which the habitats of the qualifying features rely;	YES
Little tern		The proportion of habitat that will be temporarily lost to little tern is 0.167%. As this temporary loss is less than 1%, will not impact the over extent of distribution. Negligible adverse effects upon the extent and distribution of habitats and therefore no adverse effect on site integrity.		

		Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	• The population of each of the qualifying features; • The distribution of the qualifying features within the site.	
Dunlin ***Curlew*** ***Grey plover*** ***Waterbird assemblage***		The proportion of intertidal habitat that will be temporarily lost to this feature is 0.212%. As this is also a temporary effect, this will have a no effect upon the extent and distribution of habitats. All habitat temporarily lost will be restored and no overall next loss will occur. Negligible adverse effects upon the extent and distribution of habitats, the structure and function of habitats, the supporting processes of habitats, and the population, and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		
Sandwich tern	Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction	Sandwich tern excess mortality caused by displacement is expected to be 0.279% well below the 1% threshold. Negligible adverse effects upon the population and the distribution, and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objectives of the Dee Estuary SPA will not occur as a result of disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction: • The population of each of the qualifying features; • The distribution of the qualifying features within the site.	YES
Dunlin ***Curlew*** ***Grey plover*** ***Waterbird assemblage***		The proportion of intertidal habitat that will be temporarily lost to this feature is 0.996%. As this is also a temporary effect, this will have a no effect upon the overall population of the features. Similarly, only a small proportion of the population of each species uses the area. Negligible adverse effects upon the population and the distribution, and therefore no adverse effect on site integrity.		

		Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		
Little tern	Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction	Little tern excess mortality caused by displacement is expected to be 0.06% well below the 1% threshold. There are concerns about the route of the proposed development through the limited foraging range of Little Terns associated with the Dee Estuary SPA. In advance of any mitigation measures, there is the potential for significant disturbance and displacement of this species. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objectives of the Dee Estuary SPA have the potential to occur as a result of disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction: • The population of each of the qualifying features; • The distribution of the qualifying features within the site.	NO
Sandwich tern ***Dunlin*** ***Curlew*** ***Grey plover*** ***Waterbird assemblage***	Indirect impacts from changes in prey availability during construction, and operation and maintenance	Impacts to prey populations will be localised and temporary in nature and are therefore unlikely to impact mobile non-breeding features or features with a large enough foraging range to alter their foraging strategy. No adverse effects on the population and the distribution, and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objectives of the Dee Estuary SPA will not occur as a result of indirect impacts from changes in prey availability during construction, and operation and maintenance: • The population of each of the qualifying features; • The distribution of the qualifying features within the site.	YES

Little tern		With construction during the breeding period, up to 2.9% of little tern's foraging range may be affected by temporary changes in prey availability caused by underwater noise. In addition, cable laying activities may result in SSCs of over 1,000 mg/l. Therefore a moderate adverse effect is predicated upon this feature for temporary habitat loss. During operation and maintenance there will be no impact. Moderate adverse effects upon the extent and distribution of habitats and therefore moderate adverse effects on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objective of the Dee Estuary SPA have the potential to occur as a result of indirect impacts from changes in prey availability during construction, and operation and maintenance: • The population of each of the qualifying features.	NO
Sandwich tern ***Little tern*** ***Dunlin*** ***Curlew*** ***Grey plover*** ***Waterbird assemblage***	Accidental pollution in the surrounding area during construction, and operation and maintenance	Any effects would be limited both temporally and spatially, affecting an area of less than 1% of available intertidal habitats at most, with necessary action plans already in place. Therefore, there would be no adverse effects to the population. No adverse effects upon site integrity. The applicant's assessment of effects takes account of embedded mitigation measures that have been adopted as part of the project. In the absence of any mitigation measures, however, there is a potential to compromise these conservation objectives. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objective of the Dee Estuary SPA have the potential to occur as a result of accidental pollution in the surrounding area during construction, and operation and maintenance: • The population of each of the qualifying features; • The distribution of the qualifying features within the site.	NO
Common tern ***Pintail*** ***Teal***	All impact pathways	Species which were present within 500 m of the proposed works below 1% of the current Dee Estuary population were considered to have no potential to be adversely impacted by the proposed work.	Adverse effects on the qualifying bird interest features which undermine the following conservation objectives of the Dee Estuary SPA will not occur:	YES

Knot ***Oystercatcher*** ***Bar-tailed godwit*** ***Black-tailed godwit*** ***Shelduck*** ***Redshank***		Further supporting evidence is provided in Section 1.9.3.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	• The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site..	

9) Ribble and Alt Estuaries SPA

Natura 2000 site feature (from Table 3.2.2 – RED rows only)	**Impact pathway(s) (from Table 3.2.2)**	**Description of impacts**	**Assessment in view of conservation objectives**	**Can adverse effect on site integrity be ruled out?**
Ribble and Alt Estuaries SPA (1.00 km)				
Common tern	Disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance	Whilst there were no available data to calculate excess mortality caused by displacement for common tern. Assuming a foraging range of 18 km (Woodward, et. al., 2014), and by applying a 100 m disturbance (Goodship and Furness 2022) buffer around working vessels it was calculated that the area of proposed works does not overlap with the Ribble and Alt SPA common tern colonies foraging range. Therefore, there will be no disturbance/displacement caused by the Proposed Development upon the Ribble and Alt SPA population of common tern during any phase. As there is no potential for impact to occur to common tern from Ribble and Alt Estuaries SPA it is not presented within Table 1.143.	Adverse effects on the qualifying bird interest features which undermine the following conservation objectives of the Ribble and Alt Estuaries SPA will not occur as a result of disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance:	YES

		Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.3 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	• The population of each of the qualifying features; • The distribution of the qualifying features within the site.	
Lesser black-backed gull	Collision with static offshore infrastructure during operation and maintenance	Any effects are unquantifiable and will be counteracted by the benefits provided for this species. Therefore, overall there will be no adverse effects upon the population. No adverse effects on the population and distribution, and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.3 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objectives of the Ribble and Alt Estuaries SPA will not occur as a result of collision with static offshore infrastructure during operation and maintenance: • The population of each of the qualifying features; • The distribution of the qualifying features within the site.	YES
	Indirect impacts from changes in prey availability during construction, and operation and maintenance	The overlap between lesser black-backed gull foraging range and the proposed works is approximate 0.13%. Fish species have a negligible adverse impact during works and therefore the prey might be impacted, leading to the lesser black-backed gull also impacted. However, the area of impact is *de minimis*. No adverse effects on the population and distribution, and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.3 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objective of the Ribble and Alt Estuaries SPA will not occur as a result of indirect impacts from changes in prey availability during construction, and operation and maintenance: • The population of each of the qualifying features; • The distribution of the qualifying features within the site.	YES

	Creation of roosting and nesting habitats among project infrastructure during operation and maintenance	As this is a beneficial impact that may benefit this/these species there will be no adverse effects upon the population. No adverse effects on the population and distribution, and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.3 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objective of the Ribble and Alt Estuaries SPA will not occur as a result of creation of roosting and nesting habitats among project infrastructure during operation and maintenance: • The population of each of the qualifying features; • The distribution of the qualifying features within the site.	YES

10) Anglesey Terns SPA

Natura 2000 site feature (from Table 3.2.2 – RED rows only)	Impact pathway(s) (from Table 3.2.2)	Description of impacts	Assessment in view of conservation objectives	Can adverse effect on site integrity be ruled out?
Anglesey Terns SPA (30.00 km)				
Sandwich tern	Disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance Changes in prey availability during construction, and operation and maintenance	The Anglesey Terns SPA is designated for four species of breeding terns of these, sandwich tern have the largest foraging range of 34.3 km (Woodward, et. al., 2014). Sandwich tern colonies within the SPA are mostly situated on the northern and western coasts of Anglesey with Cemlyn Bay being the colony situated closet to the Proposed Development (JNCC - Seabird Monitoring Programme). Using the mean foraging range of 34.3 km and using the Cemlyn Bay sandwich tern colony as the nearest Anglesey Terns SPA sandwich tern colony, the area of proposed works is over 60 km away from the nearest sandwich tern colony. Therefore, there is no connectivity with the Proposed Development for the Anglesey Terns	Adverse effects on the qualifying bird interest features which undermine the following conservation objectives of the Anglesey Terns SPA will not occur: • The size of the population should be stable or increasing, allowing for natural variability, and sustainable in the long term.	YES

		SPA breeding sandwich tern colony. Thus, there will be no adverse effect or impact to the Anglesey Terns SPA sandwich tern population during any phase. For breeding sandwich tern during all phases and impacts there will be no adverse effects upon the integrity of the Anglesey Terns SPA.	• The distribution of the population should be being maintained, or where appropriate increasing. • There should be sufficient habitat, of sufficient quality, to support the population in the long term. • Factors affecting the population, or its habitat should be under appropriate control	

11) Morecambe Bay and Duddon Estuary SPA

Natura 2000 site feature (from Table 3.2.2 – RED rows only)	Impact pathway(s) (from Table 3.2.2)	Description of impacts	Assessment in view of conservation objectives	Can adverse effect on site integrity be ruled out?
Morecambe Bay and Duddon Estuary SPA (22.00 km)				
Lesser black-backed gull	Collision with static offshore infrastructure during operation and maintenance	Any effects are unquantifiable and will be counteracted by the benefits provided for this species. Therefore, overall there will be no adverse effects upon the population. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.5 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objectives of the Morecambe Bay and Duddon Estuary SPA will not occur as a result of collision with static offshore infrastructure during operation and maintenance: • The population of each of the qualifying features; • The distribution of the qualifying features within the site.	YES

	Indirect impacts from changes in prey availability during construction, and operation and maintenance	The overlap between lesser black-backed gull foraging range and the proposed works is approximate 0.13%. Fish species have a negligible adverse impact during works and therefore the prey might be impacted, leading to the lesser black-backed gull also impacted. However, the area of impact is *de minimis*. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.5 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objectives of the Morecambe Bay and Duddon Estuary SPA will not occur as a result of indirect impacts from changes in prey availability during construction, and operation and maintenance: • The population of each of the qualifying features; • The distribution of the qualifying features within the site.	YES
	Creation of roosting and nesting habitats among project infrastructure during operation and maintenance	As this is a beneficial impact that may benefit this/these species there will be no adverse effects upon the population. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.5 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objectives of the Morecambe Bay and Duddon Estuary SPA will not occur as a result of creation of roosting and nesting habitats among project infrastructure during operation and maintenance: • The population of each of the qualifying features; • The distribution of the qualifying features within the site.	YES

Aberdaron Coast and Bardsey Island SPA

Natura 2000 site feature (from	**Impact pathway(s) (from Table 3.2.2)**	**Description of impacts**	**Assessment in view of conservation objectives**	**Can adverse effect on site**

Table 3.2.2 – RED rows only)				integrity be ruled out?
Aberdaron Coast and Bardsey Island SPA				
Manx shearwater	Disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance	Mortality caused by displacement is calculated at zero birds. Therefore, there will be no impact upon the breeding population. No adverse effects on the population therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.6 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objective of the Aberdaron Coast and Bardsey Island SPA will not occur as a result of disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance: • Breeding population of Manx shearwater (confined to Ynys Enlli) is stable or increasing.	YES
		The Proposed Development is approx. 215 km from site within an area of very low Manx shearwater abundance. Therefore, there will be no additional disturbance within the SPA. Negligible potential for birds to be disturbed due to the number present within the area. No adverse effects on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.6 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objective of the Aberdaron Coast and Bardsey Island SPA will not occur as a result of disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance: • Nesting birds are not disturbed by restoration works on boundary walls or recreational activities	YES

	Collision with offshore infrastructure during operation and maintenance	Any effects are unquantifiable and will be minimised by the size of the Manx shearwater foraging range. Therefore, there will be no adverse effects upon the breeding population. No adverse effects on the population therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.6 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objective of the Aberdaron Coast and Bardsey Island SPA will not occur as a result of collision with offshore infrastructure during operation and maintenance: • Breeding population of Manx shearwater (confined to Ynys Enlli) is stable or increasing.	YES
		The Proposed Development is approximately. 215 km from site. Therefore, there will be no additional disturbance to the feature of the SPA. Negligible potential for birds to be disturbed due to the number present within the area. No adverse effects on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.6 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objective of the Aberdaron Coast and Bardsey Island SPA will not occur as a result of collision with offshore infrastructure during operation and maintenance: • Nesting birds are not disturbed by restoration works on boundary walls or recreational activities	YES

12) Ailsa Craig SPA

Natura 2000 site feature (from Table 3.2.2 – RED rows only)	**Impact pathway(s) (from Table 3.2.2)**	**Description of impacts**	**Assessment in view of conservation objectives**	**Can adverse effect on site integrity be ruled out?**
Ailsa Craig SPA (196.00 km)				

Northern gannet	Disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance	Mortality caused by displacement is calculated as zero birds. Therefore, there will be no impact upon the breeding population. As the affected area equates to 0.06% of the available foraging range there will be no adverse effects upon the distribution and extent of habitats supporting the species. Negligible adverse effects on the population and supporting habitat and therefore no adverse impact on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.7 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objective of the Ailsa Craig SPA will not occur as a result of disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance: • Population of the species as a viable component of the site; • Distribution and extent of habitats supporting the species; • No significant disturbance of the species.	YES
	Indirect impacts from changes in prey availability during construction, and operation and maintenance	As the affected area equates to 0.06% of the available foraging range there will be no adverse effects upon the population. Negligible adverse effects on the population and therefore no adverse impact on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.7 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objective of the Ailsa Craig SPA will not occur as a result of indirect impacts from changes in prey availability during construction, and operation and maintenance: • Population of the species as a viable component of the site.	

13) Skomer, Skokholm and the Seas off Pembrokeshire SPA

Natura 2000 site feature (from Table 3.2.2 – RED rows only)	Impact pathway(s) (from Table 3.2.2)	Description of impacts	Assessment in view of conservation objectives	Can adverse effect on site integrity be ruled out?
Skomer, Skokholm and the Seas off Pembrokeshire SPA (213.00 km)				
Manx shearwater ***European storm petrel***	Disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance	Mortality caused by displacement is calculated at zero birds. Therefore, there will be no impact upon the breeding population. No adverse effects on the population and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.8 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objective of the Skomer, Skokholm and the Seas off Pembrokeshire SPA will not occur as a result of disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance: • The size of the population should be stable or increasing, allowing for natural variability, and sustainable in the long term.	YES
Manx shearwater		As the affected area equates to 0.002% of the available foraging range there will be no significant change to the availability and quality of the foraging habitats. Negligible adverse effects on the availability and quality of the habitats and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.8 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objective of the Skomer, Skokholm and the Seas off Pembrokeshire SPA will not occur as a result of disturbance and displacement from airborne sound, and presence of vessels and infrastructure	YES

European storm petrel		As the affected area equates to 0.034% of the available foraging range there will be no significant change to the availability and quality of the foraging habitats. Negligible adverse effects on the availability and quality of the habitats and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.8 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	during construction, and operation and maintenance: • There should be sufficient habitat, of sufficient quality, to support the population in the long term.	
Manx shearwater ***European storm petrel***	Collision with offshore infrastructure during operation and maintenance	Any effects are unquantifiable and will be minimised by the size of the Manx shearwater foraging range. Therefore, there will be no adverse effects upon the breeding population. No adverse effects on the population and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.8 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objective of the Skomer, Skokholm and the Seas off Pembrokeshire SPA will not occur as a result of Collision with offshore infrastructure during operation and maintenance: • The size of the population should be stable or increasing, allowing for natural variability, and sustainable in the long term.	YES
Manx shearwater	Indirect impacts from changes in prey availability during construction, and operation and maintenance	As the affected area equates to 0.002% of the available foraging range there will be no significant change to the population. Negligible adverse effects on the population and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.8 of the HRA Stage 2 Report to Inform	Adverse effects on the qualifying bird interest features which undermine the following conservation objective of the Skomer, Skokholm and the Seas off Pembrokeshire SPA will not occur as a result of indirect impacts from changes in prey	YES

		Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	availability during construction, and operation and maintenance: • The size of the population should be stable or increasing, allowing for natural variability, and sustainable in the long term.	
European storm petrel		As the affected area equates to 0.034% of the available foraging range there will be no significant change to the population. Negligible adverse effects on the population and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.8 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).		

14) Grassholm SPA

Natura 2000 site feature (from Table 3.2.2 – RED rows only)	**Impact pathway(s) (from Table 3.2.2)**	**Description of impacts**	**Assessment in view of conservation objectives**	**Can adverse effect on site integrity be ruled out?**
Grassholm SPA (224.00 km)				
Northern gannet	Disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance	Mortality caused by displacement is calculated as zero birds. Therefore, there will be no impact upon the breeding population. No increased in mortality due to the project and therefore on adverse effects on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.9 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objectives of the Grassholm SPA will not occur as a result of disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance: • The population will not fall below 30,000 pairs in three consecutive years; • It will not drop by more than 25% of the previous	YES

			year's figures in any one year; • There will be no decline in this population significantly greater than any decline in the North Atlantic population as a whole.	
	Indirect impacts from changes in prey availability during construction, and operation and maintenance	As the affected area equates to 0.04% of the available foraging range there will be no adverse effects upon the population. No impact on foraging resource availability and therefore on the population. No adverse effects on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.9 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objectives of the Grassholm SPA will not occur as a result of indirect impacts from changes in prey availability during construction, and operation and maintenance: • The population will not fall below 30,000 pairs in three consecutive years; • It will not drop by more than 25% of the previous year's figures in any one year; • There will be no decline in this population significantly greater than any decline in the North Atlantic population as a whole.	YES

15) Saltee Islands SPA

Natura 2000 site feature (from Table 3.2.2 – RED rows only)	Impact pathway(s) (from Table 3.2.2)	Description of impacts	Assessment in view of conservation objectives	Can adverse effect on site integrity be ruled out?
Saltee Islands SPA (246.00 km)				

Northern fulmar ***Northern gannet***	Disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance	Mortality caused by displacement is calculated at zero birds. Therefore, there will be no impact upon the breeding population. No adverse effects on the population and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.10 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objective of the Grassholm SPA will not occur as a result of disturbance and displacement from airborne sound, and presence of vessels and infrastructure during construction, and operation and maintenance: • To ensure that there is no significant decline in breeding population abundance.	YES
Northern fulmar	Collision with offshore infrastructure during operation and maintenance	Any effects are unquantifiable and will be minimised by the size of the northern fulmar foraging range. Therefore, there will be no adverse effects upon the population. No adverse effects on the population and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.10 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	Adverse effects on the qualifying bird interest features which undermine the following conservation objective of the Grassholm SPA will not occur as a result of collision with offshore infrastructure during operation and maintenance: • To ensure that there is no significant decline in breeding population abundance.	YES
Northern gannet	Indirect impacts from changes in prey availability during construction, and operation and maintenance	As the affected area equates to 0.037% of the available foraging range there will be no adverse effects upon the population. No adverse effects on the population and therefore no adverse effect on site integrity. Further supporting evidence is provided in Sections 1.9.2.1 and 1.9.3.10 of the HRA Stage 2 Report to Inform	Adverse effects on the qualifying bird interest features which undermine the following conservation objective of the Grassholm SPA will not occur as a result of indirect impacts from changes in prey availability during construction, and operation and maintenance:	YES

		Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	• To ensure that there is no significant decline in breeding population abundance.	

4.2 Assessment of the project taking into account additional mitigating measures, conditions or restrictions

Natura 2000 Feature (from Table 4.1 – 'NO' rows only)	Description of adverse effect(s)	Can adverse effect(s) be mitigated?	Description of mitigation measures, and how they would be applied (e.g. contractual obligations, consent conditions)	Can adverse effect on site integrity be ruled out?
Dee Estuary SAC: ***Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats***	Temporary habitat loss and/or disturbance (along cable connection only) during construction, and operation and maintenance	YES	Should the cable trenching machine be used, matting will be used. In addition, tyre pressure of working vehicles in the intertidal will be reduced. These measures will reduce the impact from compaction on the Annex I Mudflat and sandflats not covered by seawater at low tide feature of the Dee Estuary SAC. These measures will be secured through an appropriate licence condition which requires the submission for approval of an Environment Management Plan.	YES
Dee Estuary SAC: ***Estuaries*** ***Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats*** ***Salicornia and other annuals colonising mud***	Increased risk of introduction and spread of INNS	YES	Development of, and adherence to, an Environmental Management Plan (EMP), including actions to minimise INNS. The EMP will outline measures to ensure vessels comply with the International Maritime Organisation (IMO) ballast water management guidelines. These measures will consider the origin of vessels and contain standard housekeeping measures for such vessels as well as specific measures to be adopted in the event that a high alert species is recorded (e.g. carpet sea squirt *Didemnum vexillum*). Actions to minimise INNS, including a biosecurity plan to limit spread and introduction of INNS. These measures will aim to manage and reduce the risk of potential introduction and spread of INNS so far as reasonably practicable to best	YES

and sand; Glasswort and other annuals colonising mud and sand ***Atlantic salt meadows***			protect the biological integrity of the local natural environment and communities.	
Dee Estuary SAC: ***Estuaries*** ***Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats*** ***Salicornia and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand*** ***Atlantic salt meadows*** ***Sea lamprey*** ***River lamprey***	Accidental pollution to the surrounding area	YES	Development of, and adherence to a Marine Pollution Contingency Plan (MPCP) as part of the Environment Management Plan (EMP) which will include planning for accidental spills, address all potential contaminant releases and include key emergency details. Measures will be adopted to ensure that the potential for release of pollutants from construction, operations and maintenance 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.	YES
Liverpool Bay SPA: ***Red-throated diver***				

Little gull ***Common scoter*** ***Common tern*** ***Little tern*** ***Waterbird assemblage***				
Dee Estuary SPA: ***Sandwich tern*** ***Little tern*** ***Dunlin*** ***Curlew*** ***Grey plover*** ***Waterbird assemblage***				
Harbour porpoise (North Anglesey Marine SAC, North Channel SAC, West Wales Marine SAC, Bristol Channel Approaches SAC, Roaringwater Bay and Islands SAC)	There is the potential for injury and disturbance from underwater noise.	YES	Although the pressure does not reach any protected sites for marine mammals, the development of and adherence to a Marine Mammal Mitigation Protocol (MMMP) based on the draft MMMP submitted in support of the marine licence application (Appendix S of the ES - CML2365-LBA CCS Ltd_OFFSHORE ES_Appendix S MMMP_NRW_FINAL), will mitigate any injury within the Management Unit Mitigation including ADD and soft starts will be applied to reduce the risk of injury to marine mammals that may be present outside the site boundary and in the vicinity of the Proposed Development. In addition, the Applicant has confirmed that it is fully committed to work in line with the UXO Clearance Joint Interim Position Statement and will prioritise low order detonations as the first approach for UXO clearance activities..	YES

Grey seal (Lleyn Peninsula and the Sarnau SAC, Cardigan Bay, Pembrokeshire Marine SAC) ***Harbour seal (Strangford Lough SAC, Murlough SAC)***			These mitigation measures will result in no residual risk to any of the marine mammals SACs considering that there is no overlap with the boundaries of the sites.	
Sea lamprey ***River lamprey*** ***Atlantic salmon*** *(From* ***Dee Estuary SAC, River Dee and Bala Lake SAC, Afon Gwyrfai a Llyn Cwellyn SAC, Afon Eden – Cors Goch Trawsfynydd SAC, River Teifi SAC)***	There is the potential for injury and disturbance from underwater noise	YES	The development of and adherence to a Marine Mammal Mitigation Protocol (MMMP) based on the draft MMMP submitted in support of the marine licence application (Appendix S of the ES - CML2365-LBA CCS Ltd_OFFSHORE ES_Appendix S MMMP_NRW_FINAL), with mitigation measures including ADD and soft starts will be applied to reduce the risk of injury to marine fish that may be present outside the site boundary and in the vicinity of the Proposed Development. In addition, the Applicant has confirmed that it is fully committed to work in line with the UXO Clearance Joint Interim Position Statement and will prioritise low order detonations as the first approach for UXO clearance activities.	YES
Little tern (Liverpool Bay SPA, Dee Estuary SPA)	Indirect impacts from changes in prey availability during construction, and operation and maintenance	YES	Construction activities will be timed to avoid the egg laying and chick rearing period. This mitigation measure will be applied through an appropriate licence condition.	YES
	Disturbance and displacement from airborne sound and presence of vessels	YES	Construction activities will be timed to avoid the impacts to little terns and their prey. The timings of the works will be agreed in writing with NRW Advisory. Based on available evidence, NRW Advisory currently advise that these works should be carried out as far into August and September as possible.	YES

	and infrastructure during construction		This mitigation measure will be secured through licence conditions requiring the submission and approval of an Environment Management Plan.	
Liverpool Bay: Red throated diver Common scoter	Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction	YES	Cable laying and protection will be restricted to avoid disturbance and displacement effects on red-throated diver and common scoter during the sensitive months of 1st November to 31st March. This will be secured through a Vessel Traffic Management Plan (VTMP). Outside of these sensitive months (e.g. October and April when there can still be large numbers of birds) the VTMP will use mitigation measures such as (but not limited to) the use of established shipping routes to transit through the SPA, slow vessel speeds, and avoiding the over-revving of engines. This VTMP will be agreed in writing with SNCBs in advance of any works. This mitigation measure will be secured as a licence condition requiring the submission of the VTMP.	YES

4.3 Concluding the appropriate assessment of the project alone

(a) If the right hand column of Table 4.1 and Table 4.2 (if applicable) is 'YES' for all features	It has been ascertained that the proposal, when considered alone, will not adversely affect the integrity of any Natura 2000 sites.
~~**(b) If there are any 'NO's in the right hand column of Table 4.1 that have not been resolved to 'YES' through mitigation measures identified in Table 4.2**~~	~~It has not been ascertained that the proposal, when considered alone, will not adversely affect the integrity of one or more Natura 2000 sites.~~

(c) Are there any residual effects of the project (net of any mitigation measures identified) which, though insignificant on their own, could be significant if considered in combination with the effects of other plans or projects?	***YES***

5. In combination assessment

5.1 Identifying possible in combination effects

For the Proposed Development in-combination assessment a tiered approach has been adopted by the applicant (see Section 1.5.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf). This approach provides a framework for placing relative weight on the potential for each project/plan to be included in the in-combination assessment to ultimately be realised, based upon the project/plan's current stage of maturity and certainty in the project's parameters. The allocation of each project, plan and activity into tiers is not affected by the screening process but is merely a categorisation applied to all projects, plans and activities that have been screened in for assessment. Definitions for each tier is as follows:

- Tier 1 assessment: Proposed Development;
- Tier 2 assessment: All plans/projects assessed under tier 1, plus projects which are operational, under construction, those with consent and those submitted but not yet determined;
- Tier 3 assessment: All plans/projects assessed under tier 2, plus those projects with a Scoping Report; and
- Tier 4 assessment: All plans/projects assessed under tier 3, plus those projects likely to come forward where a Crown Estate Agreement for Lease (AfL) has been granted.

1) Dee Estuary SAC

BLUE impact pathway from Table 3.2 **and/or** **Residual effect (from appropriate assessment in section 4)**	**Natura 2000 site feature(s) concerned**	**Other plans/projects with effects that might interact with the effects of the project to render its effects significant (if any)**	**Nature of the in-combination effect (if any)**	**Is there likely to be any significant in-combination effect, in view of the site's conservation objectives?**
Temporary habitat loss and/or disturbance (along cable connection only) during construction, and operation and maintenance	Dee Estuary SAC: Estuaries Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats	**Tier 1**: Deposits and Removal: • Mostyn Energy Park Expansion There were no other plans or projects identified with the potential to result in in-combination effects regarding	**Tier 1:** Activities associated with the Tier 1 project are predicted to be of local spatial extent, short term in duration (for individual activities), intermittent, and of high reversibility. Given the localised extent of this impact for the Tier 1 project, and that it doesn't overlap with the cable connection of the Proposed Development, any temporary habitat loss/disturbance is not anticipated to affect the	NO

	Salicornia and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand Atlantic salt meadows	temporary habitat loss/disturbance during any phases of the Proposed Development.	Annex I habitats of the Dee Estuary SAC during the construction phase. **Tiers 2, 3, and 4:** There were no Tier 2, 3 or 4 plans or projects identified with the potential to result in in-combination effects regarding temporary habitat loss/disturbance during any phases of the Proposed Development. **Summary:** Temporary habitat loss/disturbance along the cable connection is therefore not predicted to undermine the conservation objectives of the Dee Estuary SAC. Further supporting evidence is provided in Section 1.6.2.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	
Increased SSC and associated deposition (along cable connection only) during construction, and operation and maintenance	Dee Estuary SAC: Estuaries Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats *Salicornia* and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand Atlantic salt meadows	**Tier 1:** Offshore Renewables: • Burbo Bank Extension OWF cable repair and remediation; • Awel y Môr OWF; and • Mona OWF Suction Bucket Trails. Deposits and Removal: • Burbo Bank Extension OWF Disposal Site IS153; • Mostyn Energy Park Expansion; and • Hilbre Swash. **Tier 2:** Offshore Renewables: • Mona OWF. **Tier 3:**	**Tier 1:** Activities associated with Tier 1 projects are predicted to be of local spatial extent, short term in duration (for individual activities), intermittent, and of high reversibility. Given the localised extent of this impact for the Tier 1 projects, and that none overlap with the cable connection of the Proposed Development, any increased SSCs are not anticipated to affect the Annex I habitats of the Dee Estuary SAC during the construction, or operation and maintenance phases. **Tier 2:** There is potential for in-combination effects with the Mona OWF in the construction phase of the Proposed Development. The modelling for Mona OWF suggested that suspended sediments would be resuspended on subsequent tides and sediment plumes would reduce with distance from the site (Mona Offshore Wind Ltd, 2023a).	NO

		Cables and Pipelines: • MaresConnect Wales – Ireland Interconnector Cable. **Tier 4:** Offshore Renewables: • Removal of a meteorological mast at Gwynt y Môr OWF.	As above for the Tier 1 projects, due to the localised extent of this impact and no overlap with the cable connection of the Proposed Development, any increased SSCs are not anticipated to affect the Annex I habitats of the Dee Estuary SAC during the construction, or operation and maintenance phases. **Tier 3:** There is potential for in-combination effects with one Tier 3 project only in the construction phase of the Proposed Development: The MaresConnect interconnector cable. At the time of writing, there was limited information available on this project, however activities associated with increased SSCs are likely to be similar to those for the installation of cables at the Proposed Development. As above for the Tier 1 projects, due to the localised extent of this impact and no overlap with the cable connection of the Proposed Development, any increased SSCs are not anticipated to affect the Annex I habitats of the Dee Estuary SAC during the construction, or operation and maintenance phases. **Tier 4:** There is potential for in-combination effects with one Tier 4 project only in the construction phase of the Proposed Development: the removal of a meteorological mast at Gwynt y Môr OWF. At the time of writing, there was limited information available on this project, however activities associated with increased SSCs are likely to be lower than those for the construction of the Proposed Development. As above for the Tier 1 projects, due to the localised extent of this impact and no overlap with the cable connection of the Proposed Development, any increased SSCs are not	

			anticipated to affect the Annex I habitats of the Dee Estuary SAC during the construction, or operation and maintenance phases. **Summary:** Increased SSCs and associated deposition in-combination with other plans and projects is therefore not predicted to undermine any of the conservation objectives of the Dee Estuary SAC. Further supporting evidence is provided in Section 1.6.2.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	
Increased temperature impacting benthic and marine communities (along pipeline only) during operation and maintenance	Dee Estuary SAC: Estuaries Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats *Salicornia* and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand Atlantic salt meadows	There were no projects or plans identified with the potential to result in in-combination effects for increased temperature impacting benthic and marine communities (along the pipeline only).	None of the projects and plans will have pipelines or power cables within the Dee Estuary SAC. Therefore, due to the highly localised nature of this potential impact and the static nature of Annex I habitats in the Dee Estuary SAC, no in-combination effects are anticipated for this impact.	NO
Impacts resulting from the release of sediment bound benthic contaminants (along cable connection only) during construction	Dee Estuary SAC: Estuaries Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats *Salicornia* and other annuals colonising mud	There were no projects or plans identified with the potential to result in in-combination effects for release of sediment bound contaminants (along the cable connection only).	None of the projects and plans identified in the screening process may result in the release of sediment bound contaminants within their own boundaries. Therefore, no in-combination effects are anticipated for this impact.	NO

	and sand; Glasswort and other annuals colonising mud and sand Atlantic salt meadows			
Temporary habitat loss and/or disturbance (along cable connection only) during construction, and operation and maintenance	Dee Estuary SAC: Sea lamprey River lamprey	**Tier 1**: Deposits and Removal: • Mostyn Energy Park Expansion There were no other plans or projects identified with the potential to result in in-combination effects regarding temporary habitat loss/disturbance during any phases of the Proposed Development.	**Tier 1:** Activities associated with the Tier 1 project are predicted to be of local spatial extent, short term in duration (for individual activities), intermittent, and of high reversibility. Given the localised extent of this impact for the Tier 1 project, and that it doesn't overlap with the cable connection of the Proposed Development, any temporary habitat loss/disturbance is not anticipated to affect the Annex II diadromous fish features of the Dee Estuary SAC during the construction phase. **Tiers 2, 3, and 4:** There were no Tier 2, 3 or 4 plans or projects identified with the potential to result in in-combination effects regarding temporary habitat loss/disturbance during any phases of the Proposed Development. **Summary:** Temporary habitat loss/disturbance along the cable connection is therefore not predicted to undermine the conservation objectives of the Dee Estuary SAC. Further supporting evidence is provided in Section 1.7.2.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	NO
Increased SSC and associated deposition (along cable connection only) during construction,	Dee Estuary SAC: Sea lamprey River lamprey	**Tier 1:** Offshore Renewables: • Burbo Bank Extension OWF cable repair and remediation; • Awel y Môr OWF; and	**Tier 1:** Activities associated with Tier 1 projects are predicted to be of local spatial extent, short term in duration (for individual activities), intermittent, and of high reversibility. Given the localised extent of this impact for the Tier 1 projects, and that none	NO

and operation and maintenance		• Mona OWF Suction Bucket Trails. Deposits and Removal: • Burbo Bank Extension OWF Disposal Site IS153; • Mostyn Energy Park Expansion; and • Hilbre Swash. **Tier 2:** Offshore Renewables: • Mona OWF. **Tier 3:** Cables and Pipelines: • MaresConnect Wales – Ireland Interconnector Cable. **Tier 4:** Offshore Renewables: • Removal of a meteorological mast at Gwynt y Môr OWF.	overlap with the cable connection of the Proposed Development, any increased SSCs are not anticipated to affect the Annex II diadromous fish of the Dee Estuary SAC during the construction, or operation and maintenance phases. As previously described for the Proposed Development alone, this impact is not expected to adversely affect the distribution of qualifying species for this site (sea lamprey and river lamprey). **Tier 2:** There was potential for in-combination effects with the Mona OWF in the construction phase of the Proposed Development. The modelling for Mona OWF suggested that suspended sediments would be resuspended on subsequent tides and sediment plumes would reduce with distance from the site (Mona Offshore Wind Ltd, 2023a). As above for the Tier 1 projects, due to the localised extent of this impact and no overlap with the cable connection of the Proposed Development, any increased SSCs are not anticipated to affect the Annex II diadromous fish of the Dee Estuary SAC during the construction, or operation and maintenance phases. **Tier 3:** There was potential for in-combination effects with one Tier 3 project only in the construction phase of the Proposed Development: The MaresConnect interconnector cable. At the time of writing, there was limited information available on this project, however activities associated with increased SSCs are likely to be similar to those for the installation of cables at the Proposed Development. As above for the Tier 1 projects, due to the localised extent of this impact and no overlap with	

			the cable connection of the Proposed Development, any increased SSCs are not anticipated to affect the Annex II diadromous fish of the Dee Estuary SAC during the construction, or operation and maintenance phases. **Tier 4:** There was potential for in-combination effects with one Tier 4 project only in the construction phase of the Proposed Development: the removal of a meteorological mast at Gwynt y Môr OWF. At the time of writing, there was limited information available on this project, however activities associated with increased SSCs are likely to be lower than those for the construction of the Proposed Development. As above for the Tier 1 projects, due to the localised extent of this impact and no overlap with the cable connection of the Proposed Development, any increased SSCs are not anticipated to affect the Annex II diadromous fish of the Dee Estuary SAC during the construction, or operation and maintenance phases. **Summary:** Increased SSCs and associated deposition in-combination with other plans and projects is therefore not predicted to undermine the conservation objectives of Dee Estuary SAC. Further supporting evidence is provided in Section 1.7.2.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	
Underwater noise impacting fish receptors during construction	Dee Estuary SAC: Sea lamprey River lamprey	**Tier 1:** Offshore Renewables: • Awel y Môr OWF. **Tier 2:**	**Tier 1:** One Tier 1 project was identified with a potential for in-combination effects in the construction phase: Awel y Môr OWF. There may be some overlap between the construction phase of Awel y	NO

		Offshore Renewables: • Mona OWF; • Morgan OWF Generation Assets; and • Morecambe OWF Generation Assets.	Môr OWF and the Proposed Development (up to a year), which suggests in-combination impacts would be lower than if they overlapped for multiple years. Furthermore, there will only be up to 13.5 hours of piling at the Proposed Development, which is low in comparison to the Tier 1 and Tier 2 projects identified. At the Awel y Môr OWF, mortality ranges were modelled for this project (<100 m for fish as fleeing receptors) and behavioural effects of underwater noise were modelled as similar to that of the Proposed Development (RWE Renewables UK, 2021b). Furthermore, embedded mitigation, such as soft starts, will potentially reduce the risk of impact to diadromous fish species. Overall, increased underwater noise is not anticipated to affect the Annex II diadromous fish of the Dee Estuary SAC during the construction phase. This impact is not expected to adversely affect the distribution of qualifying species for this site (sea lamprey and river lamprey). **Tier 2:** There is potential for in-combination effects with three Tier 2 projects in the construction phase of the Proposed Development: Mona OWF, Morgan OWF Generation Assets, and Morecambe OWF Generation Assets. As above for the Tier 1 project, there may be some overlap between the construction phases of the Tier 2 projects (up to a year), however it should be noted that it any in-combination impacts will be of a lesser extent than if the Tier 2 projects overlapped for a longer period of time (i.e. over multiple years). The underwater noise modelling for all three Tier 2 projects presented injury ranges of <100 m or with threshold not exceeded for Group 1 fish (lamprey species) modelled as fleeing receptors (Mona	

			Offshore Wind Ltd, 2023b, Morecambe Offshore Wind Ltd, 2023b, Morgan Offshore Wind Ltd, 2023a). Furthermore, embedded mitigation, such as soft starts, will potentially reduce the risk of impact to diadromous fish species. Overall, increased underwater noise is not anticipated to affect the Annex II diadromous fish of the Dee Estuary SAC during the construction phase. **Summary:** Increased underwater noise in-combination with other plans and projects is therefore not predicted to undermine the conservation objectives of Dee Estuary SAC. Further supporting evidence is provided in Section 1.7.2.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	

2) Other Diadromous Fish SACs

BLUE impact pathway from Table 3.2 **and/or** **Residual effect (from appropriate assessment in section 4)**	**Natura 2000 site feature(s) concerned**	**Other plans/projects with effects that might interact with the effects of the project to render its effects significant (if any)**	**Nature of the in-combination effect (if any)**	**Is there likely to be any significant in-combination effect, in view of the site's conservation objectives?**
Underwater noise impacting fish receptors during construction	Other diadromous fish SACs: River Dee and Bala Lake SAC (22.53 km)	**Tier 1:** Offshore Renewables: • Awel y Môr OWF. **Tier 2:**	**Tier 1:** One Tier 1 project was identified with a potential for in-combination effects in the construction phase: Awel y Môr OWF. There may be some overlap between the construction phase of Awel y	NO

	Afon Gwyrfai a Llyn Cwellyn SAC (113.40 km) Afon Eden – Cors Goch Trawsfynydd SAC (197.35 km) River Teifi SAC (211.80 km) Cardigan Bay SAC (183.99 km)	Offshore Renewables: • Mona OWF; • Morgan OWF Generation Assets; and • Morecambe OWF Generation Assets.	Môr OWF and the Proposed Development (up to a year), which suggests in-combination impacts would be lower than if they overlapped for multiple years. Furthermore, there will only be up to 13.5 hours of piling at the Proposed Development, which is low in comparison to the Tier 1 and Tier 2 projects identified. At the Awel y Môr OWF, mortality ranges were modelled for this project (<100 m for fish as fleeing receptors) and behavioural effects of underwater noise were modelled as similar to that of the Proposed Development (RWE Renewables UK, 2021b). Furthermore, embedded mitigation, such as soft starts, will potentially reduce the risk of impact to diadromous fish species. Overall, increased underwater noise is not anticipated to affect the Annex II diadromous fish of any SACs during the construction phase. This impact is not expected to adversely affect the natural range, or the area or quality of habitat of the qualifying species for this site (Atlantic salmon, sea lamprey and river lamprey). **Tier 2:** There is potential for in-combination effects with three Tier 2 projects in the construction phase of the Proposed Development: Mona OWF, Morgan OWF Generation Assets, and Morecambe OWF Generation Assets. As above for the Tier 1 project, there may be some overlap between the construction phases of the Tier 2 projects (up to a year), however it should be noted that it any in-combination impacts will be of a lesser extent than if the Tier 2 projects overlapped for a longer period of time (i.e. over multiple years). The underwater noise modelling for Mona OWF and Morgan OWF Generation Assets presented injury ranges of <100 m or with threshold not exceeded for Group 1 fish (lamprey species) and Group 2 fish (Atlantic	

			salmon) modelled as fleeing receptors (Mona Offshore Wind Ltd, 2023b, Morgan Offshore Wind Ltd, 2023a). For the Morecambe OWF Generation Assets, this range of <100 m was also modelled for Group 1 species, and 250 m was modelled for Group 2 species (Morecambe Offshore Wind Ltd, 2023b). Furthermore, embedded mitigation, such as soft starts, will potentially reduce the risk of impact to diadromous fish species. Overall, increased underwater noise is not anticipated to affect the Annex II diadromous fish of any SACs during the construction phase. **Summary:** Increased underwater noise in-combination with other plans and projects is therefore not predicted to restrict the conservation objectives of any SACs. Further supporting evidence is provided in Section 1.7.2.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	

3) Bottlenose Dolphin SACs

BLUE impact pathway from Table 3.2 **and/or** **Residual effect (from appropriate assessment in section 4)**	**Natura 2000 site feature(s) concerned**	**Other plans/projects with effects that might interact with the effects of the project to render its effects significant (if any)**	**Nature of the in-combination effect (if any)**	**Is there likely to be any significant in-combination effect, in view of the site's conservation objectives?**
Injury and disturbance from underwater noise generated by piling during construction	Bottlenose dolphin SACs: Lleyn Peninsula and the Sarnau SAC (115.39 km)	**Tier 1:** Offshore Renewables: • Project Erebus. Construction Projects:	**Tier 1:** The ES for Project Erebus predicted that, in the worst case scenario, 310 bottlenose dolphins may experience disturbance from impact piling. It should be noted that the duration of piling activity	NO

	Cardigan Bay SAC (183.99 km)	• Mostyn Energy Park Extension. **Tier 2:** Offshore Renewables: • Mona OWF; • Morgan OWF Generation Assets; • Morecambe OWF Generation Assets; • Mooir Vannin OWF; • Arklow Bank Wind Park Phase 2; • Dublin Array OWF; • NISA OWF; • Oriel OWF; • Codling Offshore Wind Park; • Llŷr 1 Floating OWF; • Llŷr 2 Floating OWF; and • White Cross OWF.	at both projects is relatively short, (e.g. 13.5 hours at the Proposed Development and 18 days at Project Erebus). Given the distance from Project Erebus and the Proposed Development and small temporal overlap of construction phases (one year), it can be anticipated that bottlenose dolphin outside of the SAC boundaries would be able to tolerate the effect without any impact on reproduction or survival rates. Considering the behavioural disturbance ranges, there would be no potential for overlap of behavioural disturbance ranges with the boundary of any SAC as a result of piling at the Proposed Development and Project Erebus. **Tier 2:** Temporally, the construction phases of the eleven Tier 2 projects are anticipated to occur between 2024 and 2028. Although piling will not result in continuous risk of disturbance, it may affect bottlenose dolphin from the Irish Sea MU population over a meaningful proportion of their lifespan. The PEIR for Mona OWF and Morgan OWF predicted that, in the worst case scenario, up to 16 and 17 bottlenose dolphins, respectively, may experience disturbance from impact piling. It should be highlighted that duration of piling at the Proposed Development will be very short in comparison to Tier 2 projects. Although temporal overlap cannot be discounted, it is anticipated that duration of piling at the Proposed Development (13.5 hours) will not contribute significantly to impacts on bottlenose dolphin population within any SAC or the Irish Sea MU. Considering the distance between the SACs and Tier 2 projects the potential for overlap of behavioural disturbance ranges as a result of piling at respective projects with the boundary of any SAC is highly unlikely.	

			Tier 1 and Tier 2: Impacts that could potentially affect physical characteristic of the habitat (e.g. seabed footprint around piling location) will be taking phase within the Proposed Development or projects considered in the in-combination assessment which are located at a considerable distance from the site. As such, there will be no impacts on supporting habitats within any SACs due to lack of impact pathway. Across all phases of the Proposed Development and other plans and projects considered in the in-combination assessment, only a small area of potential foraging habitat would be affected when compared to available extent of this habitat in the Irish Sea. Although some fish species may temporarily avoid the area of works, the availability of wider suitable habitat within the SACs (which will not be directly affected) and across the Celtic and Irish Sea MU suggest that individuals may move to alternative foraging grounds without affecting animals' health. **Summary:** Underwater noise associated with piling in-combination with other plans and projects is therefore not predicted to restrict the objective of the population being able to maintain itself as a viable component of its natural habitat. Although bottlenose dolphin range within the site will not be constrained, the accessibility to other areas within the Irish Sea may be hindered during piling activities due to barrier effects. Although temporal overlap between piling at respective Tier 1 and Tier 2 projects cannot be discounted, it is anticipated that duration of piling at the Proposed Development (13.5 hours) will not contribute significantly to impacts on bottlenose dolphin population within any SACs or the Irish Sea MU.	

			Underwater noise associated with piling in-combination with other plans and projects is therefore not predicted to occur at levels that could adversely affect the natural range of the bottlenose dolphin population, or the presence, abundance, condition and diversity of habitats and species required to support bottlenose dolphins. It is also not predicted to occur at levels that could adversely affect the presence, abundance, condition and diversity of habitats and species required to support bottlenose dolphins. Furthermore, it is highly unlikely to hinder the restoration of bottlenose dolphin population either within any SACs or wider Irish Sea. Further supporting evidence is provided in Section 1.8.2.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	
Injury and disturbance from underwater noise generated by UXO detonation during construction	Bottlenose dolphin SACs: Lleyn Peninsula and the Sarnau SAC (115.39 km) Cardigan Bay SAC (183.99 km)	**Tier 1:** • Offshore Renewables: • Awel y Môr OWF; and • Project Erebus. **Tier 2:** • Offshore Renewables: • Mona OWF; • Morgan OWF Generation Assets; • Morecambe OWF Generation Assets; • Mooir Vannin OWF; • Arklow Bank Wind Park Phase 2; • Dublin Array OWF; • NISA OWF; • Oriel OWF; • Codling Offshore Wind Park; • Llŷr 1 Floating OWF;	**Tier 1:** Underwater noise modelling results presented for Awel y Mor and Project Erebus indicated that the largest injury range (PTS) due to UXO clearance would be 500 m and 730 m respectively for bottlenose dolphin. Both projects will also be adhering to UXO mitigation which will further reduce the risk of PTS to negligible levels (Blue Gem Wind, 2021, RWE Renewables UK, 2022). There is no potential of overlap of the behavioural disturbance range with the site boundary as a result of UXO clearance at Awel y Mor and Project Erebus. Prolonged behavioural disturbance outside the SAC boundaries as a result of underwater noise may have an effect on reproductive success of some individuals. However, considering that the duration of impact (elevated sound) for each UXO detonation is very short (seconds) and effects of behavioural disturbance are reversible, it is unlikely that this activity in-combination with Tier 1 projects has the	NO

		• Llŷr 2 Floating OWF; and • White Cross OWF.	potential to affect reproduction rates and/or probability of survival that may affect the population of bottlenose dolphin within the site or Irish Seas MU. The potential range of behavioural disturbance as a result of UXO clearance at Project Erebus for bottlenose dolphin is 1,300m (Blue Gem Wind, 2020). The largest TTS onset impact range (as a proxy for behavioural disturbance) for bottlenose dolphin during UXO clearance at Awel y More has been assessed as 920 m (RWE Renewables UK, 2021c). Considering the distance to the SACs, there would be no potential for overlap of behavioural disturbance ranges with the boundary of any SACs as a result of UXO clearance at the Proposed Development, Project Erebus and Awel y Mor. **Tier 2:** Underwater noise modelling results presented for Mona OWF and Morgan OWF indicated that the largest injury range (PTS) for bottlenose dolphin due to UXO clearance would be approximately 890 m. Both projects will also be adhering to UXO mitigation which will further reduce the risk of PTS (Mona Offshore Wind Ltd, 2023c, Morgan Offshore Wind Ltd, 2023b). Considering the distance between the SACs and Tier 2 projects the potential for overlap of behavioural disturbance ranges as a result of UXO clearance at respective projects with the boundary of any SAC is highly unlikely. It should be noted that the duration of impact (elevated sound) for each UXO detonation is very short (seconds) and that the activity may take place intermittently over the years. Additionally, the effects of behavioural disturbance are reversible. Considering the above, it is unlikely that this activity in-combination with Tier 2 projects has	

			the potential to affect reproduction rates and/or probability of survival that may affect the population of bottlenose dolphin within the site or Irish Seas MU. **Tier 1 and Tier 2:** Impacts that could potentially affect physical characteristic of the habitat (e.g. seabed footprint due to UXO crater) will be taking phase within the Proposed Development or projects considered in the in-combination assessment which are located at a considerable distance from the site. As such, there will be no impacts on supporting habitats within any SACs due to lack of impact pathway. Across all phases of the Proposed Development and other plans and projects considered in the in-combination assessment, only a small area of potential foraging habitat would be affected when compared to available extent of this habitat in the Irish Sea. Although some fish species may temporarily avoid the area of works, the availability of wider suitable habitat within the SACs (which will not be directly affected) and across the Celtic and Irish Sea MU suggest that individuals may move to alternative foraging grounds without affecting animals' health. **Summary:** Underwater noise associated with UXO clearance in-combination with other projects and plans is therefore not predicted to occur at levels that could adversely affect the ability of bottlenose dolphin population to maintain itself as a viable component of its natural habitat. Although bottlenose dolphin range within the site will not be constrained, the accessibility to other areas within the Irish Sea may be hindered during UXO clearance campaigns due to barrier effects. Although temporal overlap between UXO	

			clearance at respective Tier 1 and Tier 2 projects cannot be discounted, the duration of impact (elevated sound) for each UXO detonation is very short (seconds) and behavioural effects are reversible. It is anticipated that duration of UXO clearance at the Proposed Development (approximately two days onsite per clearance) will not contribute significantly to impacts on bottlenose dolphin population within the SACs or the Irish Sea MU. Underwater noise associated with UXO clearance in-combination with other plans and projects is therefore not predicted occur at levels that could adversely affect the natural range of the bottlenose dolphin population, or the presence, abundance, condition and diversity of habitats and species required to support bottlenose dolphins. This impact in-combination with other plans and projects is also highly unlikely to hinder the restoration of bottlenose dolphin population either within the SACs or wider Irish Sea. Further supporting evidence is provided in Section 1.8.2.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	

4) Grey Seal SACs

BLUE impact pathway from Table 3.2 **and/or** **Residual effect (from appropriate assessment in section 4)**	**Natura 2000 site feature(s) concerned**	**Other plans/projects with effects that might interact with the effects of the project to render its effects significant (if any)**	**Nature of the in-combination effect (if any)**	**Is there likely to be any significant in-combination effect, in view of the site's conservation objectives?**

Injury and disturbance from underwater noise generated by piling during construction	Grey seal SACs: Lleyn Peninsula and the Sarnau SAC (115.39 km) Cardigan Bay SAC (183.99 km) The Maidens SAC (190.72 km) Pembrokeshire Marine SAC (233.18 km) Lundy SAC (330.73 km) Saltee Islands SAC (239.28 km)	**Tier 1:** Offshore Renewables: • Project Erebus. Construction Projects: • Mostyn Energy Park Extension. **Tier 2:** Offshore Renewables: • Mona OWF; • Morgan OWF Generation Assets; • Morecambe OWF Generation Assets; • Mooir Vannin OWF; • Arklow Bank Wind Park Phase 2; • Dublin Array OWF; • NISA OWF; • Oriel OWF; • Codling Offshore Wind Park; • Llŷr 1 Floating OWF; • Llŷr 2 Floating OWF; and • White Cross OWF.	**Tier 1:** The ES for Project Erebus predicted that, in the worst case scenario, 18 grey seals may experience disturbance from impact piling. It should be noted that the duration of piling activity at both projects is relatively short, (e.g. 13.5 hours at the Proposed Development and 18 days at Project Erebus). Given the distance from Project Erebus and the Proposed Development and small temporal overlap of construction phases (one year), it can be anticipated that grey seal outside of the SAC boundaries would be able to tolerate the effect without any impact on reproduction or survival rates. **Tier 2:** Temporally, the construction phases of the eleven Tier 2 projects are anticipated to occur between 2024 and 2028. Although piling will not result in continuous risk of disturbance, it may affect grey seal within the Irish Sea over a meaningful proportion of their lifespan. The PEIR for Mona OWF and Morgan OWF predicted that, in the worst case scenario, up to 92 and 48 grey seals, respectively, may experience disturbance from impact piling. Also, up to 1 grey seal may experience disturbance during piling at Morecambe OWF. It should be highlighted that duration of piling at the Proposed Development will be very short in comparison to Tier 2 projects. Although temporal overlap cannot be discounted, it is anticipated that duration of piling at the Proposed Development (13.5 hours) will not contribute significantly to impacts on grey seal population. **Tier 1 and Tier 2:** Impacts that could potentially affect physical characteristic of the habitat (e.g. seabed footprint around piling location) will be taking phase within	NO

			the Proposed Development or projects considered in the in-combination assessment which are located at a considerable distance from the site. As such, there will be no impacts on supporting habitats within any SACs due to lack of impact pathway. Across all phases of the Proposed Development and other plans and projects considered in the in-combination assessment, only a small area of potential foraging habitat would be affected when compared to available extent of this habitat in the Irish and Celtic Seas. Although some fish species may temporarily avoid the area of works, the availability of wider suitable habitat within the SACs (which will not be directly affected) and across the Celtic and Irish Seas suggest that individuals may move to alternative foraging grounds without affecting animals' health. **Summary:** Underwater noise associated with piling in-combination with other plans and projects is therefore not predicted to restrict the objective of the population being able to maintain itself as a viable component of its natural habitat. Although grey seal range within the site will not be constrained, the accessibility to other areas within the Irish and Celtic Seas may be hindered during piling activities due to barrier effects. Although temporal overlap between piling at respective Tier 1 and Tier 2 projects cannot be discounted, it is anticipated that duration of piling at the Proposed Development (13.5 hours) will not contribute significantly to impacts on grey seal. Underwater noise associated with piling in-combination with other plans and projects is therefore not predicted to occur at levels that could adversely affect the natural range of the grey seal population, or the presence, abundance, condition	

			and diversity of habitats and species required to support grey seals. Further supporting evidence is provided in Section 1.8.2.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	
Injury and disturbance from underwater noise generated by UXO detonation during construction	Grey seal SACs: Lleyn Peninsula and the Sarnau SAC (115.39 km) Cardigan Bay SAC (183.99 km) The Maidens SAC (190.72 km) Pembrokeshire Marine SAC (233.18 km) Lundy SAC (330.73 km) Saltee Islands SAC (239.28 km)	**Tier 1:** • Offshore Renewables: • Awel y Môr OWF; and • Project Erebus. **Tier 2:** • Offshore Renewables: • Mona OWF; • Morgan OWF Generation Assets; • Morecambe OWF Generation Assets; • Mooir Vannin OWF; • Arklow Bank Wind Park Phase 2; • Dublin Array OWF; • NISA OWF; • Oriel OWF; • Codling Offshore Wind Park; • Llŷr 1 Floating OWF; • Llŷr 2 Floating OWF; and • White Cross OWF.	**Tier 1:** Underwater noise modelling results presented for Awel y Mor and Project Erebus indicated that the largest injury range (PTS) due to UXO clearance would be 1,600 and 2,500 m for grey seal. Both projects will also be adhering to UXO mitigation which will further reduce the risk of PTS to negligible levels (Blue Gem Wind, 2021, RWE Renewables UK, 2022). The potential range of behavioural disturbance as a result of UXO clearance at Project Erebus for grey seal is 20 km (Blue Gem Wind, 2020). The largest TTS onset impact range (as a proxy for behavioural disturbance) for grey seal during UXO clearance at Awel y More has been assessed as 3,100 m (RWE Renewables UK, 2021c). Considering the distance to the SACs, there would be no potential for overlap of behavioural disturbance ranges with the boundary of any SACs as a result of UXO clearance at the Proposed Development, Project Erebus and Awel y Mor. Prolonged behavioural disturbance outside the SAC boundaries as a result of underwater noise may have an effect on reproductive success of some individuals. However, considering that the duration of impact (elevated sound) for each UXO detonation is very short (seconds) and effects of behavioural disturbance are reversible, this is unlikely that this activity in-combination with Tier 1 projects has the potential to affect reproduction rates and/or probability of survival that may affect the population of grey seal. **Tier 2:**	NO

			Underwater noise modelling results presented for Mona OWF and Morgan OWF indicated that the largest injury range (PTS) for grey seal due to UXO clearance would be approximately 3,215 m. Both projects will also be adhering to UXO mitigation which will further reduce the risk of PTS (Mona Offshore Wind Ltd, 2023c, Morgan Offshore Wind Ltd, 2023b). Considering the distance between the SACs and Tier 2 projects (Table 1.68) the potential for overlap of behavioural disturbance ranges as a result of UXO clearance at respective projects with the boundary of any SAC is highly unlikely. It should be noted that the duration of impact (elevated sound) for each UXO detonation is very short (seconds) and that the activity may take place intermittently over the years. Additionally, the effects of behavioural disturbance are reversible. Considering the above, this is unlikely that this activity in-combination with Tier 2 projects has the potential to affect reproduction rates and/or probability of survival that may affect the population of grey seal within relevant MUs and/or OSPAR III region. **Tier 1 and Tier 2:** Impacts that could potentially affect physical characteristic of the habitat (e.g. seabed footprint due to UXO crater) will be taking phase within the Proposed Development or projects considered in the in-combination assessment which are located at a considerable distance from the site. As such, there will be no impacts on supporting habitats within any SAC due to lack of impact pathway. Across all phases of the Proposed Development and other plans and projects considered in the in-combination assessment, only a small area of potential foraging habitat would be affected when compared to available extent of this habitat in the	

			Irish and Celtic Seas. Although some fish species may temporarily avoid the area of works, the availability of wider suitable habitat within the SACs (which will not be directly affected) and across the Celtic and Irish Seas suggest that individuals may move to alternative foraging grounds without affecting animals' health. **Summary:** Underwater noise associated with UXO clearance in-combination with other projects and plans is therefore not predicted to occur at levels that could adversely affect the ability of grey seal population to maintain itself as a viable component of its natural habitat. Although grey seal range within the site will not be constrained, the accessibility to other areas within the Irish and Celtic Seas may be hindered during UXO clearance campaigns due to barrier effects. Although temporal overlap between UXO clearance at respective Tier 1 and Tier 2 projects cannot be discounted, the duration of impact (elevated sound) for each UXO detonation is very short (seconds) and behavioural effects are reversible. It is anticipated that duration of UXO clearance at the Proposed Development (approximately two days onsite per clearance) will not contribute significantly to impacts on grey seal population from relevant MUs and/or OSPAR III region. Underwater noise associated with UXO clearance in-combination with other plans and projects is therefore not predicted occur at levels that could adversely affect the natural range of the grey seal population, or the presence, abundance, condition and diversity of habitats and species required to support grey seals.	

			Further supporting evidence is provided in Section 1.8.2.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	

5) **Liverpool Bay SPA**

BLUE impact pathway from Table 3.2 **and/or** **Residual effect (from appropriate assessment in section 4)**	**Natura 2000 site feature(s) concerned**	**Other plans/projects with effects that might interact with the effects of the project to render its effects significant (if any)**	**Nature of the in-combination effect (if any)**	**Is there likely to be any significant in-combination effect, in view of the site's conservation objectives?**
Temporary habitat loss leading to disturbance and displacement of birds during construction	Liverpool Bay SPA: Red throated diver Little gull Common scoter Waterbird assemblage	**Tier 1** • Awel y Môr **Tier 2** • Morgan offshore wind farm generation assets • Mostyn Energy Park extension • Morecambe offshore wind farm generation assets • Mona offshore wind farm	**Tier 1 and Tier 2:** 4.14% of the Liverpool Bay SPA will be affected by the additional works. These effects would be medium-term and reversible. However, as wintering birds have a high level of movement and are not tied to a colony, there would be minor additional adverse effects to the distribution and extent of habitats. Further supporting evidence is provided in Section 1.9.6.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	NO
Temporary habitat loss leading to disturbance and displacement of birds during construction	Liverpool Bay SPA: Little tern	**Tier 1** • Awel y Môr **Tier 2** • Morgan offshore wind farm generation assets • Mostyn Energy Park extension • Morecambe offshore wind farm generation assets	**Tier 1 and Tier 2:** As the in-combination projects are beyond connectivity with the little tern foraging range and therefore will be no additional adverse effects upon the extent and distribution of habitats, the structure and function of habitats, the supporting processes of habitats, the population or the distribution of the species. Further supporting evidence is provided in Section 1.9.6.1 of the HRA Stage 2 Report to Inform	NO

		• Mona offshore wind farm	Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	
Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction	Liverpool Bay SPA: Little tern	**Tier 1** • Awel y Môr **Tier 2** • Morgan offshore wind farm generation assets • Mostyn Energy Park extension • Morecambe offshore wind farm generation assets • Mona offshore wind farm	**Tier 1 and Tier 2:** As the other projects are beyond connectivity with the little tern foraging range there will be no additional adverse effects upon the population or distribution of the species. Further supporting evidence is provided in Section 1.9.6.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	NO
Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction	Liverpool Bay SPA: Red-throated diver	**Tier 1** • Awel y Môr **Tier 2** • Morgan offshore wind farm generation assets • Mostyn Energy Park extension • Morecambe offshore wind farm generation assets • Mona offshore wind farm	**Tier 1 and Tier 2:** In-combination the increase of baseline morality is above 1% red-throated diver. Further supporting evidence is provided in Section 1.9.6.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	NO
Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction	Liverpool Bay SPA: Common scoter Waterbird assemblage	**Tier 1** • Awel y Môr **Tier 2** • Morgan offshore wind farm generation assets • Mostyn Energy Park extension • Morecambe offshore wind farm generation assets • Mona offshore wind farm	**Tier 1 and Tier 2:** In-combination the increase of baseline mortality is above 1% for common scoter (and by proxy the assemblage). Further supporting evidence is provided in Section 1.9.6.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	NO
Disturbance and displacement from airborne sound and presence of vessels	Liverpool Bay SPA: Little gull	**Tier 1** • Awel y Môr **Tier 2**	**Tier 1 and Tier 2:** In-combination the increase of baseline morality is below 1% for little gull.	NO

and infrastructure during construction		• Morgan offshore wind farm generation assets • Mostyn Energy Park extension • Morecambe offshore wind farm generation assets • Mona offshore wind farm	Further supporting evidence is provided in Section 1.9.6.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	
Indirect impacts to birds from changes to prey availability during construction	Liverpool Bay SPA: Red-throated diver Little gull Common scoter Waterbird assemblage	**Tier 1** • Awel y Môr **Tier 2** • Morgan offshore wind farm generation assets • Mostyn Energy Park extension • Morecambe offshore wind farm generation assets • Mona offshore wind farm	**Tier 1 and Tier 2:** Impacts to prey populations will be localised and temporary in nature and are therefore unlikely to impact mobile non-breeding features or features with a large enough foraging range to alter their foraging strategy. The impacts are expected to be the same as those from temporary habitat loss leading to displacement/disturbance of birds. Therefore, it is predicted that there will be minor additional adverse effects upon distribution. Further supporting evidence is provided in Section 1.9.6.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	NO
Indirect impacts to birds from changes to prey availability during construction	Liverpool Bay SPA: Little tern	**Tier 1** • Awel y Môr **Tier 2** • Morgan offshore wind farm generation assets • Mostyn Energy Park extension • Morecambe offshore wind farm generation assets • Mona offshore wind farm	**Tier 1 and Tier 2:** As the other projects are beyond connectivity with the little tern foraging range there will be no additional adverse effects upon distribution. Further supporting evidence is provided in Section 1.9.6.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	NO
Accidental pollution in the surrounding area during construction	Liverpool Bay SPA: Red-throated diver Little gull	**Tier 1** • Awel y Môr **Tier 2**	**Tier 1 and Tier 2:** As this impact was scoped out from assessment in the other projects there is predicted to be no additional adverse effects upon distribution.	NO

	Common scoter Little tern Waterbird assemblage	• Morgan offshore wind farm generation assets • Mostyn Energy Park extension • Morecambe offshore wind farm generation assets • Mona offshore wind farm	Further supporting evidence is provided in Section 1.9.6.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	

6) Dee Estuary SPA

BLUE impact pathway from Table 3.2 **and/or** **Residual effect (from appropriate assessment in section 4)**	**Natura 2000 site feature(s) concerned**	**Other plans/projects with effects that might interact with the effects of the project to render its effects significant (if any)**	**Nature of the in-combination effect (if any)**	**Is there likely to be any significant in-combination effect, in view of the site's conservation objectives?**
Temporary habitat loss leading to disturbance and displacement of birds during construction	The Dee Estuary SPA: Little tern	**Tier 1** • Awel y Môr **Tier 2** • Morgan offshore wind farm generation assets • Mostyn Energy Park extension • Morecambe offshore wind farm generation assets • Mona offshore wind farm	**Tier 1 and Tier 2:** None of the other projects are within the foraging range of little tern. Therefore, there will be no additional effects upon the extent and distribution of habitats of the feature, the structure and function of habitats of the feature, the supporting processes of the habitats of the feature, or the population and distribution of the species. Further supporting evidence is provided in Section 1.9.6.1 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	NO
Temporary habitat loss leading to disturbance and displacement of birds during construction	The Dee Estuary SPA: Curlew Waterbird assemblage	**Tier 1** • Awel y Môr **Tier 2** • Morgan offshore wind farm generation assets	**Tier 1 and Tier 2:** The number of additional SPA features potentially affected increases. These effects are mitigated for with measures from Mostyn Energy Park. Therefore, there will be negligible additional effects to distribution.	NO

		• Mostyn Energy Park extension • Morecambe offshore wind farm generation assets • Mona offshore wind farm	Further supporting evidence is provided in Section 1.9.6.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	
Temporary habitat loss leading to disturbance and displacement of birds during construction	The Dee Estuary SPA: Dunlin Grey plover	**Tier 1** • Awel y Môr **Tier 2** • Morgan offshore wind farm generation assets • Mostyn Energy Park extension • Morecambe offshore wind farm generation assets • Mona offshore wind farm	**Tier 1 and Tier 2:** The number of additional SPA features potentially affected increases. These effects are mitigated for with measures from Mostyn Energy Park. Therefore, there will be negligible additional effects to distribution. Further supporting evidence is provided in Section 1.9.6.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	NO
Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction and operation	The Dee Estuary SPA Little tern	**Tier 1** • Awel y Môr **Tier 2** • Morgan offshore wind farm generation assets • Mostyn Energy Park extension • Morecambe offshore wind farm generation assets • Mona offshore wind farm	**Tier 1 and Tier 2:** None of the other projects are within the foraging range of little tern. Therefore, there will be no additional adverse effect upon the population. Further supporting evidence is provided in Section 1.9.6.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	NO
Disturbance and displacement from airborne sound and presence of vessels and infrastructure during construction, and operation	The Dee Estuary SPA All other features	**Tier 1** • Awel y Môr **Tier 2** • Morgan offshore wind farm generation assets • Mostyn Energy Park extension • Morecambe offshore wind farm generation assets • Mona offshore wind farm	**Tier 1 and Tier 2:** The number of additional SPA features potentially affected increases. These effects are mitigated for with measures from Mostyn Energy Park. Therefore, there will be negligible additional effects to distribution. Further supporting evidence is provided in Section 1.9.6.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	NO

Indirect impacts from changes in prey availability during construction	The Dee Estuary SPA: Little tern	**Tier 1** • Awel y Môr **Tier 2** • Morgan offshore wind farm generation assets • Mostyn Energy Park extension • Morecambe offshore wind farm generation assets • Mona offshore wind farm	**Tier 1 and Tier 2:** None of the other projects are within the foraging range of little tern. Therefore, there will be no additional adverse effect upon the population or distribution of the species. Further supporting evidence is provided in Section 1.9.6.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	NO
Indirect impacts from changes in prey availability during construction	The Dee Estuary SPA: Dunlin Curlew Grey plover Waterbird assemblage	**Tier 1** • Awel y Môr **Tier 2** • Morgan offshore wind farm generation assets • Mostyn Energy Park extension • Morecambe offshore wind farm generation assets • Mona offshore wind farm	**Tier 1 and Tier 2:** The number of additional SPA features potentially affected increases. These effects are mitigated for with measures from Mostyn Energy Park. Therefore, there will be negligible additional effects to distribution. Further supporting evidence is provided in Section 1.9.6.2 of the HRA Stage 2 Report to Inform Appropriate Assessment (CML2365-LBA CCS Ltd_ES_Appendix P_RIAA_NRW_FINAL.pdf).	NO

(a) If the right hand column is 'NO' for all rows	The project, when considered in combination with other plans and projects, is either not likely to have a significant effect on, or will not adversely affect the integrity of any Natura 2000 site.

6. Conclusion

HRA is not required because the whole of the project is directly connected with or necessary to the management of one or more Natura 2000/Ramsar sites, for the purposes of conserving the habitats or species for which the site(s) is/are designated, and the project is not likely to have a significant effect on any other Natura 2000/Ramsar sites. **(As documented in section 2.1 and 2.2 of this form)**	
HRA is not required because there is no conceivable impact pathway to any Natura 2000/Ramsar site **(As documented in section 2.3 of this form)**	
This project is a renewal of a current permission which complies with NRW agreed criteria for ruling out significant effects of a renewal without conducting a project-specific LSE test. Therefore it is considered not likely to have a significant effect on any Natura 2000/Ramsar sites, either alone or in-combination with other plans and projects. **(As documented in section 3.1 of this form)**	
The project has been screened for likelihood of significant effects and, taking account of the advice received from protected sites advisors, is considered not likely to have a significant effect on any Natura 2000/Ramsar site **(As documented in section 3.2 of this form, or section 5 if applicable)**	
In light of the conclusions of an appropriate assessment, and taking account of the advice received from protected sites advisors, it has been established that the project will not adversely affect the integrity of any Natura 2000/Ramsar site, taking into account any conditions or restrictions as applicable, either alone or in-combination with other plans and projects. **(As documented in section 4 of this form, and section 5 if applicable)**	**X**
In light of the conclusions of the appropriate assessment, it has not been ascertained that the project will not adversely affect the integrity of any Natura 2000/Ramsar site, as documented in section 4 of this form, and section 5 is applicable. **Approval for the project cannot be given unless either:** • **the project specification, and/or the terms under which it might be approved, are modified so as to remove the risk of adverse effects, and a revised HRA report is prepared, or** • **the project satisfies the requirements of Article 6(4) of the Habitats Directive, an Article 6(4) Statement of Case is prepared (OGN 200 Form 3) and submitted for consideration by the appropriate authority, normally Welsh Ministers**	

Signed:

Name: Maria Alvarez

Position: Lead Specialist Officer, Marine Licensing Team

Date: 19 May 2025

7. Consultation with protected sites advisor(s) and how sections 2, 3, 4 and 5 of this HRA report (as applicable) take into account that advice.

CML2365 HRA and WFD NRW consultation response
CML2365 HRA JNCC consultation response
CML2365 HRA NE consultation response updated

Relevant section of the HRA report	Date(s) of correspondence* and any meeting(s) with protected sites advisor(s)	Description of how the comments from protected sites advisors have been taken into account
1, 3, 4	19 November 2024	**Marine Mammals:** **1.** *Injury and disturbance from vessel activity and other noise producing activities during construction, and operation and maintenance has not been screened in as an impact pathway for grey seal and bottlenose dolphin SACs. Namely vessel movement and seismic surveys.* NRW PS considers that Seismic surveys are non marine licensable activities. Regulation 67(2) of The Conservation of Habitats and Species Regulations 2017 indicates that an assessment is not required if this will be more appropriately assessed by another competent authority. We consider the European Protected Species licensing will be better placed to assess the impact of seismic surveys on marine mammals. Therefore, we have not included seismic surveys as an activity on our HRA. Text in section 1 has been amended to ensure clarity. Disturbance for BND and GS from vessel movement has been added to sections 3 and 4. ***2.*** *Following the applicants update to match the level of commitment required by the unexploded ordnance clearance joint interim position statement, we agree with the statement that "The applicant's assessment of effects takes account of embedded mitigation measures that have been adopted as part of the project" once, in line with our comments submitted for the further information consultation* This issue was retired after clarifications from the applicant that they will commit to work in line with the unexploded ordnance clearance joint interim position statement ***3.*** *Assessment data for Tier 2 projects listed in the in-combination assessment are now available, and these should be added into the assessment* At this stage requesting the applicant to consider Morgan and Morcambe seems disproportionate. Applications which have been submitted at a later stage should be the ones considering HyNet. This has been agreed with NRW TE – no changes needed

		Further comments on the in-combination assessment for marine mammals were not considered necessary as the project on its own will not adversely affect the integrity of the site and there will be no residual effects taking into account mitigation measures.
3	19 November 2024	**Physical Processes** 1. *NRW (A) seek a response and resolution to the key issues relating to physical processes raised during the most recent correspondence (23/09/24) with the applicant. NRW(A) are unable to agree with the conclusions of the HRA until the outstanding issues have been resolved.* *NRW(A) is concerned the worst-case scenario with respect to the Cumulative Impact Assessment (CIA) of the proposed development and the re-dredging of the main navigation channel as part of the Mostyn Energy Park Expansion (MEPE) has not been assessed* The MEPE project is applying to dredge to -4CD, which is the modelled depth. We sought clarity from Port of Mostyn on their response (CML2365 HyNet Offshore consultation by PoM 14 May 2024 - Eni Response DRAFT v2.0) where they indicated their intention to dredge to -5CD. The intention to dredge to -5CD relates to the Outer Channel, for which PoM is the Statutory Harbour Authority. However, this is only stating the SHA intentions for 2026. The dredging of the Outer Channel will require the relevant permissions and will be assessed when an application is received. Therefore, the worse case scenario of -4CD is considered accurate for this application.
3, 4	19 November 2024 (NRW);	**Marine Ornithology** 1. *Within the appropriate authority HRA, agreement with NRW Advisory on timing of works to avoid impacts to little tern and their prey, and to avoid disturbance and displacement of Red-throated diver is proposed to be secured as a licence condition. NRW (A) note a discrepancy with the Applicants response to further information which "considers that it would be unnecessary to place timing restrictions on the Proposed Works". NRW (A) reiterate our advice that any marine licence issued should be conditional on securing a written agreement with NRW (A) on the timing of the works to avoid impacts to Little Tern and Red Throated Diver.* NRW will be placing timing restrictions for cable laying and protection activities. Other activities which do not require vessel movements could continue during the sensitive months, although the applicant is committed to minimise activities during sensitive months for bird species. A Vessel Traffic Management Plan will be agreed Similar comments were received with regards to timing restrictions from JNCC and Natural England and their support to requests on little terns from NRW (A)
4	19 November 2024	**Benthic Ecology** Following the submission of Further Clarifications were a commitment to mitigation measures is secured, NRW (A) agreed with the conclusions of the assessment in relation to the integrity for benthic features in the Dee Estuary SAC. Similarly Natural England showed their support to advise from NRW (A) on benthic features of the Dee Estuary SAC

5	16 January 2025	**M**arine Mammals Although in the view of NRW (A) there is agreement that no residual effect exists for Harbour porpoise and no in-combination assessment is required, they consider that some residual effect to the MMMU level remains albeit small for Grey Seal and Bottlenose Dolphin and an in-combination assessment will be needed. NRW has amended section 5.1 of the assessment to include in combination assessments for those species
4.2	16 January 2025	**Migratory fish** NRW (A) considers that the underwater noise impacts for salmon, sea and river lamprey have been taken through to AA for the SACs where these are migratory species features (section 4.1). These sites have been included in the in-combination assessment (section 5), but have not been included within the mitigation measures section (4.2). The mitigation measures for the Dee Estuary SAC in regard to underwater noise impacts would equally apply for the migratory species features for the other scoped in sites, and we recommend that the assessment should be updated to reflect that. NRW has corrected the omission
4.2	16 January 2025	**Ornithology** NRW (A) considered that some amendments to the text were necessary to add clarity on mitigation measures to red throated diver, common scoter and little terns. NRW has amended the text as requested

Appropriate nature conservation body (ANCB) response to an internal HRA consultation

This form should be completed by the team or individual providing the ANCB advice to the competent authority team

TO: Maria Alvarez

FROM: Rebekah Newstead, Marine Area Advice and Management Team

SUBJECT: Habitats Regulations Assessment of Hynet Carbon Dioxide Transport and Storage Project, CML2365

Thank you for consulting Marine Area Advice and Management Team on the above. Our comments are as follows:

NRW Advisory agree with the conclusions of the appropriate assessment that the project will not adversely affect the integrity of any Natura 2000/Ramsar site, taking into account any conditions or restrictions as applicable, either alone or in-combination with other plans and projects.

Signed:

Date:16/01/2025