Cambois Connection – Marine Scheme

Water Framework Directive Assessment

sse Renewables

Revision Information					
Rev	**Issue Status**	**Date**	**Originator**	**Checker**	**Approver**
R01	Issued for Review	17/05/2023	JG	EW	AC
R02	Issued for Review	08/06/2023	MD	EW	AC
R03	Issued for Review	30/06/2023	MD	EW	AC
A01	Approved for use	14/07/2023	JO	AC	AC

Approval for Issue		
Approver's name	**SIGNATURE**	**DATE**
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Acronyms

Acronym	Description
AWB	Artificial Waterbody
BBAC	Berwick Bank Alternative Connection
BBWF	Berwick Bank Wind Farm
BBWFL	Berwick Bank Wind Farm Limited
CAL1	Cefas Action Level 1
Cefas	Centre for Environment, Fisheries and Aquaculture Science
DDV	Drop Down Video
EA	Environment Agency
ECC	Export Cable Corridor
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EQS	Environmental Quality Standards
EQSD	Environmental Quality Standards Directive
ES	Environmental Statement
EU	European Union
EUNIS	European Nature Information System
GCS	Good Chemical Status
GEP	Good Ecological Potential
GES	Good Ecological Status
GS	Good Status
HDD	Horizontal Directional Drilling
HMWB	Heavily Modified Waterbody
HRA	Habitats Regulations Assessment
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
IEMA	Institute of Environmental Management and Assessment
IMO	International Maritime Organisation
INNS	Invasive Non-Native Species

Acronym	Description
JNCC	Joint Nature Conservation Committee
LPA	Local Planning Authority
LSE	Likely Significant Effects
MCZ	Marine Conservation Zone
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
MMO	Marine Management Organisation
MD-LOT	Marine Directorate Licensing and Operations Team
NCC	Northumberland County Council
oEMP	Outline Environmental Management Plan
OCSP	Offshore Converter Station Platform
PFOS	Perfluorooctane Sulfonate
PLONOR	Pose Little or No Risk
PSA	Particle Size Analysis
PSD	Priority Substance Directive
RBMP	River Basin Management Plan
rBWD	Revised Bathing Water Directive
RIAA	Report to Inform Appropriate Assessment
SAC	Special Areas of Conservation
SPA	Special Protection Areas
SSER	SSE Renewables
SSSI	Site Special Scientific Interest
UK	United Kingdom
UWWT	Urban Wastewater Treatment
UWWTD	Urban Wastewater Treatment Directive
UXO	Unexploded Ordnance
VIGRA	Vision using Generic Algorithms
WFD	Water Framework Directive
ZoI	Zone of Influence

Units

Unit	Description
GW	Giga watt (power)
km	Kilometre (distance)
km^2	Kilometre squared (area)
mg/l	Milligrams per litre (concentration of solids within a liguid)
nm	Nautical mile (distance)

Glossary

Term	Description
Berwick Bank Wind Farm (BBWF)	Refers to the offshore wind farm from which the Cambois Connection (the Project) will export part of the generated electricity. The consent applications for BBWF are currently being determined.
Cambois Connection (the Project)	Offshore Export Cables, Onshore Export Cables, an onshore converter station and associated onshore grid connection at the existing National Grid ESO, Blyth substation near Cambois in Northumberland. The purpose of this infrastructure is to facilitate the export of a portion of the green electricity from BBWF, allowing the BBWF to reach its full generation capacity by the early 2030s.
EIA Regulations	Collectively, this term is used to refer to the suite of Environmental Impact Assessment Regulations which are of relevance to the Marine Scheme and to the Onshore Scheme. For the Marine Scheme, this is The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended). For the Onshore Scheme, this is the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended).
Environmental Impact Assessment	Assessment of the consequences of a plan, project or activity on the ecological features of the receiving environment.
Firth of Forth	Estuary or Firth of the River Forth in Scotland which flows into the North Sea and is flanked by Fife to the north and West Lothian, City of Edinburgh and East Lothian to the south.
Grid Substation	Refers to the point at which electricity is connected into the UK transmission network. For the Onshore Scheme, this is the National Grid ESO substation at Blyth.
Habitats Directive	The Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora.

Term	Description
Habitats Regulations	The Conservation of Habitats and Species Regulations 2017 and the Conservation of Offshore Marine Habitats and Species Regulations 2017, which are collectively referred to as the 'Habitats Regulations'.
Horizontal Directional Drilling	Horizontal Directional Drilling or 'HDD' refers to a trenchless method of drilling generally used for installation of underground utilities which does not require any direct works and which can aid installation of crossings with sensitive or challenging features and obstructions.
High Voltage Alternating Current (HVAC)	Refers to high voltage electricity in alternating current ('AC') form. The GB's transmission and distribution network infrastructure consists of AC form.
High Voltage Direct Current (HVDC)	Refers to high voltage electricity in direct current ('DC') form. In relation to transmission, HVDC is often selected for longer transmission infrastructure on the basis that losses are typically lower when compared to transmission infrastructure utilising alternating current.
Intertidal	The area of seabed located between Mean High Water Springs and Mean Low Water Springs.
Landfall	Area and activities associated with the Offshore Export Cables carrying power from BBWF to the shore and which connect the offshore and onshore infrastructure. The Landfall includes areas and activities that extend beyond both MLWS and MHWS.
Local Planning Authority	Local Planning Authority (or 'LPA') refers to the local government body legally empowered to exercise terrestrial (onshore) planning functions for a given area. In the case of the Project, this is Northumberland County Council (NCC).
Marine Licence	A licence granted under the Marine and Coastal Access Act 2009.
Marine Scheme	Activities required as part of the Project extending seawards below Mean High Water Springs
Marine Scheme in English waters	Activities required as part of the Marine Scheme located within English territorial waters (MHWS – 12 nm) and English offshore waters (12 – 200 nm).
Marine Scheme in Scottish waters	Activities required as part of the Marine Scheme located within Scottish offshore waters (12-200 nm).
Maximum Design Parameters	The maximum range of design parameters of each Marine Scheme asset.
Mean High Water Springs	Monthly tides are defined as 'Springs' or 'Spring tides' when the tidal range is at its highest and 'Neaps' or 'Neap tides' when the tidal range is at its lowest. The height of Mean High Water Springs (MHWS) is the average throughout the year, of two successive high waters, during a 24-hour period in each month when the range of the tide is at its greatest (Spring tides).

Term	Description
Mean Low Water Springs	The height of Mean Low Water Springs (MLWS) is the average throughout a year of the heights of two successive low waters during periods of 24 hours (approximately once a fortnight).
National Site Network	Formerly referred to as Natura 2000 this now refers to the national site network within the UK territory. It is comprised of the protected sites that were designated under the European Union (EU) Nature Directives (Habitats Directive (as defined) and certain elements of the Wild Birds Directive (Directive 2009/147/EC)) until the UK's exit of the EU, and any further sites designated under the Habitats Regulations (as defined).
Offshore Converter Station Platform (OCSP)	Power generated by the wind turbines is transferred to the Offshore Converter Station Platform (OCSP) via the inter array cables. The electricity generated by the wind turbines is HVAC. The OCSPs are then used to convert the HVAC electricity into HVDC electricity for exporting to the onshore converter station.
Offshore Export Cable	High voltage cable used for exporting power from the offshore convertor station platforms located within the array area of BBWF to Onshore Export Cables at the Landfall.
Offshore Export Cable Corridor	The area within which the Offshore Export Cables will be located. This area will be refined post consent following detailed engineering design.
Onshore Converter Station	Infrastructure used to convert electricity from Direct Current (DC) to Alternating Current (AC)
Onshore Export Cable	High voltage cable used for exporting power produced by BBWF between the Offshore Export Cables and the onshore convertor station.
Onshore Scheme	Activities required as part of the Project extending landwards above Mean Low Water Springs
Project Design Envelope	A series of maximum design parameters which are defined for the Marine Scheme and which are considered to be the worst case for any given assessment.
Transition Joint Bay	A concrete structure where Offshore Export Cables and Onshore Export Cables are spliced together.

1. Water Framework Directive Assessment

1.1. Introduction

1. Berwick Bank Wind Farm Limited (BBWFL) is a wholly owned subsidiary of SSE Renewables (SSER) (hereafter referred to as 'the Applicant'). The Applicant is proposing the development of Offshore Export Cables, Onshore Export Cables, an onshore Converter Station and associated grid connection at Blyth in Northumberland (the Cambois Connection, hereafter referred to as 'the Project'). The offshore components of the Project, seaward of mean high water springs (MHWS) comprise the Cambois Connection Marine Scheme (hereafter referred to as "the Marine Scheme"), which is the subject of this Water Framework Directive (WFD) compliance assessment.

2. The purpose of the Project is to facilitate the export of green energy from the generation assets associated with the Berwick Bank Wind Farm (BBWF)[1], located in the outer Firth of Forth. A separate application for developing a grid connection to Branxton, East Lothian, has been included as part of the Applicant's application for consent for BBWF, currently being determined separately. The Project will enable the BBWF to reach full generating capacity (4.1 gigawatts (GW)) by 2030. The Offshore Export Cable (up to four HVDC cable circuits) will be installed within an installation corridor (the Offshore Export Cable Corridor), approximately 180 kilometres (km) in length (from Offshore Convertor Station Platforms (OCSPs) within the BBWF array area to MHWS) and a maximum of 1 km in width 500 metres (m) either side of a centre line, extending to up to 3.4 km in width east of the BBWF array area boundary. The installation corridor marginally widens at the Landfall and is approximately 1.5 km wide at Cambois beach, at the widest point between the River Wansbeck and the Port of Blyth. The final location of the Landfall at Cambois beach is still to be determined and will be located within the wider Landfall corridor.

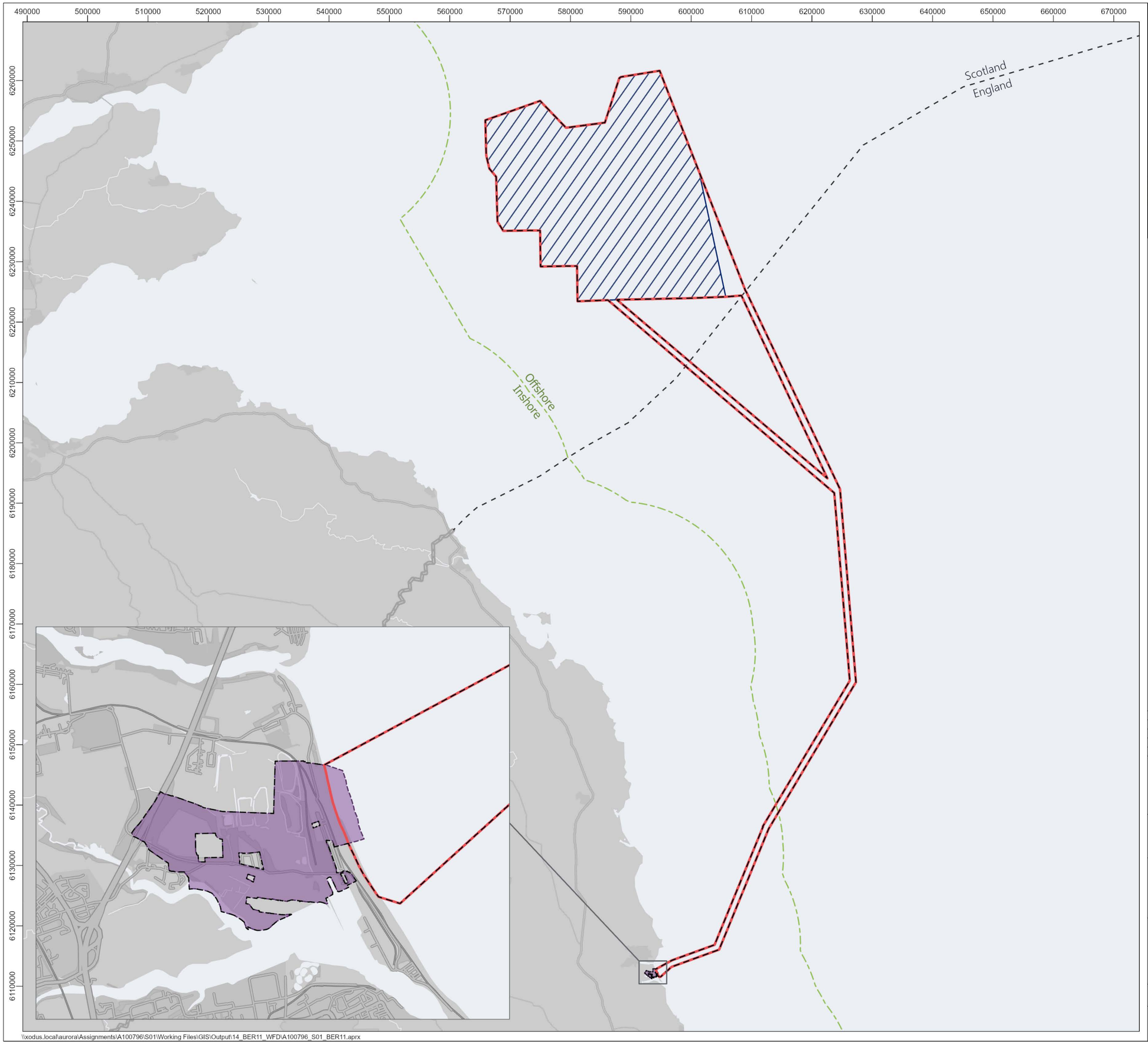
3. The project description for the Marine Scheme, as presented within Volume 2, Chapter 5: Project Description of the Marine Scheme Environmental Statement (ES) provides full details of the Marine Scheme including the potential pre-installation clearance activities, cable installation and protection methods, Landfall methodology, operation and maintenance including remedial methods and decommissioning activities. The precise location of the proposed Landfall is not yet known but will be along the Cambois coastline within the boundary for the Marine Scheme. Following recent stakeholder engagement and formal consultation and as informed by a range of technical studies along the Cambois coastline, the Applicant has committed to adopting trenchless techniques (such as Horizontal Directional Drilling (HDD)) to achieve the Landfall for the Offshore Export Cables. This process will involve drilling a hole (or holes) underground from one point to another whereupon the Offshore Export Cables are installed through the hole(s), without the need to excavate an open trench in the intertidal zone.

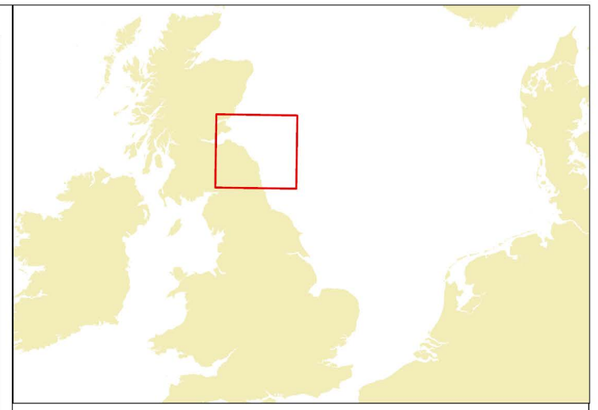
4. This WFD compliance assessment provides a WFD Screening, Scoping and Assessment of effects of the Marine Scheme against the objectives for relevant designated waters[2] (comprising WFD waterbodies, Bathing Waters, Shellfish Waters and other associated protected areas). It describes the current baseline conditions and assesses the potential changes due to the installation and presence of the Marine Scheme. The legislative context for the development of this WFD compliance assessment is provided in section 1.2, while the location and extent of the Marine Scheme is provided in Figure 1.1 below. As explained above and in Volume 2, Chapter 3: EIA Methodology, the Marine Scheme is located across both English and Scottish waters. In relation to WFD compliance, there is no requirement for a WFD assessment in Scottish waters (the Marine

[1] BBWF is subject to a separate consenting process. An application for consent under Section 36 of the Electricity Act 1989 (as amended) was submitted to MD-LOT and accepted in December 2022.

[2] Designated or protected waters under the WFD are defined under the River Basin Management Plans, which enact the Water Environment (WFD) Regulations 2017, which underpin the assessment. Further clarification on how the designated waters are assessed are provided the in WFD impact assessment guidance 'Clearing the Waters for All' and section 1.1.3 below.

Scheme being beyond inshore waters, and there being no pathway for an impact to an inshore waterbody).





Legend

- Cambois Connection
- Marine Scheme Boundary
- Berwick Bank Wind Farm Array Area
- Onshore Scheme Boundary
- UK 12 Nautical Mile Limit
- Scotland/England Territorial Waters

Rev	Date	Status	Drwn	Chkd	Appd
04	-	-	-	-	-
03	-	-	-	-	-
02	-	-	-	-	-
01	13/07/2023	Issued	TF	JO	EW

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Project

Cambois Connection

Title

Figure 1.1 Location and Extent

0 2.5 5 10 15 20 nm

0 2.5 5 10 15 20 25 30 km

N

Scale	Plot Size	Datum	Projection
1:600,000	A3	WGS84	UTM30N

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1.1.1. Study Area

5. The study area associated with the WFD compliance assessment considers the Landfall area along the Cambois coastline with a 2 km buffer around the Marine Scheme boundary; this is presented in Figure 1.2 below. The rationale for the study area is based on the guideline buffer distance for the assessment of effects on designated waters as outlined in the Environment Agency 'Clearing the Waters for All' guidance (Environment Agency, 2017).

6. It is important to note that the width of the Marine Scheme boundary at the Landfall is required so as to accommodate a necessary level of flexibility for refinement of the Landfall location, as explained and justified fully in Volume 2, Chapter 5: Project Description. However, within this area, the actual installation corridor will be smaller (a maximum 1 km in width, comprised of a 500 m buffer either side of an indicative centreline for the Offshore Export Cables). Within this 1 km, the footprint of activities associated with the Marine Scheme is also significantly less, as reported in Volume 2, Chapter 5: Project Description.

1.1.2. Marine Scheme Properties

1.1.2.1. PROJECT DESCRIPTION

7. For full details relating to the Marine Scheme, please refer to the comprehensive description provided within Volume 2, Chapter 5: Project Description. In accordance with the guidance provided by the Environment Agency (2017), information regarding activities which form part of the Marine Scheme, as relevant to the WFD assessment, is summarised in Table 1.1.

Table 1.1 Project Description

Activity	Description
Applicant name	Berwick Bank Wind Farm Limited
Name of activity	HVDC cable laying
Brief description of activity	Installation of up to four HVDC subsea cables (Offshore Export Cables) linking the BBWF to a Landfall at Cambois beach, Northumberland. A trenchless technique (e.g. HDD) will be used to bring the Offshore Export Cables ashore.
Location of activity (central point XY coordinates or national grid reference)	Approximate central point of the Marine Scheme boundary at the Landfall 430,754Easting; 583,780Northing (WGS 1984 UTM Zone 30N)
Footprint of activity within 1 NM of MHWS	3.72 km^2 based on Marine Scheme area (as shown in Figure 1.1)
Timings of activity (including start and finish dates)	The installation is expected to occur from Q4 2026 to Q4 2029 and the cable will be operational for 35 years
Extent of activity (for example size, scale frequency, expected volumes of output or discharge)	Installation of up to four HVDC cables
Use or release of chemicals (state which ones)	During the course of the installation of Offshore Export Cables at the Landfall, there may be the potential for drilling fluids losses to the marine environment. Maximum volume discharge of 2,000 m^3 (comprising 1,900 m^3 of water and 100 m^3 of solids) per trenchless duct could be released on exit. However, these will be on the Cefas approved list of drilling fluids, and the OSPAR list of Substances/Preparations Used and Discharge Offshore

Activity	Description
	which are considered to Pose Little or No Risk (PLONOR) to the environment.
Summary of installation activity	The Offshore Export Cable (up to four HVDC cables) will be installed within an installation corridor (the Offshore Export Cable Corridor), approximately 180 km in length (from OCSPs within the BBWF array area to MHWS) and a maximum of 1 km in width. A detailed description of the Marine Scheme including the Landfall installation is presented in Volume 2, Chapter 5: Project Description, while a summary of the key relevant properties informing the assessment is set out below. • Seabed / bedform clearance (including but not limited to Pre-Lay Grapnel Run, boulder grab and Mass Flow Excavator (MFE may be used to remove debris from the seabed within the installation corridor. • Cable installation will be carried out in several campaigns, where cables will be buried along the majority of the route by methods including but not limited to ploughs, jetting, mechanical trenchers or MFE. Where burial cannot be achieved, cable protection measures will be utilised. • Offshore Export Cables will be buried to a minimum target depth of 0.5 m, with a trench width of 2.5 m. • The maximum width of the temporary disturbance associated with the cable installation is 25 m (noting that not all clearance or installation disturbance will occur to this width. • The Landfall methodology will entail trenchless technologies, such as HDD, in response to discussions with the MMO and the Environment Agency. Up to five exit pits, each 20 x 5 m, for up to four cable ducts (with one spare). • The trenchless technology is to be completed from land to sea, with material being retrieved and processed on land above the MHWS line. Therefore, the only discharges that can be expected from drilling of the cable duct is at punch out at the exit pit, with expected volume discharge of 2,000 m^3 (comprising 1,900 m^3 of water and 100 m^3 of solids) per trenchless duct. Discharge material will all be PLONOR. • Although installation of the Marine Scheme is expected to occur between Q4 2026 to Q4 2029, Landfall installation is estimated to take up to maximum of 15 months
Maximum Zone of Influence (ZoI)	Sediment deposition associated with levelling and or trenching would typically be within tens to hundreds of metres for the majority of the sediment bulk. However, a small proportion of the sediment could develop into a plume with the potential to remain in suspension for over a flood-ebb tidal cycle. The tidal excursion on a single tide (i.e. flood/ebb) could be up to 5 km and 10 km over a flood-ebb tidal cycle. Therefore, the ZoI is defined on the basis of the 5 km tidal excursion extent associated with a single tide.

1.1.2.2. MEASURED ADOPTED AS PART OF THE MARINE SCHEME

8. The Marine Scheme will implement several designed in measures as mitigation to avoid or minimise likely significant adverse effects as far as reasonably practicable. Mitigation measures, as detailed in Volume 2, Chapter 5: Project Description, which are applicable to the WFD compliance assessment include:

    - Landfall construction – Trenchless techniques, such as horizontal directional drilling (HDD) will be used at the Landfall for the construction of the Marine Scheme. Works associated

with Landfall construction activities will avoid any works in the intertidal environment and will reduce the potential for sediment disturbance;

- Route Selection and Avoidance – The Marine Scheme has been specifically refined to avoid interactions with key designations, environmental sensitivities, and notable inshore fishing grounds as far as reasonably practicable. On the approach to the Landfall at Cambois, the route has been selected to minimise the footprint within European Sites. Nearshore routes with greater levels of interactivity with European Sites along the English and Scottish coast have been de-selected;
- PLONOR Substances – During trenchless installation activities at Landfall, there will be an interface between the sea and the drilling fluids used to create the exit pits at the breakouts. Small quantities of drilling fluids may be discharged to the marine environment, however best practice mitigation will be implemented to minimise the amount of drill mud / cuttings released in the event of a release. To limit environmental damage, only biologically inert PLONOR listed drilling fluid will be used;
- Environmental Management Plan (EMP) – An EMP will be developed and employed to ensure potential release for pollutants will be reduced as far as practicable. This will include a Marine Pollution Contingency and Control Plan and an INNS management plan. An outline EMP has been provided as part of this application (Volume 5, Appendix 5.1) and will be updated for submission to MMO and MD-LOT prior to construction;
- Invasive and Non-Native Species (INNS) management plan – this will be implemented to manage and reduce the risk of potential introduction and spread of INNS as far as reasonably practicable. An outline INNS management plan has been provided as part of the application and can be found in Volume 5, Appendix 5.2A; and
- Vessel best-practice / MARPOL - Compliance with MARPOL regulations and best-practice protocols to prevent and manage incidents of accidental release of marine contaminants.

9. Please refer to Volume 2, Chapter 16: Summary of Mitigation and Commitments for further information.

1.1.3. Approach to Completing WFD Compliance Assessment

10. ‘Good status’ comprises two parts. The first is ‘good ecological status’ (or ‘good ecological potential’, for waterbodies classed as heavily modified or artificial). The second is ‘good chemical status’. ‘Good ecological status/potential’ includes biological, hydromorphological and physicochemical quality elements and specific pollutants. ‘Good chemical status’ concerns a series of priority substances, including a number of priority hazardous substances. The WFD also requires that relevant protected area objectives (Environment Agency, 2015) are achieved.

11. The current status of waterbodies is detailed within River Basin Management Plans (RBMPs) and supporting appendices. RBMPs have recently been updated (in December 2022), incorporating further challenges to the water environment and following a review of the conditions and status of waterbodies within the RBMP (UK Government, 2022a). Each RBMP includes the work undertaken over the preceding five years, and the plans/objectives for the next six years following publication. The Marine Scheme and study area are within the Northumbria RBMP.

12. This WFD compliance assessment focuses on designated waters (comprising designated waterbodies and bathing and shellfish waters) extending out to 1 nm from MHWS. In doing so the assessment evaluates those elements of the Marine Scheme relevant to the nearshore areas which are required to be assessed against the objectives for each WFD waterbody. Activities of relevance to this WFD assessment relate to the installation of the Offshore Export Cables primarily within 1 nm of the Landfall at Cambois and the Landfall itself and activities beyond the 1 nm extent where there is a pathway for impacts on designated waters within the 1 nm boundary. Outputs from Volume 2, Chapter 7: Offshore Physical Environment and Seabed Conditions, identify a distance of up to 600 m where sedimentation of under 1 m could occur, while sediment plume extents could be up to 5 km but associated deposition would be millimetres and undiscernible from the surrounding seabed. The orientation of the tidal flow with respect to the Marine Scheme is approximately north

– south, with very little east – west gradient. This therefore means there is little to no pathway for effects east – west and only Marine Scheme activities within the 1 nm boundary are relevant, and the assessment does not consider elements of the Marine Scheme that are further seaward of 1 nm.

13. The 'Clearing the Waters for All' guidance (Environment Agency, 2017) stipulates that the footprint of the activity be considered when assessing the impact of the Marine Scheme upon WFD waterbodies and protected areas. In the context of the Marine Scheme, the 'activity' refers to the works required for the installation of Offshore Export Cables and associated infrastructure within 1 nm seaward of MHWS. 'Footprint' refers to the area of habitat potentially directly affected by the installation of the offshore export cables and associated infrastructure.

14. The effects of operation and maintenance activities (i.e. cable inspection, repair and reburial) during the lifetime of the Marine Scheme are not expected to exceed those during the construction phase. These have been considered in the scoping process where relevant, however no additional impact pathway is likely given the nature and scale of the activities. As detailed within Volume 2, Chapter 5: Project Description, activities during the operation and maintenance phase are highly limited and focused on periodic inspection of the Offshore Export Cables (using similar techniques to pre-installation surveys) and limited maintenance, if required.

15. The effects of decommissioning activities at the end of the Marine Scheme's operational life are not expected to exceed those during the construction phase. Cables and cable protection, where required, will be removed where practicable to do so, and this approach will be kept under review during the operational life of the Marine Scheme and finalised at decommissioning, following the most up to date and best available guidance. Decommissioning has been considered in the scoping process where relevant, however no additional impact pathway is likely given the nature and scale of the activities.

16. As advised by the MMO and the Environment Agency during pre-application engagement and consultation, the WFD assessment adheres to the Environment Agency guidance on WFD Assessment of estuarine (transitional) and coastal waters, 'Clearing the waters for All'. As outlined in this guidance, WFD Assessment is undertaken in three stages:

    - Screening – excludes any activities that do not need to go through the scoping or assessment of effects stages;
    - Scoping – identifies the receptors that are potentially at risk from the activity and need assessment of effects; and
    - Assessment of effects – considers the potential impacts of the activity, identifies ways to avoid or minimise impacts, and demonstrates if the activity may cause deterioration or jeopardise the waterbody achieving good status.

17. Each of these stages is explained in further detail within the WFD assessment below (section 5). This WFD compliance assessment has been informed by the following:

    - Marine Scheme: Environmental Impact Assessment Scoping Report (A-100742-S01-A-REPT-001) (BBWFL, 2022);
    - Volume 2, Chapter 5: Project Description;
    - Volume 2, Chapter 7: Offshore Physical Environment and Seabed Conditions;
    - Volume 2, Chapter 8: Benthic and Intertidal Ecology;
    - Volume 2, Chapter 9: Fish and Shellfish Ecology;
    - Response to the Environment Agency with respect to the water and sediment quality topic. (Annex A, Xodus; 2023a)[3]; and

[3] / [5] Provided in Annex A (Environment Agency Correspondence)

- EA response to clarification letter (Environment Agency, 2023b)[5].

1.2. Legislative Context

18. A full account of the policy and legislation related to the Marine Scheme is provided in Volume 2, Chapter 2: Policy and Legislative Context; a brief summary of key legislative context of relevance to the WFD compliance assessment is included below.

1.2.1. WFD Directive

19. The Water Framework Directive (Council Directive 2000/60/EC establishing a framework for Community action in the field of water policy) (the WFD) was adopted by the European Commission in December 2000 and establishes a framework for the management and protection of Europe's water resources. The WFD requires that all European Union Member States prevent deterioration and protect, enhance and restore, all identified bodies of water. This means that Member States must ensure that new schemes do not adversely impact upon the status of aquatic ecosystems, and that they must address historical modifications that are already impacting an identified waterbody. Whilst the WFD originates from the EU it has been retained in UK law following the UK's exit from the European Union (EU). It is implemented in England and Wales through the Water Environment (England and Wales) Regulations 2017 (the Water Environment Regulations). The WFD is implemented in Scotland through the Water Environment and Water Services (Scotland) Act 2003 and the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) noting that as described above, a WFD assessment is not required in Scottish waters for the reasons explained in section 1.1.

20. Whilst Environmental Impact Assessment (EIA) is an efficient mechanism to gather the relevant information, the WFD compliance assessment should be interpreted in relation to the WFD objectives. According to the Environment Agency 'Clearing the Waters for All' guidance (Environment Agency, 2017; PINS, 2017) and as informed by relevant industry guidance (IEMA, 2012), impacts on fish and habitat biology, chemistry and hydromorphology need to be considered in relation to WFD water body status classes and reported under a specific WFD section in any environmental statement or report produced or in a separate WFD compliance report.

21. Therefore, this WFD compliance assessment has been undertaken to demonstrate the potential impact on WFD receptors caused by the different activities associated with the Marine Scheme in the context of the environmental objectives of any affected WFD surface waterbody. The compliance assessment also offers the opportunity to inform the detailed design of the Marine Scheme to avoid, minimise, mitigate or compensate for the risks to the environmental objectives of WFD surface water receptors where the risk assessment determines that the activities have the potential to:

- Cause a surface waterbody to deteriorate from one WFD status class to another or cause significant localised impacts that could contribute to this happening; and
- Prevent or undermine action to get surface waterbodies to good status (e.g. compromise the programme of measures put in place to achieve the ultimate waterbody objective).

22. Using the Environment Agency 'Clearing the Waters for All' guidance (Environment Agency, 2017), and referring to the relevant chapters of the Marine Scheme EIA, a WFD assessment of the potential for the Marine Scheme to have a significant non-temporary[4] effect on WFD parameters at waterbody level has been carried out. Consideration of the status and objectives for relevant waterbodies is based on the cycle 3 revision (UK Government, 2022b; 2022c). The Marine Scheme, off the coast of Cambois, Northumberland, is largely located within the Tyne and Wear waterbody, although it

[4] As set out in the Clearing the Waters for All guidance (Environment Agency, 2017), temporary effects due to short-duration activities like construction or maintenance do not count as deterioration if the water body would recover in a short time without any restoration measures.

also just intersects the Wansbeck waterbody. The applied buffer study area intersects a further two waterbodies as discussed in section 1.4.1.

23. To support the Marine Licence Application (MLA) to the Marine Management Organisation (MMO), this WFD assessment has been carried out to consider the effects of the Marine Scheme in respect of the WFD and Water Environment Regulations. As informed by pre-application discussions with the Environment Agency (EA), the feedback provided to the Applicant in response to the Scoping Report for the Marine Scheme (BBWFL, 2022) and the WFD assessment methodology, the assessment is structured around the distinct stages of (1) Screening, (2) Scoping and – where required – (3) Impact Assessment; this is discussed in further detail in section 5 of this assessment.

24. The overall objective of the WFD is to achieve good status (GS) in all inland, transitional, coastal and ground waters by 2015, unless alternative objectives are set and there are appropriate reasons for time limited derogation. The WFD divides rivers, lakes, lagoons, estuaries, coastal waters (out to one nautical mile from the low water mark), man-made docks and canals into a series of discrete surface waterbodies. For a surface waterbody to be at overall GS, the waterbody must be achieving good ecological status (GES) and good chemical status (GCS). Ecological status is measured on a scale of high, good, moderate, poor or bad, while chemical status is measured as good or fail (i.e. failing to achieve good).

25. Under Article 4 of the WFD and regulation 1 of the Water Environment Regulations, the ecological status of surface waters is classified using information on the biological (e.g. fish, benthic invertebrates, phytoplankton, angiosperms and macroalgae), physico-chemical (e.g. dissolved oxygen and salinity) and hydromorphological (e.g. hydrological regime) quality of the body of water, as well as several specific pollutants (e.g. copper and zinc). Compliance with chemical status objectives is assessed in relation to environmental quality standards (EQS) for a specified list of 'priority' and 'priority hazardous' substances. The Priority Substance Directive (PSD) (Council Directive 2008/105/EC on environmental quality standards in the field of water policy) sets objectives, amongst other things, for the reduction of these substances through the cessation of discharges or emissions. The PSD requirements have been transposed by the Water Environment Regulations and are considered through the WFD assessment.

26. Under Article 4 of the WFD and regulation 15 of the Water Environment Regulations, each surface waterbody has a hydromorphological designation that describes how modified a waterbody is from its natural state. Waterbodies are either undesignated (i.e. natural, unchanged), designated as a heavily modified waterbody (HMWB) or designated as an artificial waterbody (AWB). HMWBs are defined as bodies of water which, as a result of physical alteration by sustainable human use activities (such as flood protection) are substantially changed in character and cannot therefore meet GES. The default target for HMWBs and AWBs under the WFD is to achieve good ecological potential (GEP), a status recognising the importance of their human use while ensuring ecology is protected as far as possible.

27. Consideration of WFD requirements is necessary for developments which have the potential to cause deterioration in ecological, quantitative and/or chemical status of a waterbody, to introduce or spread INNS or to compromise improvements which might otherwise lead to a waterbody meeting its WFD objectives. Therefore, it is necessary to consider the potential for the Marine Scheme to impact WFD waterbodies.

1.2.2. Other Relevant Legislation

28. The WFD requires that activities are also in compliance with other relevant legislation, such as the Habitats Directive (92/43/EEC as amended), Birds Directive (2009/147/EC), Ramsar Convention, Bathing Water Directive (2006/7/EC), Nitrates Directive (91/676/EEC), Urban Wastewater Treatment Directive (91/271/EEC) and the provisions of the Shellfish Waters Directive (2006/113/EC). Relevant legislation associated with the WFD are briefly summarised in the following sections.

1.2.2.1. NATURE CONSERVATION

29. Internationally designated nature conservation sites of relevance to this WFD assessment include SACs, SPAs and Ramsar, while nationally designated sites include Site of Special Scientific Interest (SSSI) and Marine Conservation Zone (MCZ).

30. The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 transpose the Habitats Directive and Birds Directive into UK domestic law. Article 3 of the Habitats Directive (92/43/EEC as amended) requires the establishment of a European network of important high-quality conservation sites known as SACs that will contribute to conserving habitats and species identified in Annexes I and II of the Directive. The listed habitat types and species are those considered to be most in need of conservation at a European level (excluding birds). In accordance with Article 4 of the Birds Directive (2009/147/EC), SPAs are strictly protected sites classified for rare and vulnerable birds (Annex I of the Directive), and for regularly occurring migratory species.

31. Ramsar sites are wetlands of international importance designated under the Ramsar Convention (adopted in 1971 and came into force in 1975), providing a framework for the conservation and wise use of wetlands and their resources. These do not form park of the national site network derived as part of the Conservation of Habitats and Species Regulations 2019 however remain protected in the same way as SACs and SPAs.

32. In England, SSSIs are identified by Natural England and are protected by SSSIs the Wildlife and Countryside Act 1981. A site is designated if it has features of special interest such as its wildlife, geology or landform. The Marine and Coastal Access Act 2009 created a type of marine protected area of national importance called a marine conservation zone (MCZ). These are in place to protect a range of nationally important habitats and species.

1.2.2.2. BATHING WATER DIRECTIVE

33. The revised Bathing Water Directive (rBWD) (2006/7/EC) was adopted in 2006, updating the microbiological and physico-chemical standards set by the original Bathing Water Directive (BWD) (76/160/EEC) and the process used to measure/monitor water quality at identified bathing waters. The rBWD focuses on fewer microbiological indicators, whilst setting higher standards, compared to those of the BWD. Bathing waters under the rBWD are classified as excellent, good, sufficient or poor according to the levels of certain types of bacteria (Intestinal Enterococci and Escherichia coli) in samples obtained during the bathing season (May to September). It is transposed in England and Wales by the Bathing Water Regulations 2013.

34. The BWD was repealed at the end of 2014 and monitoring of bathing water quality has been reported against rBWD indicators since 2015. The new classification system considers all samples obtained during the previous four years and, therefore, data has been collected for rBWD indicators since 2012. The UK Government's target under the rBWD is to achieve 'sufficient' for all bathing waters by 2015, as described under the Bathing Water Regulations 2013 (as amended). Based on the inland bathing water data available for 2022, out of the 419 bathing waters measured in England, 407 (97.1%) met at least the minimum standard of the Bathing Water Regulations. In 2022, 302 bathing waters in England (72.1%) met the Excellent standard of the Bathing Water Regulations. In 2022, 12 bathing waters in England (2.9%) did not meet the minimum standard, and were classified as Poor (Defra, 2022).

1.2.2.3. SHELLFISH WATER DIRECTIVE

35. The Shellfish Waters Directive (2006/113/EC) was repealed in December 2013 and subsumed within the WFD. However, the Shellfish Water Protected Areas (England and Wales) Directions 2016 require the Environment Agency (in England) to endeavour to observe a microbial standard in all ‘shellfish water protected areas’. The microbial standard is 300 or fewer colony forming units of Escherichia coli per 100 ml of shellfish flesh and intervalvular liquid. The Directions also requires the Environment Agency to assess compliance against this standard to monitor microbial pollution (75% of samples taken within any period of 12 months below the microbial standard and sampling/analysis in accordance with the Directions) (Directions 3 and 4).

1.2.2.4. NITRATES DIRECTIVE ZONES

36. The Nitrates Directive (91/676/EEC) aims to reduce water pollution from agricultural sources and to prevent such pollution occurring in the future (nitrogen is one of the nutrients that can affect plant growth). Under the Nitrates Directive, surface waters are identified if too much nitrogen has caused a change in plant growth which affects existing plants and animals and the use of the waterbody. It is transposed in England and Wales by the Protection of Water Against Agricultural Nitrate Pollution (England and Wales) Regulations 1996.

1.2.2.5. URBAN WASTEWATER TREATMENT (UWWT) DIRECTIVE

37. The Urban Wastewater Treatment Directive (91/271/EEC) aims to protect the environment from the adverse effects of the collection, treatment and discharge of urban wastewater. It sets treatment levels on the basis of sizes of sewage discharges and the sensitivity of waters receiving the discharges. In general, the UWWTD requires that collected wastewater is treated to at least secondary treatment standards for significant discharges. Secondary treatment is a biological treatment process where bacteria are used to break down the biodegradable matter (already much reduced by primary treatment) in wastewater. Sensitive areas under the UWWTD are waterbodies affected by eutrophication of elevated nitrate concentrations and act as an indication that action is required to prevent further pollution caused by nutrients. It is transposed in England and Wales by the Urban Waste Water Treatment (England and Wales) Regulations 1994.

1.3. Consultation

38. A summary of consultation and technical engagement activities undertaken to date specific to the WFD assessment is presented in Table 1.2 below, together with how these issues have been considered in the production of this assessment. Further detail is presented in Volume 2, Chapter 4: Stakeholder Consultation and Engagement.

39. It is important to note that for WFD, consultation and technical engagement has not given rise to significant volumes of feedback. Statutory Consultees and key stakeholders were asked to review the Scoping Report and the key response of relevance to this WFD compliance assessment was from the Environment Agency who suggested that water and sediment quality should be considered in more detail as the Marine Scheme boundary intersects two WFD waterbodies (Environment Agency, 2023a). This response, and any other feedback which could be relevant to the WFD assessment, has been addressed in full as detailed below.

Table 1.2 Summary of Consultation and Technical Engagement

Date	Consultee and Type of Consultation	Issues(s) Raised	Response to Issue Raised and/or Where Considered in this Assessment
16 March 2022	Marine Management Organisation (MMO) –Pre-application advice through ENQ/2022/00004	A meeting was held to introduce the Project to the relevant marine regulators for the Marine Scheme. The approach to the MLAs was presented, as well as the intended approach regarding MLA submissions in both Scotland and England.	Advice from both the MMO and Marine Science – Licencing Operations Team (MD-LOT) was used to inform the identification of a broad corridor from BBWF to Cambois as part of the EIA Scoping exercise, and then further refinement of the Marine Scheme route. As part of this workshop, the Applicant discussed the need for coordination between authorities and how this may aid the consenting process for the Marine Scheme and Onshore Scheme.

Date	Consultee and Type of Consultation	Issues(s) Raised	Response to Issue Raised and/or Where Considered in this Assessment
			Both MD-LOT and MMO were briefed regarding the intended timeframes of and approach to EIA Scoping. The Applicant provided a summary of the intended Scope of and approach to surveys (benthic and geophysical for the Marine Scheme and Phase 1 Habitats and Species surveys for the Onshore Scheme which were presented for completeness). The MMO's advice to engage with Natural England regarding the Scope of and approach to surveys was followed. *Volume 2, Chapter 1: Introduction* *Volume 2, Chapter 6: Route Appraisal and Consideration of Alternatives.*
15 September 2022	MMO –pre-application advice through ENQ/2022/00004 Cefas JNCC	The Applicant along with their benthic survey contractor (Natural Power), held a meeting with stakeholders to discuss the approach to the benthic survey and sampling plan for the Marine Scheme. The Applicant presented the proposed survey design, methodology, sampling locations and approach to reporting. Stakeholders followed up in writing to confirm their agreement on the approach presented.	Benthic surveys and sampling for the Marine Scheme commenced in September/October 2022 following methodology agreed with stakeholders. *Volume 2, Chapter 8: Benthic Subtidal and Intertidal Ecology* *Volume 3, Appendix 8.2: Benthic Survey Report (Phase 1 and 2)*
21 October 2022	MMO –pre-application advice through ENQ/2022/00004	A general Marine Scheme update was provided via a Microsoft Teams meeting.	N/A
15 December 2022	MMO –pre-application advice through ENQ/2022/00004	A general Marine Scheme update was provided via a Microsoft Teams meeting.	N/A
20 January 2023	Environment Agency – Scoping Comments	Advised against Scoping-Out water and sediment quality without further review and raised a small number of clarifications regarding study area, key receptors and approach to impact assessment. The Environment Agency also provided feedback on the assessment of impacts associated with migratory fish, and flood risk.	The Applicant provided clarifications to the Environment Agency to support the justification of Scoping-Out this topic; this was accepted by the Environment Agency, subject to the Applicant undertaking a WFD assessment. As discussed and agreed with the Environment Agency, a WFD assessment has been carried out (this document) and this has been developed in-line with the valuable advice received from the Environment Agency during pre-application discussions.

Date	Consultee and Type of Consultation	Issues(s) Raised	Response to Issue Raised and/or Where Considered in this Assessment
		An advisory note regarding the FRAP regime was noted.	The Applicant is aware of the FRAP regime, including that a MMO licence is one of the permitted exclusions to the need for a separate flood risk environmental permit.
09 January 2023	Centre for Environment Fisheries & Aquaculture Science – Scoping Comments	Cefas are content with the data sources used to identify the marine physical processes baseline.	Noted; the key data sources utilised for the EIA are provided in Volume 2, Chapter 5: Physical Environment and Seabed Conditions.
09 January 2023	Centre for Environment Fisheries & Aquaculture Science – Scoping Comments	Cefas notes for the marine physical processes modelling methodology Section 6.3 defines the study areas as the tidal excursion (4 km) rounded up to 10km – this more than doubling appears adequate but the assessment should also be responsive to any evidence that impacts extend beyond this (this is highly unlikely but would be appropriate, for example, if impacts on a sediment transport pathway are significant and lead to downstream deficits beyond the envelope of direct impacts). This would be of particular importance for accurately assessing cumulative impacts.	For the purposes of this WFD assessment, the study area is explained and fully justified within section 1.1.1. The study area gives a thorough understanding of the seabed along the route as informed by baseline surveys commissioned by the Applicant, and the suite of activities required for the Marine Scheme (as detailed within Volume 2, Chapter 5: Project Description), in line with the buffer distance defined by guidance. In terms of the assessment of physical processes specifically, the assessment detailed in Volume 2, Chapter 5: Physical Environment and Seabed Conditions considers any impacts which may extend beyond the 10 km Study Area (however unlikely).
February 2023	Environment Agency – Pre-Application advice	Following the Scoping exercise, the Applicant wrote to the Environment Agency to provide a number of clarifications, and to help justify the decision to Scope Out water and sediment quality from a dedicated impact assessment chapter. This was supported with a commitment to providing a WFD assessment alongside the Marine Licence Application.	As discussed and agreed with the Environment Agency, a WFD assessment has been carried out (this document) and this has been developed in-line with the valuable advice received from the Environment Agency during pre-application discussions.
26 April 2023	Environment Agency – Pre-Application advice	The Environment Agency wrote to the Applicant to provide a response to clarifications made by the Applicant in February 2023. The Environment Agency confirmed that they were satisfied for water and sediment quality to be Scoped Out of further assessment in	As discussed and agreed with the Environment Agency, a WFD assessment has been carried out (this document) and this has been developed in-line with the valuable advice received from the Environment Agency during pre-application discussions. The feedback from the Environment Agency is welcomed regarding impact pathways and the scale, nature and extent of potential impacts. This WFD assessment has been prepared to

Date	Consultee and Type of Consultation	Issues(s) Raised	Response to Issue Raised and/or Where Considered in this Assessment
		the EIA; the Environment Agency further commented that they agreed with the conclusions of the report provided by the Applicant in February 2023. The Environment Agency confirmed that they were satisfied with the justification provided that the impacts caused by the Marine Scheme will be small and temporary in nature, which is unlikely to have any impact on WFD classification. The Environment Agency confirmed that the impact pathways demonstrated are not likely to ultimately impact the status of WFD protected areas. The Environment Agency suggested early engagement with them regarding the CEMP.	confirm full compliance with the requirements of the WFD and to support the Marine Licence Application to the MMO. The Applicant has provided a suite of mitigation measures which are summarised in Volume 2, Chapter 5: Project Description and Volume 2, Chapter 17: Summary of Mitigation and Commitments. An EMP will be developed covering all phases of the marine scheme, including construction. An outline EMP has been provided as part of the application and can be found in Volume 5, Appendix 5.1.
18 April 2023	MMO –pre-application advice through ENQ/2022/00004	The Applicant met with the MMO to provide an update following the review of the MMO Scoping Opinion. The MMO confirmed that they were pleased with the engagement carried out with the Environment Agency and endorsed the approach to not provide a dedicated water and sediment quality chapter.	Noted.

1.4. WFD Baseline Environment

40. The following section presents the known baseline environment it is compiled with respect to the following key sources of information:

- The legislative framework for the WFD (section 1.2);
- The requirements of a WFD compliance assessment from the Environment Agency guidance (Environment Agency, 2017);
- The RBMP Northumbria Cycle 3 status and objectives (UK Government 2022b; 2022c); and
- Ongoing monitoring of the waterbodies on varying ecological and chemical classifications (Environment Agency, 2023c; 2023d; 2023e; 2023f).

1.4.1. Relevant Waterbodies

41. The Marine Scheme boundary is within the Tyne and Wear waterbody (ID: GB650301500002), and only just intersects the Wansbeck waterbody (ID: GB510302210100). The 2 km buffer also intersects Blyth (N) waterbody (ID: GB510302203200) and Northumberland South (ID: GB650301500001). The waterbodies extent relevant to the Marine Scheme footprint is illustrated in Figure 1.1 with the status and objectives from the key sources summarised in Table 1.3. Details include current waterbody status (overall, ecological and chemical) and parameters currently failing to achieve good status.

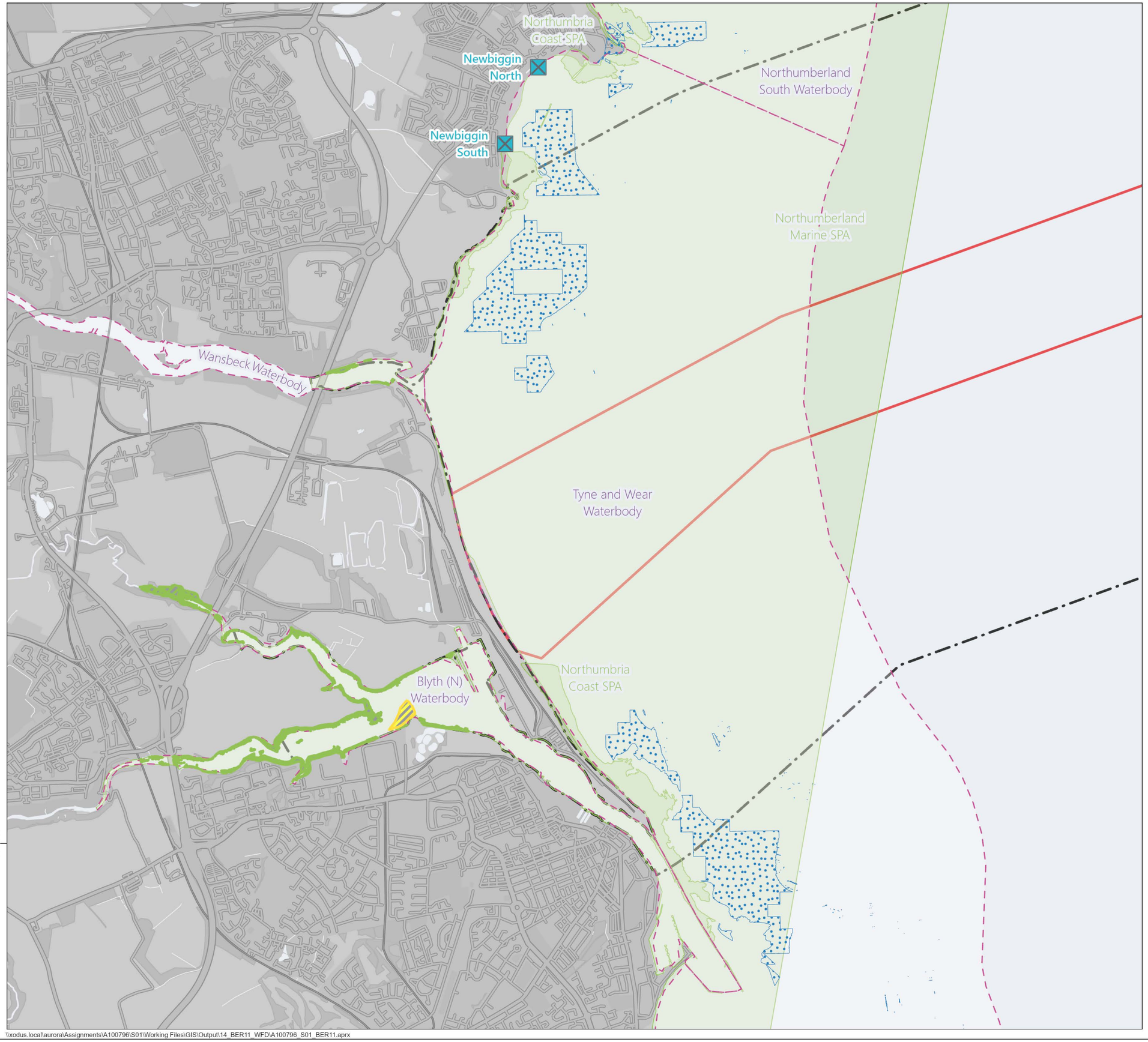
Table 1.3 Waterbody Summary within 2 km of the Marine Scheme Boundary

Waterbody[5]	Description, notes or more information			
WFD waterbody name	**Tyne and Wear**	**Wansbeck**	**Blyth (N)**	**Northumberland South**
Waterbody ID	GB650301500002	GB510302210100	GB510302203200	GB650301500001
River basin district name	Northumbria	Northumbria	Northumbria	Northumbria
Waterbody type	Coastal	Transitional	Transitional	Coastal
Waterbody total area (ha)	12,656.881 [2]	60.432 [3]	171.98 [4]	10,478.143 [5]
Hydromorphological designation	Not designated artificial or heavily modified	Heavily modified – for navigation, ports and harbours	Heavily modified – for navigation, ports and harbours	Not designated artificial or heavily modified
Overall waterbody status [1]	Good	Good	Moderate	Good
Ecological status (2019)	Good [2]	Moderate [3]	Moderate [4]	Good [5]
Biological quality elements (2019)	Good [2]	Moderate [3]	High [4]	Good [5]
Physico-chemical quality elements (2019)	High [2]	Not assessed [3]	Moderate [4]	High [5]
Hydromorphological Supporting Elements (2019)	Supports good [2]	Supports good [3]	Supports good [4]	High [5]
Specific elements/pollutants (2019)	High[2]	Good [3]	Moderate or less [4]	High [5]
Chemical status (2019) [6]	Fail [2]	Fail [3]	Fail [4]	Fail [5]
Priority hazardous substances (2019) [6]	Fail [2]	Fail [3]	Fail [4]	Fail [5]

[5] Waterbody information can be found in the Environment Agency's catchment data explorer and the waterbody summary table. Magic maps provide additional information on habitats and protected areas. Links to these information sources can be found in the WFD assessment guidance for estuarine and coastal waters.

Waterbody[5]	Description, notes or more information			
Priority substances (2019)	Good [2]	Good [3]	Good [4]	Good [5]
Other Pollutants (2019)	Does not require assessment [2]	Does not require assessment [3]	Does not require assessment [4]	Does not require assessment [5]
Target waterbody status and deadline [1]	Good (2063)	Good (2063)	Moderate (2015)	Good (2063)
Higher sensitivity habitats present [7]	Polychaete reef (320.32 ha); Saltmarsh (3.59 ha); Subtidal kelp beds (2,015.84 ha)	Saltmarsh (0.6 ha)	Mussel beds, including blue and horse mussel (2.00 ha); Saltmarsh (11.88 ha)	Mussel beds, including blue and horse mussel (50.87 ha); Subtidal kelp beds (2,569.62 ha)
Lower sensitivity habitats present [7]	Cobbles, gravel and shingle (204.54 ha); Intertidal soft sediment (468.56 ha); Rocky shore (202.93 ha); Subtidal soft sediments (5,923.15 ha); Subtidal rocky reef (7,228.33 ha)	Intertidal soft sediment (9.71 ha)	Intertidal soft sediment (86.23 ha); Rocky shore (5.45 ha); Subtidal soft sediments (28.19 ha)	Cobbles, gravel and shingle (44.34 ha); Intertidal soft sediment (573.54 ha); Rocky shore (382.59 ha); Subtidal soft sediments (4,637.12 ha); Subtidal rocky reef (5,238.74 ha)
Phytoplankton status[7]	Unknown	Unknown	Unknown	High
History of harmful algae[7]	Not monitored	Not monitored	Not monitored	Not monitored
WFD protected areas within 2 km of the Marine Scheme boundary	Northumberland Marine SPA; Northumbria Coast SPA; Berwick to St Mary's MCZ; Coquet to St Mary's MCZ; Farnes East MCZ			

1: Information on cycle 3 WFD classification from UK Government (2022c),
2: Information from Environment Agency (2023c), on the latest RBMP data.
3: Information from Environment Agency (2023d) on the latest RBMP data.
4: Information from Environment Agency (2023e) on the latest RBMP data.
5: Information from Environment Agency (2023f) on the latest RBMP data.
6: The Fail chemical classification is in relation to Mercury and its Compounds and Polybrominated diphenyl ethers (PBDE). Since 2015, the approach to chemical status has been updated in terms of analytical methods and standards. Since the update, three groups of pollutants have caused approximately 97% of waterbodies to fail to achieve good chemical status and these include: PBDEs, mercury and perfluorooctane sulfonate (PFOS). All waterbodies of interest to this project achieved good chemical status is 2015.
7: Information of protected habitats as informed by the cycle 2 WFD classifications from UK Government (2017).



Legend

- Marine Scheme Boundary
- Marine Scheme Boundary Buffer (2 km)
- SPA (Special Protection Area)
- WFD Transitional and Coastal Waterbody Boundary
- WFD Higher Sensitivity Habitat: Subtidal Kelp Beds
- WFD Higher Sensitivity Habitat: Saltmarsh
- WFD Higher Sensitivity Habitat: Mussel Beds
- Bathing Waters Monitoring Locations

Rev	Date	Status	Drwn	Chkd	Appd
04	-	-	-	-	-
03	-	-	-	-	-
02	13/07/2023	Revised	TF	JO	EW
01	13/06/2023	Issued	TF	JG	EW

sse Renewables

Project

Cambois Connection

Title

Figure 1.2 High Sensitivity Habitats, Special Protection Areas and Bathing Waters Within the Vicinity of the Marine Scheme Boundary

0 0.25 0.5 1 nm

0 0.25 0.5 1 km

N

Scale	Plot Size	Datum	Projection
1:30,000	A3	WGS84	UTM30N

Drawing Number: A100796_S01_BER11_2

Sheet No.: 001 OF 001

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1.4.2. Protected Areas within the WFD Study Area

1.4.2.1. NATURE CONSERVATION

42. There are two SPAs and three MCZs within 2 km of the Marine Scheme boundary. The Marine Scheme boundary lies within the Northumberland Marine SPA, Berwick to St Mary's MCZ and Coquet to St Mary's MCZ. The Northumbria Coast SPA, at the closest distance, is approximately 45 m from the Marine Scheme boundary. The Farnes East MCZ is approximately 177 m from the Marine Scheme boundary. Note the MCZs are not presented in Figure 1.1 as they would cover the extent of the figure.

1.4.2.2. BATHING WATERS

43. There are no bathing waters situated within 2 km of the Marine Scheme Boundary, as illustrated in Figure 1.1.

1.4.2.3. SHELLFISH WATERS

44. There are no Shellfish Water Protected Areas situated within 2 km of the Marine Scheme Boundary.

1.4.2.4. NITRATE WATERS

45. The Tyne and Wear waterbody, Wansbeck waterbody, Blyth (N) and Northumberland South waterbody are not designated under the Nitrates Directive.

1.4.2.5. URBAN WATERWATER TREATMENT (UWWT) ZONES

46. There are no designations under the UWWTD located within 2 km of the Marine Scheme Boundary.

1.4.2.6. NON-STATUTORY PROTECTED AREAS

47. There are no Non-Statutory Protected Areas within 2 km of the Marine Scheme Boundary.

1.4.2.7. WFD SENSITIVE HABITATS

48. There are higher and lower sensitivity habitats present within 2 km of the Marine Scheme Boundary. Further details of total area of each habitat present with the waterbody of interest is presented within Table 1.3.

1.5. WFD Assessment

1.5.1. WFD Assessment Methodology

49. This WFD compliance assessment has followed the latest Environment Agency (2017) guidance. Based on the updated draft to the RBMP and the cycle 3 review of WFD classification, the assessment considers the status as per the cycle 3 classification, with additional information on protected areas from cycle 2, where the information is not provided under updated draft to the RBMP or cycle 3 review. Based on the guidelines, a WFD assessment can have up to three stages; this is described below.

1.5.1.1. SCREENING

50. Screening is used to inform the Scoping stage and to exclude any activities that do not need to go through the Scoping or Impact Assessment stages as they are low risk. According to the Environment Agency guidance (2017), screening is required for the Marine Scheme as it is not a low risk activity, is not a fast-track or accelerated marine licence activity (i.e. it is not part of ongoing dredging operations) and does not fall into any of the categories of projects where screening is not required. An activity is considered low risk if it involves: maintaining pumps at pumping stations; removing blockages within 10 m of an existing structure; replacing or removing existing pipes; or 'over water' replacement or repairs (e.g. to bridges, piers, jetties, etc.).

1.5.1.2. SCOPING

51. The Scoping stage identifies the WFD receptors that are potentially at risk from the proposed activity on the basis of Scoping criteria and therefore may need impact assessment. The WFD receptors and the associated Scoping criteria used to complete this stage are listed in Table 1.4.

52. At the scoping stage it is necessary to identify all potential risks to each receptor associated with the proposed activity/activities. The receptors, as specified in the 'Clearing the Waters for All' guidance, are: hydromorphology; biology – habitats; biology – fish; water quality; protected areas; and INNS. The 'Clearing the Waters for All' guidance provides specific criteria for each of the receptors outlined above to determine if an assessment of effects is required and recommends the use of a scoping template as part of the WFD assessment process. These criteria are considered for each receptor below based on the recommended scoping template.

53. These receptors in relation to this activity are discussed further in section 1.4 with a full Scoping assessment in Section 1.5.3.

Table 1.4 WFD Receptors and Scoping Criteria

Receptor	Scoping criteria
Hydromorphology	Hydromorphology in this assessment is defined as the physical characteristics of the waterbody, including the size, shape, structure; and for marine bodies the flow and quantity of water and sediment.
Biological - habitats	This includes both those designated as higher and lower sensitivity habitats. They will be considered if the footprint (temperature or sediment plume) of the activity is any of the following: • 0.5 km^2 or larger • 1% or more of the waterbody's area • Within 500 m of any higher sensitivity habitat • 1% or more of any lower sensitivity habitat
Biology – fish	Fish activity is to be considered if the activity: • Is in an estuary and could affect fish in the estuary • Is outside the estuary but could delay or prevent fish from entering the estuary • Could affect fish migrating through the estuary to freshwater • If the activity could impact on normal fish behaviour
Water Quality	Water quality is included in the impact assessment if the activity: • Could affect water clarity, temperature, salinity, oxygen levels, nutrients or microbial patterns continuously for longer than a spring neap tidal cycle (about 14 days) • Is in a waterbody with phytoplankton status of moderate, poor or bad • Is in a waterbody with history of harmful algae • Uses or releases chemicals e.g. through sediment disturbance or building works.
Protected Areas	Protected areas include Bathing Waters, Shellfish Waters, nutrient sensitive areas, SACs, SPAs and Ramsar sites.
Invasive Non-Native Species (INNS)	INNS should be considered if the activity has the potential to introduce or spread INNS to a waterbody

1.5.1.3. IMPACT ASSESSMENT

54. Should potential impacts be identified on WFD receptors during the Scoping stages, the guidelines necessitate an impact assessment is completed to evaluate the following:

- Identification of the potential pressures on the receptor as a result of the activity; and
- Determine whether there is potential for deterioration in the status of the waterbody receptor.

55. Under the guidelines, deterioration is defined as when the status of a quality element reduces by one class. If a quality element is already at the lowest status, then any reduction in its condition counts as deterioration. Temporary effects due to short-duration activities are not considered to cause deterioration if the waterbody would recover in a short time without any restoration measures (Environment Agency, 2017). Where relevant, mitigation measures should be included to avoid or minimise risks of deterioration. In the instance an activity causes deterioration to the quality of the receptor or supporting habitat, the assessment should consider the pathway for the impact and how the deterioration could occur, in terms of being:

- Direct and immediate – it will happen at the same time and place as the activity; or
- Indirect – it will happen later or further away, including in other linked waterbodies.

56. The impact assessment is also required to consider the potential risk of jeopardising 'Good status' or an activity limiting the ability of a waterbody to achieve 'Good status' in the future.

1.5.2. Screening Outcome

57. The Applicant is proposing to install HVDC subsea cables between BBWF and a Landfall location at Cambois, Northumberland, which will be approximately 180 km in length. Generally, cable installation activities have the potential to be classified as high risk activities and therefore warrant a WFD compliance assessment, and the requirement for an assessment has been advised through stakeholder consultation with the Environment Agency.

1.5.3. Scoping Assessment

1.5.3.1. HYDROMORPHOLOGY

58. With respect to the hydromorphology WFD receptor, potential impacts from the cable laying activity are scoped out as any disturbance will be localised to the installation activity and be transient, with no permanent impacts to the waterbody (Table 1.5).

Table 1.5 Scoping Outcome Hydromophology

Scoping Test	Scoping Decision (IN/OUT) and Justification			
	Tyne and Wear	Wansbeck	Blyth (N)	Northumberland South
Could impact on the hydromorphology (for example morphology or tidal patterns) of a waterbody at high status	**Scoped Out:** The relevant waterbody is classified as "Supports good" and therefore is not classified as high status.			**Scoped out:** Although the Northumberland South waterbody has a high status, it is only just within the 2 km buffer which intersects this waterbody and therefore it is unlikely that the cable laying or Landfall activities within the Marine Scheme Boundary will impact hydromorphology. As reported within Volume 2, Chapter 7: Offshore Physical Environment and Seabed Conditions, the largest increases in suspended sediment concentration (SSC) are associated with clearance activities, but no morphological bedforms are identified on approach to Landfall (Hydrofix, 2023). Increases in SSC associated with a plume as a result of trenching, will be of a lower magnitude compared with clearance activities. Plume SSC concentrations would only be a few milligrams per litre (mg/l) at the plume extent of 5 km associated with the tidal excursion distance. and will be short-lived to less than 3-hours. Therefore, the hydromorphology of this waterbody at Landfall will not be impacted as there are no significant adverse effects at the Landfall.
Could significantly impact the hydromorphology of any waterbody	**Scoped Out:** Where the cable is buried, there will be no potential for it to influence hydrodynamic processes at the seabed. As detailed within section 1.2, the extent of interaction with the seabed is minimal owing to the adoption of trenchless technologies at the Landfall. As also detailed above, drilling fluids will be discharged into the marine environment however these will be on the Centre for Environment, Fisheries and Aquaculture Science (Cefas) approved list of drilling fluids, and the OSPAR list of PLONAR substances. It is expected that any potential impacts will only result in localised and temporary disruption. Any impacts are unlikely to adversely impact the hydromorphology.			
Is in a waterbody that is heavily modified for the same use as your activity	**Scoped out:** The waterbody is not heavily modified	**Scoped out:** The waterbody is heavily modified for navigation, ports and harbours, but this is not the same use as the Marine Scheme.	**Scoped out:** The waterbody is heavily modified for navigation, ports and harbours, but this is not the same use as the Marine Scheme.	**Scoped out:** The waterbody is not heavily modified

1.5.3.2. BIOLOGY

1.5.3.2.1. HABITATS

59. The Scoping criteria for this receptor are mainly based on the physical footprint of the proposed works and proximity to sensitive habitats. Under the WFD, the habitats receptor is split into two categories: higher sensitivity and lower sensitivity. Higher sensitivity habitats have a low resistance to, and recovery rate, from human pressures, examples include chalk reef, mussel beds, intertidal seagrass. Lower sensitivity habitats have a medium to high resistance to, and recovery rate from, human pressure, examples include rocky shore and subtidal soft sediments.

60. The footprint of the Marine Scheme Boundary exceeds 0.5 km2, is more than 1% of the Tyne and Wear waterbody, is within 500 m of a higher sensitivity habitat and the area consists of more than 1% of a lower sensitivity habitat (Table 1.6). Therefore, the potential risk to habitats has been scoped in and an impact assessment is required for the Tyne and Wear and Wansbeck waterbodies.

Table 1.6 Scoping Outcome for Habitats

Scoping Test	Scoping Decision (IN/OUT) and Justification			
	Tyne and Wear	Wansbeck	Blyth (N)	Northumberland South
0.5 km^2 or larger	**Scoped in:** The Marine Scheme out to 1 nm is 3.72 km^2			
1% or more of the waterbody's area	**Scoped in:** The Marine Scheme is approximately 3.0% of the Tyne and Wear waterbody	**Scoped out:** The Marine Scheme is not more than 1% of the waterbody	**Scoped out:** The Marine Scheme is not more than 1% of the waterbody	**Scoped out:** The Marine Scheme is not more than 1% of the waterbody
Within 500 m of any higher sensitivity habitat	**Scoped in:** There are higher sensitivity subtidal kelp beds adjacent to the Marine Scheme boundary	**Scoped out:** The Marine Scheme is not within 500 m of higher sensitivity saltmarsh	**Scoped out:** The Marine Scheme does not overlap nor is it within 500 m of a higher sensitivity habitat within this waterbody	**Scoped out:** The Marine Scheme does not overlap nor is it within 500 m of a higher sensitivity habitat within this waterbody
1% or more of any lower sensitivity habitat	**Scoped in:** 1.1% of the Marine Scheme area within this waterbody is cobbles, gravel and shingle, 6.3% of the area is intertidal soft sediment, 2.5% is subtidal rocky reef and 90.1%	**Scoped out:** The Marine Scheme is not 1% or more of any lower sensitivity habitat	**Scoped out:** The Marine Scheme is not 1% or more of any lower sensitivity habitat	**Scoped out:** The Marine Scheme is not 1% or more of any lower sensitivity habitat

Scoping Test	Scoping Decision (IN/OUT) and Justification			
	Tyne and Wear	Wansbeck	Blyth (N)	Northumberland South
	is subtidal soft sediments.			

61. Saltmarsh is a higher sensitivity habitat which based on the same publicly available datasets and EUNIS classification detailed above may be located adjacent to the Marine Scheme, and/or the applied study area. However, based on the Marine Scheme extent, there are no saltmarsh directly overlapping or within 500 m of the Marine Scheme, although these occur within the study area as illustrated in Figure 1.1. The small pockets of saltmarsh that occur within the study area can be found at the mouth of the River Wansbeck to the north of the Marine Scheme and within the Blyth Estuary, west of the Marine Scheme. For both of these locations, the occurrence of these high sensitivity habitats are over 1 km away, with limited hydrological connectivity with the Marine Scheme and as a result are not assessed further.

1.5.3.2.2. FISH

62. Fish are only considered at risk if the activity is in an estuary or could affect fish in or entering an estuary. As per the ES Chapter 9 Fish and Shellfish Ecology, all impacts from the activities were considered as not significant. Therefore, any potential risk to fish is scoped out (Table 1.7).

Table 1.7 Scoping Outcome for Fish

Scoping Test	Scoping Decision (IN/OUT) and Justification			
	Tyne and Wear	Wansbeck	Blyth (N)	Northumberland South
Is in an estuary and could affect fish in the estuary, outside the estuary but could delay or prevent fish entering it or could affect fish migrating through the estuary	**Scoped out:** The Marine Scheme does not overlap the Wansbeck waterbody. Diadromous species are the species which would migrate to/from rivers. The diadromous species considered in Chapter 9 Fish and Shellfish Ecology of the ES and the Fish and Shellfish Ecology Study Area included: Atlantic salmon (*Salmo salar*), sea trout (*Salmo trutta*), sea lamprey (*Petromyzon marinus*), river lamprey (*Lampetra fluviatilis*), European eel (*Anguilla Anguilla*) and Brook lamprey (*Lampetra planeri).* Construction of the Marine Scheme will be short-term in duration and occur intermittently over the construction period, and therefore there is no direct impact anticipated on fish species. Any effect from construction and decommissioning, was found to be negligible to minor adverse significance. With regards to the operation phase of the Marine Scheme, it is not expected that exposure to elevated electro-magnetic field levels from the buried cables would be sufficient to influence migration patterns and therefore the effect was classified as a negligible to minor adverse significance. Negligible to minor adverse significance is not significant in EIA terms. The same conclusion was drawn for spawning species e.g. sandeel and herring. Refer to ES Volume 2, Chapter 9: Fish and Shellfish Ecology for further details. As there are not considered to be significant effects on migrating fish species, it will not be taken forward for impact assessment.			
Could impact on normal fish behaviour like movement, migration or spawning (for example creating a physical barrier, noise, chemical change or a change in depth or flow)	N/A as the scoping template does not require a scoping decision on this if above is scoped out.			
Could cause entrainment or impingement of fish	N/A as the scoping template does not require a scoping decision on this if above is scoped out.			

1.5.3.3. WATER QUALITY

63. An impact assessment is required if there are adverse impacts on water quality indicators e.g. changes in water clarity, temperature, salinity, oxygen levels etc. or if the activity takes place in a waterbody with a phytoplankton status of moderate or less or with a history of harmful algae (Table 1.8).

64. With respect to the proposed works associated with the Marine Scheme, potential risk to water quality is scoped out as any disturbance associated with the Marine Scheme is predicted to be localised to the works and transient with no phytoplankton or algae issues.

Table 1.8 Scoping Outcome for Water Quality

Scoping Test	Scoping Decision (IN/OUT) and Justification			
	Tyne and Wear	Wansbeck	Blyth (N)	Northumberland South
Could affect water clarity, temperature, salinity, oxygen levels, nutrients or microbial patterns continuously for longer than a spring neap tidal cycle (about 14 days)	**Scoped out:** As per the Applicant's clarification letter to the Environment Agency's Scoping response, regarding the water and sediment quality EIA topic (see section 1.3), the construction and decommissioning works are of short duration and localised nature, resulting in short-lived and transient impacts, with increases in SSC only lasting at worst just over flood-ebb tidal cycle, as discussed in Volume 2, Chapter 7: Offshore Physical Environment and Seabed Conditions. For operation and maintenance activities, any disturbance is expected to be less than for construction activities. Therefore any potential impacts to water quality receptors associated with the works would not be required to be taken forward for impact assessment. This conclusion has been agreed upon by the Environment Agency subsequent to the issue of the Scoping Opinion (Environment Agency, 2023b).			
Is in a waterbody with a phytoplankton status of moderate, poor or bad	**Scoped out:** Not a feature of the waterbody which is monitored and therefore has not been taken forward for impact assessment.			**Scoped out:** Northumberland South has a high phytoplankton status
Is in a waterbody with a history of harmful algae	**Scoped out:** Not a feature of the waterbody which is monitored and therefore has not been taken forward for impact assessment.			

65. There is potential for losses of the drilling fluids to the marine environment. However as the drilling fluids are approved by CEFAS and are considered as PLONOR, there is no potential risk of chemicals from a discharge (Table 1.9).

Table 1.9 Scoping Outcome for Chemicals Released through Mixing Zone

Scoping Test	Scoping Decision (IN/OUT) and Justification Tyne and Wear / Wansbeck / Blyth (N) / Northumberland South
If there is a mixing zone (like a discharge pipeline or outfall) the chemicals released are on the Environmental Quality Standards Directive (EQSD) list	**Scoped out:** As described in section 1.2, drilling fluids will be discharged into the marine environment however these will be on the Cefas approved list of drilling fluids, and the OSPAR list of PLONAR substances. Therefore, no chemicals will be released which are on the EQSD list and would not be required to be taken forward for an impact assessment.

66. There are no chemicals used or released during the cable laying process itself. In addition, analyses of samples showed there were no contaminants above Cefas Action Level 1 (Table 1.10).

Table 1.10 Scoping Outcome for Uses or Release of Chemicals

Scoping Test	Scoping Decision (IN/OUT) and Justification Tyne and Wear / Wansbeck / Blyth (N) / Northumberland South
The chemicals are on the EQSD list	**Scoped out:** Only a very small volume of Cefas approved PLONOR drilling fluids would be discharged into the marine environment, associated with cable installation at the Landfall. Therefore no chemicals will be released which are on the EQSD list and would not be required to be taken forward for assessment.
It disturbs sediment with contaminants above Cefas Action Level 1 (CAL1)	**Scoped out:** As presented within the Scoping Report (BBWFL, 2022), information from the Marine Scotland Clean Seas Environmental Monitoring Programme (CSEMP)[7] which provided an assessment of sediment contamination concentrations within the Forth, at the Tees Estuary, and further offshore, did not identify any sediment quality issues. Furthermore, information from the Centre for Environment, Fisheries and Aquaculture (Cefas) OneBenthic tool demonstrated that samples on the seaward side of the Blyth harbour wall typically exhibit levels of contamination which fall below Cefas Action Level 1, while highly contaminated sediments within Blyth Harbour are not dredged and disposed in the designated offshore disposal areas. As demonstrated in Figure 1.1 and described in section 1.1.2, the Landfall for the Marine Scheme is along the Cambois Bay frontage and does not extend into Blyth Estuary, where there may be the potential for historic contamination. Should any contaminant be disturbed, it would be diluted and either redeposited quickly with the sediment in close proximity to the disturbance site or form part of the plume to be deposited within the tidal excursion distance.

[7] For the reasons explained in section 1.1, a WFD assessment in Scottish waters is not required. The CSEMP provides wider valuable context beyond Scottish waters, and is therefore included and presented for completeness.

1.5.3.4. WFD PROTECTED AREAS

67. As listed in section 1.5.1.2, there are protected areas which need to be considered for the potential to be at risk from an activity under the WFD assessment.

68. As there are five protected sites within the WFD study area (Table 1.11), an impact assessment is required.

Table 1.11 Scoping Outcome for WFD Protected Areas

Scoping Test	Scoping Decision (IN/OUT) and Justification			
	Tyne and Wear	Wansbeck	Blyth (N)	Northumberland South
Within 2km of any WFD protected area[8]	**Scoped in:** The Marine Scheme boundary intersects one SPA and two MCZs, with an additional SPA and MCZ within 2 km, as detailed in section 1.5.1.2.			

1.5.3.5. INNS

69. An impact assessment would be required if there is a risk that the activity could introduce or spread INNS. Risks of introducing or spreading INNS include:

- Materials or equipment that have come from, had use in or travelled through other waterbodies; or
- Activities that help spread existing INNS, either within the immediate waterbody or other waterbodies.

70. Although the Marine Scheme has the potential to introduce and spread INNS to the waterbody through vessels associated with the activity e.g. via hull fouling (Table 1.12), embedded project mitigation (section 1.1.2.2), including compliance with MARPOL regulations and best-practise protocols to prevent and manage incidents of accidental release of marine contaminants or spread of INNS will be employed to mitigate this risk and can therefore be scoped out.

Table 1.12 Scoping Outcome for INNS

Scoping Test	Scoping Decision (IN/OUT) and Justification			
	Tyne and Wear	Wansbeck	Blyth (N)	Northumberland South
Introduce or spread INNS	**Scoped out:** There is the potential for construction and operation & maintenance vessels to introduce or spread INNS as it is possible that vessels may come from outside the UK or that they could discharge ballast water within the waterbody. However, the potential impact will be managed through prevention methods by following best practice as listed in section 1.1.2.2.			

[8] Note that a regulator can extend the 2km boundary if your activity has an especially high environmental risk

Scoping Test	Scoping Decision (IN/OUT) and Justification			
	Tyne and Wear	Wansbeck	Blyth (N)	Northumberland South
	There are no INNS predicted to be within the Marine Scheme boundary (NNSS, 2022) and therefore, there is no spread of INNS predicted to occur as a result of the installation disturbance to the seabed.			

1.5.3.6. SCOPING SUMMARY

71. Table 1.13 summarises which receptors are potentially at risk from the proposed Marine Scheme and are therefore carried forward for Impact Assessment. These are Biology: Habitats, with respect to the Tyne and Wear and Wansbeck waterbodies and Protected areas.

Table 1.13 Summary of Scoping Assessment

Receptor	Potential risk to receptor?	Scoping justification for impact assessment
Hydromorphology	No	N/A as scoped out based on scoping assessment completed in Table 1.5.
Biology: habitats	Yes	The footprint of the Marine Scheme boundary exceeds 0.5 km^2, and is more than 1% of the Tyne and Wear waterbody. The Marine Scheme is also within 500 m of a higher sensitivity habitat within the Tyne and Wear waterbody (subtidal kelp beds) and covers more than 1% of a lower sensitivity habitat within the Tyne and Wear waterbody
Biology: fish	No	N/A as scoped out based on scoping assessment completed in Table 1.7.
Water quality	No	N/A as scoped out based on scoping assessment completed in Table 1.8
Protected areas	Yes	There are 5 protected sites (2 SPAs and 3 MCZs) within 2 km of the Marine Scheme boundary.
INNS	No	N/A as scoped out based on scoping assessment completed in Table 1.12.

1.5.4. WFD Impact Assessment

72. As presented in the scoping summary in Table 1.13, the Scoping process carried out for the Marine Scheme has indicated a need to carry out a WFD impact assessment on Biology (habitats) for the Tyne and Wear waterbody and on the protected sites which are within the vicinity (2 km) of the Marine Scheme.

1.5.4.1. BIOLOGY (HABITATS)

1.5.4.1.1. SCOPED-IN RECEPTORS

73. The footprint of the Marine Scheme exceeds 0.5 km2, is more than 1% of the Tyne and Wear waterbody and is within 500 m of a higher sensitivity habitat (which for Tyne and Wear is subtidal kelp and for Wansbeck is saltmarsh).With respect to the Tyne and Wear waterbody only, the area

relating to the Marine Scheme consists of more than 1% of a lower sensitivity habitat, comprising approximately 1.2% of cobbles, gravel and shingle, 4.9% of intertidal soft sediment, 0.06% of subtidal rocky reef and 93.7% of subtidal soft sediments (based on desk-based WFD data (Xodus Group, 2023)). The above presents a summary of the habitats for which an impact assessment is required.

74. Subtidal kelp beds are a higher sensitivity habitat which, based on the publicly available datasets available and the EUNIS Habitat classification may be located within the Marine Scheme and/or the applied study area. The Marine Scheme does not directly overlap any of this habitat, although it occurs within 500 m from the Marine Scheme boundary and more widely within the 2 km study area. An analysis of the higher sensitivity habitats using the EUNIS Habitat classification was carried out seeking to identify the potential presence of subtidal kelp beds (A3.11, A3.21, A3.22, A3.32, A5.52). This analysis led to the identification of A3.2132 (Laminaria hyperborea park and foliose red seaweeds on tide-swept lower infralittoral mixed substrata) and A3.2141 (Laminaria hyperborea forest and foliose red seaweeds on moderately exposed upper infralittoral rock). Considering the Marine Scheme and study area, with respect to the Subtidal kelp beds habitat, there is the potential for interaction with approximately 1,295 m2 of A3.2132 and approximately 4,6452 m2 of A3.2141, where Figure 1.2 provides a visualisation of the Marine Scheme and the higher sensitivity habitat subtidal kelp beds within the area.

75. As illustrated in Figure 1.2, the entirety of the higher sensitivity habitat regionally is located outside of the Marine Scheme meaning that all interactivity with subtidal kelp beds is related to indirect interaction within 0.5 km or 2 km buffer areas.

76. An analysis of the publicly available data was also carried out for other lower-sensitivity habitats, identifying the preliminary extent as follows:

- 45,257 m^2 littoral course sediment A2.1 / A5.1 (encompassing cobbles, gravel and shingle);
- 0.2 km^2 Littoral sand and muddy sand / Amphipods and *Scolelepis spp*. In littoral medium-fine sand A2.2 / A2.223 (encompassing intertidal soft sediment);
- 2,237 m^2 of Atlantic and Mediterranean moderate energy circalittoral rock A4.2 (considered to be encompassing of subtidal rocky reef); and
- 4.5 km^2 of sublittoral sand / sublittoral mud A5.2 / A5.3 (encompassing subtidal soft sediments).

77. The completed scoping assessment identified that the Marine Scheme intersected with these habitats to varying proportions within the Tyne and Wear waterbody only (Table 1.6).

1.5.4.1.2. IMPACT PATHWAYS

78. Given the direct overlap of higher and lower sensitivity habitats, the activities associated with the Marine Scheme which could have the potential to affect these habitats are limited. The primary effects associated with laying of the Offshore Export Cables that are considered to be relevant to the WFD assessment are as follows:

- Indirect physical disturbance or loss of seabed and habitats within the Marine Scheme and within the guidance 2 km buffer around the Marine Scheme associated with deposition;
- Indirect disturbance in terms of increases in SSC associated with a sediment plume resulting from Marine Scheme installation works; and
- Indirect impacts related to aqueous releases associated with trenchless technologies, such as HDD, at the Landfall.

1.5.4.1.3. MARINE SCHEME HABITAT CHARACTERISATION

79. Baseline surveys carried out by the Applicant to support the separate EIA and consenting process for the BBWF in 2019 – 2021 cover the northernmost extent of the Marine Scheme and have been used to inform the baseline characterisation as part of specialist assessments, as reported in

Volume 2 of the EIA. They are focused on the northernmost extent of the Marine Scheme and therefore presented for completeness, owing to the focus of this document on inshore waterbodies.

80. To help inform the EIA for the Marine Scheme, the Applicant carried out a comprehensive suite of geophysical and benthic surveys during 2022 and spring 2023; sampling stations and EUSeaMap MSFD broad habitat types are provided on Figure 1.4 below.

81. Building on the existing desk-based understanding of this higher sensitivity habitat, survey outputs from the aforementioned benthic campaign have been analysed. All data collected from surveys, including up to date species nomenclature in accordance with the World Register of Marine Species (WoRMs) database, abundance, biomass and physical parameters such as Particle Size Analysis (PSA) and depth, were collated in excel spreadsheets. Based on PSA results, each sampling station was assigned a Folk (1954) classification using the Folk Ternary diagram provided in the JNCC guidance (Parry, 2015) and the percentage composition of gravel, sand and mud was calculated.

82. For the habitat mapping, the overarching strategy was to combine information from the geophysical data with the benthic sample data using geostatistical processing and spatial statistical analysis.

83. Bathymetry and backscatter data were collected for the Offshore Export Cable Corridor, which are relevant to the benthic environment. These data were incorporated within a geographic information system and processed to produce derived data sets which were then used to predict benthic habitat variability or complexity within the areas surveyed.

84. Due to poor weather in the second half of 2022, survey operations and subsequent reporting was split into two Phases. The Phase 1 survey included benthic grab sampling at 58 planned survey stations, drop down video (DDV) at 27 of the survey stations and incorporation of geophysical survey data and phase 1 survey data into benthic habitat mapping. The Phase 2 survey included DDV at an additional 43 sampling stations and incorporation of Phase 1 and Phase 2 survey data into benthic habitat mapping.

85. For the Phase 1 survey, a total of 30 imagery samples across 27 sampling stations (as two sampling stations were split into two segments) were collected. Phase 2 returned 43 imagery samples (no videos were segmented) across 43 sampling stations. The results showed the seabed at the majority of sampling stations across the Marine Scheme comprised of sand and mud dominated sediment interspersed with patches of coarser sediment. A number of sampling stations were recorded as the broadscale habitat 'subtidal mud' with some burrows observed (including some complex burrow systems from Nephrops). 'Subtidal sand' was typically observed at inshore sampling locations with 'Subtidal Coarse Sediment' observed at five sampling stations towards the north of the Marine Scheme and subtidal Mixed Sediment' observed to the north of the Marine Scheme and at one inshore location. In addition. epifauna was typically sparse throughout the Marine Scheme and the most abundant taxa observed were brittle stars (*Ophiuroidea*). Other epifauna included seapens (*Pennatula phosphorea*), fish, (*Pleuronectiformes, Gadidae, Callionymiformes, Triglidae, Melanogrammus aeglefinus, Pleuronectes platessa*), starfish (*Asterias rubens*, *Asteroidea*, *Crossaster papposus*), crustacea (*Brachyura, Paguridae, Nephrops norvegicus, Decapoda, Majoidea, Liocarcinus sp., Munida rugosa, Goneplax rhomboides, Cancer pagurus, Pagurus prideau*), anemones (*Actiniaria and Adamsia palliata),* tube worms (*Sabellidae, Terrebellidae, Chaetopteridae*), scallops (*Pectinidae, Pecten maximus*) and sea urchins (*Echinus esculentus*).

86. No Invasive Non-Native Species (INNS) were found. Potential Annex I stony reef was found at seven locations. Five in the nearshore area (1, 4, 11, 12 and 14), and two offshore at station 34 and station 88 of the Marine Scheme. However, these two stations were composed of cobbles with relatively low percentage cover and were assessed as 'low' stony reef. The UK BAP Habitat 'Subtidal sands and Gravels' (SS.SSa.CMuSa, SS.SCS and SS.SCS.CCS biotopes) was recorded at nine offshore stations (5, 9, 80, 82, 83, 89, 96, 102, 104) and 'Mud habitats in Deepwater' (SS.SMu.CSaMu and SS.SMu.CFiMu) was recorded at 38 offshore stations. The substrates observed were largely homogeneous in nature, however segmentation was required at sampling stations 1 and 14 (Figure 1.4) due to the presence of a change in habitat from soft sediments to soft rock communities.

87. Results are summarised below; for full details, please refer to Volume 3, Appendix 8.1: Benthic Survey Report (Phase 1 and 2).

Table 1.14 Habitat classifications classifications across the Marine Scheme, with stations illustrated in Figure 1.4

Bitope	MNCR Classification Description	EUNIS (2022) Equivalent	Stations
SS.SMu	Sublittoral cohesive mud and sandy mud communities	A5.3	29
SS.SMu.CFiMu	Circalittoral fine mud	A5.36	30, 31, 32, 33, 35, 36, 37,39, 40, 42, 43, 44, 79, 85,86, 87
SS.SMu.CFiMu.SpnMeg	Seapens and burrowingmegafauna in circalittoral fine mud	A5.361	2, 6, 7, 15, 16, 27, 28, 38,45
SS.SMu.CSaMu	Circalittoral sandy mud	MC6	10, 17, 18, 19, 20, 22, 23,24, 25, 26, 41, 64, 77, 81,90, 91, 92, 93, 100, 108,109, 110
SS. SCS	Sublittoral coarse sediment(unstable cobbles and pebbles,gravels and coarse sands)	A5.1	80, 96, 104
SS.SCS.CCS	Circalittoral coarse sediment	A5.14	89, 102
SS.SSa	Sublittoral sands and muddysands	A5.2	1, 3, 8
SS.SSa.CMuSa	Circalittoral muddy sand	A5.26	5, 9, 82, 83
CR.MCR	Soft rock communities	A4.23	1, 11, 12, 14
CR.MCR.EcCr.FaAICr.Flu	Flustra foliacea on slightlyscoured silty circalittoral rock	A4.2141	4
SS.SMx.CMx	Circalittoral mixed sediment.	A5.44	13, 21, 34, 84, 88, 106

88. The Applicant also carried out an intertidal survey at two locations north and south of Cambois beach, Northumberland. This visual survey was completed to characterise and map the benthic habitats present across the intertidal zone associated with the Landfall area. The survey involved the collection of aerial imagery accompanied by walkover surveys to gather detailed information on the benthic communities present for subsequent habitat / biotope mapping purposes. A comprehensive suite of images and target notes were collected across the full extent of the intertidal survey areas at each site between Mean Low Water Springs (MLWS) and MHWS. For full details of the intertidal survey, please refer to the report provided within Volume 3, Appendix 8.2: Intertidal Survey Report.

1.5.4.1.4. IMPACT ASSESSMENT: SUBTIDAL KELP BEDS

89. The data obtained above and described in full within Volume 2, Chapter 7: Offshore Physical Environment and Seabed Conditions and Volume 2, Chapter 8: Benthic and Intertidal Ecology helps to further confirm the general absence of subtidal kelp beds within the Marine Scheme itself and it is reasonable to conclude that the primary interactions with this higher sensitivity feature will be

outside of the Marine Scheme (as suggested by Figure 1.2, the entirety of this higher sensitivity feature regionally is located north of the River Wansbeck or south of 'The Rockers' at the southern end of Cambois beach).

90. Subtidal kelp beds could be subject to a degree of smothering as a result of the sediment plume generated by the Landfall operations and the installation of Offshore Export Cables. Based on seabed sediment composition within the waterbodies it is considered that the majority of the sediment bulk would be deposited within tens to hundreds of metres of the disturbance source, with deposition thickness of less than 1 m in close proximity to the disturbance and less than 0.1 m at the largest extent. Deposition from plumes which could extend up to a flood/ebb tidal excursion distance of 5 km would deposit material of only a few millimetres and would largely be indiscernible from the surrounding seabed (see Volume 2, Chapter 7: Offshore Physical Environment and Seabed Conditions).

91. As described in section 1.2, drilling fluids (such as bentonite) will be discharged into the marine environment however these will be on the Cefas approved list of drilling fluids, and the OSPAR list of PLONAR substances. Therefore, no chemicals will be released which are on the EQSD list and are not required for further impact assessment.

92. At this location, the subtidal zone will regularly experience changes in turbidity as a result of natural processes and subtidal kelp beds feature is considered tolerant of short-term variations in suspended sediments. Furthermore, kelp actually thrives in dynamic and often harsh, exposed coastal conditions (particularly winged kelp (Wildlife Trust, 2023)) and is known to be highly resilient to dynamic coastal environments with often moderate to high levels of baseline suspended sediment, as notably supported by their trialled usage as a coastal protection asset (Morris et al, 2020).

93. As noted in Volume 2, Chapter 5: Project Description, the Landfall installation process is anticipated to take up to a maximum of approximately 15 months to complete. Within this wider period, as described in Volume 2, Chapter 5: Project Description and as summarised in section 1.1.2, the Landfall installation process itself will be far shorter (i.e., trenchless operations). The periods described above are considered relatively short in duration and mean that even any temporary impact, however limited, will be reversible and not give rise to a significant effect on subtidal kelp beds.

94. In consideration of the potential for cumulative effects with nearby projects, the only relevant project is the Blyth Demonstration Phase 2 (and 3) Cable Corridor, which overlaps with the Marine Scheme, is due to complete by 2025 and therefore overlaps with the Marine Scheme construction timeframe. Volume 2, Chapter 7: Offshore Physical Environment and Seabed Conditions assessed cumulative disturbance and increases in SSC impacts to be similar to that of the Marine Scheme, with no increase in impact magnitude. Therefore, with respect to the potential for cumulative impacts to subtidal kelp beds, any disturbance or increases in SSC would be relatively short in duration and temporary, as a result impacts will be limited, reversible and not give rise to a significant effect on subtidal kelp beds.

1.5.4.1.5. IMPACT ASSESSMENT: LOWER SENSITVITY HABITATS

95. As noted above, the Marine Scheme has the potential to interact with the lower-sensitivity WFD habitat features cobbles, gravel and shingle, intertidal soft sediment, subtidal rocky reef and subtidal soft sediments (based on desk-based WFD data). These low sensitivity habitats have been described to be present within the Marine Scheme as presented in section 1.5.4.1.3.

96. It is important to note that the potential interactions detailed above which relate to the presence of several potential habitat types are based on desk-based information which is in the public domain, and relatively 'coarse'. The Applicant has commissioned a suite of benthic and geophysical surveys, as detailed above and reported within Volume 2, Chapter 7: Offshore Physical Environment and Seabed Conditions and Volume 2, Chapter 8: Benthic Subtidal and Intertidal Ecology; the confidence associated with this (recent) project and site-specific data is higher than that which is associated with the historical public data. On this basis, in reality, the true nature of the nearshore

area on approach to Cambois is actually likely to give rise to different (less significant) interactions, the seabed being mostly homogeneous in nature. Potential impacts on lower sensitivity habitats are assessed in detail below.

97. By way of illustration, the vast majority of direct interactions are anticipated to be with subtidal soft sediments (as can be seen from Figure 1.4 and Figure 1.5 below, this is the predominant habitat type on approach to the Landfall; a closer analysis of the DDV)provided as part of the benthic campaign validates this with further details provided in Volume 2, Chapter 8: Benthic and Intertidal Ecology).

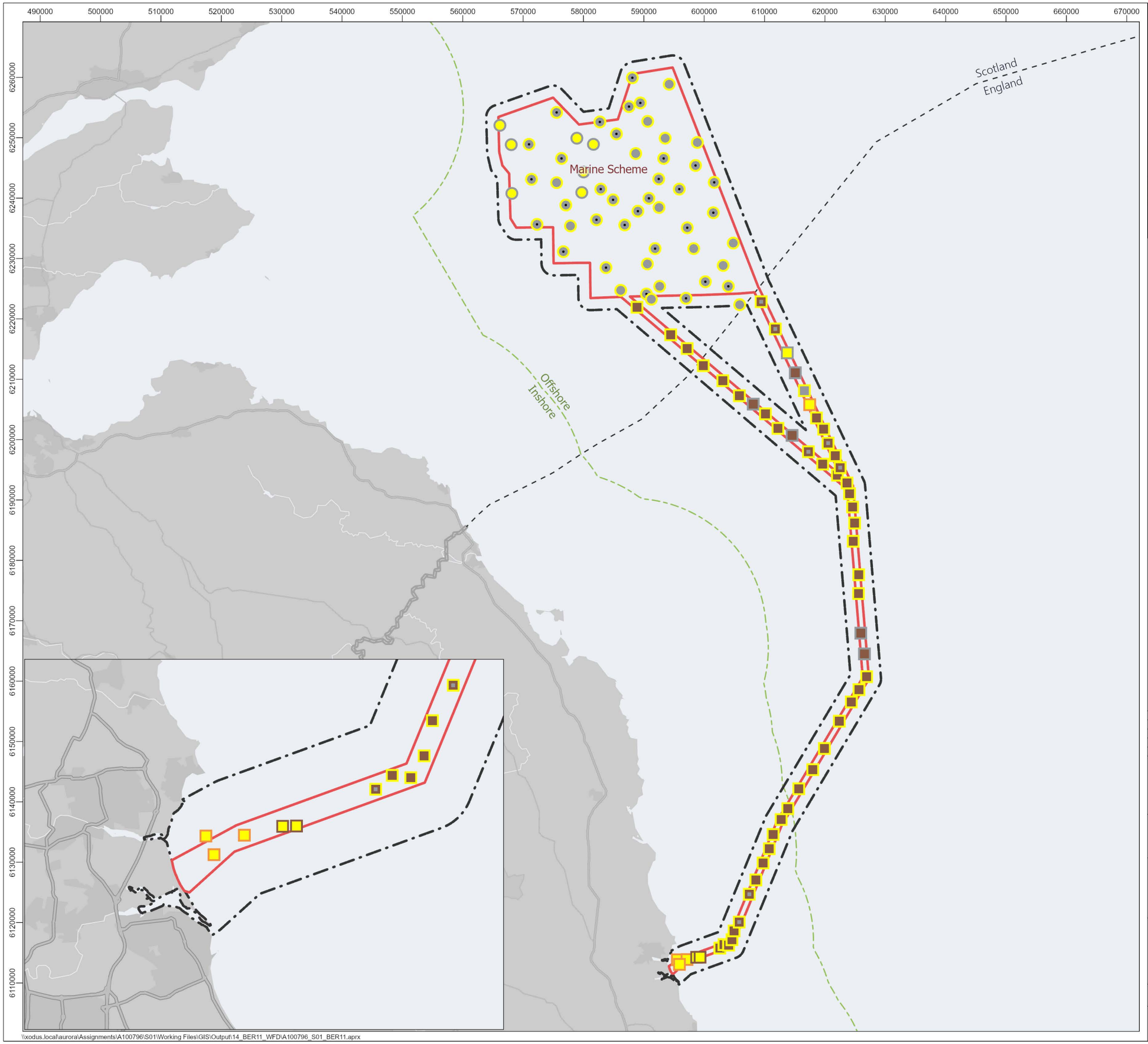
98. Based on the nature of the seabed in the nearshore area, it is anticipated that the Applicant will be able to achieve a good level of burial for the Offshore Export Cables (and indeed along the length of the route, burial within the seabed will be the preferred option with cable protection only applied where burial cannot be achieved). This is discussed further in Volume 2, Chapter 5: Project Description and is a finding supported by the Indicative Cable Burial Appraisal carried out by the Applicant.

99. Based on a contemporaneous analysis of comparable infrastructure projects regionally carried out by Xodus Group (notably including the North Sea Link and Blyth Demonstrator), the Applicant's predictions associated with burial can be seen to be validated (National Grid Ventures / MMT, 2013; National Grid Ventures, 2014; National Grid Ventures, 2019; EDF Renewables, 2020). On this basis, following installation of the Offshore Export Cables, it is anticipated that the seabed will return swiftly to a pre-existing baseline state. As no clearance is expected in the nearshore due to the absence of geophysical bedforms informed by site-specific geophysical survey (Hydrofix, 2023), therefore the only impacts influencing SSC are in relation to trenching activities. As reported within Volume 2, Chapter 7: Offshore Physical Environment and Seabed Conditions, increases in SSCs associated with cable installation through trenching are anticipated to reduce to background levels within 3-hours following installation of the cable, with effects only lasting within one tide. Although the plume associated with cable installation could extend over the full tidal excursion extent, the concentrations would only be a few mg/l.

100. Similarly, to subtidal kelp beds, there is a need to consider the potential indirect impacts arising from the Marine Scheme; in this case, the rationale described above for subtidal kelp beds equally applies and the habitats in question are less sensitive to smothering than for subtidal kelp beds.

101. As noted in Volume 2, Chapter 5: Project Description, the Landfall installation process is anticipated to take up to a maximum of approximately 15 months to complete. Within this wider period, as described in Volume 2, Chapter 5: Project Description and as summarised in section 1.1.2, the Landfall installation process itself will be far shorter (i.e., trenchless operations). The periods descried above are considered relatively short in duration and mean that even any temporary impact, however limited, will be reversible and not give rise to a significant effect on any of the lower sensitivity habitats described.

102. The material that would also be dispersed in the plume and potentially deposited on the lower sensitivity habitats would primarily consist of finer sediment (including fine silts and clays). Deposition over the plume extent would only be a few millimetres and indiscernible from the natural variation, as assessed in Volume 2, Chapter 7: Physical Environment and Seabed Conditions. The locations with the thickest deposition would be in the vicinity of the disturbance, therefore the sediment would have the same composition, with no alteration of the sediment type associated with the low sensitivity habitat. For the material that remains in suspension for longer, deposition may occur in locations with a different sediment type, however, by this time the actual deposition thickness would be minimal and largely indiscernible from the remaining seabed environment. In addition, the deposited material would be reworked with ongoing nearshore sediment transport processes. The same conclusion is considered to apply in relation to the potential for cumulative impacts associated with the nearby Blyth Demonstration Phase 2 (and 3) Cable Corridor for reasons presented in section 1.5.4.1.4.



Legend

- Marine Scheme Boundary

Folk Sediment Classification (Berwick Bank)

- Gravelly Sand
- Sandy Gravel
- Slightly Gravelly Sand

Folk Sediment Classification (Cambois)

- Gravelly Muddy Sand; (Gravelly) Muddy Sand
- Gravelly Sand
- Muddy Sand
- Muddy Sandy Gravel
- Sand; (Gravelly) Sand
- Sandy Gravel
- Sandy Mud; (Gravelly) Sandy Mud
- Marine Scheme Boundary Buffer (2 km)
- UK 12 Nautical Mile Limit
- Scotland/England Territorial Waters

Rev	Date	Status	Drwn	Chkd	Appd
04	-	-	-	-	-
03	-	-	-	-	-
02	13/07/2023	Revised	TF	JO	EW
01	15/06/2023	Issued	TF	JO	EW

Project

Cambois Connection

Title

Figure 1.3 PSA Folk Classification

0 2.5 5 10 15 20 nm

0 2.5 5 10 15 20 25 30 km

N

Scale	Plot Size	Datum	Projection
1:600,000	A3	WGS84	UTM30N

Drawing Number	Sheet No.
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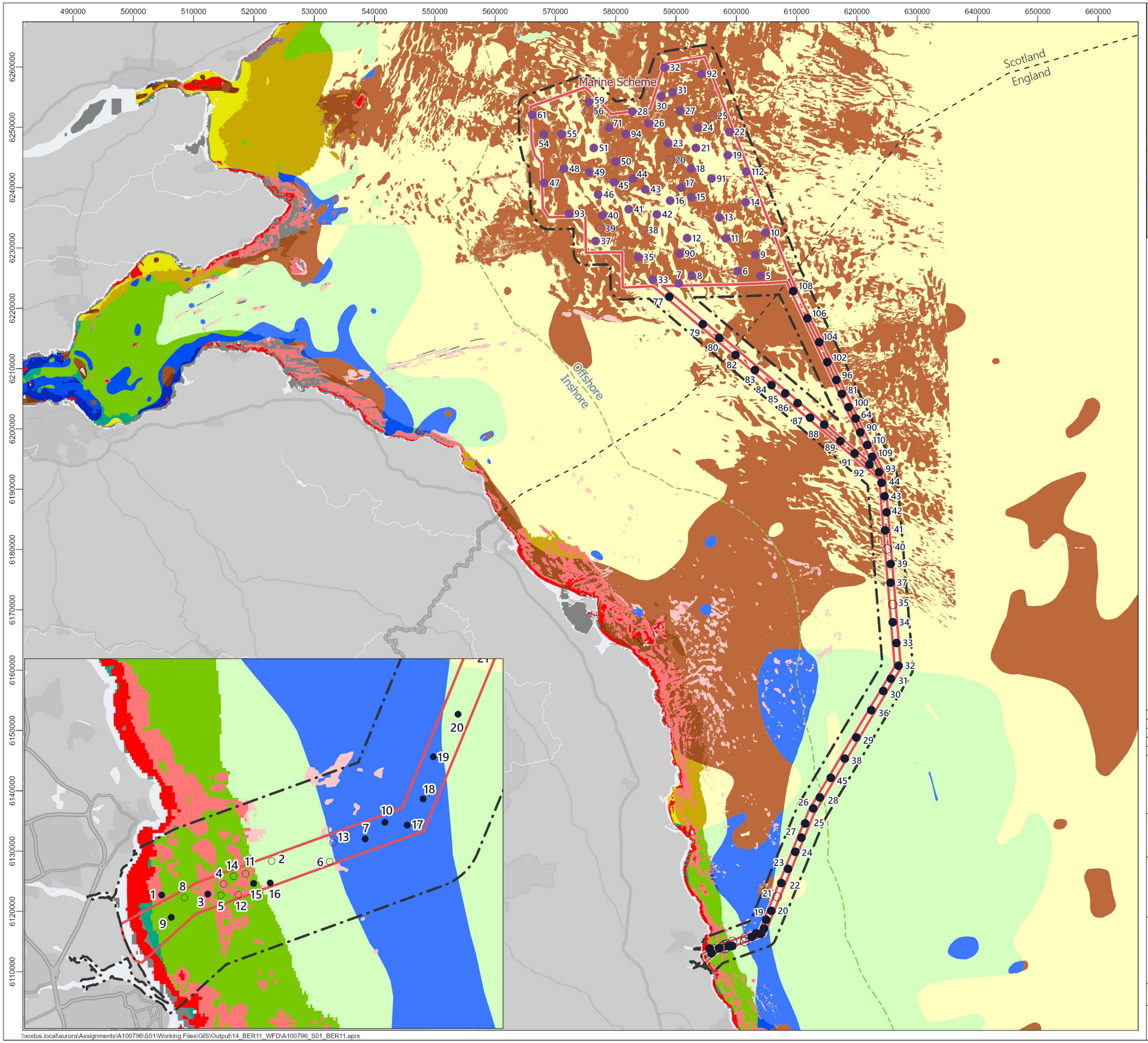

Legend

- Marine Scheme Boundary
- Marine Scheme Boundary Buffer (2 km)

Benthic Sampling Stations

- Combined Grab and DDV Sample (Cambois)
- DDV Only Sample (Cambois)
- Combined Grab and DDV Sample (Berwick Bank)
- DDV Only Sample (Berwick Bank)
- UK 12 Nautical Mile Limit
- Scotland/England Territorial Waters

EUSeaMap (2021) MSFD Benthic Broad Habitat Types

- Infralittoral Coarse Sediment
- Infralittoral Rock and Biogenic Reef
- Infralittoral Sand
- Infralittoral Mud
- Circalittoral Rock and Biogenic Reef
- Circalittoral Sand
- Circalittoral Mud
- Offshore Circalittoral Mixed Sediment
- Offshore Circalittoral Coarse Sediment
- Offshore Circalittoral Rock and Biogenic Reef
- Offshore Circalittoral Sand
- Offshore Circalittoral Mud

Rev	Date	Status	Drwn	Chkd	Appd
04	-	-	-	-	-
03	-	-	-	-	-
02	13/07/2023	Revised	TF	EW	EW
01	15/06/2023	Issued	TF	JO	EW

sse Renewables

Project

Cambois Connection

Title

Figure 1.4 Benthic Sampling Stations and Habitat Types Along the Marine Scheme

0 2.5 5 10 15 20 nm

0 2.5 5 10 15 20 25 30 km

N

Scale	Plot Size	Datum	Projection
1:600,000	A3	WGS84	UTM30N

Drawing Number: A100796_S01_BER11_4

Sheet No.: 001 OF 001

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1.5.4.1.6. ASSESSMENT OF POTENTIAL FOR DETERIORATION

103. The Environment Agency define deterioration as '*when the status of a quality element reduces by one class'*. If a quality element is already at the lowest status, any reduction in its condition is generally counted as deterioration. The potential effects associated with the Marine Scheme will be limited both spatially and temporally, as set out in this assessment and described in Volume 2, Chapter 5: Project Description.

104. For the reasons explained within this impact assessment (Section 1.5.4.1), no deterioration in the classification of the waterbodies considered within this assessment is expected to occur. Therefore, the Marine Scheme will not result in a reduction of the WFD classification of any waterbodies within or adjacent to the Marine Scheme, nor put at risk the good status or potential of any waterbodies within or adjacent to the Marine Scheme and not inhibit any waterbodies from progressing towards good status or potential which are located within or adjacent to the Marine Scheme. The conclusion is relevant to the Marine Scheme and with respect to the cumulative Blyth Demonstration Phase 2 (and 3) Cable Corridor.

1.5.4.2. PROTECTED AREAS

105. The Marine Scheme intersects or is within 200 m of the following nature conservation protected areas:

- Northumberland Marine SPA (intersects);
- Northumbria Coast SPA (45 m away at closest point);
- Berwick to St Mary's MCZ (intersects); and
- Coquet to St Mary's MCZ (intersects).

106. The Marine Scheme is also within 2 km of the Farnes East MCZ although in offshore waters (i.e., beyond 12 nm); it is not considered further within this WFD assessment (for further detail, please refer to the MPA and MCZ Assessment, submitted as supporting documentation).

1.5.4.2.1. NORTHUMBERLAND MARINE SPA, NORTHUMBRIA COAST SPA AND THE BERWICK TO ST MARY'S MCZ, ALL DESIGNATED BASED ON ORNITHOLOGICAL FEATURES

107. Northumberland Marine SPA, Northumbria Coast SPA and the Berwick to St Mary's MCZ sites are all designated based on ornithological features, a detailed account of which is supplied within Volume 2, Chapter 10: Offshore and Intertidal Ornithology. To support the Marine Licence Application for the Marine Scheme, the Applicant has also provided a Report to Inform Appropriate Assessment (RIAA) to support the Marine Licence Application (MLA). This has been informed by the detailed Habitats Regulations Assessment (HRA) Screening exercise carried out by the Applicant in Spring 2023 to assess the potential for a Likely Significant Effect (LSE) on European Sites (BBWFL, 2023).

108. In order to consider the potential impacts on MCZs arising from the Marine Scheme and the potential for the Marine Scheme to impede the conservation objectives of relevant MCZs, the Applicant has also provided an MCZ Assessment; this can be found as supporting documentation to this MLA.

109. The ornithologically-focused conclusions of these assessments are surmised in Table 1.14 below.

Table 1.14 Summary of ornithological conclusions from RIAA and MPA and MCZ Assessments

Protected Area	Features	Pathways Considered	Significant Effect Identified[9]

Northumberland Marine SPA	• Guillemot (*Uria aalge*) (Breeding)
	• Common tern (*Sterna hirundo*) (Breeding)
	• Little tern (*Sterna albifrons*) (Breeding)
	• Sandwich tern (*Sterna sandvicensis*) (Breeding)
	• Arctic tern (*Sterna paradisaea)* (Breeding)
	• Puffin (*Fratercula arctica*) (Breeding)
	• Roseate tern (*Sterna dougallii*) (Breeding)
	• Seabird assemblage (breeding) including the components:
	  ○ Cormorant (*Phalacrocorax carbo)*
	  ○ Shag (*Gulosus aristotelis*)
	  ○ Black-headed gull (*Chroicocephalus ridibundus*)
	• Kittiwake (*Rissa tridactyla*)
		Vessel Disturbance, Nearshore Construction (and Decommissioning) Activity; Long-term habitat loss, and Changes in prey availability.	Screened-In as part of the Stage One HRA Screening (BBWFL, 2023) and assessed in-detail within the RIAA.
			
			The Applicant subsequently concluded that the Marine Scheme will not lead to an Adverse Effect on Site Integrity (AEOSI) for the Northumberland Marine SPA or any of its supporting qualifying features.
			
			This assessment included a full appraisal of potential in-combination effects; the conclusions remained the same (no AEOSI).
			
			Whilst this is a HRA-specific conclusion, in EIA terms, this is considered **not significant**.

Northumbria Coast SPA	• Little tern (Breeding) • Turnstone (*Arenaria interpres*) (Non-breeding) • Purple sandpiper (*Calidris maritima*) (Non-breeding) • Arctic tern (Breeding)	Vessel Disturbance, Nearshore Construction (and Decommissioning) Activity; Long-term habitat loss, and Changes in prey availability.	Screened-In as part of the Stage One HRA Screening (BBWFL, 2023) and assessed in-detail within the RIAA. The Applicant subsequently concluded that the Marine Scheme will not lead to an AEOSI for the Northumberland Marine SPA or any of its supporting qualifying features. This assessment included a full appraisal of potential in-combination effects; the conclusions remained the same (no AEOSI).

[9] The term 'significance' is used here for consistency with the terminology used elsewhere in this assessment however it is important to note that for HRA and MCZ-specific assessments, the terminology used may differ. The topic-specific conclusions from separate assessments are provided in this table but supported with an equivalent EIA terminology descriptor. For further details regarding the EIA methodology, please refer to Volume 1, Chapter 3: EIA Methodology.

Protected Area	Features	Pathways Considered	Significant Effect Identified[9]
			Whilst this is a HRA-specific conclusion, in EIA terms, this is considered **not significant**.
Berwick to St Mary's MCZ	Breeding and non-breeding Common eider *Somateria mollissima*	Temporary visual and auditory disturbance	The designated feature of the Berwick to St Mary's MCZ was identified as having the potential to be affected by the Marine Scheme and was therefore Screened-In for a full assessment. The Applicant subsequently concluded that that there is no significant risk of the Marine Scheme hindering the achievement of the conservation objectives stated for the MCZ. This assessment included a full appraisal of potential cumulative effects; the conclusions remained the same (no risk of hindering the achievement of the conservation objectives stated for the MCZ). Whilst this is an MCZ-specific conclusion, in EIA terms, this is considered **not significant**.

110. As outlined above, no significant effects have been identified through these topic-specific assessments, with respect to the Marine Scheme or cumulatively / in-combination nearby cumulative projects. Furthermore, the preceding appraisals within this WFD assessment conclude that activities associated with the Marine Scheme, and their related impact pathways, will not result in significant effects to any identified receptors (i.e., hydromorphology, habitats and water quality). As a result, it is considered that the Marine Scheme does not present a risk to any of the qualifying features for which the identified SPAs and ornithologically-focused MCZ are designated. The protected areas above are therefore not considered further and the remainder of this WFD impact assessment is focused on Coquet to St Mary's MCZ (directly intersected by the Marine Scheme).

1.5.4.2.2. COQUET TO ST MARY'S MCZ

111. The Coquet to St Mary's MCZ, which was designated in January 2016, is located entirely within inshore waters along the Northumberland coast covering a total area of approximately 192 km2. The site is designated for: Low energy intertidal rock; Moderate energy intertidal rock; High energy intertidal rock; Intertidal mixed sediments; Intertidal coarse sediment; Intertidal sand and muddy sand; Intertidal mud; Intertidal under-boulder communities; Peat and clay exposures; Moderate energy infralittoral rock; High energy infralittoral rock; Moderate energy circalittoral rock; Subtidal coarse sediment; Subtidal sand; Subtidal mixed sediments; and Subtidal mud.

112. The general management approach for all of these features is 'maintain in favourable condition'. The seabed protected by this site is made up of rock, sand, mud and sediment as detailed above.

This range of habitats provides a home for a large variety of marine life. The coarse sediment found within the MCZ is home to animals such as bristleworms, sand mason worms, small shrimp-like animals, burrowing anemones, and cockles. Rocks in shallow water (infralittoral rocks) are a key habitat for kelp and red seaweed, whilst the deep water (circalittoral) rock is a habitat for cup coral, sea-fans, and anemones, and sponges. These animals thrive in this deeper water where there is not enough sunlight for algal life to grow.

113. These complex habitats and communities also support mobile species such as starfish, sea urchins, crabs, and lobsters. When this site was surveyed, amongst the species recorded, is the first ever Arctic cushion star, a starfish, on the English coast. The site also supports a range of intertidal habitats, which are above water at low tide and underwater at high tide. One of these habitats is intertidal under-boulder communities. Boulders create shaded areas that provide a refuge to sea squirts, sea mats, and sponges. The undersides of the boulder provide a habitat for animals like sea slugs, long-clawed porcelain crabs and brittlestars, which shelter and feed in the damp shaded conditions. Crabs, fish and young lobsters also scavenge for food and seek shelter amongst the boulders.

114. Multibeam echosounder (MBES) bathymetry and backscatter data was collected within the MCZ between January and March 2014, followed by a ground truth survey between July and September 2014 in support of the recommendation to designate the MCZ at the time (Defra, 2015). Ninety-five target sampling stations were identified for the collection of ground truth data within the MCZ. This selection of stations was deemed to give the best possible representation of the MCZ and potential broadscale habitats.

115. There are some significant differences between the original Site Assessment Document (SAD) (NetGain, 2011) and the survey results. High energy infralittoral rock, moderate energy infralittoral rock, subtidal course sediment and subtidal mixed sediments were not found to be present within the MCZ. However, results from the ground truth survey indicated significantly higher than predicted levels of habitats; this included subtidal sand with an approximate extent of 51.76 km2 (~51.63 km2 more than the previous estimate) and subtidal mud with an approximate extent of 47.00 km2 (~46.84 km2 than the previous estimate). Further analysis of the 2014 data was carried out by Natural England as part of a review of the MCZ to confirm the potential presence of an undesignated habitat feature of conservation interest – sea-pen and burrowing megafauna communities' – within the MCZ (Natural England, 2022).

116. On the basis of the results of the site specific geophysical and benthic surveys, the protected features expected within the zone of influence for direct disturbance are limited to Moderate energy circalittoral rock (A4.2) and Sublittoral sand (A5.2); the conclusions from the MCZ Assessment with respect to the Marine Scheme and cumulative nearby projects are provided below.

Direct Disturbance

117. The extent and distribution of the moderate energy circalittoral rock feature will be maintained in the long term following cable installation activities, as there is no potential for removal or relocation of the rock substrate. The epifauna associated with the rocky reef habitat will be minimally impacted in terms of spatial extent within the MCZ and would be expected to recolonise quickly following abrasion as they are characterised by rapid growth and early reproduction as well as multiple reproductive phases. With respect to the associated biological communities, the structure and functions, quality, and the composition of these biotopes will be therefore maintained.

118. The extent and distribution of the sublittoral sand feature will be maintained in the long term following cable installation activities, with only a small proportion of the total extent of this feature within the MCZ affected. The temporary disturbance effects on the sublittoral sand feature resulting from the installation activities will be temporary and reversible with recovery of sediments occurring following completion of installation.

119. The sediment composition of the sublittoral sand protected feature is unlikely to be affected by temporary habitat disturbance resulting from cable installation and preparation activities. Whilst trenching and HDD activities will temporarily remove sediment, it will be deposited locally, and the high rate of sedimentation in this moderate energy environment will ensure rapid redistribution of

material. Since no sediment is being removed from the area, this is considered unlikely to represent a significant shift in the baseline situation.

120. With respect to the biological communities that have a core role in determining the structure and function of the sublittoral sand feature, it is considered that they will be minimally affected, with only a small proportion (7% within the Marine Scheme) of the total extent of this feature within the MCZ affected, enabling the maintenance of characteristic communities in this feature. Following temporary habitat disturbance, a full recovery of these communities into the affected areas would be expected within a few years following disturbance. These processes ensure that the key and influential species and characteristic communities of protected feature will be maintained in the long term across the Coquet to St Mary's MCZ.

121. For direct disturbance, it is therefore concluded that that there is no significant risk of the Marine Scheme or cumulative projects hindering the achievement of the conservation objectives stated for the MCZ.

Indirect Disturbance

122. The extent and distribution of the moderate energy circalittoral rock feature will be maintained in the long term following cable installation activities, as any immediate deposition of relocated sediment from trenching activities is expected to be highly localised and transported off the rock feature in the short term due to the high energy environment.

123. The deposition of sand sediment onto the moderate energy circalittoral rock feature would constitute a highly localised loss of this feature. The extent of this deposition would be in the immediate vicinity of cable burial activities, and therefore highly localised, and could persist for months. However, over time the flow regime in the region would be expected to remobilise this unconsolidated sediment and the rock feature would be re-exposed and thus reinstated. This process would be expected to be accelerated in the instance of any storm events. Therefore, the extent and distribution of the moderate energy circalittoral rock feature would be maintained in the long term.

124. The structure and function of the feature is in relation to its function as an Annex I habitat providing suitable substrate for colonisation by epilithic communities, in this case the identified biotope 'Flustra foliacea on slightly scoured silty circalittoral rock' (CR.MCR.EcCr.FaAlCr.Flu). The low magnitude of high levels of potential sedimentation and moderate levels of energy in the environment mean that deposited sediment would be expected to be quickly dispersed, and epilithic communities would remain or recover, either through survival of the depositional event or via recruitment from adjacent areas. The most likely case is low level sedimentation from a plume as it advects over the area. Rocky reef biotopes have low sensitivity to low levels of SSC in terms of water clarity and deposition. Likewise, any resuspension of sediment contaminants is not expected to significantly increase exposure above background levels/ The quality and function of this feature will therefore be maintained in the long term.

125. The extent and distribution of the circalittoral sand feature will be maintained in the long term following cable installation activities, as any immediate deposition of relocated sediment from trenching activities is expected to be highly localised, will constitute native material and be quickly incorporated into the sediment transport system. Further deposition of sediment from plumes is expected to be in the order of millimetres of deposition and will not impact the extent or distribution of the feature.

126. The structure and function of the feature including the composition of characteristic communities, will remain in (or recover to) a condition which is healthy and not deteriorating. Recovery of the seabed sediment will occur within a few tidal cycles following with completion of construction activities. The key and influential species are tolerant of the effects of SSC, with full recovery of characteristic communities expected.

127. For indirect disturbance, it is therefore also concluded that that there is no significant risk of the Marine Scheme or cumulative projects hindering the achievement of the conservation objectives stated for the MCZ.

1.5.5. Conclusion of WFD Assessment

128. Building on the existing pre-application discussions held with the Environment Agency and formal consultation in advance of the Marine Licence Application, the Applicant has followed a sequential process to demonstrate full compliance with the WFD.

129. Through the staged process followed by the Applicant, the assessment indicates that based on the nature of the Marine Scheme (as detailed in Volume 2, Chapter 5: Project Description), there is potential for some spatially and temporally limited effects to occur as a result of the installation of Offshore Export Cables and the trenchless process at the Landfall.

130. Following the WFD Screening exercise carried out by the Applicant, WFD Scoping indicated that a WFD Impact Assessment was required for biology (habitats) and four protected areas located within or adjacent to the Marine Scheme.

131. Effects of the Marine Scheme during construction, and the presence of Offshore Export Cables / potential cable protection during operation and maintenance, are expected to be of local spatial extent, long term duration and highly reversible, resulting in effects that are of minor adverse significance. Effects during decommissioning are also predicted to be of minor adverse significance. Based on a review of nearby cumulative projects within the WFD study area, no cumulative impacts have been identified which could give rise to a significant adverse effect or a deterioration of waterbodies. Therefore, considering the potential for cumulative effects, the conclusions of the WFD assessment remain valid (i.e., minor adverse significance and no deterioration of waterbodies).

132. Having considered potential effects further and the two topics required for impact assessment, it is concluded that the Marine Scheme will not result in a deterioration of waterbodies, will not put at risk the ‘good’ status of waterbodies or the potential of any waterbodies and will not inhibit any waterbodies from progressing toward ‘good’ status or potential.

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1.7. Annex A: Environment Agency Correspondence

1 RESPONSE TO THE ENVIRONMENT AGENCY WITH RESPECT TO THE WATER AND SEDIMENT QULAITY TOPIC

1.1 Introduction

Thank you for your recent feedback on the Scoping Report prepared for the Cambois Connection Marine Scheme.

With regards to comments provided within the Scoping consultee comments for the Marine Scheme of the Berwick Bank Cambois Connection Project ("Marine Scheme") (Environment Agency, 2023), we would like to clarify and update information presented within the Scoping Report (Section 2 SSER, 2022a). Based on this clarification, we are hopeful that this help to justify the conclusion to scope out the water and sediment quality receptor topic.

1.2 Status of Water Framework Directive (WFD) Protected Areas and the Physical Environment

As correctly stated in your response, the Marine Scheme of the associated water and sediment quality study area does intersect with a number of Water Framework Directive (WFD) protected areas. In the case of WFD protected waterbodies, this includes Wansbeck Estuary, Blyth (N) and Tyne and Wear, which directly intersect with the Marine Scheme, while Northumberland South intersects with the applied water and sediment quality study area (defined as 10 km from the Scoping Boundary). The status of the waterbodies that intersect the Marine Scheme or study area based on assessments in 2011, 2015 and 2019 (UK Government, 2022) are summarised in Table 1.1.

Table 1.1 WFD waterbody status from cycle 3 (2019) and cycle 2 (2011 and 2015) reviews for waterbodies that intersect the applied study area (UK Government, 2022)

	CLASSIFICATION	TYNE AND WEAR	WANSBECK ESTUARY	BLYTH (N)	NORTHUMBERLAND SOUTH
Waterbody ID		GB650301500002	GB510302210100	GB510302203200	GB650301500001
Waterbody Category		Coastal	Transitional	Transitional	Coastal
Hydromorphological Designation		Not designated artificial or heavily modified	Heavily modified	Heavily modified	Not designated artificial or heavily modified
Surface Area (km^2)		126.569	0.604	1.72	104.781
2019 (cycle 3)	Overall	Moderate	Moderate	Moderate	Moderate
	Ecological	Good	Moderate	Moderate	Good
	Chemical	Fail	Fail	Fail	Fail
2015 (cycle 2)	Overall	Good	Moderate	Moderate	Good
	Ecological	Good	Moderate	Moderate	Good

	CLASSIFICATION	TYNE AND WEAR	WANSBECK ESTUARY	BLYTH (N)	NORTHUMBERLAND SOUTH
	Chemical	Good	Good	Good	Good
2011 (cycle 2)	Overall	Good	Moderate	Good	Good
	Ecological	Good	Moderate	Good	Good
	Chemical	Good	Does not require assessment	Does not require assessment	Does not require assessment

Although the Marine Scheme does not directly intersect with any Bathing Waters or Shellfish Waters, it is noted that that the applied study area overlaps with Newbiggin North (UK04400), Newbiggin South (UK04500) and Blyth South Beach (UK04600) Bathing Waters (Defra, 2022a). A review of the status and conditions of these Bathing Waters and the approximate distance of the Bathing Waters from the Marine Scheme are summarised in Table 1.2. No shellfish waters intersect with the Marine Scheme or applied study area (the closest designated Shellfish Waters can be found at Holy Island, approximately 60 km to the north of the cable landfall at Cambois (Defra, 2022b)).

Table 1.2 Designated Bathing Waters within the applied study area (Defra, 2022a; Environmental Agency, 2022).

SITE (ID)	APPROXIMATE DISTANCE FROM MARINE SCHEME (KM)	CURRENT COMPLIANCE RESULT	COMPLIANCE RESULT IN 2016	COMPLIANCE RESULT IN 2013
Newbiggin North (UK04400)	2.5	excellent	excellent	guideline
Newbiggin South (UK04500)	2	excellent	excellent	guideline
Blyth South Beach (UK04600)	1.2	excellent	excellent	guideline
Whitley Bay (UK04800)	8.2	excellent	excellent	guideline
Seaton Sluice (UK04700)	3.5	excellent	excellent	guideline

As presented within the Scoping Report (SSER, 2022a), information from the Marine Scotland Clean Seas Environmental Monitoring Programme (CSEMP) which provided an assessment of sediment contamination concentrations within the Forth, at the Tees Estuary, and further offshore, did not identify any sediment quality issues. Furthermore, information from the Centre for Environment, Fisheries and Aquaculture (Cefas) OneBenthic tool demonstrated that samples on the seaward side of the Blyth harbour wall typically exhibit levels of contamination which fall below Cefas Action Level 1, while highly contaminated sediments within Blyth Harbour are not dredged and disposed in the designated offshore disposal areas. As demonstrated in Section 1.3 below, the landfall for the Marine Scheme is on the beach of Cambois Bay and does not extend into Blyth Estuary, where there may be the potential for historic contamination. It should also be noted that consideration of historic contamination within Blyth Estuary and terrestrial WFD protected areas will be considered as part of the Onshore Scheme (SSER, 2022b). Therefore, based on the available strategic data there are no known sediment quality issues within the water and sediment quality study area.

1.3 Project Description

The Project Description for the Marine Scheme as presented within Section 3 of the Scoping Report (SSER, 2022a) summarised the potential pre-installation clearance activities, cable installation and protection methods, landfall methodology, operational and maintenance including remedial methods and decommissioning activities. Since submission of the Scoping Report (SSER, 2022a), further refinement of the cable landfall has been undertaken. The proposed landfall for the Marine Scheme is on the beach at Cambois Bay, comprising an open sandy bay illustrated in a recent site photo (Image 1).

Image 1: Indicative landfall for the Marine Scheme on the beach at Cambois Bay.

The impact pathway to water and sediment quality receptors, comprising designated waterbodies, bathing waters and shellfish waters, as a result of the Marine Scheme was identified as the potential for increased suspended concentration or release of contaminants, as a result of Project activities. Designed in measures for the Marine Scheme include the implementation of Construction Environmental Management Plan (CEMP) and Operation Environmental

Management Plan (OEMP). The CEMP and OEMP would be expected to be inclusive of Marine Pollution Contingency and Control Plan as well as vessel management and discharge control in line with the MARPOL[1] convention.

1.4 Assessment

As a result of the impact pathways and designed in measures, the Scoping Report identified the following impacts, which have also been updated to reflect the presence of the WFD protected area:

- Construction and Decommissioning: Potential impacts to designated waterbodies, bathing and shellfish waters as a result of increased suspended sediment concentration and potential release of contaminants; and
- Operation and Maintenance: Potential impacts to designated waterbodies, bathing and shellfish waters as a result of increased suspended sediment concentration and potential release of contaminants.

The following assessment is completed to evaluate for the potential impacts on water and sediment quality receptors on the basis of the Project Description for the Marine Scheme and the potential impact pathways, noting that the landfall for the Marine Scheme is on the beach of Cambois Bay.

1.4.1 Construction and Decommissioning: Potential impacts to designated waterbodies, bathing and shellfish waters as a result of increased suspended sediment concentration and potential release of contaminants

Any potential impacts associated with increased suspended sediment concentrations and the potential release of contaminants as a result of installation or decommissioning works are anticipated to be highly localised and temporary. The proposed clearance and installation (potentially using methods such as mass flow excavator) would only be short in duration. As stated in the Marine Scheme Project Description (SSER, 2022a), the installation program is expected to take three to six months overall. However, the actual installation in any given location will mostly be on the order of hours to days. The maximum plume extents would be on the order of 4 km associated with the mean spring tidal excursion distance as informed by the Section 6: Offshore Physical Environment and Seabed Conditions of the Scoping Report (SSER, 2022a). Increased concentrations would be largest in close proximity to the disturbance site. The relatively coarse seabed fraction comprising mainly of sand (based on Figure 6.2 of the Scoping Report) means that the largest proportion of sediment would be quickly redeposited to seabed within tens to hundreds of metres from the disturbance site. In locations of muddy sand along the cable corridor, the plume extent associated with the clearance and installation activities would still be on the order of the tidal excursion. Along the offshore export cable route and at the landfall, the dispersive nature of the environment, associated with the mean spring flow speeds of up to 0.6 m/s means that volume of disturbed sediment would be diluted within the plume. Should horizontal directional drilling (HDD) be employed as the landfall methodology, drilled material will be removed and processed onshore at the terrestrial drill site, with minimal releases in the marine environment, in line with best practice guidance. The exception is at drilling of the HDD exit, where relatively low volumes of drilling fluids could be released on punch-out. The drilling fluids could include bentonite, which is a Cefas authorised 'PLONOR'[2] substance

[1] *International Convention for the Prevention of Pollution from Ships*

[2] Substance which has been independently evaluated and which is considered to Pose Little to No Risk ("PLONAR") to the environment.

and therefore considered to pose little or no risk to the environment. In the event that an open cut approach is adopted, cable trenching in the intertidal area may use similar techniques to those already described above for the offshore export cable route, noting that amphibious plant may also be required (as detailed within the Project Description for the Marine Scheme (SSER, 2022a).

With respect to the potential disturbance of contaminated sediment, available background data from near the landfall and further offshore indicate no contaminants are present, as summarised in Section 1.2 above, therefore the potential for these occurring within the Marine Scheme are considered to be low. Should any contaminant be disturbed, it would be diluted and either redeposited quickly with the sediment in close proximity to the disturbance site or form part of the plume to be deposited within the tidal excursion distance.

The Marine Scheme directly intersects two transitional and one coastal waterbody (i.e. Wansbeck Estuary, Blyth (N) and Tyne and Wear respectively) and no Bathing Waters, although the applied study area (based on a 10 km buffer) intersects with a further waterbody and Bathing Waters. In terms of the WFD protected areas that directly intersect the Marine Scheme or study area, all waterbodies have an overall status of moderate based on the 2019 (cycle 3 assessment,), with good or moderate ecological status and fail chemical status (Table 1.1). The 2019 status is either the same or has declined from earlier assessments (i.e. based on cycle 2 reviews in 2011 and 2015), as set out in Table 1.1. It is noted that the reason for the chemical fail is due to the occurrence of chemical contaminants associated with the occurrence of ubiquitous, persistent, bioaccumulative and toxic substances (uPBTs) as a change in the assessment process. Without the inclusion of uPBTs, the chemical status for waterbodies is noted as good. The Marine Scheme does not intersect with any Bathing Waters, however, intersects the applied study area with five designated bathing waters, which are all noted as being excellent and have improved on previous assessments. As noted above, there are no designated shellfish waters that intersect the Marine Scheme or study area.

The short duration and localised nature of the landfall and cable installation works means the sediment disturbance, increases in suspended sediment concentration or potential release of contaminants would be short-lived and transient with the offshore progress of construction activities. The flow speeds and metocean regime that occurs at landfall and along the offshore export cable corridor means that disturbed sediment would be diluted adding to the temporary nature of the effect. Overall, the construction activities are not considered to be able to alter the status of WFD protected areas, which occur over much larger extents compared with the footprint of proposed works and the status are set on much wider chemical parameters for which there is no pathway for introduction by the proposed construction activity. The disturbance of sediment associated with construction activities is also not enough to alter the status, as the clearance and installation disturbance would be akin to the occurrence and seabed mixing caused by storm events. For the reasons that the works are short in duration and temporary, activities are transient and predominantly localised to within a few hundred metres of the disturbance activity and standard best practice and industry guidance will be applied during construction and decommissioning, it is proposed that the impact to WFD protected areas is scoped out from further assessment within the Environmental Impact Assessment (EIA). However, should it be deemed necessary through consultation with Statutory consultees, a WFD Screening and Scoping can be completed to evaluate for the potential interaction between the Marine Scheme and WFD protected areas.

1.4.2 Operation and Maintenance: Potential impacts to designated waterbodies, bathing and shellfish waters as a result of increased suspended sediment concentration and potential release of contaminants

Potential operation and maintenance activities include monitoring surveys and remedial works including repair and reburial or the use of rock protection, should it be required. Any remedial works, if necessary, would again be short-term and very localised, with the disturbance extents less than what can be expected for construction activities. Therefore, for the same reasons as discussed for construction activities in section 1.4.1 above, operation and maintenance activities are not considered to be able to alter the status of WFD protected areas, which occur over much larger extents compared with the footprint of proposed works. It is therefore proposed that the impact to WFD protected area associated with the operational phase is also scoped out from further assessment within the EIA.

1.5 Conclusion

On the basis of the above assessment, which accounts for potential impacts to WFD protected areas and based on the Project Description as presented within the Scoping Report (SSER, 2022a), it is still proposed that the potential impacts to water and sediment quality receptors associated with construction and decommissioning, and operation and maintenance phases be scoped out. As a result, it is also proposed that the water and sediment quality topic also be scoped out from further assessment within the EIA as the impact pathways are demonstrated to not ultimately impact the status of WFD protected areas. However, should it be deemed necessary through consultation with Statutory consultees, a WFD Screening and Scoping can be completed to evaluate for the potential interaction between the Marine Scheme and WFD protected areas.

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Environment Agency

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ML1 4YQ

Our ref: NA/2023/116222/01-L01
Your ref: Cambois Connection Project

Date: 26 April 2023

Dear Kerrie

CHARGED PLANNING ADVICE (ENVPAC/1/NEA/00129) CAMBOIS CONNECTION PROJECT: MARINE SCHEME

We are pleased to provide planning advice on the above development proposal. We have reviewed the following information:

- Water & Soil Quality technical note (02 March 2023)

Advice requested

- SSE Renewables are seeking a review by the Environment Agency of a technical note to agree scoping Marine Water and Sediment Quality out of further assessments.

Environment Agency Comments

We have reviewed the provided Water and Sediment Quality technical note which concludes that water and sediment quality can be scoped out from further assessment within the EIA, as the impact pathways are demonstrated to not ultimately impact the status of WFD protected areas. We **agree** with the conclusions of this report, that the application as submitted can scope out water and sediment quality from further assessments.

We are satisfied with the justification provided that the impacts caused by this proposal will be small and temporary in nature, which is unlikely to have any impact on WFD classification.

We also have the following additional advice to offer:

Construction Environment Management Plan – Informative

In the Environmental Impact Assessment Scoping Report, it is stated that a Construction Environment Management Plan (CEMP) will be developed and employed. We would request to see the developed CEMP when available within a future stage of the application process, to provide us with reassurance that water

quality impacts can be appropriately managed.

We would advise that the plan should include, but not be limited to, the following:

- Approach to minimise disturbance of coastal sediments.
- It is likely that there are Northumbrian Water Group (NWG) assets within the construction area boundary. As such, contact should be made with NWG to ensure that construction does not impact their assets.
- Measures in place to ensure each stage of works, in particular concrete and welding activities, do not pollute the wider coastal environment.
- Management of fuel and chemical spills during construction and operation, including a process in place to ensure the environment is not detrimentally impacted in the event of a spill.

Sediment Sample Results – Informative

On page 38 of the Environmental Impact Assessment (EIA) Scoping Report (November 2022) it is stated that 'site specific benthic and geophysical surveys for the offshore export cable corridor are being undertaken throughout 2022. As part of the benthic survey scope, sediment samples will be taken in order to assess sediment contaminant levels.'

As these samples are proposed to have already been taken, we would recommend that they are presented as part of this application to further support the conclusions regarding water quality impacts.

Please do not hesitate to contact me on the below if you have any questions about the advice in this letter.

Yours sincerely,

Cameron Chandler
Planning Advisor

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