



Eastern Green Link 2 - Marine Scheme

Environmental Appraisal Report

Volume 3

Appendix 7.1 - Water Framework Directive Compliance Report

nationalgrid



National Grid Electricity Transmission and Scottish Hydro Electric Transmission plc

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7.1 Water Framework Directive Compliance Assessment

7.1.1 Introduction

National Grid Electricity Transmission (NGET) and Scottish Hydro Electric Transmission plc (SHE Transmission) are jointly developing a submarine High Voltage Direct Current (HVDC) link between Peterhead in Aberdeenshire and Drax in North Yorkshire, referred to as the Eastern Green Link 2 (hereafter referred to as 'the Project'). NGET is the Transmission Operator (TO) within the English jurisdiction and SHE Transmission is the TO within the Scottish jurisdiction. Eastern Green Link 2 is a major reinforcement of the electricity transmission system which will provide additional transmission capacity between Scotland and England. This reinforcement is essential to ensuring an efficient network that can facilitate achieving the net-zero target.

The Project specifically comprises of the following three components:

- **Scottish Onshore Scheme:** From the existing transmission system and an adjacent substation approximately 1 km of buried high voltage alternating current (HVAC) cable will connect to a proposed converter station. A further approximately 1 km of buried HVDC will extend from the proposed converter station to the landfall at Sandford Bay, Peterhead. The scope of the Scottish Onshore Scheme ends at MLWS, and is covered by a separate consent application which was submitted in November 2021 to Aberdeenshire Council and permission granted in May 2022 (APP/2021/2681);
- **Marine Scheme:** Commencing at MHWS within Sandford Bay, approximately 436 km of submarine HVDC cable, comprising 150 km in Scottish waters and 286, km in English waters, will extend to MHWS at Fraisthorpe Sands on the East Riding of Yorkshire coast. This comprises the subject of the MLAs to MS-LOT and the MMO, which this EAR supports; and
- **English Onshore Scheme:** From MLWS at Fraisthorpe Sands, approximately 67 km of underground buried HVDC will connect to a proposed converter station in Drax within the Selby District. The proposed converter station will then connect to an existing substation within the boundary of the Drax Power Station by approximately 100 m of HVAC cable. This is subject to a separate consent application which was submitted to East Riding of Yorkshire Council (Planning Portal Ref: PP-11285186v1BZD) and Selby District Council (Planning Portal Ref: PP-11291708v1GQS) in May 2022.

NGET and SHE Transmission are submitting MLAs to MS-LOT and to the MMO for the marine elements of the Project referred to as the 'Marine Scheme', which extend between Mean High Water Springs (MHWS) at both the Scottish and English landfalls. This WFD Compliance Assessment Report refers to the Project Marine Scheme only.

To support these MLAs, an assessment has been carried out to consider the effects of the Marine Scheme in respect of the European Communities WFD 2006/60/EC, which has been retained in UK law following the UK's exit from Europe. The WFD is implemented in Scotland under the Water Environment and Water Services (Scotland) Act 2003 (HM Government, 2022) and in England under The Water Environment (WFD) (England and Wales) Regulations 2017 (HM Government, 2022) .

Consideration of the WFD is required for projects which have the potential to detrimentally impact the chemical and/or ecological status of a waterbody or to prevent improvements that may otherwise result in a waterbody meeting its WFD objectives. The WFD aim is for all waterbodies to be at good status. In a WFD assessment consideration must be shown if an activity will:

- Cause or contribute to deterioration of status; and / or
- Jeopardise the waterbody achieving good status in the future.

Activities associated with the Marine Scheme are considered to have the potential to impact the current or targeted status of WFD waterbodies with which it interacts in both Scottish and English waters. Thus, this WFD Compliance Assessment Report has been prepared with the aim of identifying the relevant WFD waterbodies located in proximity of the Marine Scheme and undertaking an assessment of the potential effects of the Project.

7.1.2 WFD Assessment Methodology

7.1.2.1 Background

The WFD (2000/60/EC) was published in December 2000 and transposed into Scottish law by the Water Environment and Water Services (Scotland) Act 2003 and into English law by The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. The published WFDs define coastal water bodies as the limit for the implementation of the Water Framework Directive. Coastal waters are limited to 3 nautical miles (NM) from Mean Low Water Springs (MLWS) in Section 3 (8) of the Water Environment and Water Services (Scotland) Act 2003, while coastal waters in England and Wales are defined by Schedule 1 of The WFD (England and Wales) Regulations 2017 as extending 1 NM of MLWS.

The intention of the Directive (and transposed regulations) is to provide a more holistic approach to the protection of the water environment, addressing a wide range of the aspects of the water environment including:

- Hydromorphological – specifically assesses elements such as water flow, sediment composition and movement, continuity and structure of the habitat against reference or ‘largely undisturbed conditions’;
- Biological – including biological quality elements such as the abundance of fish, invertebrates or aquatic flora and by the presence of invasive species;
- Physio-chemical – including environmental standards for supporting physio-chemical conditions, such as dissolved oxygen, phosphorus and ammonia;
- Chemical – defined by compliance with environmental standards for chemicals that are ‘priority substances’ and/or ‘priority hazardous substances’ in accordance with the Environmental Quality Standards Directive (2008/105/EC); and
- Specific pollutants – assessing compliance with environmental standards for concentrations of pollutants such as zinc, cypermethrin or arsenic.

The environmental objectives of the WFD are to:

- Prevent the deterioration of the status of the aquatic ecosystems whilst improving the ecological conditions of waters;
- Achieve at least Good Chemical and Ecological Status for surface waters and Good Chemical and Quantitative Status for groundwater bodies;
- Meet the requirements of WFD protected areas including Special Areas of Conservation (SACs), Special Protection Areas (SPAs), shellfish waters, bathing waters and nutrient sensitive areas;
- Promote sustainable use of water as a natural resource;
- Conserve habitats and species that depend directly on water;
- Make progress in reducing and/or phasing out the release of individual or groups of pollutants that present a significant threat to the aquatic environment;
- Continuously reduce the pollution of groundwater and prevent or limit the entry of pollutants; and
- Contribute to mitigating the effects of flood and droughts.

The Directive requires that the competent authority for implementing the WFD (in Scotland, Scottish Environment Protection Agency (SEPA) and in England, the Environment Agency (EA)) define River Basin Districts and for each of these develop a River Basin Management Plan (RBMP). As part of this process, all inland, transitional, and coastal waterbodies have been allocated status categories in order to help inform where waterbodies are at risk and/or protective/management measures are required. The most recent RBMP in the England was published in 2015. A draft plan was published in 2021, and updated plans are anticipated in 2022 (Environment Agency, 2021a). The RBMP in Scotland is separate from the English plan and was updated and published for use in December 2021 (Scottish Environment Protection Agency, 2022). Additionally, a specific Solway Tweed RBMP was prepared jointly by the Scottish Environment Protection Agency and the Environment Agency and updated in 2021 (Scottish Environment Protection Agency, 2022).

The WFD aims to protect and enhance (or improve) the ecological status/potential of all WFD waterbodies including surface waterbodies (i.e., rivers, lakes, transitional waters and coastal waters) and groundwater bodies. As such, it requires all natural waterbodies to achieve both Good Chemical Status and Good Ecological Status and all Artificial and Heavily Modified Waterbodies (AHMWB) to achieve Good Ecological Potential. There is also a requirement to view the water environment holistically, integrating water quality, quantity, and physical habitat with ecological indicators.

7.1.2.2 Assessment Process

In accordance with the EA guidance for completing WFD assessments for coastal and transitional waters (Environment Agency, 2017) and the Planning Inspectorate's Advice Note Eighteen (National Infrastructure Planning, 2022), a three-stage approach has been adopted:

- **Stage 1 (Screening)** - Excludes any activities that do not need to go through the scoping or impact assessment stages;
- **Stage 2 (Scoping)** - Identifies the receptors such as morphology, habitats, fish, invasive non-native species (INNS) and protected areas that are potentially at risk from the activities of the Marine Scheme and need impact assessment; and
- **Stage 3 (Impact Assessment)** - Considers the potential impacts of the activities, identifies ways to avoid or minimise impacts, and shows if the activities may cause deterioration or jeopardise the waterbody achieving good status.

Note that there is no respective guidance produced by SEPA for undertaking a WFD assessment in Scotland. Therefore, the assessment presented in this report follows the above guidance documents and utilises the resources and templates provided by the EA for this purpose.

7.1.3 Project Description

This WFD Compliance Assessment Report is for the Marine Scheme, comprising those components proposed within the marine area between MHWS at the Scottish landfall and MHWS at the English landfall. The Marine Installation Corridor for the Marine Scheme is shown in Figure 2.

As described in Chapter 2: Project Description of the Environmental Appraisal Report (EAR), the activities of the Marine Scheme that would occur within 1 NM of MLWS for England and Wales and 3 NM of MLWS for Scotland, where the WFD applies, are summarised in Table 1.

The indicative programme for the Marine Scheme to the point of operation is provided in Figure 1. The lifetime of the Marine Scheme is 40 years; however, this may be extended depending on the condition of the cables.

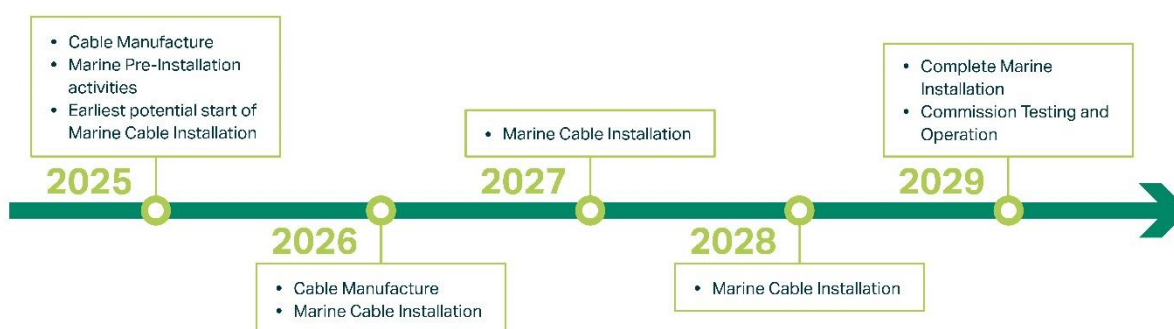
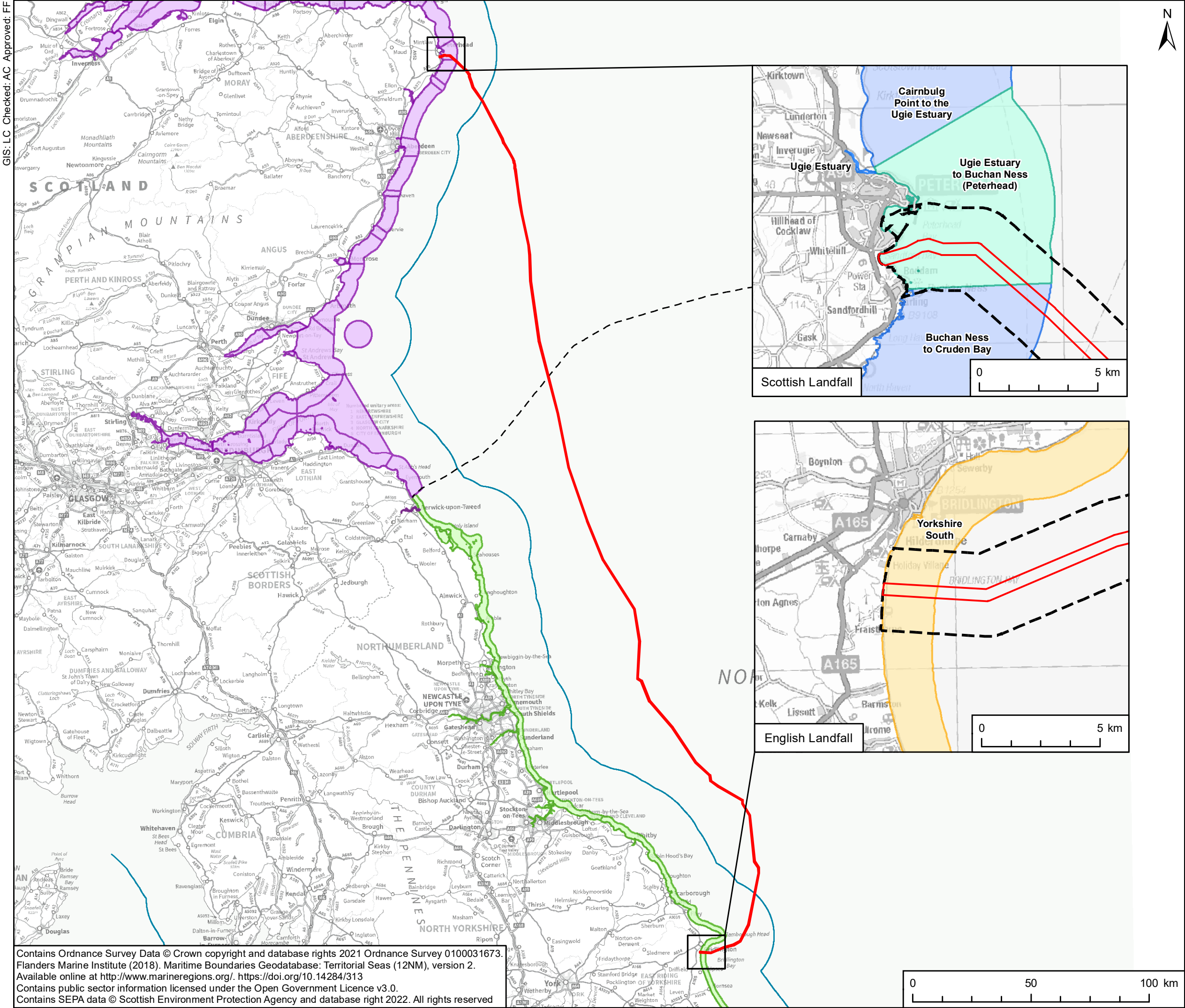


Figure 1: Indicative Marine Scheme Programme

Table 1: Summary of activities occurring within 1 NM / 3 NM of MLWS

Aspect	Description	Maximum Zone of Influence
Marine Installation Corridor	Width	500 m
Cable installation trenches	Number	Up to two trenches
	Depth of lowering	Minimum depth of lowering approximately 0.6 m. Target depth of lowering of approximately 1.5 m.
	Width	Width dependent on trenching tool utilised
	Disturbed area	Up to 25 m per trench, depending on trenching tool.
	Separation between trenches	30 m maximum separation
Route preparation	Use of boulder plough or grab to remove boulders.	Where required, across a swathe of 10 m to 25 m per cable trench.
	PLGR	Corridor of 1 m to 3 m per cable trench.
	Sandwave lowering	Footprint depends on density of seabed sediments. May be up to 10 m in width in loosely packed sands, but typically less than 6 m.
Crossing preparation	Concrete mattresses	Area up to 18 m ² (6 m x 3 m). Up to 0.3 m thick. Weigh up to 9.1 tonnes. Number provided per pole.
	Separator system	Use would be subject to crossing agreement. Number provided per pole.
	Pre-cast concrete bridge	
	Rock placement	See below
Landfall Installation	Completed boreholes	Boreholes up to 1.5 km in length and 660 mm in diameter.
	Aborted boreholes	
	HDD exit pit excavation	Area of the seabed directly affected by works associated with the excavation of exit pits at each landfall (including equipment spread). Depth of lowering is expected to be 1 m to 3 m. Temporary concrete mattresses used to protect borehole breakout within the exit pit prior to cable pull in. Each mattress covers 18 m ² .
	Pre trenching at landfalls to facilitate cable pull in.	Area of the seabed directly affected by works associated with the excavation pre-cut trenches at each landfall.
	Drilling fluid losses	2,000 m ³ of drilling fluids and 80 m ³ of solids (drill cuttings) to be discharged into the marine environment per borehole.
	Breakout point protection after installation of cable ducts	Anticipated that ducts and cables (within HDD exit pits and pre-cut trenches) will be buried using MFE or diver operated equipment or backfilled using rock placement. Concrete mattresses may be used as temporary protection at six per duct.
	Nearshore vessels	Area of seabed disturbance for jack-up barges as a result of spud cans
		Area of seabed disturbance for CLB. Each anchor up to 2 m in length and deployed up to 800 m from CLB within Marine Installation Corridor.
		Area of seabed disturbance for back-hoe dredger, which maintain position via anchors or spud can.

Aspect	Description	Maximum Zone of Influence
Cable trenching	Displacement plough	Corridor of disturbance swathe per trench is 10 m to 25 m wide. The actual disturbed seabed footprint due to ploughing is 2 m to 5 m, the remainder comprising the skids and berms either side of the ploughed seabed. If the displacement plough is used along the cable route within the parameters provided below, this would be instead of non-displacement methods, not in addition to.
	Non-displacement plough	Corridor of disturbance per trench is: <ul style="list-style-type: none"> • Ploughs – 8 m to 12 m. • Jet trenchers – up to 10 m • Mechanical trenchers – 8 m to 15 m
	MFE	Seabed footprint up to 10 m in width.
Cable laying	Simultaneous cable lay and trenching	1 km indicative vessel separation.
	Surface lay followed by post-lay trenching	Spatially and temporally separated.
Cable protection using rock placement	Protection of breakouts within exit pits	Protection of breakouts following excavation of exit pits within footprint of exit pits and pre-cut trench
	Third-party assets to be crossed	One cable crossing with an approximate footprint of at 4,100 m ² .
	External protection	Rock placement along Marine Installation Corridor per pole (excluding crossings). Approximately 6 km in length between KP 0 and KP11.0 totalling 0.084 km ² for separate lay.



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Flanders Marine Institute (2018). Maritime Boundaries Geodatabase: Territorial Seas (12NM), version 2.
Available online at <http://www.marineregions.org/>. <https://doi.org/10.14284/313>
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Coordinate System: WGS1984 Zone 30N

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PROJECT
Eastern Green Link 2

- KEY
- Marine Installation Corridor
 - Maximum Zone of Influence
 - UK Territorial Sea Limit
 - Scottish/English Water Border
 - Coastal/Estuaries Waterbody Classification - Scotland (SEPA)
 - WFD Transitional and Coastal Waterbody Cycle 2 - England (EA)
- Overall Waterbody Status
- High
 - Good Ecological Potential
 - Moderate

TITLE
**Figure 2
WFD Waterbodies**

REFERENCE
SEGL2_M_WFD_1_v3_20220623

SHEET NUMBER
1 of 1

DATE
23/06/2022

Scale @ A3 1:1,500,000 / 1:150,000

7.1.3.1 Embedded Mitigation Measures

The design of the Marine Scheme has facilitated mitigation with potentially significant effects avoided or minimised as far as reasonably practicable through the design process. A summary of mitigation considered embedded in the design of the Marine Scheme (and relevant to the scope of the WFD Compliance Assessment Report) is provided in Table 2 and in detail in Chapter 2: Project Description and Chapter 17: Schedule of Mitigation and Commitments.

Table 2: Embedded mitigation commitments

Activity / Issue	Embedded mitigation commitment
All phases	
Marine Scheme vessel requirements	<ul style="list-style-type: none"> All vessels will follow the International Regulations for Preventing Collisions at Sea 1972 (COLREGS) and International Convention for the Safety of Life at Sea 1974 (SOLAS); All vessels will be in compliance with the International Convention for the Prevention of Pollution from Ships (MARPOL) regulations and will therefore be equipped with waste disposal facilities onboard. The discharging of contaminants is not permitted within 12 nm from the coast to preserve bathing waters; Control measures and shipboard oil pollution emergency plans (SOPEP) will be in place and adhered to under MARPOL Annex I requirements for all vessels; Ballast water discharges from all vessels will be managed under International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (BWM Convention); All vessels will adhere to the IMO guidelines for the control and management of ships' biofouling to minimise the transfer of invasive aquatic species (Biofouling Guidelines) (resolution MEPC.207(62); Where possible, vessels will operate with dynamic positioning which will minimise anchor disturbance on the seabed; and A temporary 500 m Recommended Clearance Zone will be established around all vessels associated with the works.
Installation Phase	
Route selection	The Marine Installation Corridor has been selected to optimise the balance of environmental, technical, commercial and financial considerations, such as avoiding designated sites, known archaeological sites, recreational activities, key fishing grounds and third-party infrastructure as far as possible.
Pre-installation surveys	<p>Pre-installation surveys will inform detailed engineering and cable installation planning. They will focus on collection of detailed information within the preferred route for each of the cables, all within the Marine Installation Corridor. They will confirm the absence or presence of any new obstructions or significant changes to seabed conditions and bathymetry, and also help to inform detailed unexploded ordnance (UXO) assessment. Survey methods may include:</p> <ul style="list-style-type: none"> Geophysical survey including multibeam and single beam echo sounders, side scan sonar (SSS), and sub-bottom profiler (SBP); Magnetometer/gradiometer to identify magnetic anomalies and metallic targets; Visual methods including drop down video or remotely operated vehicle (ROV); and Geotechnical investigations such as vibrocore and cone penetration test (CPT).
Micro-routeing / detailed design post-consent	<p>Detailed route development and micro-routeing will be undertaken within the Marine Installation Corridor, informed by pre-installation evaluation of site-specific survey data to avoid or minimise localised engineering and environmental constraints. This will include minimising the footprint as much as possible;</p> <p>Changes to the sedimentary and metocean environments will be minimised by careful route selection and the use of appropriate burial techniques and cable protection methods such as fall pipes for the laying of rock placement; and</p> <p>Cable configuration will be optimised to minimise EMF during detailed design.</p>
Construction Environmental Management Plan (CEMP)	Prior to cable installation activities commencing, a CEMP, including an Emergency Spill Response Plan (ESRP), Waste Management Plan, Marine Mammal Management Plan,

Activity / Issue	Embedded mitigation commitment
	Marine Non-Native Species (MNNS) Plan, Fisheries Liaison and Co-existence Plan ¹ will be developed and agreed with relevant stakeholders in accordance with the coastal and marine environment site guide.
Landfall installation	Horizontal Directional Drilling (HDD) will be used at both landfalls for the installation of the cables in the transition zone between the Onshore Schemes and the Marine Scheme which avoids any works in the intertidal environment; and This will keep sediment disturbance to a minimum, minimising the use of cable protection measures inshore of the 11 m depth contour at Sandford Bay and the 5 m depth contour at Fraisthorpe Sands. This avoids direct impacts on sensitive coastal and intertidal habitats and features.
Drilling fluids	Drilling fluids for HDD operations will be biologically inert and selected from the OSPAR List of Substances/Preparations Used and Discharged Offshore which are Considered to Pose Little or No Risk to the Environment (PLONOR); During drilling, drilling fluids will be recycled, treated, and reused as far as possible, and any waste drilling fluid will be transported offsite for treatment and disposal; and Losses of drilling fluids are unavoidable; however they will be minimised insofar as practicable through the implementation of industry best practice for example, clearing runs or reducing the volume of drilling fluids in the borehole prior to breakout to the marine environment.
Cable protection	Cables will be trenched to a minimum depth of lowering of approximately 0.6 m, with a target depth of lowering of approximately 1.5 m; and The use of external protection will be limited to areas where cables cannot be trenched to the minimum depth of lowering, at crossings with third-party infrastructure and in some limited areas at both landfalls (as required).
Rock placement	Rock utilised in berms will be igneous, clean with low fines; and A vessel able to undertake a targeted placement method will be used, such as one fitted with a flexible fall pipe.
Operation and Maintenance Phase	
Monitoring Surveys	Routine surveys and inspections of the submarine cables and associated protection measures will be conducted through the lifetime of the project, to ensure they remain in good condition, and adequately protected.
No planned routine maintenance work	Following installation, the cable system is designed to minimise scheduled maintenance and no routine maintenance work is planned on the cables or their infrastructure during the lifetime of the Marine Scheme.
Decommissioning Phase	
Options for decommissioning	Options for decommissioning will be evaluated in both environmental and economic assessments, taking account of the regulations, best practices and available technology at the time of decommissioning.

7.1.3.2 Zone of Influence

WFD applies to coastal waters up to 1 NM for England and Wales and 3 NM for Scotland from MLWS. WFD waterbodies have been screened into this assessment using a Zone of Influence (ZOI) approach (Table 3) and on the basis of whether they are a designated WFD waterbody within the ZOI.

Table 3: Potential pathways and ZOI

Potential impact	Zone of influence (ZOI)
Landfall preparation and installation	
HDD operations and cable pull in.	Up to 0.01 km ² at each landfall
Vessel anchoring and use of spud legs	Up to 0.0003 km ² at each landfall
Route preparation and cable installation	
Temporary physical disturbance to subtidal benthic habitats and species	Boulder clearance plough (25 m swathe) and mechanical trenching (15 m swathe) across the Marine Installation Corridor.

¹ Note that this will be a single document that will perform the role of other fisheries liaison plans, for instance, a Fisheries Management and Mitigation Strategy.

Potential impact	Zone of influence (ZOI)
Permanent loss of subtidal benthic habitats and species due to placement of hard substrates on the seabed	Crossings One cable crossing with an approximate footprint of at 4,100 m ² .
	Rock protection at landfalls 0.01 km ² per landfall, 0.02 km ² total (same for separate lay/bundled cables).
	Rock protection between KP0 and KP11 0.084 km ² for separate lay.
Temporary increase in suspended sediment concentrations (SSC) sediment deposition leading to contaminant mobilisation, turbidity and smothering effects on subtidal habitats and species.	Footprint of the proposed works plus 1.5 km buffer; based on professional judgement and consideration of worst-case for fine particulates (Chapter 7: Physical Environment).
Changes to marine water quality effects from the use of HDD drilling fluids and accidental leaks and spills from vessels, including loss of fuel oils	Footprint of the proposed works plus 1.5 km buffer; based on professional judgement and consideration of worst-case for fine particulates (Chapter 7: Physical Environment).
Decommissioning	
Potential effects the same as route preparation and cable installation	Anticipated to be analogous to route preparation and cable installation.

7.1.3.3 Relevant Waterbodies

The ZOI (as defined in Section 7.1.3.2) have been used to determine the waterbodies of relevance to this WFD Compliance Assessment Report. Assuming the greatest ZOI of 1.5 km from the Marine Installation Corridor, within which all activities associated with the Marine Scheme will be undertaken, the following waterbodies have been identified as potentially at risk:

- Ugie Estuary to Buchan Ness (Peterhead) coastal WFD waterbody;
- Buchan Ness to Cruden Bay coastal WFD waterbody; and
- Yorkshire South.

Ugie Estuary to Buchan Ness (Scotland)

The approach to the Scottish landfall will pass through the Ugie Estuary to Buchan Ness water body between KP0 to KP6.6 (Table 4). As of 2020, Ugie Estuary to Buchan Ness (Peterhead) has a moderate status, a passing chemical status, and an overall Good ecological potential status. The water body has been designated as a heavily modified water body on account of physical alterations that cannot be addressed without a significant impact on navigation (Scottish Environment Protection Agency, 2020).

Table 4: Characteristics of the Ugie Estuary to Buchan Ness waterbody

Waterbody	Description, notes or more information
WFD water body name	Ugie Estuary to Buchan Ness
Water body ID	200131
River basin district name	Scotland
Water body type (estuarine or coastal)	Coastal
Water body total area (km ²)	46.3
Overall water body status (2020)	Good ecological potential
Ecological status	Moderate
Chemical status	Pass
Target water body status and deadline	Good (2027)

Waterbody	Description, notes or more information
Hydromorphology status of water body	Moderate
Heavily modified water body and for what use	Heavily modified water body on account of physical alterations that cannot be addressed without a significant impact on navigation.
Phytoplankton status	High
Associated protected areas	Marine Scheme is located within 3 km of: Buchan Ness to Collieston Coast SPA Peterhead Lido Bathing Waters

Buchan Ness to Cruden Bay (Scotland)

As of 2020, Buchan Ness to Cruden Bay has a High ecological status, a High chemical status, and an overall High status (Table 5). The water body falls within the 1.5 km Zol for the Marine Scheme and between KP 6.6 and KP 8.1 (Scottish Environment Protection Agency, 2020).

Table 5: Characteristics of the Buchan Ness to Cruden Bay waterbody

Waterbody	Description, notes or more information
WFD water body name	Buchan Ness to Cruden Bay
Water body ID	200125
River basin district name	Scotland
Water body type (estuarine or coastal)	Coastal
Water body total area (km ²)	57.7
Overall water body status (2020)	High
Ecological status	High
Chemical status	Pass
Target water body status and deadline	High
Hydromorphology status of water body	High
Heavily modified water body and for what use	No
Phytoplankton status	High
Associated protected areas	Marine Scheme is located within 3 km of: Buchan Ness to Collieston Coast SPA Ythan Estuary, Sands of Forvie and Meikle Loch SPA

Yorkshire South (England)

The approach to the English landfall will pass through the Yorkshire South water body between KP433.3 to KP435.7 (Table 6). As of 2019, Yorkshire South has a Moderate ecological status, Fail chemical status and an overall Moderate status. Good status was not achieved due to high levels of physical modification within the waterbody (Environmental Agency, 2019).

Table 6: Characteristics of the Yorkshire South waterbody

Waterbody	Description, notes or more information
WFD water body name	Yorkshire South
Water body ID	GB640402491000
River basin district name	Humber
Water body type (estuarine or coastal)	Coastal
Water body total area (km ²)	158.4
Overall water body status (2019)	Moderate
Ecological status	Moderate

Waterbody	Description, notes or more information
Chemical status	Fail
Target water body status and deadline	Good (2027)
Hydromorphology status of water body	Supports Good
Heavily modified water body and for what use	Yes: Coastal Protection Flood Protection Navigation, Ports, and Harbours
Phytoplankton status	Good
Associated protected areas	Marine Scheme is located within 3 km of: Flamborough Head SAC Flamborough and Filey Coast SPA Greater Wash SPA Bridlington South Beach bathing water Whilsthorne Bathing Water Fraisthorpe Bathing Water

Conclusion

The Marine Installation Corridor or its potential ZOI will intercept the Ugie Estuary to Buchan Ness waterbody (200131) and the Buchan Ness to Cruden Bay waterbody (200125) within Scottish territorial waters. The approach to the English landfall will intercept the Yorkshire South waterbody (GB640402491000).

These three waterbodies will be taken forward to the assessment stage. In addition to this, all associated protected areas mentioned above are located within 1.5 km (the greatest ZOI as defined in Section 3.2) of the Marine Scheme in both Scottish and English waters. As a result, these will also be considered within the assessment.

7.1.4 Assessment

7.1.4.1 Stage 1 – Screening

The EA guidance provides a list of low-risk activities that enable further assessment stages to be excluded, however the Marine Scheme does not fulfil the requirements of these and therefore no activities can be screened out. Stage 2 of the assessment process (Scoping) must therefore be completed.

7.1.4.2 Stage 2 – Scoping

A scoping assessment is required to determine which receptors may be at risk from those activities of the Marine Scheme screened into the assessment and therefore need to be assessed in Stage 3 – Impact Assessment. Receptors are defined in accordance with EA guidance (Environment Agency, 2017) and are based on the waterbody's quality elements, and also include consideration of INNS.

This section of the WFD Compliance Assessment Report is structured in accordance with the scoping template produced by the EA (2017).

Hydromorphology

Hydromorphology concerns the physical characteristics of estuaries and coastlines. Hydromorphology quality elements include the size, shape and structure of the waterbody, and the flow and quantity of water and sediment. Impacts on hydromorphology include changes to morphological conditions (for example variation, the seabed sediment structure) and tidal patterns (e.g., dominant currents and wave exposure).

Table 7 provides specific risk information relating to hydromorphology to determine which waterbodies and potential risks should be taken forward to Stage 3 – Impact Assessment.

Table 7: Specific Risk Information – Hydromorphology

Assess Further if Activity	Ugie Estuary to Buchan Ness	Buchan Ness to Cruden Bay	Yorkshire South
Could impact on the hydromorphology (for example morphology or tidal patterns) of a water body of high status.	Impact assessment not required. This waterbody is 'moderate' hydromorphological status.	Requires impact assessment. This waterbody is 'high' hydromorphological status putting it at potential risk from the Marine Scheme's activities.	Impact assessment not required. This waterbody is 'supporting good' status.
Could significantly impact the hydromorphology of any water body.	Impact assessment not required. Activities, such as rock placement and cable trenching techniques, have the potential to locally alter hydromorphological qualities. For instance, scour and increased deposition of sediments is possible in seabed areas subject to external cable protection. However, any resultant changes are likely to be spatially limited and will not result in significant change to the hydromorphological qualities of the waterbody as a whole. The magnitude of impact was assessed as low with the effect significance negligible, which is considered not significant (see Chapter 7: Physical Environment).		
Is in a water body that is heavily modified for the same use as your activity.	Impact assessment not required. None of these waterbodies are assessed as being heavily modified.		

Biology

Habitats

In order to establish the risks of the Marine Scheme to habitats, the EA guidance classifies habitats into higher and lower sensitivity. Higher sensitivity habitats, such as chalk reef, mussel beds, polychaete reef, subtidal kelp or seagrass beds, have a low resistance to human pressures and a lower recovery rate. Lower sensitivity habitats, such as cobbles, gravels and shingle, subtidal boulder and rocky reefs, have a medium to high resistance to human pressure, resulting in a higher recovery rate.

Table 8 provides specific risk information relating to benthic habitats to determine which waterbodies and potential risks should be taken forward to Stage 3 – Impact Assessment.

Table 8: Specific Risk Information – Habitats

Consider if the footprint of your activity is:	Ugie Estuary to Buchan Ness	Buchan Ness to Cruden Bay	Yorkshire South
0.5 km ² or larger?	Yes. The Zol of the activities of the Marine Scheme exceeds 0.5 km ² within this waterbody.		
1% or more of the waterbody's area?	Yes. The Zol of the activities of the Marine Scheme exceeds 1% or more of the waterbody's area.		
Within 500 m of any higher sensitivity habitat?	Yes. The Zol of the activities of the Marine Scheme fall within potential areas of low to medium resemblance <i>Sabellaria spinulosa</i> reef between KP2.5 to KP4.5.	No. No higher sensitivity habitats identified in this waterbody.	No. No sensitive habitats identified in this waterbody.
1% or more of any lower sensitivity habitat?	Yes. The footprint of the activities of the Marine Scheme affects 1% or more of lower sensitivity habitats of subtidal coarse, mixed sediment and potential areas of low to medium stony reef between KP0.2 to KP2.5 (NEXTGeosolutions, 2022) (see Chapter 8: Benthic Ecology).	Yes. The footprint of the activities of the Marine Scheme affects 1% or more of lower sensitivity habitats of subtidal coarse and mixed sediment (see Chapter 8: Benthic Ecology).	Yes. The footprint of the activities of the Marine Scheme affects 1% or more of lower sensitivity habitats of subtidal soft sediment.

Consider if the footprint of your activity is:	Ugie Estuary to Buchan Ness	Buchan Ness to Cruden Bay	Yorkshire South
Impact assessment required?	Requires impact assessment as yes to one or more questions.		

Fish

In order to establish risks of the Marine Scheme to fish, the EA guidance requires consideration as to whether fish are at risk, but only if the activities are within an estuary or could prevent fish entering an estuary. Table 9 provides specific risk information relating to fish to determine which waterbodies and potential risks should be taken forward to Stage 3 – Impact Assessment.

Table 9: Specific Risk Information – Fish

Consider if your activity:	Ugie Estuary to Buchan Ness	Buchan Ness to Cruden Bay	Yorkshire 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.	<p>The location of the Marine Scheme is not within in an estuary, although there are a number of estuaries and rivers located between the two landfall sites.</p> <p>Effects of temporary suspended sediment, underwater sound and electromagnetic field (EMF) emissions on migratory fish were assessed as not significant (Chapter 9: Fish and Shellfish). The activities are not anticipated to delay or prevent fish entering an estuary or significantly affect migratory fish, therefore no further impact assessment is required.</p>		

Water Quality

Water quality impacts relate to changes in water clarity, temperature salinity, nutrients, oxygen levels, nutrients and microbial patterns that occur for longer than the duration of a spring neap tidal cycle (approx. 14 days). Whether for the waterbodies in question have any history of harmful algal blooms, or bad, poor or moderate phytoplankton status must also be considered. Table 10 and Table 11 provides specific risk information relating to water quality to determine which waterbodies and potential risks should be taken forward to Stage 3 – Impact Assessment.

Table 10: Waterbody summary table

Consider if your activity:	Ugie Estuary to Buchan Ness	Buchan Ness to Cruden Bay	Yorkshire 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)?	<p>Impact Assessment Not Required.</p> <p>Activities of the Marine Scheme, such as HDD and cable trenching activities, have the potential to generate sediment plumes that may impact water clarity. Coastal tidal currents recorded close to both breakout locations are the most dispersive recorded along the Marine Installation Corridor and dilution of fine materials will be rapid to background suspended sediment levels, with a low magnitude of impact predicted (see Chapter 7: Physical Environment).</p> <p>It is anticipated that these plume generating activities would be temporally limited to less than 14 days within a waterbody per plume generating activity.</p>		
Is the waterbody with a phytoplankton status of moderate, poor or bad?	<p>Impact Assessment Not Required.</p> <p>All waterbodies have a 'high' phytoplankton status.</p>		
Is in a waterbody with a history of harmful algae?	<p>Impact Assessment Not Required.</p> <p>None of the waterbodies have a history of harmful algae.</p>		

Table 11: Specific Risk Information – Water Quality

If your activity uses or releases chemicals (for example through sediment disturbance or building works) consider if:	Ugie Estuary to Buchan Ness	Buchan Ness to Cruden Bay	Yorkshire South
The chemicals are on the Environmental Quality Standards Directive (EQSD) list?	Impact assessment not required. The Marine Scheme activities will not involve the use of any chemicals on the EQSD list.		
It disturbs sediments with contaminants above Cefas Action Level 1?	Impact assessment not required. The concentrations of hydrocarbon and heavy metal encounters along the Marine Installation Corridor are not considered significant in the context of contaminants already present within the receiving environment. Furthermore, the Installation Phase activities resulting in the re-suspension of fine-grained material which is associated with sediment contamination is not permanent and any reduction in water quality will be temporary (see Chapter 7: Physical Environment). The Marine Scheme activities doesn't have the potential to disturb sediments with contaminants above Cefas Action Level 1.		Requires impact assessment. The Marine Scheme activities have the potential to disturb sediments exceeding Cefas Action Level 1 for arsenic between KP388.1, KP404.4 to KP428.7 and KP433.7 (see Chapter 7: Physical Environment).

Protected Areas

Potential impacts to protected areas relates to any WFD protected areas are at risk from the activities of the Marine Scheme. WFD protected areas include Special Areas of Conservation (SACs), Special Protection Areas (SPAs), shellfish waters, bathing waters and nutrient sensitive areas. Table 12 provides specific risk information relating to protected areas to determine which waterbodies and potential risks should be taken forward to Stage 3 – Impact Assessment.

Table 12: Specific Risk Information – Protected Areas

Consider if your activity is:	Ugie Estuary to Buchan Ness	Buchan Ness to Cruden Bay	Yorkshire South
Within 2 km of any WFD protected area	Requires impact assessment. The Zol of the activities associated with the Marine Scheme is located (at the closest point): <ul style="list-style-type: none"> • 0 km from the Buchan Ness to Collieston Coast SPA; and • 1.5 km from the Peterhead Lido Bathing Waters. 	Requires impact assessment. The Zol of the activities associated with the Marine Scheme is located (at the closest point): <ul style="list-style-type: none"> • 0 km from the Buchan Ness to Collieston Coast SPA; and 	Requires impact assessment. The Zol of the activities associated with the Marine Scheme is located (at the closest point): <ul style="list-style-type: none"> • 0.12 km from the Flamborough Head SAC; • 0.5 km from the Flamborough and Filey Coast SPA; • 1.9 km from the Greater Wash SPA; • 1.5 km from Fraisthorpe Bathing Water and Whilsthorpe Bathing Water; and • Bridlington South Beach Bathing Water is within 0.97 km of the 1.5 km Zol.

Invasive Non-native Species

The accidental introduction of invasive non-native species (INNS) has the potential to cause detrimental changes to habitats by out-competing native species and introducing diseases which could result in mortality. Table 13 provides specific risk information relating to INNS to determine which waterbodies and potential risks should be taken forward to Stage 3 – Impact Assessment.

Table 13: Specific Risk Information – INNS

Consider if your activity could:	Ugie Estuary to Buchan Ness	Buchan Ness to Cruden Bay	Yorkshire South
Introduce or spread INNS	<p>Impact assessment not required.</p> <p>All project vessels will adhere to the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention) with the aim of preventing the spread of INNS (IMO, 2022). In addition, vessels will be required to adhere to the IMO guidelines for the control and management of ships' biofouling to minimise the transfer of invasive aquatic species (Biofouling Guidelines) (resolution MEPC.207(62) (see Chapter 2: Project Description and Chapter 17: Schedule of Mitigation and Commitments).</p> <p>Additionally, all rock and concrete mattresses used for cable protection will be terrestrially sourced and cleaned and no INNS were identified in the Study Area (NEXTGeosolutions, 2022) and so the risk of the spread of any existing non-native species is considered unlikely.</p> <p>These measures will ensure that INNS are not introduced as a result of the Marine Scheme.</p>		

Summary

Where no risk to potential receptors have been identified as part of this scoping stage, Stage 3 – Impact Assessment does not need to be completed. The potential risks to receptors that the scoping exercise concluded need to be taken forward for detailed impact assessment for each of the relevant waterbodies is provided in Table 14.

Table 14: Potential Risks to be Assessed in Stage 3 – Impact Assessment

Receptor	Ugie Estuary to Buchan Ness	Buchan Ness to Cruden Bay	Yorkshire South
Hydromorphology	No. The proposed activities do not present a significant hydromorphology risk to this waterbody.	Yes. This waterbody is 'high' hydromorphological status putting it at potential risk from the Marine Scheme's activities.	No. The proposed activities do not present a significant hydromorphology risk to this waterbody.
Biology – Habitats	<p>Yes. The footprint of the proposed activities of the Marine Scheme exceeds 0.5 km², exceeds 1% or more of the waterbody's area and affects 1% of more of lower sensitivity habitats such as subtidal coarse and mixed sediment.</p> <p>The Zol of the activities of the Marine Scheme within the Ugie Estuary to Buchan Ness waterbody fall within potential areas of low to medium resemblance <i>Sabellaria spinulosa</i> reef between KP2.5 to KP4.5 and potential areas of low to medium stony reef between KP0.2 to KP2.5 (NEXTGeosolutions, 2022) (See Chapter 8: Benthic Ecology).</p>		<p>Yes. The footprint of the proposed activities of the Marine Scheme exceeds 0.5 km², exceeds 1% or more of the waterbody's area and affects 1% of more of lower sensitivity habitats of subtidal soft sediment.</p>
Biology – Fish	<p>No. The proposed activities of the Marine Scheme are not within an estuary, nor are anticipated to delay or prevent fish entering any estuaries or significantly affect migrating fish.</p>		
Water Quality	<p>No. The Marine Scheme activities doesn't have the potential to disturb sediments above Cefas Action Level 1. The Marine Scheme activities will not involve the use of any chemicals on the EQSD list. The Marine Scheme activities will not affect water clarity, temperature, salinity, oxygen levels, nutrients or microbial patterns continuously for longer than a spring neap tidal cycle (about 14 days).</p>		<p>Yes. The Marine Scheme activities have the potential to disturb sediments exceeding Cefas Action Level 1 for arsenic.</p>

Receptor	Ugie Estuary to Buchan Ness	Buchan Ness to Cruden Bay	Yorkshire South
Protected Areas	Yes. The activities of the Marine Scheme are within 2 km of a number of WFD protected areas.		
INNS	No. The design of the Marine Scheme and its embedded mitigation result in the risk of spreading or introducing INNS to be considered of low risk.		

7.1.4.3 Stage 3 – Impact Assessment

The impact assessment below is written in the context of the embedded mitigation measures, as described in Section 7.1.3, being included as part of the design, installation, operation and decommissioning of the Marine Scheme.

This assessment has been based on the detailed impact assessments presented in the Environmental Appraisal Report (EAR) (See Chapter 7: Physical Environment, Chapter 8: Benthic Ecology and Chapter 11: Ornithology).

Hydromorphology

The Buchan Ness to Cruden Bay waterbody has been identified by the Stage 2 – Scoping assessment as being at potential risk from the activities of the Marine Scheme, based upon its high hydromorphological status. A Stage 3 – Impact Assessment is therefore required.

Hydromorphology is defined as the physical characteristics of the coast and includes the size, shape and structure of the waterbody, and also the flow and quality of water and sediment. Potential impacts on hydromorphology include changes to morphological conditions (e.g., depth variations, seabed and intertidal zone structure etc.) and tidal patterns (e.g., dominant currents, wave exposure etc.).

Trench excavation and cable trenching will be limited to the subtidal, temporarily affecting the structure of the seabed. Any resultant changes to Buchan Ness to Cruden Bay will be spatially limited and will not result in significant change to the hydromorphological qualities of the waterbody as whole.

Impacts to the structure of the intertidal zone are avoided, with HDD breakout points and exit pits being located in the subtidal area. Impacts to the seabed at breakout will be temporary and highly localised. Exit pits and pre-cut trenches will be excavated using Mass Flow Excavator (MFE) or a backhoe dredger with sediments side cast within the Marine Installation Corridor. During installation any suspended sediments are expected to naturally disperse. The breakouts will be protected using rock, back filled to original seabed level (see EAR Volume 2 Chapter 2: Project Description). It is expected that natural hydrodynamic processes will redistribute any sediment quickly (see EAR Volume 2 Chapter 7: Physical Environment).

Subtidal substrate mapping data (EMODnet, 2019), confirmed by site specific marine surveys (NEXTGeosolutions, 2022) show substrates within the Marine Installation Corridor which intersect the Ugie Estuary to Buchan Ness waterbody (Scottish nearshore area) to consist of by well-defined cobble and boulder matrices intermixed with areas of sand dominated mixed sediment (see Section 7.5.2.1, EAR Volume 2 Chapter 7: Physical Environment). Recovery of the structure of the coastal bed after installation is predicted to be rapid (within months) particularly for those substrates which characterise much of the water bodies.

The Marine Installation Corridor does not cross any existing infrastructure within the Buchan Ness to Cruden Bay waterbody which might require rock placement. However, the consented (on hold) NorthConnect cable crossing at KP5.1 within the Ugie Estuary to Buchan Ness waterbody has the potential to affect water depth and structure of the coastal bed should this development proceed. The impacts of rock placement from this crossing will be highly localised and will cover an area of 4,100 m² and will not affect the status of the Ugie Estuary to Buchan Ness waterbody.

The potential for impacts on bathymetry, seabed morphology, suspended sediments, and water quality are all appraised in detail in Section 7.6 in EAR Volume 2 Chapter 7: Physical Environment. No significant effects as a result of potential impacts on these aspects of the physical environment, with bearing upon hydromorphology, are identified within the EAR.

Biology – Habitats

The three waterbodies, the Ugie Estuary to Buchan Ness, Buchan Ness to Cruden Bay, and Yorkshire South have been identified by the Stage 2 – Scoping assessment as being at potential risk from the Marine Scheme. A Stage 3 – Impact Assessment is therefore required.

Several impacts associated with installation of the Marine Scheme have the potential to affect both higher and lower sensitivity habitats. Physical disturbance to substrates will result in some associated disturbance and potential loss of benthic habitats within the footprint of the Marine Installation Corridor. In addition, the physical disturbance to sediments may result in the generation of a sediment plume and subsequent sediment deposition within a 1.5 km potential Zol, resulting in potential smothering of habitats and associated species.

Within the Ugie Estuary to Buchan Ness waterbody, higher sensitivity areas of potential *S. spinulosa* reef extend from approximately KP2.5 to KP4.5, while lower sensitivity areas of potential 'low' to 'medium' resemblance Annex I stony reef from approximately KP0.2 to KP2.5 have the potential to be affected (see Chapter 8: Benthic Ecology). In addition, both the Ugie Estuary to Buchan Ness and Buchan Ness to Cruden Bay waterbodies, contain lower sensitivity habitats of subtidal coarse and mixed sediments (EUNIS: MC3, MC4) which have the potential to be affected, while for the Yorkshire South waterbody, subtidal soft sediment (EUNIS: MB3 and MB5) have the potential to be affected (see Chapter 8: Benthic Ecology).

The area of direct physical disturbance is limited to a maximum width of 25 m per cable within the Marine Installation Corridor, with the area of disturbance being spatially limited and the seabed expected to return to pre-installation conditions under natural processes. Permanent habitat loss from rock placement between KP0 and KP11.0 which intersect the Ugie Estuary to Buchan Ness and Buchan Ness to Cruden Bay waterbodies is anticipated to be approximately 6 km in length (0.084 km²) for two cables, a small percentage compared to the remaining habitat within the waterbodies and wider North Sea. The Zol for the suspended sediment plume (and therefore potential smothering effects from redeposition) is up to 1.5 km for fine sediments, such as sand. With coarser sediments dominating the Scottish nearshore, deposition beyond the Marine Installation Corridor will be limited. Areas of lower sensitivity habitat dominate the encompassing water bodies, with areas potentially impacted by direct physical disturbance and associated Zol, small in comparison to the habitats available in the wider waterbody and North Sea (Section 7.6.4, EAR Volume 2 Chapter 7: Physical Environment).

Given the proximity of potential Annex I stony reef habitats to the Scottish breakout location at approximately KP0.9 (with the breakout areas extending to approximately KP1.3), temporary disturbance to Annex I stony reefs at this location is unavoidable. Furthermore, disturbance to Annex I *S. spinulosa* reef from boulder clearance and trenching is also considered unavoidable due to its current extent across the width of the Marine Installation Corridor. The EAR concluded that due to the sporadic nature of medium resemblance reef, ground truthed across the camera transects at the Scottish nearshore, and the limited extent of the Annex I reef area identified compared to its wider distribution in the North Sea, that these areas do not form part of a designated site under the Council Directive 92/43/EEC of 21 May 1992 (Habitats Directive) or any other protected site. Furthermore, embedded mitigation (as described in EAR Volume 2 Chapter 2: Project Description) to minimise disturbance to these sensitive features, results in the effect of disturbance and or habitat loss to these features being not significant (Section 8.6, EAR Volume 2 Chapter 8: Benthic Ecology).

Water Quality

Changes to water quality could impact all three water bodies Ugie Estuary to Buchan Ness, Buchan Ness to Cruden Bay and Yorkshire South due to the release of drilling fluid, or discharges, leaks and spills from vessels, including loss of oils. Embedded mitigation is detailed in EAR Volume 2 Chapter 2: Project Description and EAR Volume 2 Chapter 17: Schedule of Mitigation and Commitments. To ensure the risk of accidental spills is as low as reasonably practicable, relevant pollution prevention guidance will be followed and a Construction Environmental Management Plan (CEMP) including an Emergency Spill Response Plan and Waste Management Plan implemented. Control measures and Shipboard Oil Pollution Emergency Plans (SOPEP) will also be in place and adhered to under MARPOL Annex I requirements for all vessels. Planned discharges will be compliant with MARPOL Annex IV 'Prevention of Pollution from Ships' standards. The EAR assessed effects to water quality as not significant (Section 7.6.4.5, EAR Volume 2 Chapter 7: Physical Environment).

One waterbody, Yorkshire South has been identified by the Stage 2 – Scoping assessment as being at risk from the activities of the Marine Scheme as a result of the potential for activities to disturb sediments with contaminants above Cefas Action Level 1. Route preparation and cable installation activities, including any maintenance, have the potential to increase SSC as the seabed is disturbed, leading to increases in turbidity and potential mobilisation of contaminants.

A programme of monitoring and water classification is undertaken by SEPA, with the most recent classification data available from SEPA (Scottish Environment Protection Agency, 2020) showing that the Scottish landfall site falls within the Ugie Estuary to Buchan Ness waterbody and is classified as 'Good'. Peterhead Bay, located 2 km north west of the Marine Installation Corridor, is designated as a 'Bathing Water' of 'Good' status based on information for the Peterhead (Lido) bathing water. Water quality at designated bathing water sites in England is assessed by the Environment Agency (Environment Agency, 2020). The classification data indicates that the Fraisthorpe bathing water near the English landfall at Fraisthorpe Sands falls into the 'Good' waterbody category based on measurements.

Mean Particle-Size Analysis (PSA) at the English nearshore recorded an average of $6.02 \pm 9.10\%$ fines, $78.96 \pm 23.25\%$ sand and $15.00 \pm 16.56\%$ gravel (Next Geosolutions, 2022), suggesting the majority of the sediment particles are larger in size. Seabed sediments such as sands and gravels are expected to settle quickly, within 1.5 km of the source of the disturbance and settle within hours of disturbance (see EAR Volume 2 Chapter 7: Physical Environment).

Disturbance of seabed sediments associated with the Installation Phase activities may result in the mobilisation of sediment-bound contaminants into the water column, with potential to cause indirect effects on water quality. Exceedances of Cefas Action Level 1 were recorded for sampling stations within Yorkshire South waterbody for arsenic. However, the limited spatial extent of installation activities within the Marine Installation Corridor, limits in turn the potential to disturb sediments. This, combined with the limited spatial extent of sediments with contaminants exceeding Cefas Action Level 1, along with the small amounts of fine sediments generally associated with those contaminants, and the potential for suspended sediments to be dispersed and diluted rapidly through natural hydrodynamic processes, it is not expected that the potential disturbance of sediment bound contaminants will significantly affect the water quality in the two waterbodies. The potential for impacts on water quality during installation at both Scottish and English landfalls is appraised in EAR Volume 2 Chapter 7: Physical Environment, Sections 7.6.4.1 and 7.6.4.2, with suspended sediment impacts discussed in Section 7.6.4.3. The effects of potential impacts are not considered significant.

Protected Areas

The following WFD protected areas associated with the Ugie Estuary to Buchan Ness, Buchan Ness to Cruden Bay, Yorkshire South waterbodies fall within 2 km of the Marine Installation Corridor:

- Buchan Ness to Collieston Coast SPA;
- Flamborough and Filey Coast SPA;
- Flamborough Head SAC;
- Greater Wash SPA;
- Peterhead Lido Bathing Waters;
- Bridlington South Beach Bathing Water
- Whilsthorne Bathing Water; and
- Fraisthorpe Bathing Water.

A detailed assessment of potential effects to the SACs and SPAs listed above can be found in the chapters corresponding to qualifying features of the sites in the EAR (see Chapter 8: Benthic Ecology, and Chapter 11: Ornithology). A Habitat Regulations Assessment (HRA) Report has also been prepared for the Marine Scheme (Appendix 8.2), which has concluded that there would be no likely significant effects on the integrity of European Designated Sites, including those listed above and therefore, the Marine Scheme is considered compliant with the EU Habitats Directive (92/43/EEC).

This WFD Compliance Assessment Report concludes in the previous impact assessment sections 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 SACs are designated or bathing waters.

Deterioration Assessment

The WFD Guidance Assessment (Environment Agency, 2017) 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 counted as deterioration.

The potential effects associated with the activities of the Marine Scheme will be limited both spatially and temporally, with no deterioration in the classification of the Ugie Estuary to Buchan Ness, Buchan Ness to Cruden Bay, or Yorkshire South waterbodies expected to occur.

The Marine Scheme would:

- Not result in a reduction of the WFD classification of any waterbodies;
- Not put at risk the good status or potential of any waterbodies; and
- Not inhibit any waterbodies from progressing towards good status or potential.

7.1.5 Conclusions

The WFD Compliance Assessment Report indicates that potential exists for spatially and temporally limited effects on the Ugie Estuary to Buchan Ness, Buchan Ness to Cruden Bay, Yorkshire South waterbodies as a result of activities associated with the Marine Scheme.

However, the assessment concludes that, with the implementation of the Marine Scheme as described in EAR Volume 2 Chapter 2: Project Description, and embedded mitigation measures, the Marine Scheme will not:

- Result in the deterioration of the waterbodies;
- Put at risk the good status of the waterbodies or the potential of any waterbodies; and
- Inhibit any waterbodies from progressing towards good status or potential.

Thus, the activities of the Marine Scheme are assessed as in compliance with the requirements of the WFD and relevant River Basin Management Plans.

7.1.6 References

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