



Morven Hawthorn Pit Grid Connection Project

Preliminary Environmental Information Report

Volume 1, Annex 3.2: Selection and Refinement
of the Offshore Infrastructure

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Prepared by:	Prepared for:
MvOWL	Morven Offshore Wind Limited

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Glossary

Term	Meaning
AC connection cables	Alternating Current (AC) cables that will connect the proposed onshore land substation to the National Grid Hawthorn Pit Substation.
Applicant	The legal entity making the applications for consent; Morven Offshore Wind Limited (MvOWL).
Anchorage area	An area of seabed formally designated and charted by the relevant maritime authority for the anchoring of vessels, subject to applicable navigational and safety controls.
Annex I Habitat	Annex I refers to a habitat as defined under the European Union Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive).
Archaeological Exclusion Zones	An area surrounding any features or geophysical anomalies of known or potential archaeological interest within which no activity may occur.
Cable protection	Measures used to protect subsea cables where burial is not possible, due to seabed conditions or at cable crossings, to ensure cable stability and reduce risks from anchors, fishing gear and environmental forces.
Commitments	Measures (embedded mitigation and secondary) to be adopted during the construction, operation and maintenance and decommissioning phases of the MHPGC Project.
Development Consent Order (DCO)	An order made under the Planning Act 2008, as amended, granting development consent.
Direct impact	This is associated with the direct activities of the MHPGC Project as well as the activities of primary suppliers.
Environmental Impact Assessment (EIA)	The process of identifying and assessing the significant effects likely to arise from a project. This requires consideration of the likely changes to the environment, where these arise as a consequence of a project, through comparison with the existing and projected future baseline conditions.
Expert Working Groups (EWGs)	A topic-specific group of specialists formed under the evidence plan process (EPP) to resolve technical issues and agree approaches for environmental assessments.
High Voltage Direct Current (HVDC)	A HVDC electric power transmission system uses direct current for electric power transmission, in contrast to the more common alternating current systems. Most HVDC links use voltages between 100kV and 800kV.
High Voltage Alternating Current (HVAC)	A HVAC electric power transmission system uses alternating current for electric power transmission that periodically reverses direction at regular intervals.
Highly Protected Marine Area (HPMA)	Areas of the sea (including the shoreline) that allow the protection and full recovery of marine ecosystems. HPMAs protect all species and habitats and associated ecosystem processes within the site boundary, including the seabed and water column.
Impact	A change caused by an action that occurs during a project's lifetime.
Intertidal area	The area between Mean High Water Springs and the Mean Low Water Springs.
Landfall	The area in which the offshore export cables make landfall (come onshore) and the transitional area between the offshore cabling and the onshore cabling. This term applies to the entire landfall area between the trenchless

Term	Meaning
	technique exit pits and the transition joint bay inclusive of all construction works.
Marine Conservation Zone (MCZ)	An area designated under the Marine and Coastal Access Act 2009 in English waters for the purpose of conserving marine flora, fauna, habitats, or features of geological or geomorphological interest.
Marine Protected Area (MPA)	Areas within the United Kingdom's seas designated for the protection of marine life and habitats against damage caused by human activities.
Marine Directorate Licensing Operations Team (MD-LOT)	The part of the Scottish Government's Marine Directorate responsible for assessing and administering applications for marine licences and Section 36 consent (offshore) in Scotland.
MHPGC Project Environmental Statement (ES)	The document presenting the results of the Environmental Impact Assessment process.
MHPGC Project Evidence Plan Process (EPP)	A voluntary consultation process with specialist stakeholders to agree the approach to, and information to support, the EIA and Habitats Regulations Assessment processes for certain topics.
MHPGC Project PEIR Red Line Boundary	The area within which all components of the MHPGC Project will be located, including areas required on a temporary basis during construction and/or decommissioning (such as construction compounds).
MHPGC Project Preliminary Environmental Information Report (PEIR)	A report that provides preliminary environmental information in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. This is information that enables consultees to understand the likely significant environmental effects of a project and which helps to inform consultation responses.
MHPGC Project Scoping Opinions	Separate scoping opinions received from PINS (on behalf of the Secretary of State) and MD-LOT (on behalf of the Scottish Ministers) in response to the MHPGC Project Scoping Report. The MHPGC Project Scoping Opinions contain the range of issues that PINS, and MD-LOT in consultation with statutory stakeholders, have identified should be considered within the EIA process.
MHPGC Project Scoping Boundary	The spatial extent of the area used to define the environmental baseline to inform impact assessments at the time the MHPGC Project Scoping Report was submitted.
Morven Hawthorn Pit Grid Connection Project	The MHPGC Project is comprised of the offshore export cables in Scottish and English waters from the Morven North or the Morven South offshore substation platform(s) (OSP), landfall, onshore export cables, the onshore land substation (LSS) and AC connection cables. Also referred to in this report as the MHPGC Project, for ease of reading.
Morven North Offshore Wind Array Project ('Morven North')	The Morven North Offshore Wind Array Project which includes the wind turbines and foundations, Offshore Substation Platforms and foundations, inter-array and interconnector cables and associated infrastructure located within the Morven North Boundary.
Morven North Offshore Wind Array Project and Morven South Offshore Wind Array Project ('Morven North and Morven South')	Morven North and Morven South comprises the Morven North Offshore Wind Array Project and Morven South Offshore Wind Array Project, collectively.

Term	Meaning
Morven South Offshore Wind Array Project ('Morven South')	The Morven South Offshore Wind Array Project, which includes the wind turbines and foundations, Offshore Substation Platforms and foundations, inter-array and interconnector cables and associated infrastructure located within the Morven South Boundary.
National Grid Hawthorn Pit Substation	The National Grid substation at Hawthorn Pit, County Durham, which the AC connection cables will connect into from the Onshore Land Substation.
Offshore export cables	HVDC cables which bring electricity from either the Morven North or Morven South offshore substation platform to the TJB at landfall.
Offshore export cable corridor	The proposed corridor in which the offshore export cables will be located, from either the Morven North or Morven South offshore substation platform to the transition joint bay (TJB) at landfall.
Offshore substation platforms (OSP(s))	OSP(s) comprise the support structure, topside and electrical components used for collecting the electricity generated by the wind turbine generators, in Scottish waters, for the passage or transmission to landfall. These OSP(s) can be divided into two types: • HVAC collector substations; • HVDC converter substations.
Point of Interconnection (Pol)	The Point of Interconnection (Pol) is the point identified by NESO (the National Energy System Operator) where a project connects to the electricity grid. It is the location at which electricity from the project is transferred into the national transmission network.
Significance	Effect factor that is determined by the magnitude of impact along with the sensitivity of the receptor.
Sites of Special Scientific Interest (SSSI)	Designated areas which feature rare flora or fauna or are host to important features (physiological or geological) which are of scientific interest, designated under the Wildlife and Countryside Act 1981 (as amended).
Special Area of Conservation (SAC)	A site designation specified in the Habitats Directive (Council Directive 92/43/EEC) and protected in the UK under the Conservation (Natural Habitats, &c.) Regulations 1994 (in Scotland), the Conservation of Habitats and Species Regulations 2017 (in England) and Conservation of Offshore Marine Habitats and Species Regulations 2017 (in Scotland and England). Each site is designated for one or more of the habitats and species listed in the Directive. The Habitats Directive requires the necessary conservation measures to be established involving, if need be, appropriate management plans for each SAC to ensure the favourable conservation status of the habitats or species for which it was designated.
Special Protection Area (SPA)	Locations within the UK designated to conserve rare, vulnerable, and migratory bird species of European importance, as classified by the Conservation (Natural Habitats, &c.) Regulations 1994 (in Scotland), the Conservation of Habitats and Species Regulations 2017 (in England) and Conservation of Offshore Marine Habitats and Species Regulations 2017 (in Scotland and England).
Transition Joint Bay (TJB)	An underground bay housing a joint which connects the offshore export cables to the onshore export cables. The TJB will be located in the vicinity of the onshore side of the landfall.

Acronyms

Acronym	Meaning
BRAG	Black-Red-Amber-Green
CBRA	Cable Burial Risk Assessment
Cefas	Centre for Environment, Fisheries and Aquaculture Science
CRP	Cable Route Protocol
DCO	Development Consent Order
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
ES	Environmental Statement
EWG	Expert Working Group
HND	Holistic Network Design
HNDFUE	Holistic Network Design Follow-up Exercise
HPMA	Highly Protected Marine Area
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
MCZ	Marine Conservation Zone
MHPGC	Morven Hawthorn Pit Grid Connection
MHWS	Mean High Water Spring
MLWS	Mean Low Water Springs
MPA	Marine Protected Area
NGET	National Grid Electricity Transmission
NESO	National Electricity System Operator
NSL	North Sea Link
OSP	Offshore Substation Platform
OTNR	Offshore Transmission Network Review
PEIR	Preliminary Environmental Information Report
SAC	Special Area of Conservation
SEGL	Scotland to England Green Link Eastern Link
SPA	Special Protection Area
SSSI	Sites of Special Scientific Interest
UK	United Kingdom

Units

Unit	Meaning
km	Kilometres
m	Metres
nm	Nautical mile

1 Selection and Refinement of Offshore Infrastructure

1.1 Introduction

1.1.1 Overview and background

- 1.1.1.1 This document forms **Annex 3.2: Selection and Refinement of the Offshore Infrastructure to Chapter 3: Site Section and Consideration of Alternatives of the Preliminary Environmental Information Report (PEIR)** prepared for the Morven Hawthorn Pit Grid Connection Project (hereafter referred to as 'the MHPGC Project'). The PEIR presents the preliminary findings of the Environmental Impact Assessment (EIA) process carried out to date for the MHPGC Project.
- 1.1.1.2 Morven Offshore Wind Limited (MvOWL), a joint venture between JERA Nex bp Limited (JNBP) and EnBW Energie Baden-Württemberg (EnBW) (hereafter 'the Applicant'), was awarded a seabed option under the 2021/22 ScotWind Leasing Round for the Morven Option Lease Agreement Site (hereafter Morven Site), located wholly within Plan Option Area E1, identified in the Scottish Government's Sectoral Marine Plan for Offshore Wind Energy (the SMP) (Scottish Government, 2020).
- 1.1.1.3 In the 2020 Progress Report to the Parliament on Reducing UK emissions, the Committee on Climate Change called for the UK Government to "develop a strategy to coordinate interconnectors and offshore networks for wind farms and their connections to the onshore network and bring forward any legislation necessary to enable coordination" (Committee on Climate Change, 2020). Following this, the UK Government announced the Offshore Transmission Network Review (OTNR) to identify near-term actions and opportunities for offshore windfarm projects to coordinate and thereby address the barriers of the then existing offshore transmission regime to the deployment of offshore wind; the intention being to develop an offshore transmission network that facilitates coordination between offshore wind developments.
- 1.1.1.4 The OTNR led to the publication of the Holistic Design Network (HND) (NGESO, 2022); which established an integrated approach to connecting new offshore wind generation to the electricity transmission network. Half of the generating capacity of the Morven Site was included within the HND assessment alongside other offshore wind developments in the East Coast Region. The remaining capacity was not included due to limitations on the total ScotWind generation considered within the HND.
- 1.1.1.5 The output of 2022 HND recommended that half of the generating capacity of the Morven Site, for up to 1.5 GW, is connected to the grid network at the Point of Interconnection (PoI) at the National Grid Hawthorn Pit Substation in County Durham, England.
- 1.1.1.6 The HND Follow Up Exercise (HND FUE) (Ofgem, 2024) was subsequently undertaken and considered the additional ScotWind projects and generating capacity that had not formed part of HND. This included the remaining half of the Morven Site generating capacity. The HND FUE recommended a second grid connection, for up to 1.5 GW, at a PoI within the Branxton area in East Lothian, Scotland.
- 1.1.1.7 The HND (and HND FUE) assessments both considered an interconnected offshore wind network, where a coordinated connection between other offshore assets was initially proposed.
- 1.1.1.8 The Applicant commenced the site selection process for the MHPGC Project, based on the recommended PoI at the National Grid Hawthorn Pit Substation identified through the 2022 HND. The alternatives considered for the MHPGC Project therefore relate to the feasible means of connecting Morven North or Morven South to the National Grid Hawthorn Pit Substation including the identification and assessment of offshore cable routes, landfall locations, onshore cable routes and associated onshore infrastructure.
- 1.1.1.9 Against this strategic grid connection context, in 2024 the Applicant decided to progress the Morven Site as two distinct projects: the Morven North Offshore Wind Array Project (hereafter 'Morven North') and the Morven South Offshore Wind Array Project (hereafter 'Morven South'). Both projects would be located off the coast of Aberdeenshire in the North Sea, within Scottish waters.
- 1.1.1.10 In April 2025, NESO subsequently confirmed that the original proposal of a coordinated connection design was discounted and a radial connection for half of the generating capacity of the Morven Site

would be connected to the grid network at National Grid Hawthorn Pit Substation in County Durham. This decision is evidenced in the outcome of the HND North Cluster 2 Impact Assessment and Asset Classification (Ofgem, 2025).

- 1.1.1.11 In March 2024, following the recommendations of the HND FUE, NESO also confirmed that the remaining half of the Morven Site generating capacity would connect to the electricity transmission network within the Branxton area (Ofgem, 2025). In September 2025, NESO subsequently confirmed that the original proposal of a coordinated connection design was discounted and a radial connection for remaining half of the generating capacity of the Morven Site would be connected to the grid network at Branxton area. (NESO – Sep 2025, Ofgem - Nov 2025).
- 1.1.1.12 The transmission infrastructure associated with the Hawthorn Pit connection is planned as part of this application with the MHPGC Project seeking development consent and Marine Licence(s) for assets in Scottish and English waters and England. The transmission infrastructure associated with the Branxton connection is planned to be progressed separately through the Morven Branxton Area Grid Connection Project (hereafter referred to as 'MBAGC Project') and does not form part of the application for the MHPGC Project. Further the applications for the generation assets, Morven North and Morven South, are being progressed separately and the Section 36 (s36) applications were submitted to the Scottish Ministers in May 2026 and are undergoing a separate consultation process.
- 1.1.1.13 The MHPGC Project will connect the OSPs in either Morven North or Morven South to the Pol at Hawthorn Pit and will comprise the offshore export cables transiting through Scottish offshore waters, English offshore and inshore waters, to landfall in County Durham where the offshore export cables will connect to the onshore export cables in the transition joint bay (TJB), with onshore export cables connecting to the Onshore Land Substation (LSS) and National Grid substation.
- 1.1.1.14 This Annex presents the offshore site selection stages the Applicant has followed for the MHPGC Project and the process to define the siting of the offshore components of the MHPGC Project to connect Morven North or Morven South to the Pol.

1.1.2 Purpose of this annex

- 1.1.2.1 This Annex sets out the stages of offshore infrastructure siting and design iterations that the MHPGC Project has progressed since the recommendations of the 2022 HND were published, through to PEIR. The MHPGC Project offshore infrastructure consists of high voltage direct current (HVDC) offshore export cables exporting electricity from the OSPs located in either Morven North or Morven South, to the subtidal exit pit between 360m and 1,660m seaward of Mean Low Water Springs (MLWS). The site selection for the landfall element of the MHPGC Project, the area in which the offshore export cables make landfall (come onshore) and are jointed to the onshore export cables within the TJB, which is sited above Mean High Water Springs (MHWS), is detailed in **Volume 1, Annex 3.1: Selection and Refinement of the Cable Landfall** of the PEIR.
- 1.1.2.2 This Annex forms part of a wider suite of site selection documents within the PEIR supporting the MHPGC Project. The overall site selection process is presented in **Volume 1, Chapter 3: Site Selection and Consideration of Alternatives, of the PEIR**, with supporting annexes covering the refinement of the cable landfall (**Volume 1, Chapter 3, Annex 3.1: Selection and Refinement of Cable Landfall, of the PEIR**), and onshore infrastructure (**Volume 1, Chapter 3, Annex 3.3: Selection and Refinement of Onshore Infrastructure, of the PEIR**). The relationship between these documents and the spatial overlap is illustrated in **Figure 1-1**, presenting the three site selection components against the now defined the MHPGC Project PEIR Red Line Boundary. Together, these documents present the iterative process undertaken to identify and refine the proposed configuration of the MHPGC Project from offshore export cables through to the Pol at Hawthorn Pit.
- 1.1.2.3 The site selection and refinement process followed an iterative approach to ensure the most appropriate and efficient solution was identified with consideration for environmental, engineering and commercial constraints. The site selection has been progressed through three stages, incorporating feedback received at each phase to further refine the siting and design of the offshore infrastructure in the next stage. These three stages are described in **Table 1-1**.

Table 1-1: Site selection and refinement stages

Stage	Associated Document
Stage 1 – Identification of Pol	Volume 1, Chapter 3: Site Selection and Consideration of Alternatives, of the PEIR
Stage 2 – Identification of areas of search • Stage 2a – identification of landfall areas of search • Stage 2b – identification of offshore infrastructure search area • Stage 2c – identification of onshore substations search area • Stage 2d – identification of onshore export cable route search area	Volume 1, Chapter 3, Annex 3.1: Selection and Refinement of Cable Landfall, of the PEIR Volume 1, Chapter 3, Annex 3.2: Selection and Refinement of the Offshore Infrastructure, of the PEIR Volume 1, Chapter 3, Annex 3.3: Selection and Refinement of the Onshore Infrastructure, of the PEIR
Stage 3 – Refinement of the siting and design of the MHPGC Project for PEIR • Stage 3a – refinement of landfall for PEIR • Stage 3b – refinement of offshore infrastructure options for PEIR • Stage 3c – refinement of onshore substation search areas for PEIR • Stage 3d – refinement of onshore export cable route options for PEIR	Volume 1: Annex 3.1: Selection and Refinement of Cable Landfall, of the PEIR Volume 1: Annex 3.2: Selection and Refinement of the Offshore Infrastructure, of the PEIR Volume 1: Annex 3.3: Selection and Refinement of the Onshore Infrastructure, of the PEIR

1.1.2.4 This Annex focuses on the offshore infrastructure siting and design considerations seawards of the subtidal exit pits associated with Stages 2b and 3b as detailed in **Table 1-1**. In particular, this Annex details the following considerations for each stage (considered holistically, rather than in a particular order):

- The approach taken to defining the spatial boundaries and constituent parts of offshore infrastructure requirements;
- The siting decisions taken by the Applicant; and
- The reasonable offshore alternatives considered for the MHPGC Project, including location and siting options.

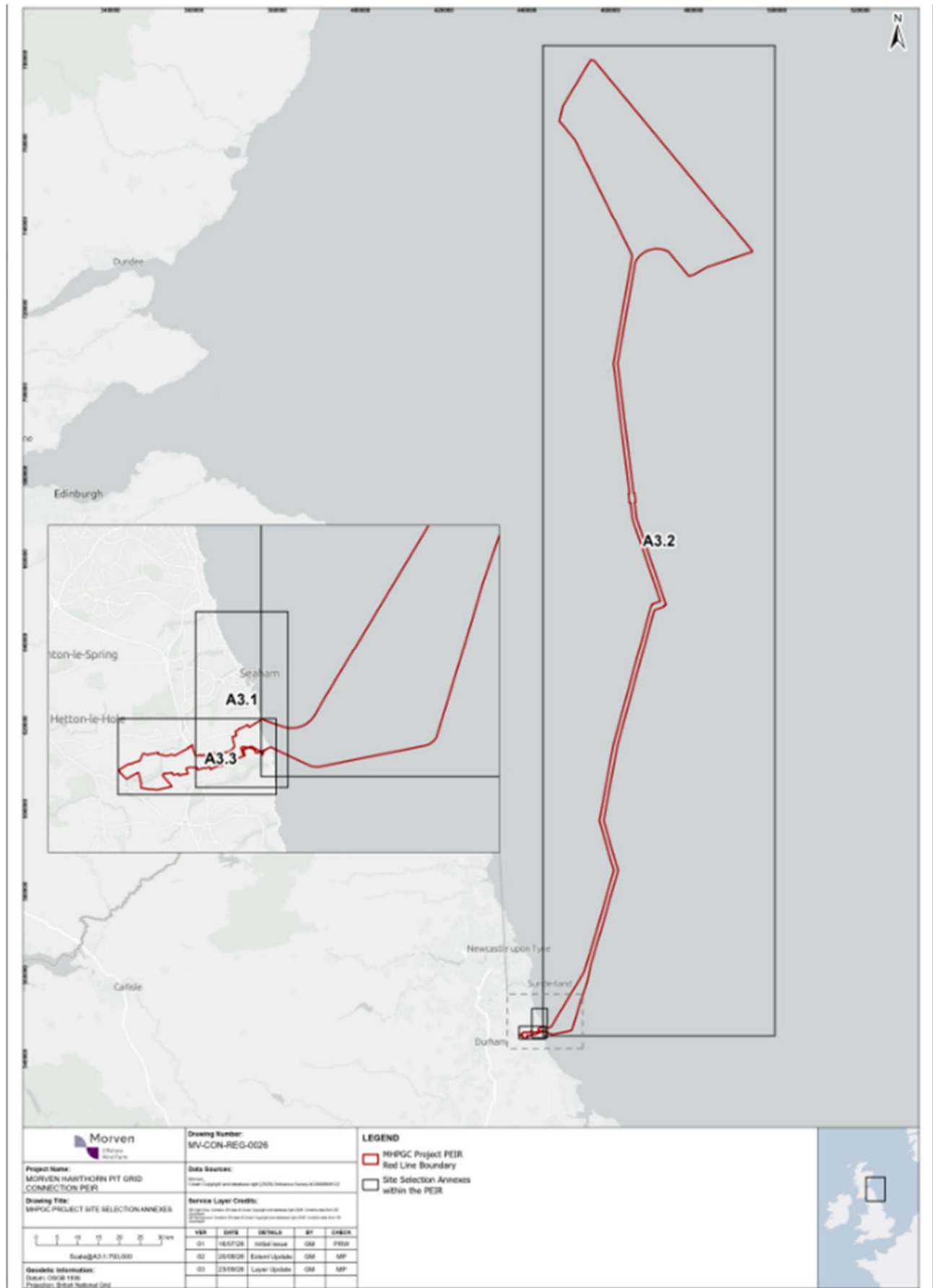


Figure 1-1: MHPGC Project Site Selection Annexes

1.1.3 Consultation and engagement

- 1.1.3.1 Stakeholder engagement and public consultation is recognised as vitally important for shaping the approach to development throughout each programme stage. **Table 1-2** provides a summary of consultation and engagement undertaken since the recommendation of the 2022 HND process was published to PEIR submission relevant to site selection for the MHPGC Project and **Table 1-3** provides a summary of the site selection stages.

Table 1-2: Summary of consultation and engagement for relevant to site selection for the MHPGC Project

Programme stage	Description of activities	Site selection stage
Non-statutory consultation July – September 2024	Non-statutory public consultation events to: • Present an overview of the Morven Programme, providing justification for separate consent applications for the MHPGC Project and Morven North and Morven South; • Provide an update on the HND and HNDFUE process and the identification of two separate grid connections for the Morven Site; and • Explain how the MHPGC Project will tie in with the Morven Site.	Stage 2b – identification of offshore infrastructure search area
EIA scoping February 2025	Submission of EIA Scoping Report for the MHPGC Project covering: • The EIA Scoping boundary; • Landfall search area; and • Two offshore export cable corridor options and Onshore infrastructure search area.	Stage 2b – progressing from the identification of an offshore infrastructure search area to the refinement of an EIA Scoping boundary.
Non-statutory consultation October – November 2025	Non-statutory public consultation events to present: • Proposed offshore export cable corridor; • Two landfall options; • Two indicative onshore export cable routes; • Three indicative onshore substation locations; • Request for feedback from stakeholders and communities; and • Landowner liaison.	Stage 3b – refinement of offshore infrastructure options for PEIR
Evidence Process Plan (EPP) Steering Group and Expert Working Groups (EWGs) (tranche 1) November 2025	EPP Steering Group and EWGs to discuss ongoing site selection activities and approach to EIA.	Stage 3b – refinement of offshore infrastructure options for PEIR

Programme stage	Description of activities	Site selection stage
EPP and EWGs (tranche 2) July 2026	EPP Steering Group and EWGs on preliminary PEIR findings and proposed commitments.	Stage 3b – refinement of offshore infrastructure options for PEIR
Non-statutory consultation (inclusive of the PEIR) October – November 2026	Overview of project refinements since scoping covering: - Proposed offshore export cable corridor; - Selected landfall option; - Indicative onshore export cable route; - Two indicative onshore substation locations; - Request for feedback from stakeholders and communities; and - Landowner liaison.	

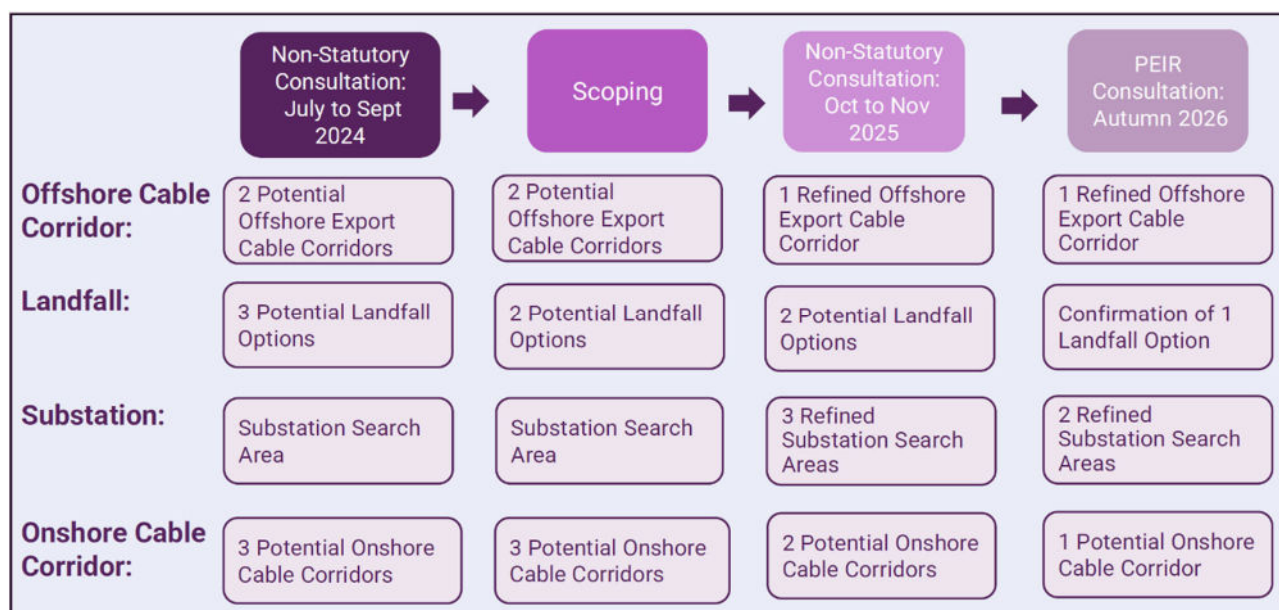


Table 1-3: Selection and Refinement Process of the MHPGC Project

1.1.3.2 From the publication of the HND recommendation up to publication of the PEIR, the Applicant has engaged with a range of stakeholders on site selection and the design of the MHPGC Project through consultation events, direct engagement and through the EPP. This included engaging through the EPP during the pre-application phase. The development and monitoring of the EPP and its subsequent progress was undertaken by the EPP Steering Group. The Steering Group comprises the Planning Inspectorate, the Applicant, NatureScot, the Marine Management Organisation (MMO), Natural England, the Environment Agency, and the relevant Local Planning Authorities (Durham County Council and Sunderland County Council) as the key regulatory bodies. Additionally, EWGs were set up to discuss and agree topic specific issues with the relevant stakeholders and to disseminate site and design refinements.

- 1.1.3.3 A summary of the key topics raised during consultation activities undertaken to date specific to the site selection and refinement of the offshore infrastructure is presented in **Volume 1, Chapter 3: Site Selection and Consideration of Alternatives, of the PEIR**, alongside how consultation has shaped each stage of site selection.

1.2 Guiding Principles for Site Selection of Offshore Infrastructure

- 1.2.1.1 Alongside the legislation and policies detailed in **Volume 1, Chapter 3: Site Selection and Consideration of Alternatives, of the PEIR**, the following general principles guided the site selection and refinement of the MHPGC Project offshore infrastructure:

- Shortest offshore cable route from the Morven site to the Landfall Search Area to reduce environmental impacts by minimising the project footprint and minimise electrical transmission losses;
- Avoidance of sensitive environmental features and receptors where practicable, and where not, to reduce interaction and mitigate potential impacts;
- Reduce interaction with existing marine infrastructure and other sea users, where practicable; and
- Find a route able to accommodate the offshore infrastructure design envelope at each stage.

- 1.2.1.2 Each step of the process (as described in **Table 1-1**) involved gathering desktop and survey data and feedback from stakeholders and the public to define and assess the offshore infrastructure options. Internal workshops were also held to collate and review data and feedback gathered to reach cross-discipline refinement decisions on the offshore cable corridor options.

1.2.2 BRAG Assessment Methodology

- 1.2.2.1 A Black/ Red/ Amber/ Green (BRAG) Assessment was adopted to assess offshore corridor options during the site selection process (see **Section 1.6.1 and 1.6.2** for assessment details and conclusions). This approach is considered appropriate to compare different corridors or routes, enabling a clear and direct comparison between options. Once constraints have been identified they are classified under four Appraisal Criteria, whereby the constraint is ranked as black, red, amber or green relative to a specific category criteria. **Table 1-4** presents a high-level summary of the BRAG Appraisal Criteria and **Table 1-6** provides a detailed breakdown of constraint specific category criteria.

Table 1-4: BRAG Appraisal Criteria

Rating	Summary
Black	Constraints cannot be overcome and option is not feasible
Red	High potential to constrain development
Amber	Intermediate potential to constrain development
Green	Low potential to constrain development

- 1.2.2.2 Offshore constraint types considered within the BRAG Assessment included technical, commercial, environmental and human. Within each constraint type, multiple subcategories were assessed for example boulder fields (technical); cable length (commercial); designated sites (environmental); and cable crossings (human). The full list of offshore constraints and subcategories are presented in **Table 6-1** and findings discussed in **Section 1.6**.
- 1.2.2.3 The BRAG Assessment and specifically definition of the Appraisal Criteria, presented in **Table 6-1**, was undertaken by a team of engineering, environmental, technical and EIA specialists, experienced in completing BRAG Assessments and site selection. The defined criteria and methodology were

agreed through multidisciplinary workshops and drawing on previous experience of undertaking site selection assessments. A summary of the BRAG Assessment outcomes and how this was incorporated into the site selection process is presented in **Section 1.6**.

1.3 Measures adopted as part of the MHPGC Project (Commitments)

- 1.3.1.1 Throughout the design process of the MHPGC Project several mitigation measures have been adopted to reduce the potential for impacts including in relation to site selection. Embedded mitigation includes primary and tertiary mitigation as identified in the ISEP (formerly IEMA) guidance 'Implementing the Mitigation Hierarchy from Concept to Construction' (IEMA, 2024).
- 1.3.1.2 Primary mitigation, including measures as part of the project design, are most relevant to the site selection process. ISEP describes these as "modifications to the location or design of the development made during the pre-application phase that are an inherent part of the project and do not require additional action to be taken". This includes modifications arising through the iterative design process, which are described throughout the down selection process set out in **Sections 1.5 and 1.6**. These measures will be secured through the consent itself through the description of the project and the parameters secured in the DCO and marine licence, or both.
- 1.3.1.3 The measures relevant to the selection and refinement of the offshore infrastructure are outlined in **Table 1-5**. A draft version of the Commitments Register is provided with this PEIR in **Volume 1, Annex 4.1: Draft Commitments Register, of the PEIR**, though it is noted this remains a working document as the EIA process is ongoing.

Table 1-5: Measures (commitments) adopted as part of the MHPGC Project relevant to offshore site selection and design refinement

Commitment (CoT) number	Phase	Measure adopted	How the measure will be secured
CoT08	Construction	An Outline Offshore Cable Specification and Installation Plan (CSIP) will be prepared and submitted with the application for development consent and as part of the marine licence application(s) to the Scottish Ministers. It will include cable burial to be the preferred option for cable protection, where practicable. A Detailed CSIP will be developed prior to construction that will be substantially in accordance with the Outline CSIP. The Outline CSIP will include (but is not limited to): - a Cable Burial Risk Assessment (CBRA), which will define burial depths and safeguards, based on seabed conditions and external aggression and climate change hazards, to keep the offshore export cables protected and compliant through all project phases while upholding navigational and environmental safety; - the implementation, management and monitoring of cable protection; - details on the development of the cable installation and protection design within the Farn Deeps Nephrops ground, which will seek to maximise cable burial and minimise the requirement for external cable protection, where technically feasible, taking account of cable stability, integrity and other engineering requirements.	The measure will be secured via a condition in the Deemed Marine Licence and Scottish Marine Licences.
CoT09	Construction	An Offshore Crossing Schedule will be prepared and submitted as part of the application for development consent and as part of the marine licence application(s) to the Scottish Ministers. Crossing and proximity agreements will be put in place with known existing cable and pipeline infrastructure owners prior to installation of the offshore export cables and associated cable protection.	The measure will be secured via a condition in the Deemed Marine Licence and Scottish Marine Licences.
CoT13	Construction	The Project Description (Volume 1, Chapter 2 of the PEIR) sets out that the installation of the offshore export cables under Durham Coast SSSI and SAC will be undertaken by trenchless technologies. The exit pits associated with the trenchless technologies installation will be at least 100 m seaward of the eastern boundary of the Durham Coast SSSI and SAC.	The measure will be secured via a condition in the Deemed Marine Licence and Scottish Marine Licences.

CoT19	Construction; Operations & Maintenance; Decommissioning	Ongoing liaison with the fishing industry through the appointment of a Company Fisheries Liaison Officer(s) (CFLO)(s) and adherence to good practice guidance with regards to fisheries liaison (e.g. Fishing Liaison with Offshore Wind and Wet Renewables Group FLOWW (2025) guidance for English Waters).	The measure will be secured via a condition in the Deemed Marine Licence and Scottish Marine Licences.
CoT20	Construction; Operations & Maintenance; Decommissioning	An Outline Fisheries Liaison and Coexistence Plan (FLCP) will be produced in relation to English Waters and will be submitted with the application for development consent. It will include details of the measures which are proposed to be implemented to reduce impacts on commercial fishing, the approach to monitoring fisheries activity and the approach to fisheries liaison and procedures to manage interactions between the MHPGC Project and the fishing industry. A Detailed FLCP will be developed post-consent substantially accordance with the Outline FLCP.	The measure will be secured via a condition in the Deemed Marine Licence.
CoT55	Construction	A draft Fisheries Management and Mitigation Coexistence Plan (FMMCP) will be produced in relation to Scottish Waters and submitted as part of the marine licence application(s) to the Scottish Ministers. The draft FMMCP will detail measures which are proposed to be implemented to reduce impacts on commercial fishing, the approach to monitoring fisheries activity and the approach to fisheries liaison and procedures to manage interactions between the MHPGC Project and the fishing industry in Scottish Waters. Updates to the FMMCP will be developed post-consent in accordance with the draft FMMCP if required.	The measure will be secured via a condition in the Scottish Marine Licences.
CoT58	Construction	UXO hazards will be avoided where practicable and appropriate. Where avoidance is not possible, removal techniques will be considered prior to detonation. Low-order techniques, such as deflagration, will be the preferred method where practicable and appropriate. Should low order not be practicable, relocation will be considered and if no alternatives exists high order clearance may be required. If high order is required for UXO clearance works, licensing will be subject to a standalone Marine Licence application(s). The application(s) will provide details of measures to seek to minimise impacts on marine mammals where appropriate.	The measure will be secured via a condition in the Deemed Marine Licence and Scottish Marine Licences.

1.4 Stage 1: Notification of Point of Interconnection

- 1.4.1.1 The seabed option was awarded under the 2021/22 ScotWind Leasing Round for the Morven Site (Scottish Government, 2020). As detailed in the **Section 1.1**, the 2022 HND process recommended half the Morven Site generating capacity should connect to the Pol at Hawthorn Pit National Substation (confirmed in the 2025 HND outcome), and HND FUE subsequently recommended the second grid connection, of up to 1.5 GW to a Pol in the Branxton Area, East Lothian.
- 1.4.1.2 Against this strategic grid connection context, in 2024 the Applicant decided to progress the Morven Site as two distinct projects, with the first transmission project, the MHPGC Project, connecting either Morven North or Morven South to the Pol at Hawthorn Pit.
- 1.4.1.3 The Applicant commenced the site selection process for the MHPGC Project, based on the recommended Pol at the National Grid Hawthorn Pit Substation identified through the HND process. The following sections present the stages and process of site selection and refinement for the offshore infrastructure. Further details on Stage 1: Notification of Pol are presented in **Volume 1, Chapter 3: Site Selection and Refinement of the PEIR**.

1.5 Stage 2b: Identification of Offshore Infrastructure Search Area

- 1.5.1.1 Once the Pol was recommended through the 2022 HND process an Offshore Infrastructure Search Area was defined by encompassing the Morven Site, located in Scottish waters and a Landfall Search Area in County Durham, England in proximity to the Pol at Hawthorn Pit. Further details on the identification of the Landfall Search Area are presented in **Volume 1, Annex 3.1: Selection and Refinement of the Cable Landfall, of the PEIR**. The Offshore Infrastructure Search Area covered a large area to enable all relevant constraints to be identified and retain sufficient flexibility to accommodate all design parameters being considered in the early design phase.
- 1.5.1.2 This included flexibility for a potential coordinated connection design being considered by NESO, although this was later discounted, with NESO confirming a radial connection. This decision is evidenced in the outcome of the HND North Cluster 2 Impact Assessment and Asset Classification (Ofgem, 2025).
- 1.5.1.3 The MHPGC Project Landfall Search Area extended approximately 12 km from the south of Sunderland to the north of Peterlee as shown in **Figure 3 in Volume 1 Annex 3.1: Selection and Refinement of the Cable Landfall of the PEIR**. The identification of the Landfall Search Area was guided by the principles outlined in **Volume 1, Annex 3.1: Selection and Refinement of the Cable Landfall, of the PEIR**, with the intention of achieving the shortest route for the offshore and onshore export cables required to connect the Morven Site, and the predetermined Pol at the National Grid substation at Hawthorn Pit. The identification of a Landfall Search Area defined the landfall extent of the Offshore Infrastructure Search Area, presenting an area of search from the Morven Site south through English waters within which to identify a route for the offshore infrastructure.
- 1.5.1.4 The Offshore Infrastructure Search Area was designed to facilitate flexibility in design and sufficient space for the development of multiple offshore export cable corridor options. The large area of search allowed for engineering design to respond to physical and technical constraints, technological advances, and subsequent refinements evidenced by technical reviews, survey data and consultation feedback.
- 1.5.1.5 The development of the Offshore Infrastructure Search Area recognised the guiding principles set out in **Section 1.2**, with the objective of achieving the shortest offshore cable route from the Morven Site to landfall, avoiding sensitive environmental receptors or reducing impacts where avoidance was not practicable, reducing the interaction with marine infrastructure and other sea users and identifying a corridor that could accommodate design iterations.
- 1.5.1.6 The Offshore Infrastructure Search Area is presented in **Figure 1-2**.

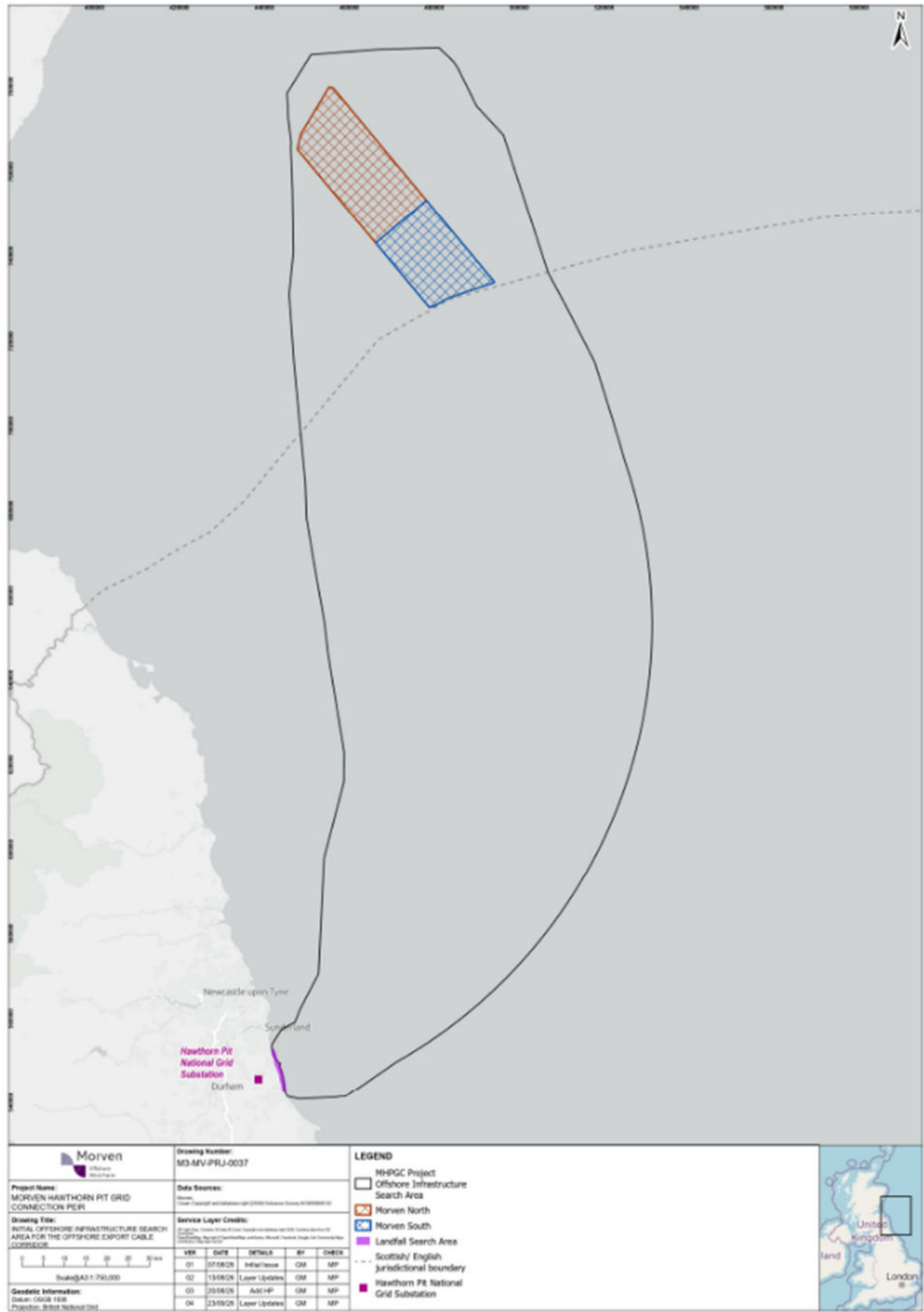


Figure 1-2 Offshore Infrastructure Search Area

1.5.2 Constraints Mapping and Analysis

- 1.5.2.1 To guide the identification of potential offshore cable corridor options within the Offshore Infrastructure Search Area, constraints mapping and analysis was undertaken to inform route optioneering.
- 1.5.2.2 Constraints categorised under technical, environmental and human topics were identified and mapped within GIS software. This included defined sites such as Special Areas of Conservations (SAC) and Marine Conservation Zone (MCZ), levels of activity or density for receptors such as shipping and commercial fisheries, and physical features such as sand waves or seabed slopes. Constraints that were identified and formed the basis of the constraint mapping and analysis are detailed in **Table 1-6** and presented in **Figure 1-3** and **Figure 1.4**.
- 1.5.2.3 Once mapped, the constraints within the Offshore Infrastructure Search Area were analysed and subject to review by a multidisciplinary team of engineering, environmental and technical experts to determine potential corridor options.

Table 1-6: Identified Constraints within the Offshore Infrastructure Search Area

Constraint	Constraint description
Environmental: biological	There are several statutory ecological designations present within the Offshore Infrastructure Search Area. North to south these comprise: • Firth of Forth Banks Complex Marine Protected Area (MPA): The site, based wholly within Scottish waters, comprises three geographically discrete areas located to the west of the Offshore Infrastructure Search Area in Scottish waters. The site includes the Berwick Bank, Scalp Bank, Montrose Bank and the Wee Bankie shelf banks and mounds. The site covers a total area of 2,130km². It is designated for offshore subtidal sands and gravels, ocean quahog (<i>Arctica islandica</i>) aggregations, shelf bank and mounds, and moraines. • Farnes East MCZ: This site, occupying an area of 945km² approximately 11km off the Northumberland coast, is wholly within English waters, on the west of the Offshore Infrastructure Search Area. It is designated for moderate energy circalittoral rock, subtidal coarse sediment, subtidal sand, subtidal mud, subtidal mixed sediments, sea pen and burrowing megafauna communities and ocean quahog. • North East of Farnes Deep MCZ and Highly Protected Marine Area (HPMA): This site occupies an area of 492 km² approximately 55 km off the Northumberland coast towards the centre of the Offshore Infrastructure Search Area in English waters. It is designated for benthic habitats such as subtidal coarse sediment, subtidal sand, subtidal mixed sediments and subtidal mud as well as ocean quahog. • Swallow Sand MCZ: this site occupies an area of 4,746km² approximately 100km off the Northumberland coast towards the centre of the Offshore Infrastructure Search Area in English waters. It is designated for subtidal coarse sediment, subtidal sand and North Sea glacial tunnel valleys (Swallow Hole). The following statutory ecological designations are located beyond the Offshore Infrastructure Search Area within the wider vicinity of the Project: • Berwickshire & North Northumberland Coast Special Area of Conservation (SAC): The site, located in England, is approximately 21km north of the Offshore Infrastructure Search Area and designated for a number of coastal features such as sea inlets, estuaries, mud flats, salt marshes and sea cliffs. • Northumberland Marine Special Protected Area (SPA): The site located approximately 13km north of the Offshore Infrastructure Search Area in English waters and designated for a number of ornithological species such as sandwich tern, common tern, arctic tern, roseate tern, little tern, puffin and guillemot.

Constraint	Constraint description
	• Berwick to St Mary's MCZ: The site, located in English waters, is approximately 11km north of the Offshore Infrastructure Search Area and designated for common eider. • Teesmouth and Cleveland Coast SPA: The site is located outside but abuts the Offshore Infrastructure Search Area in English waters and is designated for a number of ornithological species such as avocet, common tern, knot, little tern, redshank and ruff. Within the approaches to the Landfall Search Area and the intertidal zone, there are extensive patches of potential Annex 1 reef (undesigned sabellaria spinulosa reefs on mixed sediment substrate) and potential sporadic patches of Annex 1 reef (undesigned bedrock and/ or stony) (JNCC, 2022). Within the Offshore Infrastructure Search Area in Scottish waters, sparse recordings of potential Priority Marine Features have been identified such as sea pens and burrowing megafauna communities and <i>Arachnanthus sarsi</i> (see Volume 2, Annex 3.1: Benthic Ecology Technical Report, of the PEIR for further information).
Environmental: physical	The bathymetry within the Offshore Infrastructure Search Area is influenced by both geology and geological processes. The deposition of large volumes of sediment during glacial times and its subsequent reworking by the sea has created large features, such as sandbanks and sandwave fields, which have a direct impact on bathymetry. The water depth within the Offshore Infrastructure Search Area ranges from shallow waters close to landfall, to 105m at the deepest point in English waters. In Scottish waters the water depth is approximately 60m. The underlying seabed is composed of a range of sediments with variable thickness. The majority of the Offshore Infrastructure Search Area comprises sand and muddy sands as well as gravelly sands and gravelly mud, however, further south close to the coast there are areas of hard substrate, which is more difficult for cable installation compared to softer substrates, which may require greater volumes of cable protection. While much of the seabed is classed as sand and sandwave zones are present it is considered to be a relatively stable seabed environment. Higher mobile seabed environments can impact cable design and cable operability; sandwaves and mega ripples can cause functionality issues for subsea cables and can affect subsea cable temperatures.
Human: historic	With regard to historic environment, a number of wrecks, potential wrecks and obstruction records are recorded as historic constraints within the Offshore Infrastructure Search Area. There are a higher number of wrecks recorded in inshore waters closer to the County Durham coastline compared to offshore, where the density of wrecks is generally low. A combination of the low density of wrecks and the ability to avoid such features through the establishment of Archaeological Exclusion Zones and micro-siting of the corridor means that these historic constraints are unlikely to materially influence the identification of route corridors.
Human: commercial fisheries	Fishing activity is variable throughout the Offshore Infrastructure Search Area given its large area, however, high levels of fishing activity occur within nearshore waters to the west of the Search Area and south of Farnes East MCZ, where commercial fishing grounds, specifically nephrops fisheries, are located. A range of fishing fleets are present across the Offshore Infrastructure Search Area, comprising Scottish, English and international vessels.

Constraint	Constraint description
Human: shipping and navigation	Shipping traffic increases towards the south of the Offshore Infrastructure Search Area, primarily in inshore waters where moderate to high levels of shipping traffic is present. This relates to key shipping routes to and from the Firth of Forth, River Tyne, River Wear and River Tees as well as around Seaham Harbour. Moving east across the Offshore Infrastructure Search Area, shipping density is lower, although noting west to east shipping routes between the UK and northern Europe . There is a designated anchorage area located within the nearshore area of the Offshore Infrastructure Search Area, towards the Landfall Search Area (likely associated with Teesport).
Human: other infrastructure	Other infrastructure constraints include: • Berwick Bank and Seagreen Offshore Wind Farms, both outside and to the west of the Offshore Infrastructure Search Area. • There are offshore wind farm sites in the early development phase to the north and east of Morven North and Morven South, the most notable is the proposed Ossian Offshore Wind Farm to the east, partially within the Offshore Infrastructure Search Area. • Within English waters there are no offshore wind projects that overlap the Offshore Infrastructure Search Area. The Teeside Offshore Wind farm is located south of the Offshore Infrastructure Search Area and the Blyth Offshore Wind Demonstrator site is located north to the north. • The only offshore wind transmission asset to intersect the Offshore Infrastructure Search Area is the Cambois Connection, the proposed transmission export cable from Berwick Bank Offshore Wind Farm. • There are a number of cables and a pipeline within the Offshore Infrastructure Search Area. This includes the approved Eastern Green Link (EGL1) and EGL2 cable projects, subsea HVDC electricity interconnectors between Scotland and England; the North Sea Link interconnector, an existing interconnector between the UK and Norway; telecommunications cables; and the Everest to Teeside gas pipeline. In addition EGL3, EGL4 and EGL5, are in the early stages of development and intersect the Offshore Infrastructure Search Area to varying extents. A Northumbrian Water Outfall Pipe intersects with the Landfall Search Area. An offshore petroleum licence block overlaps with the Offshore Infrastructure Search Area in the northeast of the area.
Human: military activity	The Offshore Infrastructure Search Area intersects with the following Military Practice and Exercise Area (PEXA) constraints: • D513 Druridge Bay Military PEXA Firing Practice Area in English waters. • D323 Area of Intense Aerial Activity Military PEXA overlap to the southeast of the area of search. D61 Area of Intense Aerial Activity Military PEXA overlaps in the north, in Scottish and English waters.
Human: marine disposal sites	There are two marine disposal sites in English waters that overlap with the Offshore Infrastructure Search Area: • Souter Point marine disposal site located approximately 5.5km from the coastline north of Sunderland. This has a small section of overlaps with the Offshore Infrastructure Search Area.

Constraint	Constraint description
	Noses Point is located within the Landfall Search Area.





1.5.3 Initial Offshore Corridor Identification

- 1.5.3.1 The output of the constraint mapping and analysis was the identification of several potential offshore export cable corridor options within the wider Offshore Infrastructure Search Area. The route optioneering undertaken at this stage was high level, based on publicly available data only, but with the intention of defining options that would be subject to more detailed reviews and analysis as the site selection process progressed.
- 1.5.3.2 The corridors defined during this phase presented options for exiting the Morven Site, noting that the location of the OSP would not be determined until detailed design, with corridors routed east and west around identified constraints and converging in the approaches to the Landfall Search Area.
- 1.5.3.3 The potential offshore corridors were grouped into zones for ease of analysis and comparison, with Zone 1 delineating corridors to the west and Zone 2 capturing the corridor to the east:
- Zone 1 – capturing the overlap with the Morven Site, and corridor options to the west, specifically 1A, 1B, 1C and 1 D, routed between the Farnes East MCZ and North East of Farnes Deep MCZ and HPMA;
 - Zone 2 – covering the most easterly corridor, 2C, where it diverges from 1D and routes east of the North East of Farnes Deep MCZ and HPMA through the gap with Swallow Sands MCZ. 2A and 2B present corridor options where Zone 1 emerges from the gap between the Farnes East MCZ and North East of Farnes Deep MCZ and HPMA. Zone 2 also encompasses the broad corridor in the approaches to the Landfall Search Area.
- 1.5.3.4 **Figure 1-5, Figure 1-6 and Figure 1.7** present the outputs of the constraint mapping and initial corridor identification in the context of environmental and human constraints.



Figure 1-5 Initial Corridor Identification with Environmental Constraints



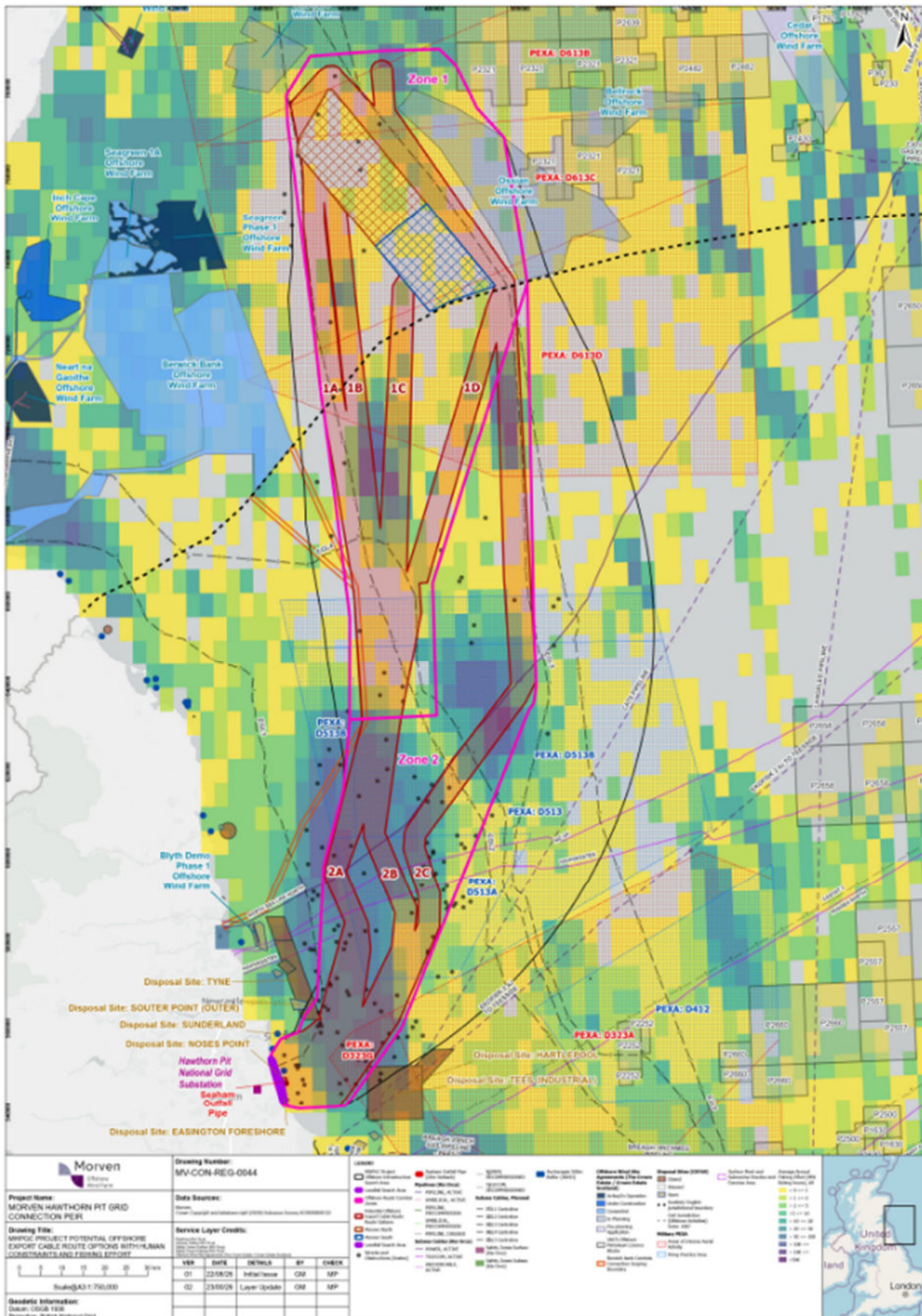


Figure 1-7: Initial Corridor Identification with Commercial Fishing Density

1.5.4 Outcomes of constraints mapping and initial offshore corridor identification

Zone 1

- 1.5.4.1 Zone 1 presents four potential offshore corridors (1A-1D), with options to exit the Morven Site along the western and eastern boundaries. The corridors are routed through Scottish offshore waters into English offshore waters where all four Zone 1 corridors converge through the gap between the Farnes East MCZ and North East of Farnes Deep MCZ and HPMA. There is no overlap with either designated site.
- 1.5.4.2 A summary of key findings for potential corridors in Zone 1 are as follows:
- 1A, 1B and 1C are the shortest and most direct southern alignments, providing three exit points from the Morven Site.
 - 1A abuts, but does not overlap, the Firth of Forth Banks Complex MPA in Scottish waters.
 - 1A and 1B are routed parallel to EGL 2 offshore cable corridor.
 - 1D, provides a much longer corridor option, routed along the eastern and northern boundary of the Morven Site, between Morven and the Ossian Offshore Wind farm.
 - All corridor options are routed between the Farnes East MCZ and North East of Farnes Deep MCZ and HPMA with no direct overlap with either designated site.
 - 1D is longer than routes 1A, 1B and 1C and is located further offshore, resulting in fewer interactions with existing offshore infrastructure and shipping.
 - Shipping data indicates that shipping traffic intensifies towards the south of 1A, 1B and 1C where moderate to high levels of shipping traffic are present, likely associated with key shipping routes from the Firth of Forth, River Tyne and River Tees.
 - 1A, 1B, 1C and 1D merge to a central point between the Farnes East MCZ and the North East of Farnes Deep MCZ and HPMA, with Zone 1 ending south of the Farnes East MCZ. EGL2 and the Cambois Connection (Berwick Bank Offshore Wind Farm) are also routed through the gap, which at its widest is approximately 15 km.

Zone 2

- 1.5.4.3 Zone 2 starts where 2C diverges from 1D at the south eastern corner of the Morven Site. 2C is routed to the east of the North East of Farnes Deep MCZ and HPMA through the gap with Swallow Sands MCZ and maintains an eastern alignment to the approaches to the Landfall Search Area where it converges with 2A and 2B.
- 1.5.4.4 Where Zone 1 ends, to the south of the gap between Farnes East MCZ and North East of Farnes Deep MCZ and HPMA, Zone 2 continues south with two corridor options, 2A and 2B, presenting alternative approaches to the Landfall Search Area. All three options, 2A, 2B and 2C merge in the offshore approaches to the Landfall Search Area to align with the widest extent of the Landfall Search Area. Landfall Search Area constraints including considerations seaward of MLWS are presented in **Volume 1, Annex 3.1: Selection and Refinement of the Cable Landfall** of the PEIR.
- 1.5.4.5 A summary of key findings for potential corridors in Zone 2 are as follows:
- 2C is the longest corridor option compared to options in Zone 1.
 - 2C is routed parallel to EGL3 to the east of the North East of Farnes Deep MCZ and HPMA.
 - 2C is routed through a gap between North East of Farnes Deep MCZ and HPMA and Swallow Sand MCZ.
 - 2A, 2B and 2C all have similar crossing constraints for cables and interconnectors.
 - 2C is routed further offshore compared to 2A and 2B and encounters lower levels of shipping activity.
 - 2A and 2B interact with similar levels of shipping traffic with moderate to high levels of shipping traffic occurring along the coast. 2A, 2B and 2C would all interact with higher levels of shipping in the approached to Landfall Search Area.
 - Zone 2 has high levels of commercial fishing activity. 2A and 2B intersect areas of high value/activity south of Farnes East MCZ, while 2C intersects an area of high intensity commercial fishing directly south of North East of Farnes Deep MCZ and HPMA.
 - All Zone 2 corridor options avoid oil and gas infrastructure and planned and consented offshore

wind farms.

1.5.5 Refinement of offshore corridor options for EIA Scoping

- 1.5.5.1 Following the conclusion of the constraints analysis and identification of initial offshore corridor options (see **Figure 1-5**, **Figure 1-6** and **Figure 1.7**) a series of engineering studies were commissioned to undertake a technical review of optioneering undertaken to date and the viability of identified corridors options.
- 1.5.5.2 A preliminary Cable Burial Risk Assessment (pCBRA) (Xodus, 2023) was undertaken to review the technical viability of routing, installing and achieving cable burial along the potential offshore corridors (1A-1D and 2A-2C). The pCBRA reported several technical constraints associated with aspects of installation and requirements for cable protection along the eastern corridor, but confirmed that all options were technically feasible. From an installation perspective no single option was preferred overall.
- 1.5.5.3 Following the completion of the pCBRA and building on the outputs of the constraint mapping the corridor options in Zone 1 and Zone 2 were combined to form an eastern and western corridors. It was recommended further evidence be gathered to determine the viability of each corridor and geophysical and geotechnical surveys were commissioned to enable a better understanding of the seabed conditions and environmental baseline.
- 1.5.5.4 The western survey corridor merged 1A and 1B, with a central alignment between the Farnes East MCZ and North East of Farnes Deep MCZ and HPMA, and a combination of 2A and 2B south of the gap, based on slight amendments from the pCBRA. The eastern survey corridor comprised route option 2C, with some amendments on alignment in the offshore approaches to the Landfall Search Area.
- 1.5.5.5 The determining factors in the identification of the survey corridors reflected the guiding principles outlined in **Section 1.2**, where the western survey corridor (1A and 1B, and 2A and 2B) presented the shortest distance to the Landfall Search Area, minimised the number of crossings of other offshore cables and pipelines and avoided any overlap with designated sites. Achieving a shorter cable length reduces environmental impacts by minimising the area disturbed by construction and any permanent infrastructure introduced. A shorter cable length would also minimise electrical transmission losses and lower costs on to the consumer. Corridor options 1A and 1B, and 2A and 2B, are referred to as the western corridor in the EIA Scoping Report and at later stages of the MHPGC Project development.
- 1.5.5.6 The factors, based on the guiding principles outlined in **Section 1.2**, influencing the determination of the eastern survey corridor (route option 2C) were to provide an alternative option to the constrained gap between the Farnes East MCZ and the North East of Farnes Deep MCZ and HPMA, and to avoid higher levels of interaction with other sea users such as commercial fisheries and shipping. Route option 2C is referred to as the eastern corridor in the EIA Scoping Report and at later stages of the Project development.
- 1.5.5.7 The objective of the proposed geophysical and geotechnical surveys was to identify technical and environmental constraints that may affect the viability of cable installation and inform subsequent down selection. The initial surveys in 2023 collected data across a survey corridor of up to 500m in width along both the eastern and western corridors. Survey techniques included multibeam echosounder (MBES), sub-bottom profiler (SBP), side scan sonar (SSS) and magnetometer (XOCEAN Ltd., 2023).
- 1.5.5.8 Geotechnical surveys were also completed in 2023 with Cone Penetration Tests (CPTs) completed on both corridors and vibrocore samples in Scottish waters only. Environmental surveys, including grab samples and drop down videos were undertaken along both the western and eastern corridors. The data and results from the geophysical, geotechnical and environmental surveys were then reviewed and analysed to inform route refinement.
- 1.5.5.9 The Applicant determined to progress the western and eastern corridor options as the basis for the EIA Scoping Boundary. Survey data interpretation and reporting was ongoing and there remained a need to maintain flexibility in the extent of the EIA Scoping boundary should the data determine areas

of higher technical or environmental constraint. Therefore the MHPGC Project EIA Scoping Boundary was developed allowing for a western and eastern corridor and adopting the following flexibility:

- Application of wide buffers on the western and eastern corridors to provide flexibility in the design process, for example number of cables and trenches required;
- Wide Landfall Area of Search, capturing a potential northern, central and southern landfalls (see **Volume 1, Annex 3.1: Selection and Refinement of the Cable Landfall** for further information); and
- Excluding direct overlap with designated sites.

1.5.5.10 **Figure 1-8, Figure 1-9 and Figure 1-10** present the MHPGC Project EIA Scoping boundary, with known environmental and human constraints.

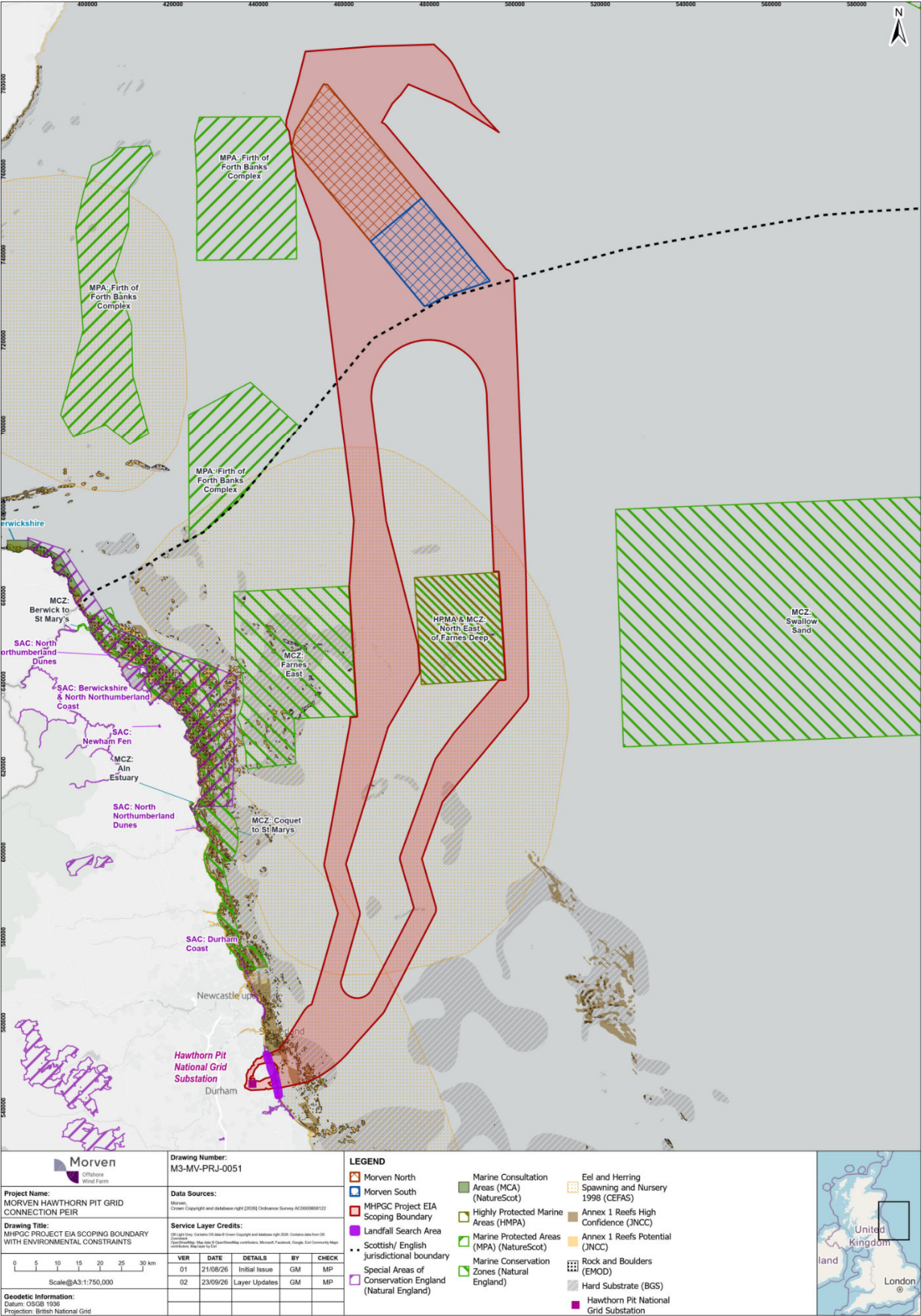


Figure 1-8: MHPGC Project EIA Scoping Boundary with Environmental Constraints



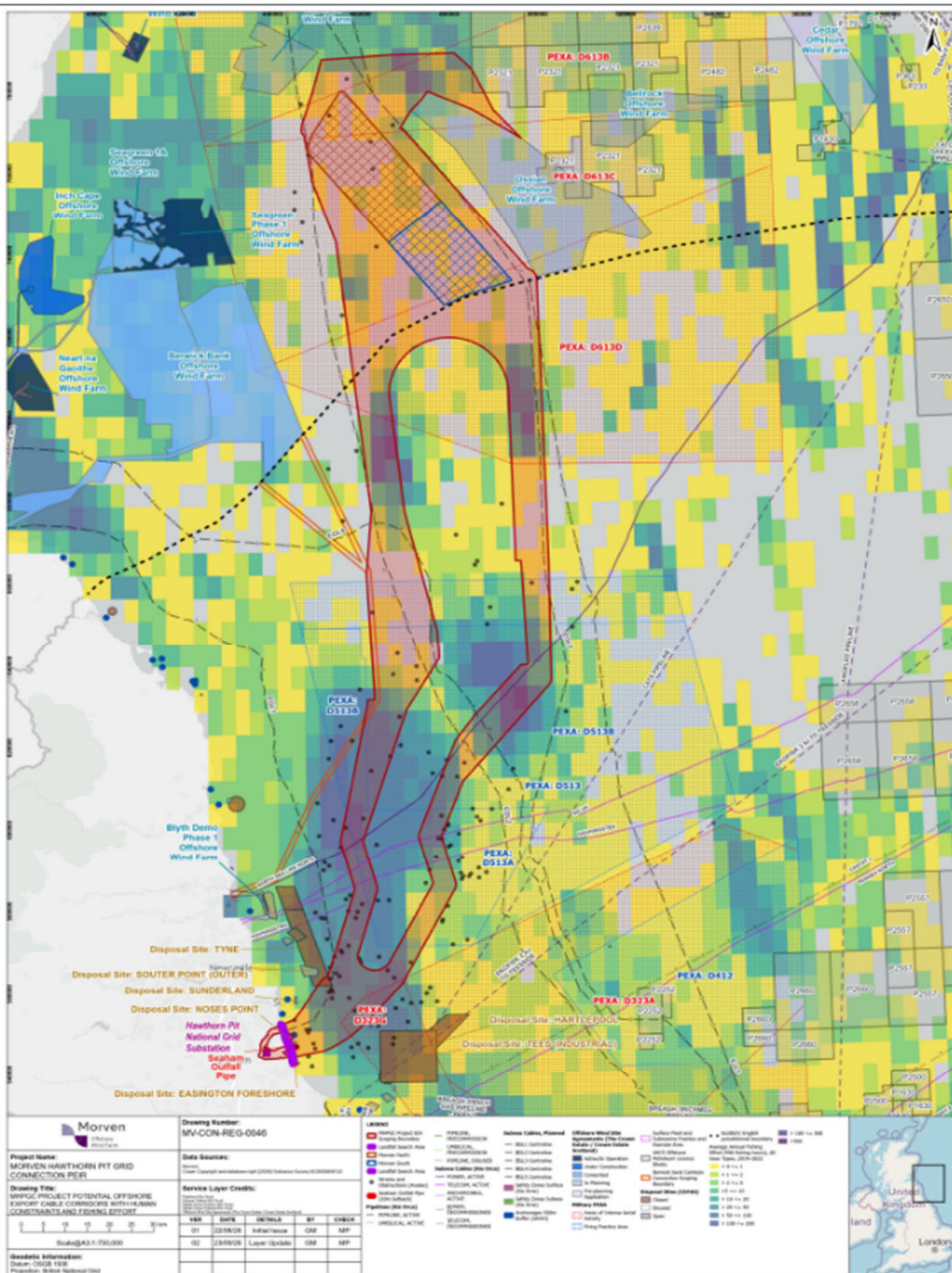


Figure 1-10: MHPGC Project EIA Scoping Boundary with Commercial Fishing Activity

1.6 Stage 3b: Refinement of Offshore Corridor for PEIR

1.6.1 BRAG Assessment

- 1.6.1.1 Following the submission of the MHPGC Project EIA Scoping Report in February 2025 and receipt of the EIA Scoping Opinion from PINS and MD-LOT, the MHPGC Project progressed to the next stage of down selection and refinement of the offshore export cable corridor options. Feedback received in the EIA Scoping Opinion encouraged further refinement of the offshore export cable corridor to enable a meaningful assessment and further engagement.
- 1.6.1.2 To inform the next stage of down selection the Applicant was able to draw on the offshore survey data, updated engineering reports and the outputs of the EIA Scoping process. To enable a direct comparison between the eastern and western corridors a BRAG Assessment was undertaken, using BRAG criteria to assess environmental, technical and commercial constraints. The BRAG Methodology is presented in **Section 1.2.2**, with the high level BRAG criteria summarised below and discussed in more detail **Table 1-7**:
- Black: Constraints cannot be overcome and option is not feasible;
Red: High potential to constrain development;
Amber: Intermediate potential to constrain development; and
Green: Low potential to constrain development.
- 1.6.1.3 Constraints scored as black were critical in identifying features to be avoided wherever possible in order to reduce impacts to the environment, human and infrastructure receptors, reduce consenting risk and limit the commercial impact of the MHPGC Project. Constraints scored as red, amber or green were identified as being more readily reduced or managed through project design and mitigation measures. Constraints assessed within the BRAG Assessment include technical, commercial, environmental and human.
- 1.6.1.4 The BRAG Assessment was informed by the project survey data and interpretation, technical assessments including an updated CBRA (Global Maritime, 2024) building on the pCBRA (Xodus, 2023) (see **Volume 2, Annex 8.2: Cable Burial Risk Assessment, of the PEIR**), and feedback from stakeholder engagement and consultation. Key findings were discussed through multidisciplinary workshops involving engineering, environmental, commercial and stakeholder teams.
- 1.6.1.5 The guiding principles outlined in **Section 1.2** informed the development of the BRAG Appraisal Criteria and underpinned the assessment, the conclusions of which are presented in **Table 1-7**.

Table 1-7: Offshore Infrastructure BRAG Assessment

Type of constraint	Category	Appraisal criteria				Appraisal	
		BLACK	RED	AMBER	GREEN	Western Corridor	Eastern Corridor
Technical	Depth of burial	>5m	2 to 5m	1 to 2m	<1m	0.5m	0.5m
	Soil strength (high strength)	N/A	>72km	72 to 24km	<24km	14km	53km. Longer sections of the eastern corridor, with higher soil strength, may lead to longer installation period which results in higher costs, safety risk and greater environmental impacts.
	Seabed mobility	N/A	>4m	1 to 4m	<1m	<1m	<1m.
	Seabed slopes	>15° slope	≤10° to 15° slope	≤5° to 10° slope	≤5° slope	<5° slope	<5° slope
	Boulder fields	N/A	>60km	60-36km	<36km	35km	55km. Longer sections of the eastern corridor interacting with boulder fields may necessitate larger areas requiring seabed clearance resulting in longer installation periods.
	Shallow bedrock	N/A	>48km	48 to 12km	<12km	<1km	20km. Longer sections of the eastern corridor with shallow bedrock may require increased volumes of cable protection and longer installation times.
	Bathymetry	Intertidal	water depth: <10m	water depth: <15m	water depth: ≥15m	55 to 106m	60 to 91m
	Mega ripples	N/A	>24km	24 to 12km	<12km	10km	19km. Longer sections of the eastern corridor interacting with mega ripples present potentially challenging feature to navigate and route through. Increased length in mobile seabed can impact cable design and cable operability; can cause functionality issues for subsea cables, affect subsea cable temperatures and result in larger areas requiring seabed clearance.
	Sandwaves	N/A	>24km	24 to 12km	<12km	8km	23km. Longer sections of the eastern corridor interacting with sandwaves present potentially challenging feature to navigate and route through. Increased length in mobile seabed can impact cable design and cable operability; can cause functionality issues for subsea cables, affect subsea cable temperatures and result in larger areas requiring seabed clearance.
	Grounding zone wedge	N/A	>60km	60 to 24km	<24km	0km	34km. Longer sections of the eastern corridor interacting with the is feature, which could contain boulders, will require additional time to prepare the offshore cable route for cable installation and increase the area of seabed clearance required.
	UXO	N/A	high	medium	low	Medium	Medium
Commercial	Cable length (based on indicative central OSP location to 1km from MHWS)	N/A	N/A	Longest	Shortest	213km	244km
Environmental	Conservation designations, protected habitats and protected species	Direct interaction and within internationally and/or nationally designated site	Indirect interaction with designated sites where there is potential for temporary impacts to	Indirect interaction with any designated site where there is no potential for impacts to the	There are no interactions between the proposed project and all internationally or nationally	The western corridor is routed through the gap between the Farnes East MCZ and the North East of Farnes Deep MCZ and HPMA, in close proximity to both sites, however, there is sufficient space within the gap to route the offshore corridor, including a buffer to limit indirect impacts, e.g. suspended sediment. Sea pens and burrowing megafauna habitats which are a protected feature of the Farnes East MCZ have been recorded as present within	The eastern corridor is immediately adjacent to the North East of Farnes Deep MCZ and HPMA for the entirety of the sites eastern boundary. The eastern corridor is approximately 21.5km distance from Swallow Sand MCZ. Grey seals have been recorded foraging within the eastern corridor. Grey seals are protected as part of the Berwickshire and North

Type of constraint	Category	Appraisal criteria				Appraisal	
		BLACK	RED	AMBER	GREEN	Western Corridor	Eastern Corridor
			the qualifying features of the designation	qualifying features of the designation	protected habitats and species	this area in the MHPGC Project specific surveys, although sparse observations (see Volume 2, Annex 3.1: Benthic Ecology Technical Report, of the PEIR). In Scottish waters the Priority Marine Feature (PMF) <i>Arachnanthus sarsi</i> was recorded at a small number of isolated stations during the MHPGC Project environmental surveys, however observations were sparse and not indicative of a wider habitat occurrence. Similarly, sea pens and burrowing megafauna were observed only in low numbers and did not meet the criteria for the PMF sea pen and burrowing megafauna communities. Grey seals have been recorded foraging within the western corridor. Grey seals are protected as part of the Berwickshire and North Northumberland Coast SAC, although there is no direct interaction between the western corridor and this SAC. Within the intertidal zone and approaches to the Landfall Search Area there are extensive patches of potential Annex 1 reef (undesigned sabellaria spinulosa reefs on mixed sediment substrate) and potential sporadic patches of Annex 1 reef (undesigned bedrock and/ or stony) (JNCC, 2022).	Northumberland Coast SAC, although there is no direct interaction between the eastern corridor and this SAC. Within intertidal zone and approaches to the Landfall Search Area , there are extensive patches of potential Annex 1 reef (undesigned <i>sabellaria spinulosa</i> reefs on mixed sediment substrate) and potential sporadic patches of Annex 1 reef (undesigned bedrock and/ or stony) (JNCC, 2022).
	Herring and sandeel spawning grounds	N/A	Intersects important spawning grounds for both demersal spawning species, herring and sandeel (Coull <i>et al.</i> , 1998)	Intersects important spawning grounds for one demersal spawning species; either herring or sandeel (Coull <i>et al.</i> , 1998)	Avoids important spawning grounds for demersal spawning species, herring and sandeel (Coull <i>et al.</i> , 1998)	The western corridor goes through an area of sandeel and herring spawning and nursery grounds (CEFAS, 1998). Herring spawn from August to October in the wider area of the western corridor. Sandeel spawning is widespread across the North Sea (Ellis <i>et al.</i> (2012). However, the western corridor goes through an area of low intensity spawning compared to areas further north of the Offshore Infrastructure Search Area off the coast of Scotland.	The eastern corridor goes through an area of herring and sandeel spawning and nursery grounds (CEFAS, 1998). Herring spawn from August to October in the wider area of the eastern corridor. Sandeel spawning is widespread across the North Sea (Ellis <i>et al.</i> (2012). However, the eastern corridor goes through an area of low intensity spawning compared to areas further north of the Offshore Infrastructure Search Area off the coast of Scotland.
Human	Historic	Direct interaction with known wreck and associated debris/debris field	≤25m of known wreck and associated debris/debris field	≤50m of known wreck and associated debris/debris field	> 50m from known wreck and associated debris/debris field	There is one designated wreck (PMRA 1986) in the nearshore approaches of the Landfall Search Area (RFA Creosol UKH05669). There are a number of potential wrecks and obstruction records recorded as historic constraints which could interact with the western corridor. However, there is adequate width in the western corridor to include appropriate buffers and establish Archaeological Exclusion Zones where required.	There is one designated wreck (PMRA 1986) in the nearshore approaches of the Landfall Search Area (RFA Creosol UKH05669). There are a number of potential wrecks and obstruction records recorded as historic constraints which could interact with the eastern corridor. However, there is adequate width in the eastern corridor to include appropriate buffers and establish Archaeological Exclusion Zones where required.
	Recreation	N/A	N/A	Intersects known areas of recreational activity	Avoids known areas of recreational activity	- There is a low intensity of recreational sailing and motor cruising in Scottish waters, with higher levels in English inshore waters. - There are very low levels of recreational angling in Scottish waters, with higher levels in English waters due to the proximity to Sunderland and Seaham. - Recreational vessel activity likely prominent in nearshore area in summer months. - There are low to medium levels of recreational activities such as boating and recreational sailing activity within the nearshore approaches to the Landfall Search Area.	- There is a low intensity of recreational sailing and motor cruising in Scottish waters, with higher levels in English inshore waters. - There are very low levels of recreational angling in Scottish waters, with higher levels in English waters due to the proximity to Sunderland and Seaham. - Recreational vessel activity likely prominent in nearshore area in summer months. - There are low to medium levels of recreational activities such as boating and recreational sailing activity within the nearshore approaches to the Landfall Search Area.
	Anchorages	Intersects designated anchorage area	N/A	≤1 nautical mile (nm) of designated anchorage area	> 1nm of designated anchorage area	There is a designated anchorage area located within 1nm of the western corridor, close to the Landfall Search Area (likely associated with Teesport).	There is a designated anchorage area located within 1nm of the eastern corridor, close to the Landfall Search Area (likely associated with Teesport).
	Known crossings	N/A	≥5 crossings	3 to 5 crossings	≤2 crossings	Nine proposed cable crossings: Havhingsten Seg 2.1;	Ten proposed cable crossings: Havhingsten Seg 2.1;

Type of constraint	Category	Appraisal criteria				Appraisal	
		BLACK	RED	AMBER	GREEN	Western Corridor	Eastern Corridor
	(oil and gas pipelines, electricity and telecommunication cables)					- Havingsten Seg 2S; - NO-UK telecommunications cable; - North Sea Link Cable 1; - North Sea Link Cable 2; - Cambois Connection from Berwick Bank Offshore Wind Farm (noting that there is adequate space in the Scoping Boundary to route the PEIR Red Line Boundary around this cable); - EGL1 (noting that there is adequate space in the Scoping Boundary to route the PEIR Red Line Boundary around this cable); - EGL2; and - EGL4. In addition, the export cable corridor boundary may overlap the Northumbrian Water Outfall Pipe which is located in the Landfall Search Area.	- Havingsten Seg 2S; - NO-UK telecommunications cable; - North Sea Link Cable 1; - North Sea Link Cable 2; - EGL1 (noting that there is adequate space in the Scoping Boundary to route the PEIR Red Line Boundary around this cable); - EGL2; and - EGL 3; and - EGL4. - EGL5 In addition the export cable corridor boundary may overlap the Northumbrian Water Outfall Pipe which is located in the Landfall Search Area.
	Offshore infrastructure (including offshore windfarms and currently known lease areas) and oil and gas infrastructure (excluding pipelines) and carbon capture and storage)	Intersects (excluding Morven North and Morven South)	≤250m	≤500m	≤1km	Ossian Lease Area abuts the MHPGC Project Scoping Boundary.	Ossian Lease Area abuts the MHPGC Project Scoping Boundary.
	Commercial fisheries	Overlapping with nationally significant fishing grounds that are seabed specific, of very high value and/or targeted by a fleet with very high dependency on these fishing grounds e.g., have no alternative fishing grounds.	Overlapping with key fishing grounds with consistent high fishing effort, of high value and/or targeted by a fleet with limited operational range or limited ability to fish alternative grounds. Average value of landings from	Overlapping with fishing grounds with moderate fishing effort, with catches of moderate value and/or targeted by a fleet with moderate operational range or moderate ability to fish alternative grounds. Average value of landings	No overlap with key fishing grounds, low fishing effort, with catches of low value and/or targeted by a fleet with wide operational range or good ability to fish alternative grounds. Average value of landings from overlapping ICES rectangles	The western corridor overlaps with demersal otter trawl fishing grounds targeting <i>nephrops</i>. The corridor crosses the Farn Deep Functional Unit, with approximately 100 km of overlap with <i>Nephrops</i> grounds. The overlap extends both within the 6 to 12nm zone and offshore through the centre of the area of highest fishing activity. Potting Activity: The inshore section intersects potting grounds for lobster and brown crab Pelagic otter trawl: No overlap identified. Dredge fisheries: No overlap identified.	The eastern corridor overlaps with demersal otter trawl fishing grounds targeting <i>nephrops</i>. The corridor crosses the Farn Deep Functional Unit, with approximately 45 km of overlap with <i>Nephrops</i> grounds. The overlap occurs within the 6 to 12nm area and further offshore, to the eastern extent of the fishing ground. Potting activity: The inshore route overlaps with potting grounds for lobster and brown crab. Pelagic otter trawl: Minor overlap, with limited expected disruption. Dredge fisheries: No overlap recorded.

Type of constraint	Category	Appraisal criteria				Appraisal	
		BLACK	RED	AMBER	GREEN	Western Corridor	Eastern Corridor
		Average value of landings from overlapping International Council for the Exploration of the Sea (ICES) rectangles (all gears, most recent annual value available) >15 million British pounds (GBP).	overlapping ICES rectangles (all gears, most recent annual value available) >8 million GBP.	from overlapping ICES rectangles (all gears, most recent annual value available) >6 million GBP.	(all gears, most recent annual value available) >200k GBP.		
	Dredge areas and disposal sites	N/A	Intersects	≤250m	≤500m	Noses Point and the Tyne disposal sites fall within western corridor in the approaches to landfall, although there is adequate space within the boundary to avoid intersecting and route around the disposal sites.	Noses Point and the Tyne disposal sites fall within eastern corridor in the approaches to landfall, although there is adequate space within the boundary to avoid intersecting and route around the disposal sites.
	Shipping	Within 0.5nm of a heavily trafficked route (multiple vessels per day and running alongside). Within 1nm of key routes (where any disruption may have an adverse impact upon schedules, e.g. commercial ferries and running alongside). Running parallel within 2nm of a designated Traffic Separation Scheme (TSS) or up to 5nm	Between 0.5 and 3.5nm from a heavily trafficked route and running alongside	Other commercial routes which are less heavily trafficked and have adequate sea room to be deviated, including crossing the routes	Avoids any regular commercial routing	Shipping traffic increases towards the south of the western corridor, primarily in inshore waters where moderate and high levels of shipping traffic are present. This relates to key shipping routes to and from the Firth of Forth, River Tyne, River Wear and River Tees as well as around Seaham Harbour. Shipping traffic routes, including DFDS Seaways RoPax ferry route with daily transits crosses the corridor from Newcastle. General cargo and tanker routes are heavier towards the southern sections of the corridor.	Shipping traffic is slightly lower in the eastern corridor. Shipping traffic increases towards the south of the eastern corridor, primarily in inshore waters where moderate and high levels of shipping traffic are present. This relates to key shipping routes to and from the Firth of Forth, River Tyne, River Wear and River Tees as well as around Seaham Harbour. Shipping traffic routes include DFDS Seaways RoPax ferry route with daily transits crosses of the corridor from Newcastle. General cargo and tanker routes are heavier towards the southern sections of the corridor.

Type of constraint	Category	Appraisal criteria				Appraisal	
		BLACK	RED	AMBER	GREEN	Western Corridor	Eastern Corridor
		from a TSS entry/exit.					
	Military operations	N/A	N/A	Intersects areas of military operation	Avoids areas of military operation	Intersects: - Military PEXA Firing Practice Area D513 Druridge Bay; - Military PEXA Area of Intense Aerial Activity D323; and A small area of Military PEXA D323 in the nearshore area of the corridors.	Intersects: - Military PEXA Firing Practice Area D513 Druridge Bay; - Military PEXA Area of Intense Aerial Activity D323; and A small area of Military PEXA D323 in the nearshore area of the corridors.

1.6.2 Outcomes of the BRAG Assessment

- 1.6.2.1 The following sections summarise the conclusions of the BRAG Assessment, considering the technical, commercial, environmental and human constraints.

Technical

- 1.6.2.2 The technical assessment considered a range of physical features and processes that may impact the ability to install the cable or achieve burial depths or influence the extent to which cable protection may be required.
- 1.6.2.3 The BRAG Assessment determined the eastern corridor demonstrated high strength soils and a greater number of boulder fields, which can increase seabed preparation requirements, and decrease cable laying speed, slowing the cable installation, which in turns results in higher costs and potentially greater environmental impacts due to impacts from vessel disturbance and underwater noise.
- 1.6.2.4 The eastern corridor also has more sandwaves and mega ripples, which is an indication of seabed mobility and a potentially challenging feature to navigate an export cable corridor through. Higher mobile seabed environments can impact cable design and cable operability; mega ripples and sandwaves can cause functionality issues for subsea cables and can affect subsea cable temperatures.
- 1.6.2.5 Shallow bedrock was also recorded across large areas of the eastern corridor which would limit the ability to bury the cable and requires greater volumes of cable protection to be installed.
- 1.6.2.6 On the basis of the appraisal presented in **Table 1-7** the western corridor was ranked as technically preferable to the eastern corridor. The CBRA (see **Volume 2, Annex 8.2: Cable Burial Risk Assessment, of the PEIR**) did conclude both corridors were viable, however the eastern corridor is assessed as having a higher technical risk compared to the western corridor.

Commercial

- 1.6.2.7 The eastern offshore export cable corridor is approximately 34km longer than the western corridor (244km compared to 213km). A longer cable corridor increases the projects footprint in the marine environment resulting in more potential direct and indirect environmental impacts. A longer cable also increases the costs to the project and the consumer as a result of the cost of purchasing the cable and increased installation costs. The risk of electrical transmission losses would also be higher for the eastern corridor due to the increased length.
- 1.6.2.8 On the basis of the appraisal presented in **Table 1-7** the western corridor was ranked as commercially preferable to the eastern corridor.

Environmental

- 1.6.2.9 The environmental assessment considered designated sites, protected species and habitats and how potential direct and impact impacts arising from the MHPGC Project may affect sensitive features and environmental receptors.
- 1.6.2.10 The eastern corridor is routed through the gap (approximately 21 km) between the North East of Farnes Deep MCZ and HPMA and Swallow Sands MCZ. The western corridor is routed through the gap (approximately 15 km) between the Farnes East MCZ and North East of Farnes Deep MCZ and HPMA. Neither corridor directly overlaps a designated sites although there are potential pathways through with the MHPGC Project could interact with the sites and relevant conservation objectives. The eastern corridor abuts the eastern boundary of the North East of Farnes Deep MCZ and HPMA, whereas there is buffer either side of the western corridor. The proximity of the eastern corridor may result in greater indirect impacts on the ecosystem of the HPMA.
- 1.6.2.11 Both the eastern and western corridors have records of foraging Grey seals, with Berwickshire and North Northumberland Coast SAC being the closest site designated for this feature. Both the eastern and western corridors interact with records of Annex I reef in the approaches to landfall.

- 1.6.2.12 The MHPGC Project specific surveys recorded sparse records of Sea pens and burrowing megafauna habitats along the western corridor, although observations were sparse and not indicative of a wider habitat occurrence.
- 1.6.2.13 Both corridors route through areas of sandeel and herring spawning and nursery grounds although noting these are low intensity spawning grounds compared to areas further north in the Offshore Infrastructure Search Area.
- 1.6.2.14 On the basis of the appraisal presented in **Table 1-7** the western and eastern corridors were ranked evenly, and neither was preferable from an environmentally perspective.

Human

- 1.6.2.15 The human assessment considered a range of receptors, activities and infrastructure. Certain categories, such as Military operations or cables (interconnectors) cover large areas and the appraisal of the western and eastern corridors resulted in similar conclusions.
- 1.6.2.16 Both the western and eastern corridor interact with known wrecks, although it is possible to route around wrecks and adopt mitigation via Archaeological Exclusions Zones (AEZs). Both corridors interact with areas of shipping activity associated with the shipping routes to and from the Firth of Forth, River Tyne, River Wear and River Tees as well as around Seaham Harbour and are within 1nm of a designated anchorage area. Noses Point and Tyne disposal sites are located within the extent of both corridors, although acknowledging these can be routed around to avoid any direct overlap.
- 1.6.2.17 The western corridor interacts with high intensity fishing grounds targeting nephrops, and crosses approximately 100 km of the Farn Deep Functional Unit, while the eastern corridor overlaps approximately 45 km of the nephrops fishing grounds. Both the western and eastern corridor overlap known potting grounds for lobster and brown crab. The western corridor was concluded to be higher risk in respect of the interface with commercial fisheries due to greater overlap with the established commercial fishing grounds.
- 1.6.2.18 Both corridors intersect areas of military operations. Neither corridor directly overlaps offshore infrastructure although noting both are adjacent to the Ossian offshore wind farm. The western corridor may cross up to nine cables, and the eastern corridor up to 10. Both overlap the Northumbrian Water Outfall Pipe at landfall.
- 1.6.2.19 On the basis of the appraisal presented in **Table 1-7** the eastern corridor was ranked as preferable to the western corridor in respect of human criteria.

1.6.3 BRAG Assessment Conclusions

- 1.6.3.1 The BRAG Assessment concluded higher risks associated with the western corridor for human constraints, but the eastern corridor was assessed as having higher technical and commercial risks. The corridors were both assessed as having high environmental risks.
- 1.6.3.2 On the basis of the BRAG Assessment and drawing on the constraints mapping, geophysical and geotechnical survey data, environmental survey data, engineering assessments, and CBRA (see **Volume 2, Annex 8.2: Cable Burial Risk Assessment, of the PEIR**) the western corridor was determined to be the preferred offshore export cable corridor. These inputs and sources of data were considered collectively to inform the down selection process and identify the route option which represented the best overall balance between environmental, technical, commercial and stakeholder considerations.

1.6.4 Non-Statutory Consultation

- 1.6.4.1 The western corridor was subsequently presented during the Non-Statutory Consultation events and targeted stakeholder engagement, including the EWGs as part of the EPP in October and November 2025. The Non-Statutory Consultation presented a summary of the down selection process, seeking views and additional feedback on the refined western corridor as the preferred corridor. Feedback received was reviewed and informed the drafting of the PEIR, and where relevant further route and site refinements.

- 1.6.4.2 Feedback from the Non-Statutory Consultation meetings did highlight concerns raised by commercial fisheries stakeholders regarding the overlap of the western corridor with the Farn Deep's nephrops grounds. Further consideration of the potential impact associated with all phases of the MHPGC Project and commercial fisheries receptors is assessed in **Volume 2, Chapter 7: Commercial Fisheries of the PEIR**. The down selection process required consideration of all constraints including commercial fisheries, engineering feasibility, route length, constructability, environmental constraints, cable crossing requirements and overall project deliverability. Commercial fisheries formed an important component of the assessment but were not considered in isolation from the wider route selection criteria.

1.6.5 MHPGC Project PEIR Red Line Boundary

- 1.6.5.1 The conclusion of the site selection and refinement process is the determination of the preferred offshore export cable corridor which is being progressed as the MHPGC Project PEIR Red Line Boundary, presented in **Figure 1-11, Figure 1-12 and Figure 1-13**.

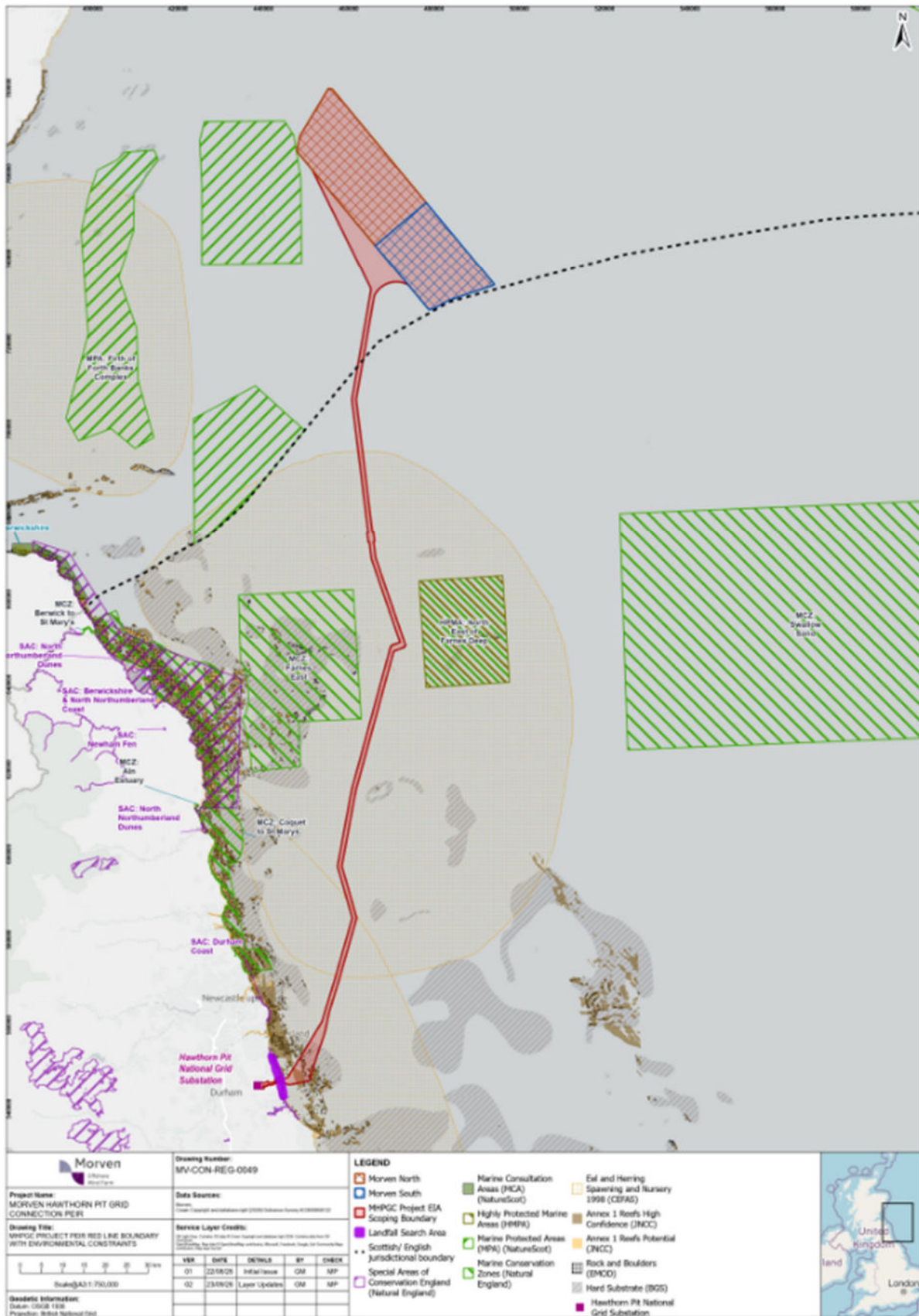


Figure 1-11: MHPGC Project PEIR Red Line Boundary with Environmental Constraints





1.7 Offshore Infrastructure Refinement Summary

- 1.7.1.1 The MHPGC Project PEIR Red Line Boundary for the offshore export cable corridor has been developed through a structured and iterative site selection process, informed by environmental constraints, engineering requirements, commercial considerations, stakeholder engagement and project-specific survey data. The process progressed from the identification of a broad Offshore Infrastructure Search Area through successive stages of constraints mapping, route corridor development, geophysical, geotechnical and environmental surveys, and comparative route appraisal.
- 1.7.1.2 A range of offshore export cable corridor options were considered and assessed against environmental, technical and commercial criteria. Both the western and eastern corridor options were found to be technically feasible of delivering a connection between Morven North or Morven South and the selected landfall location. The selection process therefore focused on identifying the corridor which provided the best overall balance of environmental, engineering, commercial and stakeholder considerations. Whilst the western corridor presents greater interaction with the Farn Deep's Nephrops fishery, it was considered to offer advantages including a shorter route length, reduced cable crossings, lower engineering risk during construction and operation, more favourable seabed conditions and reduced interaction with some environmental receptors. On balance, these factors outweigh the additional fisheries constraint and resulted in the western corridor being identified as the preferred option for PEIR. The Applicant will continue to engage with the fishing industry through ongoing engagement and updates following PEIR to further understand potential interactions and identify opportunities to reduce impacts.
- 1.7.1.3 The MHPGC Project PEIR Red Line Boundary has therefore been refined on the basis of progressing the western corridor, while retaining sufficient flexibility to accommodate detailed design and further route optimisation. Through this process, the Applicant has sought to avoid constraints and reduce potential environmental and technical impacts, while maintaining a viable connection to the National Grid substation at Hawthorn Pit. The offshore export cable corridor will continue to be refined following consultation on the PEIR and ongoing engineering and environmental assessments, with any further refinements to be presented within the Environmental Statement submitted in support of the DCO application.

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