Morven South Offshore Wind Array Project

Environmental Impact Assessment Report

Volume 4, Annex 1, Appendix 1.3: Scour Protection Management Plan (SPMP) (Version 1)

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Document status

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Prepared by:	Prepared for:
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Glossary

Term	Meaning
The Applicant	The entity making the Applications: Morven Offshore Wind Limited (MvOWL).
Bathymetry	The measurement of depth of water in oceans, seas, or lakes.
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.
Maximum design scenario (MDS)	The maximum design parameters from the Project Design Envelope (PDE) likely to result in the greatest impact on a particular topic receptor.
Morven North Boundary	Boundary within which the wind turbines and foundations, Offshore Substation Platforms and foundations, inter-array cables and interconnector cables for Morven North will be located.
Morven South Boundary	Boundary within which the wind turbines and foundations, OSPs and foundations, inter-array cables and interconnector cables for Morven South will be located.
Scour protection	Measures to prevent loss of seabed sediment around any structure placed in or on the seabed (e.g. by use of protective aprons, mattresses, rock and gravel placement).
The Morven North Offshore Wind Array Project (hereafter, "Morven North")	The Morven North Offshore Wind Array Project which includes the wind turbines and foundations, offshore substation platforms (OSPs) and foundations, inter-array and interconnector cables and associated infrastructure located within the Morven North Boundary. Consent for the export cables for Morven North will be sought separately.
The Morven Option Lease Agreement Site (hereafter "Morven Site")	The 859km^2 area awarded to the Applicant as a result of the ScotWind leasing round and located in Plan Option (PO) area E1. Morven North and Morven South are two distinct projects, located with the Morven Option Lease Agreement Site.
The Morven South Offshore Wind Array Project (hereafter, "Morven South")	The Morven South Offshore Wind Array Project which includes the wind turbines and foundations, offshore substation platforms (OSPs) and foundations, inter-array and interconnector cables and associated infrastructure located within the Morven South Boundary. Consent for the export cables for Morven South will be sought separately.

Acronyms

Acronym	Meaning
CaP	Cable Plan
CBRA	Cable Burial Risk Assessment
EIA	Environmental Impact Assessment
FEED	Front-End Engineering Design
GHG	Greenhouse Gas
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
MD-LOT	Marine Directorate – Licensing Operations Team
MDS	Maximum Design Scenario
MD-SEDD	Marine Directorate Science, Evidence, Data and Digital
O&M	Operation and Maintenance
OSPs	Offshore Substation Platforms
SPMP	Scour Protection Management Plan
SSC	Suspended Sediment Concentration

Units

Unit	Meaning
%	Percentage
km	Kilometre
m	Metre
m^2	Square metre
m^3	Cubic metres (volume)

1 Introduction

1.1 Purpose of this document

1.1.1.1 The Morven North Offshore Wind Array Project (hereafter, "Morven North") and the Morven South Offshore Wind Array Project (hereafter, "Morven South") are both located within the Morven Option Lease Agreement Site (hereafter, "Morven Site") in Scottish offshore waters. Morven North is located approximately 61km from the Aberdeenshire coast (at its closest point) and Morven South is located approximately 86km from the Aberdeenshire coast (at its closest point). Each project will comprise wind turbines, Offshore Substation Platforms (OSPs), associated foundations, inter-array and interconnector cables, and cable protection. Consent for the offshore export cables of Morven North and Morven South will be sought separately.

1.1.1.2 This Scour Protection Management Plan (SPMP) (Version 1) has been prepared by Tetra Tech RPS Energy to outline the key principles of managing the protection of infrastructure (wind turbines and OSP foundations, Inter-array and interconnector cables), from the potential effects of scour. It will also seek to minimise potential hazards (e.g. snagging of anchors) occurring following construction and during the Operation and Maintenance (O&M) phase of Morven North and Morven South. Any protection laid has the potential to result in scour, which can be described as the erosion and movement of sediment and seabed material around offshore structures. This is due to the action of currents and wave action.

1.1.1.3 This SPMP (Version 1) has been developed taking into account feedback provided from consultees as part of the Morven Option Lease Agreement Site Scoping Opinion (hereafter 'Morven Site Scoping Opinion') Marine Directorate – Licensing Operations Team (MD-LOT), 2023). This is provided below in Table 1.1, provides a summary of the issues raised by stakeholders in relation to scour protection and where this has been addressed in the Environmental Impact Assessment (EIA) Reports for Morven North and Morven South.

1.1.1.4 As the SPMP is a "live" document, it will be further developed post-consent in consultation with regulatory bodies and stakeholders such as MD-LOT, Marine Directorate Science, Evidence, Data and Digital (MD-SEDD) and NatureScot, once the final project design for Morven North and Morven South has been finalised. At the point of Application, this SPMP (Version 1) is a joint plan for both Morven North and Morven South, however, it is proposed that separate plans specific to Morven North and Morven South will be developed pre-construction when the final design of the projects are understood.

Table 1.1: Issues raised by consultees in the Morven Site Scoping Opinion in relation to scour protection

Issues raised	Stakeholder	How and where Issues are Addressed in the EIA
"The use of scour protection must be assessed in the EIA Report including details on materials, quantities, and location."	MD-LOT	Volume 2, Chapter 7: Physical Processes, of both Morven North and Morven South EIA Reports, with scour protection being assessed within relevant potential impact pathways, and assessment parameters presented within the MDS for relevant potential impacts. Volume 2, Chapter 8: Benthic Subtidal Ecology, of both Morven North and Morven South EIA Reports, with scour protection being assessed within relevant potential impact pathways, and assessment parameters presented

Issues raised	Stakeholder	How and where Issues are Addressed in the EIA
		within the MDS for relevant potential impacts Volume 2, Chapter 9: Fish and Shellfish Ecology, of both Morven North and Morven South EIA Reports, , with scour protection being assessed within relevant potential impact pathways, and assessment parameters presented within the MDS for relevant potential impacts. Volume 2, Chapter 12: Commercial Fisheries, of both Morven North and Morven South EIA Reports, , with scour protection being assessed within relevant potential impact pathways, and assessment parameters presented within the MDS for relevant potential impacts. Volume 2, Chapter 18: Climate Change, of both Morven North and Morven South EIA Reports, , with scour protection being assessed within relevant potential impact pathways, and assessment parameters presented within the MDS for relevant potential impacts.
Advice on EIA Scoping Report Appendix E: Physical Environment Potential impacts – P23: "Section 7.1.6, Table 7.3 indicated that no impacts are to be scoped out. However, we notice that impacts from scour around seabed infrastructure has been omitted and should be scoped in. This is because although scour protection is detailed as embedded mitigation, secondary scour can occur around scour protection."	NatureScot	Volume 2, Chapter 7: Physical Processes, of both Morven North and Morven South EIA Reports. This is addressed within Table 7.5, summarising key consultation issues raised during consultation activities undertaken for Morven North and Morven South.
Opinion on the Physical Processes Scoping Chapter: "The Scottish Ministers broadly agree with the impacts scoped in and out, however agree with the NatureScot representation that impacts from scour around seabed infrastructure should be scoped in due to the potential for secondary scour to occur around scour protection…".	MD-LOT	Volume 2, Chapter 7: Physical Processes, of both Morven North and Morven South EIA Reports. This is addressed within Table 7.5, summarising key consultation issues raised during consultation activities undertaken for Morven North and Morven South.

1.1.1.5 This SPMP (Version 1) provides provisional roles (naming and associated responsibilities), however, the Applicant reserves the right for listed roles and responsibilities to be carried out by alternative personnel within the applicant team. The final roles, naming of said roles, and responsibilities will be confirmed during the pre-construction phase, with the associated SPMP submitted for approval by MD-LOT. The delivery of the key responsibilities listed in this SPMP (Version 1), are committed to at this pre-application stage.

1.2 Background

1.2.1.1 Morven North and Morven South includes the following components which will require scour protection and cable protection:

- up to 96 wind turbines in Morven North, and up to 95 wind turbines in Morven South with associated support structures and fixed foundations;
- up to five OSPs in Morven North and up to five OSPs in Morven South, and associated support structures and fixed foundations, including:
  - up to four High Voltage Alternating Current (HVAC) collector substation platforms;
  - up to one High Voltage Direct Current (HVDC) convertor substation (this could be a single platform or two platforms linked by a bridge);
- a network of inter-array cabling linking the individual wind turbines to each other and to the OSPs, plus interconnector cables connecting OSPs to each other including:
  - approximately 424km of inter-array cabling and 484km of interconnector cabling in Morven North;
  - approximately 420km of inter-array cabling and 264km of interconnector cabling in Morven South.

1.2.1.2 A full description of Morven North and Morven South is provided in Volume 1, Chapter 3: Project Description, of the Morven North and Morven South EIA Reports. However, the detailed and final design of Morven North and Morven South will be determined post-consent.

1.2.1.3 A geophysical survey over the Morven Site was conducted in April to August 2022 to establish bathymetry, seabed geology, morphology and sediments, involving magnetometer, Side Scan Sonar, Single Beam Echosounder, Multibeam Echosounder, 2D Ultra-High Resolution Seismic and Sub-Bottom Profiler (Gardline, 2022).

1.2.1.4 Deep geotechnical surveys (including cone penetration test and borehole sampling) were also conducted in 2023. Further information on these surveys can be found in Volume 1, Chapter 4: Site Selection and Consideration of Alternatives.

1.2.1.5 All site specific surveys undertaken within the Morven Site are described in detail in Volume 1, Chapter 7: Physical Processes and Volume 1, Chapter 8: Benthic Subtidal Ecology of the Morven North and Morven South EIA Reports.

1.2.1.6 Bathymetry within the Morven North Boundary exhibits water depths ranging from 64m to 76m relative to Lowest Astronomical Tide and ranging from 64m to 75m within the Morven South Boundary. A full description of geophysical and geotechnical information is available in Volume 1, Chapter 7: Physical Processes, of the Morven North and Morven South EIA Reports.

1.2.1.7 There is an intention to undertake further geotechnical and geophysical surveys, as required, throughout the pre-construction and O&M phases. Any further surveys post-application, will feed into future geotechnical and detailed design work.

1.2.1.8 The final choice of scour protection for Morven North and Morven South will be made after design of the foundation structure is confirmed, taking into account a range of aspects including geotechnical data, meteorological and oceanographical data, water depth, foundation type, maintenance strategy and cost as outlined in Volume 1, Chapter 3: Project Description.

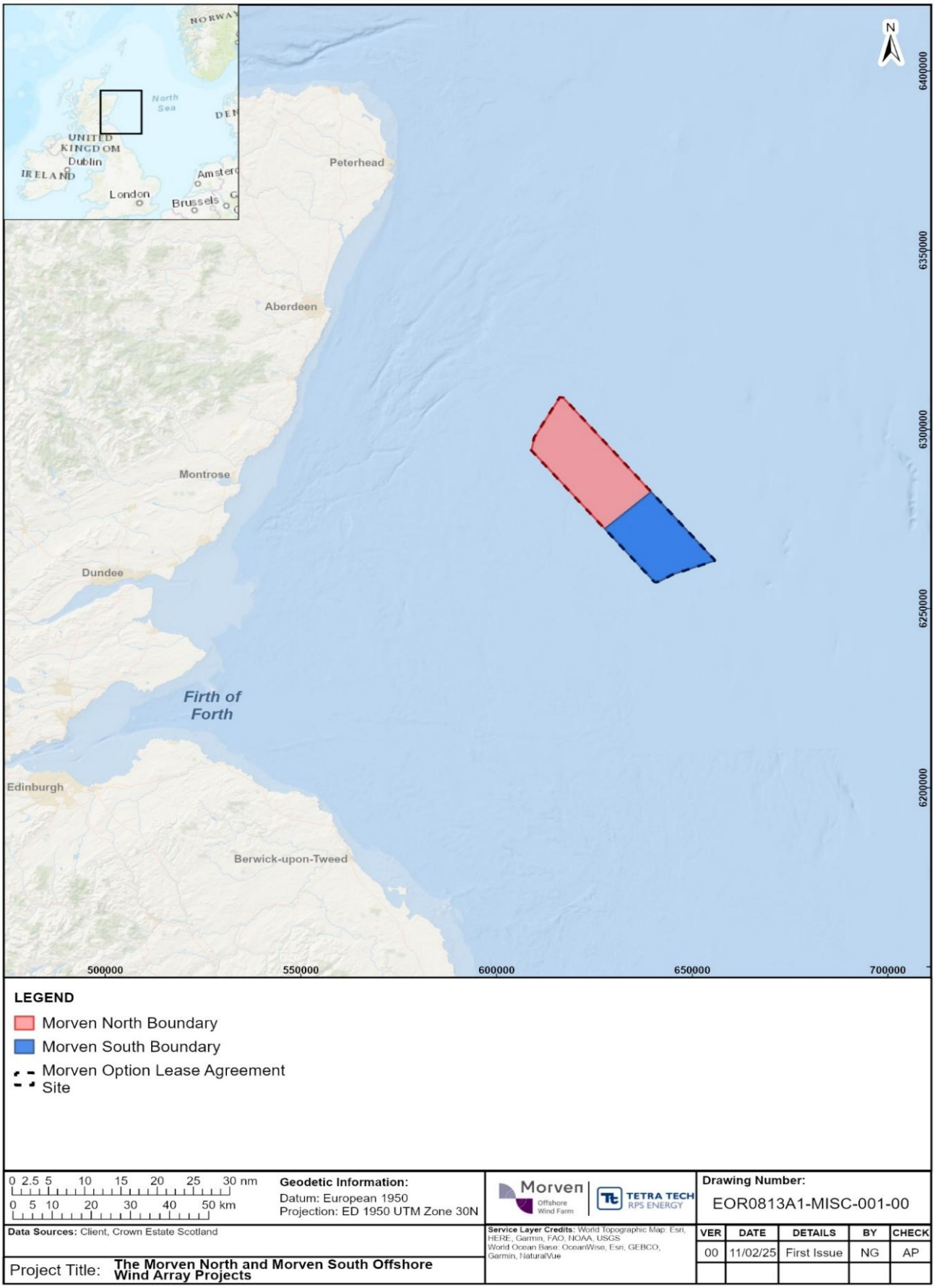

Figure 1.1: Location of the Morven Option Lease Agreement Site, Morven North and Morven South boundaries

2 Scour protection

2.1.1.1 The physical processes that occur within the Morven North and Morven South boundaries, such as tidal currents and sediment transport, have the potential to increase scour of wind turbine foundations, OSP foundations, and inter-array and interconnector cables. These conditions may therefore influence the nature of scour protection required, in order to protect (by reducing erosion) infrastructure at Morven North and Morven South.

2.1.1.2 The steps summarised below outline the proposed process for developing the scour protection design associated with Morven North and Morven South. This includes:

- design of scour protection:
  - pre-construction surveys to inform design concept;
  - Front-End Engineering Design (FEED) studies;
  - production of detailed design of scour protection.
- undertaking pre-installation surveys (e.g. geophysical surveys). These will be used to inform the preparation of the final SPMP;
- a detailed SPMP will be provided for submission and approval by MD-LOT, prior to commencement of construction;
- post-installation surveys will be undertaken as required, and as necessary to confirm scour protection installation and effectiveness;
- periodically, during the O&M phases of Morven North and Morven South, infrastructure will be inspected. This will include inspection of installed scour protection, if deemed necessary. If inspections reveal damage to the scour protection system, remediation work may be carried out and/or additional scour protection may be installed. The timing and frequency of any inspections will be determined post-construction and will be informed by previous inspections as appropriate.

2.1.1.3 Scour protection material is likely to be installed at wind turbine foundations, OSP foundations and inter-array and interconnector cables during the construction phase, if required. Installation of scour protection is intended to mitigate the potential effects of scour on infrastructure by minimising the release of suspended sediments, and any effects associated with seabed level changes, in the vicinity of the wind turbine and OSP foundations.

2.1.1.4 The Maximum Design Scenario (MDS) for scour protection required at Morven North and Morven South is provided in Volume 1, Chapter 3: Project Description (shown in Table 1.10 and Table 1.11), with a summary presented in Table 2.1 to Table 2.4.

2.1.1.5 A description of the types of scour protection being considered for Morven North and Morven South is described in Volume 1, Chapter 3: Project Description, however it includes the following scour protection systems:

- layers of graded rock;
- rock-filled mesh fibre bags;
- pre-cast concrete block mattresses;
- polypropylene fronds mattresses secured by weighted perimeter or anchors.

Table 2.1: Maximum Design Scenario for scour protection on wind turbine foundations for Morven North

Foundation	Scour protection area (maximum) per foundation (m^2) for Morven North	Scour protection volume (maximum) per foundation (m^3) for Morven North	Total scour protection volume (maximum) for Morven North (m^3)
Wind turbines			
Monopiles	3,870	10,179	858,833
Jacket foundations with pin piles	7,607	19,184	1,251,082
Jacket foundations with suction buckets	11,053	29,988	2,012,284

Table 2.2: Maximum Design Scenario for scour protection on wind turbine foundations for Morven South

Foundation	Scour protection area (maximum) per foundation (m^2) for Morven South	Scour protection volume (maximum) per foundation (m^3) for Morven South	Total scour protection volume (maximum) for Morven South (m^3)
Wind turbines			
Monopiles	3,870	10,179	849,887
Jacket foundations with pin piles	7,607	19,184	1,238,050
Jacket foundations with suction buckets	11,053	29,988	1,991,323

Table 2.3: Maximum Design Scenario for scour protection on Offshore Substation Platform foundations for Morven North

Parameter	Maximum design parameter			
	OSP Option 1		OSP Option 2	
	HVAC	HVDC	HVAC	Bridge-Linked HVDC
Morven North				
Foundation Option 1 - monopiles[1]				
Maximum area of scour protection per foundation (excluding pile area) (m^2)	3,871	N/A	3,871	N/A
Maximum volume of scour protection per foundation (m^3)	10,179	N/A	10,179	N/A

1 Note that monopiles are not proposed for HVDC OSPs (including the bridge-linked HVDC OSP), therefore, maximum design parameters for these are listed as 'N/A'.

Parameter	Maximum design parameter			
	OSP Option 1		OSP Option 2	
	HVAC	HVDC	HVAC	Bridge-Linked HVDC
Maximum volume of scour protection for Morven North (m^3)	40,715	N/A	40,715	N/A
Foundation Option 2 – jacket foundations with pin piles				
Maximum area of scour protection per foundation (excluding pile area) (m^2)	13,466	50,049	13,466	50,049
Maximum volume of scour protection per foundation (m^3)	33,666	125,123	33,666	125,123
Maximum volume of scour protection for Morven North (m^3)	134,663	125,123	134,663	250,245
Foundation Option 3 – jacket foundations with suction buckets				
Maximum area of scour protection per foundation (excluding pile area) (m^2)	16,432	53,032	16,432	53,032
Maximum volume of scour protection per foundation (m^3)	41,081	132,581	41,081	132,581
Maximum volume of scour protection for Morven North (m^3)	164,324	132,581	164,324	265,162
Foundation Option 4 – gravity base foundations				
Maximum area of scour protection per foundation (excluding pile area) (m^2)	36,945	74,725	36,945	74,725
Maximum volume of scour protection per foundation (m^3)	147,781	100,000	147,781	100,000
Maximum volume of scour protection for Morven North (m^3)	591,122	100,000	591,122	200,000

Table 2.4: Maximum Design Scenario for scour protection on Offshore Substation Platform foundations for Morven South

Parameter	Maximum design parameter			
	OSP Option 1		OSP Option 2	
	HVAC	HVDC	HVAC	Bridge-Linked HVDC
Morven South				
Foundation Option 1 - monopiles[2]				
Maximum area of scour protection per foundation (excluding pile area) (m^2)	3,871	N/A	3,871	N/A
Maximum volume of scour protection per foundation (m^3)	10,179	N/A	10,179	N/A
Maximum volume of scour protection for Morven South (m^3)	40,715	N/A	40,715	N/A
Foundation Option 2 – jacket foundations with pin piles				
Maximum area of scour protection per foundation (excluding pile area) (m^2)	13,466	50,049	13,466	50,049
Maximum volume of scour protection per foundation (m^3)	33,666	125,123	33,666	125,123
Maximum volume of scour protection for Morven South (m^3)	134,663	125,123	134,663	250,245
Foundation Option 3 – jacket foundations with suction buckets				
Maximum area of scour protection per foundation (excluding pile area) (m^2)	16,432	53,032	16,432	53,032
Maximum volume of scour protection per foundation (m^3)	41,081	132,581	41,081	132,581
Maximum volume of scour protection for Morven South (m^3)	164,324	132,581	164,324	265,162
Foundation Option 4 – gravity base foundations				
Maximum area of scour protection per foundation (excluding pile area) (m^2)	36,945	74,725	36,945	74,725
Maximum volume of scour protection per foundation (m^3)	147,781	100,000	147,781	100,000

2 Note that monopiles are not proposed for HVDC OSPs (including the bridge-linked HVDC OSP), therefore, maximum design parameters for these are listed as 'N/A'.

Parameter	Maximum design parameter			
	OSP Option 1		OSP Option 2	
	HVAC	HVDC	HVAC	Bridge-Linked HVDC
Maximum volume of scour protection for Morven South (m^3)	591,122	100,000	591,122	200,000

3 Cable protection

3.1 Unburied cables

3.1.1.1 The offshore inter-array and interconnector cables will be buried wherever feasible. In locations where achieving the minimum burial depth (0.5m) is not possible, for example due to exposed bedrock or unsuitable ground conditions, external cable protection will be applied (such as rock or concrete mattresses), providing a hard protective layer to restrict movement and prevent exposure of cables over the lifetime of Morven North and Morven South.

3.1.1.2 The below steps outline how the cable protection design will be developed:

- design of cable protection:
  - pre-construction surveys to inform design concept;
  - FEED studies;
  - production of detailed design of scour protection;
  - production of a Cable Burial Risk Assessment (CBRA).
- a detailed SPMP will be prepared, for submission and approval by MD-LOT prior to construction, which will detail the locations, types of cable protection and quantity of cable protection;
- a Cable Plan (CaP) will also be produced post-consent for submission and approval by MD-LOT prior to construction, which will include the CBRA;
- post-installation surveys (e.g. burial surveys) will be conducted to check that the target burial depths of cables have been met and that cable protection is installed adequately in order to protect assets and installation is in line with the approved plan. The specifications of these surveys will be outlined in the CaP and detailed in the updated SPMP;
- survey of assets including cable burial depths and integrity of the cable protection will be undertaken periodically during the O&M phase of the project. If inspections reveal damage to the scour protection system, remediation work may be carried out and/or additional scour protection may be installed. Timings and frequency will be determined post-construction and will be informed/adapted periodically as informed by previous asset surveys and updates to the CBRA. The Operation and Maintenance Plan (OMP) and CaP will include details of routine surveys. Approval of the OMP will be sought from MD-LOT prior to construction. Any further remediation works such as reburials and repairs could also be required, the details of which will be outlined in the OMP and CaP.

3.1.1.3 Whilst the surveys undertaken within the Morven Site indicated that the majority of Morven North and Morven South are likely to have suitable substrate conditions for cable burial, with sandy sediments and flat seabed, external cable protection may be required in certain areas due to unsuitable substrate types (i.e. areas with coarser substrates and/or shoals). Based on the survey information available pre-application, the maximum design for external cable protection assumes that 10% of the inter-array and interconnector cables will require external cable protection. This equates to the following:

- Morven North:
  - up to 42,375m of inter-array cabling requiring external cable protection;
  - up to 48,400m of interconnector cabling requiring external cable protection.
- Morven South:
  - up to 42,000m of inter-array cabling requiring external cable protection;
  - up to 26,400m of interconnector cabling requiring external cable protection.

3.1.1.4 The type of cable protection used will be dependent on various factors such as seabed conditions, sedimentology and physical processes. Cable protection used for inter-array and interconnector cables will also be designed to deal with scour.

3.1.1.5 Volume 1, Chapter 3: Project Description, of the Morven North and Morven South EIA Reports provides the maximum design for external cable protection of unburied cables required for Morven North and Morven South, which is summarised below in Table 3.1.

Table 3.1: Maximum Design Scenario for external cable protection in Morven North and Morven South

Parameter	Morven North		Morven South	
	Inter-array cables	Interconnector cables	Inter-array cables	Interconnector cables
Maximum percentage of cables that may require cable protection (%)	10		10	
Width of cable protection (m)	10		10	
Height of cable protection (m)	3		3	
Length of cable protection (m)	42,375	48,400	42,000	26,400
Maximum total cable protection footprint area for wind farm (m^2)	423,750	484,000	420,000	264,000
Maximum total cable protection volume for wind farm (m^3)	1,271,250	1,452,000	1,260,000	792,000

3.2 Cable crossings

3.2.1.1 Where offshore inter-array cables are required to cross an obstacle, such as another cable or pipeline, cable crossing protection may be installed to protect the obstacle being crossed.

3.2.1.2 There may be up to five offshore cable crossings for Morven North and up to five cable crossings for Morven South, for both inter-array and interconnector cables (as described in Volume 1, Chapter 3: Project Description, of the Morven North and Morven South EIA Reports). Where a cable crossing is for a third-party cable or pipeline, this would require an agreed procedure between the asset owners, with the agreement being finalised post-consent, following any additional pre-construction marine surveys.

3.2.1.3 Based on the information provided in Volume 1, Chapter 3: Project Description, of the Morven North and Morven South EIA Reports, the maximum width and length of the cable protection at both the inter-array and interconnector cable crossings is 36m and 80m, respectively; for Morven North and Morven South. The maximum height of the cable protection for both types of cable crossings is 4m. A summary of the maximum design for cable crossings required for Morven North and Morven South is summarised in Table 3.2 below.

Table 3.2: Maximum Design Scenario for cable crossings in Morven North and Morven South

Parameter	Morven North	Morven South
Maximum number of crossings	5	5
Maximum height of crossing (m)	4	4

Parameter	Morven North	Morven South
Maximum width of crossing (m)	36	36
Maximum length of each crossing (m)	80	80
Maximum area of protection material per crossing (m^2)	2,880	2,880
Maximum total area of crossing protection across wind farm (m^2)	14,400	14,400
Maximum volume of protection material per crossing (m^3)	11,520	11,520
Maximum volume of crossing protection across wind farm (m^3)	57,600	57,600

3.3 Types of cable protection

3.3.1.1 A description of the types of external cable protection of unburied cables and cable crossing materials being considered for Morven North and Morven South is described in Volume 1, Chapter 3: Project Description, however it includes, but is not limited to, the following cable protection systems:

- concrete mattresses;
- rock placement;
- rock bags;
- grout bags;
- cement bags;
- sandbags.

3.3.1.2 In addition, the following options may also be considered for external cable protection of unburied cables only:

- articulated pipes;
- cast iron shells;
- bend restrictors/stiffeners;
- cable protection systems;
- front mats.

4 Scour assessment in Offshore Environmental Impact Assessment Report

4.1.1.1 The EIA Reports for Morven North and Morven South have assessed the potential impacts associated with the presence of scour protection during the O&M phase of each project. These assessments have been carried out based on the MDS and specific details from Volume 1, Chapter 3: Project Description, of the Morven North and Morven South EIA Reports.

4.1.1.2 Table 4.1 provides a summary of where in the Morven North and Moven South EIA Reports these impacts have been considered.

Table 4.1: Impacts relating to scour protection

EIA chapter	Impacts considered
Volume 2, Chapter 7: Physical Processes (Morven North and Morven South).	• Increased Suspended Sediment Concentrations (SSCs) and associated deposition; • Impacts to the wave regime due to the presence of infrastructure; • Impacts to the tidal regime due to the presence of infrastructure; • Impacts to sediment transport and sediment transport pathways due to the presence of infrastructure.
Volume 2, Chapter 8: Benthic Ecology (Morven North and Morven South).	• Increased SSCs and associated deposition; • Long-term habitat loss and disturbance; • Increased risk of introduction and spread of Invasive Non-Native Species (INNS); • Colonisation of hard structures; • Removal of hard substrates; • Changes in physical processes.
Volume 2, Chapter 9: Fish and Shellfish Ecology (Morven North and Morven South).	• Long-term habitat loss; • Colonisation of hard structures and associated fish aggregation.
Volume 2, Chapter 12: Commercial Fisheries (Morven North and Morven South).	• Increased snagging risk, which could result in loss or damage to fishing gear.
Volume 2, Chapter 18: Climate Change (Morven North and Morven South)	• The impact of Greenhouse Gas (GHG) emissions arising from seabed change; • The impact of GHG emissions arising from the manufacturing and installation of Morven North and Morven South including vessel movements.

5 Summary

5.1.1.1 A summary of the details relating to scour protection have been provided in Volume 1, Chapter 3: Project Description, of the Morven North and Morven South EIA Reports, and potential impacts have been assessed in the relevant chapters (see Table 4.1). During the pre-application phase, a degree of flexibility is required in terms of type and quantity of scour and cable protection, therefore the assessment of potential effects has been carried out on the basis of an MDS.

5.1.1.2 The detailed requirements for scour protection and cable protection will be agreed post-consent with MD-LOT, as part of the final SPMP and CaP (to include CBRA) that is provided for each project. Approval for these plans will be sought from MD-LOT prior to commencement of construction.

6 References

Gardline (2022). Interpretation Report for bp Alternative Energy Investments Limited. Project Morven Integrated Site Survey. Offshore Wind Farm Site Survey. April to August 2022.

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