XLINKS MOROCCO-UK POWER PROJECT

Environmental Statement

Volume 3, Appendix 1.2: Benthic Habitat Disturbance Calculations

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Prepared by:

APEM

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Xlinks 1 Limited

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Glossary

Term	Meaning
Bipole	A Bipole system is an electrical transmission system that comprises two Direct Current conductors of opposite polarity. Can be referred to as a 'bundled pair'.
Offshore Cable Corridor	The proposed corridor within which the offshore cables are proposed to be located, which is situated within the United Kingdom Exclusive Economic Zone.
Proposed development	The element of Xlinks' Morocco-UK Power Project within the UK. The Proposed Development covers all works required to construct and operate the offshore cables (from the UK Exclusive Economic Zone to Landfall), Landfall, onshore Direct Current and Alternating Current cables, converter stations, and highways improvements.

Acronyms

Acronym	Meaning
CBRA	Cable Burial Risk Assessment
EIA	Environmental Impact Assessment
ES	Environmental Statement
EUNIS	European Nature Information System
OCC	Offshore Cable Corridor

Units

Units	Meaning
%	Percentage
ha	Hectare
m	Metre
t/m	Tonne per metre

1 BENTHIC HABITAT DISTURBANCE CALCULATIONS

1.1 Introduction

1.1.1 The habitat calculations set out in this Appendix are based on data taken from the burial assessment study, which was undertaken as part of the offshore Cable Burial Risk Assessment (CBRA) for the Proposed Development (Volume 1, Appendix 3.4: Outline Cable Burial Risk Assessment of the Environmental Statement (ES)).

1.1.2 The aim of the habitat calculations (**Table 1.1** to **Table 1.18** of this document), when taken in conjunction with Volume 3, Figures 1.14 to 1.19 of the ES, is to provide an indicative prediction of potential benthic habitat disturbance associated with different construction activities.

1.1.3 Construction activities associated with the Proposed Development include rock placement, installation of cable crossings, boulder clearance and burial via jetting, ploughing and mechanical cutting. Construction activity details are provided in Volume 1, Chapter 3: Project Description of the ES.

1.1.4 The results of the habitat calculations presented in this Appendix have been used to inform the Environmental Impact Assessment (EIA) for benthic ecology (Volume 3, Chapter 1: Benthic Ecology of the ES).

1.2 Habitat disturbance calculations

Rock Placement

1.2.1 **Table 1.1** presents the total area (ha) of European Nature Information System (EUNIS) level 4 and level 5 habitats across the entire Offshore Cable Corridor (OCC) i.e. across the entire width of the OCC. The table then shows the breakdown of the total area that is associated with different potential distributions of rock placement. Predicted rock placement ranges from 'extremely little rock placement expected (<1.2 t/m)' to 'high degree of rock placement expected (6-7 t/m)'. Cross reference Volume 3, Figures 1.14 to 1.19 of the ES. **Table 1.1** presents the overall habitat context; clearly not all habitats within the OCC would be affected by the construction activities which would be focussed around the linear trenching activities.

Table 1.1: Total benthic habitat areas (ha) across the OCC associated with indicative rock placement predictions (average t/m across the OCC segment)

Total EUNIS habitats within Offshore Cable Corridor	Total Habitat Area (across entire OCC)	1 - extremely little rock placement expected (<1.2 t/m)	2 - little rock placement expected (1.2-2.4 t/m)	3 - some rock placement expected (2.4-3.6 t/m)	4 - moderate degree of rock placement expected (3.6-4.8 t/m)	5 - extensive rock placement expected (4.8-6 t/m)	6 - high degree of rock placement expected (6-7 t/m)
Level 4	Area of habitat (ha)						
Atlantic Circalittoral Coarse Sediment (MC32)	547.6	426.9	0.0	112.5	8.3	0.0	0.0
Atlantic Circalittoral Sand (MC52)	1794.5	1510.5	88.4	195.5	0.0	0.0	0.0
Atlantic Infralittoral Rock (MB12)	9.1	9.1	0.0	0.0	0.0	0.0	0.0
Atlantic Infralittoral Sand (MB52)	456.3	456.3	0.0	0.0	0.0	0.0	0.0
Atlantic Offshore Circalittoral Coarse Sediment (MD32)	7896.7	2015.2	1443.9	2925.7	826.4	0.0	694.2
Atlantic Offshore Circalittoral Mixed Sediment (MD42)	1669.9	201.8	953.0	434.8	80.3	0.0	0.0
Atlantic Offshore Circalittoral Rock (MD12)	488.5	0.9	0.0	0.1	484.6	0.0	2.9
Atlantic Offshore Circalittoral Sand (MD32)	6524.1	2077.8	1020.5	3072.1	75.9	0.0	282.6
Level 5	Area of habitat (ha)						
Sparse fauna in Atlantic infralittoral mobile clean sand (MB5231)	186.2	186.2	0.0	0.0	0.0	0.0	0.0
Sabellaria spinulosa on stable Atlantic circalittoral mixed sediment (MC2211)	359.6	243.7	0.0	107.6	8.3	0.0	0.0
Sparse sponges, *Nemertesia* spp., and *Alcyonidium diaphanum* on Atlantic circalittoral mixed substrata (MC1217)	250.5	0.0	0.0	0.0	250.5	0.0	0.0
Polychaete-rich deep *Venus* community in offshore circalittoral mixed sediment (MD4211)	2997.3	1507.2	835.9	630.3	24.0	0.0	0.0

1.2.2 **Table 1.2** shows the same data as **Table 1.1**, but as percentage distributions of the total EUNIS level 4 and level 5 habitat area.

Table 1.2: Benthic habitat disturbance (relative %) across the OCC associated with indicative rock placement (average t/m across the OCC segment)

Total EUNIS habitats within Offshore Cable Corridor	Total Habitat Area (across entire OCC)	1 - extremely little rock placement expected (<1.2 t/m)	2 - little rock placement expected (1.2-2.4 t/m)	3 - some rock placement expected (2.4-3.6 t/m)	4 - moderate degree of rock placement expected (3.6-4.8 t/m)	5 - extensive rock placement expected (4.8-6 t/m)	6 - high degree of rock placement expected (6-7 t/m)
Level 4	(ha)	Area of habitat (%)					
Atlantic Circalittoral Coarse Sediment (MC32)	547.6	78%	0%	21%	2%	0%	0%
Atlantic Circalittoral Sand (MC52)	1794.5	84%	5%	11%	0%	0%	0%
Atlantic Infralittoral Rock (MB12)	9.1	100%	0%	0%	0%	0%	0%
Atlantic Infralittoral Sand (MB52)	456.3	100%	0%	0%	0%	0%	0%
Atlantic Offshore Circalittoral Coarse Sediment (MD32)	7896.7	26%	18%	37%	10%	0%	9%
Atlantic Offshore Circalittoral Mixed Sediment (MD42)	1669.9	12%	57%	26%	5%	0%	0%
Atlantic Offshore Circalittoral Rock (MD12)	488.5	0%	0%	0%	99%	0%	1%
Atlantic Offshore Circalittoral Sand (MD32)	6524.1	32%	16%	47%	1%	0%	4%
Level 5	(ha)	Area of habitat (%)					
Sparse fauna in Atlantic infralittoral mobile clean sand (MB5231)	186.2	100%	0%	0%	0%	0%	0%
Sabellaria spinulosa on stable Atlantic circalittoral mixed sediment (MC2211)	359.6	68%	0%	30%	2%	0%	0%
Sparse sponges, *Nemertesia* spp., and *Alcyonidium diaphanum* on Atlantic circalittoral mixed substrata (MC1217)	250.5	0%	0%	0%	100%	0%	0%
Polychaete-rich deep *Venus* community in offshore circalittoral mixed sediment (MD4211)	2997.3	50%	28%	21%	1%	0%	0%

1.2.3 **Table 1.3** presents the indicative disturbance areas of EUNIS level 4 and level 5 habitats at locations where varying levels of rock placement are expected across the OCC, ranging from 'extremely little rock placement expected (<1.2 t/m)' to 'high degree

of rock placement expected (6-7 t/m)'. The areas of indicative disturbance are based on a 20 m disturbance path for each bipole within the OCC.

Table 1.3: Benthic habitat disturbance (ha) associated with indicative rock placement (average t/m across the OCC segment), adjusted to the anticipated extent of actual works within the OCC (2 x 20 m disturbance)

EUNIS habitats within Offshore Cable Corridor	Indicative disturbance area (ha)	1 - extremely little rock placement expected (<1.2 t/m)	2 - little rock placement expected (1.2-2.4 t/m)	3 - some rock placement expected (2.4-3.6 t/m)	4 - moderate degree of rock placement expected (3.6-4.8 t/m)	5 - extensive rock placement expected (4.8-6 t/m)	6 - high degree of rock placement expected (6-7 t/m)
Level 4	Area of habitat potentially affected (ha)						
Atlantic Circalittoral Coarse Sediment (MC32)	43.8	34.1	0.0	9.0	0.7	0.0	0.0
Atlantic Circalittoral Sand (MC52)	143.6	120.8	7.1	15.6	0.0	0.0	0.0
Atlantic Infralittoral Rock (MB12)	0.7	0.7	0.0	0.0	0.0	0.0	0.0
Atlantic Infralittoral Sand (MB52)	36.5	36.5	0.0	0.0	0.0	0.0	0.0
Atlantic Offshore Circalittoral Coarse Sediment (MD32)	631.7	161.2	115.5	234.1	66.1	0.0	55.5
Atlantic Offshore Circalittoral Mixed Sediment (MD42)	133.6	16.1	76.2	34.8	6.4	0.0	0.0
Atlantic Offshore Circalittoral Rock (MD12)	39.1	0.1	0.0	0.0	38.8	0.0	0.2
Atlantic Offshore Circalittoral Sand (MD32)	521.9	166.2	81.6	245.8	6.1	0.0	22.6
Level 5	Indicative disturbance area (ha)						
Sparse fauna in Atlantic infralittoral mobile clean sand (MB5231)	14.9	14.9	0.0	0.0	0.0	0.0	0.0
Sabellaria spinulosa on stable Atlantic circalittoral mixed sediment (MC2211)	28.8	19.5	0.0	8.6	0.7	0.0	0.0
Sparse sponges, *Nemertesia* spp., and *Alcyonidium diaphanum* on Atlantic circalittoral mixed substrata (MC1217)	20.0	0.0	0.0	0.0	20.0	0.0	0.0
Polychaete-rich deep *Venus* community in offshore circalittoral mixed sediment (MD4211)	239.8	120.6	66.9	50.4	1.9	0.0	0.0

Cable Crossings

1.2.4 **Table 1.4** presents the total area (ha) of EUNIS level 4 and level 5 habitats across the entire OCC width at locations where rock protection associated with live cable crossings is required.

Table 1.4: Total benthic habitat areas (ha) across the OCC associated with live cable crossing locations (with 500 m [length] rock protection)

EUNIS habitats within Offshore Cable Corridor	Total Habitat Area (ha)	Habitat Areas associated with crossing segments (500 m length rock protection segments) (ha)
Level 4	(assuming full width of OCC)	
Atlantic Circalittoral Coarse Sediment (MC32)	547.6	49.96
Atlantic Circalittoral Sand (MC52)	1794.5	0
Atlantic Infralittoral Rock (MB12)	9.1	0
Atlantic Infralittoral Sand (MB52)	456.3	0
Atlantic Offshore Circalittoral Coarse Sediment (MD32)	7896.7	232.16
Atlantic Offshore Circalittoral Mixed Sediment (MD42)	1669.9	47.94
Atlantic Offshore Circalittoral Rock (MD12)	488.5	0
Atlantic Offshore Circalittoral Sand (MD32)	6524.1	260.21
Level 5	(assuming full width of OCC)	
Sparse fauna in Atlantic infralittoral mobile clean sand (MB5231)	186.2	0
Sabellaria spinulosa on stable Atlantic circalittoral mixed sediment (MC2211)	359.6	28.09
Sparse sponges, *Nemertesia* spp., and *Alcyonidium diaphanum* on Atlantic circalittoral mixed substrata (MC1217)	250.5	0
Polychaete-rich deep *Venus* community in offshore circalittoral mixed sediment (MD4211)	2997.3	37.35

1.2.5 **Table 1.5** shows the percentage of EUNIS level 4 and level 5 habitats (compared to the entire OCC extent) associated with the live cable crossing locations (assuming full OCC width).

Table 1.5: Benthic habitat disturbance (%) across the OCC associated with live cable crossings (with 500 m rock protection)

EUNIS habitats within Offshore Cable Corridor	Total Habitat Area (ha)	Habitat Areas associated with crossing segments (500 m length rock protection segments) (%)
Level 4	(assuming full width of OCC)	
Atlantic Circalittoral Coarse Sediment (MC32)	547.6	9%
Atlantic Circalittoral Sand (MC52)	1794.5	0%
Atlantic Infralittoral Rock (MB12)	9.1	0%
Atlantic Infralittoral Sand (MB52)	456.3	0%
Atlantic Offshore Circalittoral Coarse Sediment (MD32)	7896.7	3%
Atlantic Offshore Circalittoral Mixed Sediment (MD42)	1669.9	3%
Atlantic Offshore Circalittoral Rock (MD12)	488.5	0%
Atlantic Offshore Circalittoral Sand (MD32)	6524.1	4%
Level 5	(assuming full width of OCC)	
Sparse fauna in Atlantic infralittoral mobile clean sand (MB5231)	186.2	0%
Sabellaria spinulosa on stable Atlantic circalittoral mixed sediment (MC2211)	359.6	8%
Sparse sponges, *Nemertesia* spp., and *Alcyonidium diaphanum* on Atlantic circalittoral mixed substrata (MC1217)	250.5	0%
Polychaete-rich deep *Venus* community in offshore circalittoral mixed sediment (MD4211)	2997.3	1%

1.2.6 The precise 'lateral' position of crossing structures within the constraints of the OCC are not known at the time of drafting this Appendix as micro-routing within the OCC has not been confirmed at this stage.

1.2.7 **Table 1.6** presents indicative disturbance areas of EUNIS level 4 and level 5 habitats at locations where rock protection is required for live cable crossings. These indicative areas of disturbance are based on a 7 m disturbance width for each bipole crossing structure within the Offshore Cable Corridor.

Table 1.6: Benthic habitat disturbance (ha) associated with live cable crossings (with 500 m length rock protection), adjusted to the anticipated extent of actual works within the Offshore Cable Corridor (i.e. 2 x 7 m width structures for each crossing)

EUNIS habitats within Offshore Cable Corridor	Habitat Areas associated with max crossing footprints (500 m length rock protection structures) (ha)
Level 4	
Atlantic Circalittoral Coarse Sediment (MC32)	1.4
Atlantic Circalittoral Sand (MC52)	0.0
Atlantic Infralittoral Rock (MB12)	0.0
Atlantic Infralittoral Sand (MB52)	0.0
Atlantic Offshore Circalittoral Coarse Sediment (MD32)	6.5
Atlantic Offshore Circalittoral Mixed Sediment (MD42)	1.3
Atlantic Offshore Circalittoral Rock (MD12)	0.0
Atlantic Offshore Circalittoral Sand (MD32)	7.3
Level 5	
Sparse fauna in Atlantic infralittoral mobile clean sand (MB5231)	0.0
Sabellaria spinulosa on stable Atlantic circalittoral mixed sediment (MC2211)	0.8
Sparse sponges, *Nemertesia* spp., and *Alcyonidium diaphanum* on Atlantic circalittoral mixed substrata (MC1217)	0.0
Polychaete-rich deep *Venus* community in offshore circalittoral mixed sediment (MD4211)	1.0

Boulder Densities

1.2.8 **Table 1.7** shows the total area (ha) of EUNIS level 4 and level 5 habitats across the entire OCC width at locations where boulder clearance may be required based on varying presence of boulders.

Table 1.7: Benthic habitat disturbance (ha) across the OCC associated with boulder clearance activities

EUNIS habitats within Offshore Cable Corridor	Total Habitat Area (ha)	High density boulder area	Isolated boulders	Low density boulder area	Low density boulder area (contingency rock)	Outcropping bedrock	Subcropping / outcropping bedrock (Siltstone)
Level 4	Area of habitat potentially effected (ha)						
Atlantic Circalittoral Coarse Sediment (MC32)	547.6	0.0	264.9	112.5	162.0	8.3	0.0
Atlantic Circalittoral Sand (MC52)	1794.5	0.0	1055.1	283.9	455.4	0.0	0.0
Atlantic Infralittoral Rock (MB12)	9.1	0.0	0.0	0.0	9.1	0.0	0.0
Atlantic Infralittoral Sand (MB52)	456.3	0.0	0.0	0.0	456.3	0.0	0.0
Atlantic Offshore Circalittoral Coarse Sediment (MD32)	7896.7	1087.3	1754.0	4329.7	261.1	433.3	40.0
Atlantic Offshore Circalittoral Mixed Sediment (MD42)	1669.9	20.7	199.7	1387.8	2.1	59.6	0.0
Atlantic Offshore Circalittoral Rock (MD12)	488.5	2.9	0.2	0.1	0.7	484.6	0.0
Atlantic Offshore Circalittoral Sand (MD32)	6524.1	348.0	1841.1	3980.1	236.7	10.5	112.5
Level 5	Area of habitat potentially effected (ha)						
Sparse fauna in Atlantic infralittoral mobile clean sand (MB5231)	186.2	0.0	0.0	0.0	186.2	0.0	0.0
Sabellaria spinulosa on stable Atlantic circalittoral mixed sediment (MC2211)	359.6	0.0	138.5	107.6	105.2	8.3	0.0
Sparse sponges, *Nemertesia* spp., and *Alcyonidium diaphanum* on Atlantic circalittoral mixed substrata (MC1217)	250.5	0.0	0.0	0.0	0.0	250.5	0.0
Polychaete-rich deep *Venus* community in offshore circalittoral mixed sediment (MD4211)	2997.3	0.0	1235.8	1466.2	271.3	24.0	0.0

1.2.9 **Table 1.8** shows the percentage of EUNIS level 4 and level 5 habitats (compared to the entire OCC extent) at locations where boulder clearance may be required based on varying presence of boulders across the OCC.

Table 1.8: Benthic habitat disturbance (%) across the Offshore Cable Corridor associated with boulder clearance activities

EUNIS habitats within Offshore Cable Corridor	Total Habitat Area (ha)	High density boulder area	Isolated boulders	Low density boulder area	Low density boulder area (contingency rock)	Outcropping bedrock	Subcropping / outcropping bedrock (Siltstone)
Level 4	(ha)	Area of habitat effected (%)					
Atlantic Circalittoral Coarse Sediment (MC32)	547.6	0%	48%	21%	30%	2%	0%
Atlantic Circalittoral Sand (MC52)	1794.5	0%	59%	16%	25%	0%	0%
Atlantic Infralittoral Rock (MB12)	9.1	0%	0%	0%	100%	0%	0%
Atlantic Infralittoral Sand (MB52)	456.3	0%	0%	0%	100%	0%	0%
Atlantic Offshore Circalittoral Coarse Sediment (MD32)	7896.7	14%	22%	55%	3%	5%	1%
Atlantic Offshore Circalittoral Mixed Sediment (MD42)	1669.9	1%	12%	83%	0%	4%	0%
Atlantic Offshore Circalittoral Rock (MD12)	488.5	1%	0%	0%	0%	99%	0%
Atlantic Offshore Circalittoral Sand (MD32)	6524.1	5%	28%	61%	4%	0%	2%
Level 5	(ha)	Area of habitat effected (%)					
Sparse fauna in Atlantic infralittoral mobile clean sand (MB5231)	186.2	0%	0%	0%	100%	0%	0%
Sabellaria spinulosa on stable Atlantic circalittoral mixed sediment (MC2211)	359.6	0%	39%	30%	29%	2%	0%
Sparse sponges, *Nemertesia* spp., and *Alcyonidium diaphanum* on Atlantic circalittoral mixed substrata (MC1217)	250.5	0%	0%	0%	0%	100%	0%
Polychaete-rich deep *Venus* community in offshore circalittoral mixed sediment (MD4211)	2997.3	0%	41%	49%	9%	1%	0%

1.2.10 The precise 'lateral' position of crossing structures within the constraints of the OCC are not known at the time of drafting this Appendix because micro-routing within the OCC has not been confirmed at this stage. **Table 1.9** presents the indicative disturbance areas of EUNIS level 4 and level 5 habitats based on a 20 m boulder clearance disturbance path for each bipole within the OCC.

Table 1.9: Benthic habitat disturbance (ha) associated with boulder clearance activities, adjusted to the anticipated extent of actual works within the OCC (2 x 20 m cable lay area)

EUNIS habitats within Offshore Cable Corridor	Indicative disturbance area (ha)	High density boulder area	Isolated boulders	Low density boulder area	Low density boulder area (contingency rock)	Outcropping bedrock	Subcropping / outcropping bedrock (Siltstone)
Level 4	Indicative disturbance area (ha)						
Atlantic Circalittoral Coarse Sediment (MC32)	43.8	0.0	21.2	9.0	13.0	0.7	0.0
Atlantic Circalittoral Sand (MC52)	143.6	0.0	84.4	22.7	36.4	0.0	0.0
Atlantic Infralittoral Rock (MB12)	0.7	0.0	0.0	0.0	0.7	0.0	0.0
Atlantic Infralittoral Sand (MB52)	36.5	0.0	0.0	0.0	36.5	0.0	0.0
Atlantic Offshore Circalittoral Coarse Sediment (MD32)	631.7	87.0	140.3	346.4	20.9	34.7	3.2
Atlantic Offshore Circalittoral Mixed Sediment (MD42)	133.6	1.7	16.0	111.0	0.2	4.8	0.0
Atlantic Offshore Circalittoral Rock (MD12)	39.1	0.2	0.0	0.0	0.1	38.8	0.0
Atlantic Offshore Circalittoral Sand (MD32)	521.9	27.8	147.3	318.4	18.9	0.8	9.0
Level 5	Indicative disturbance area (ha)						
Sparse fauna in Atlantic infralittoral mobile clean sand (MB5231)	14.9	0.0	0.0	0.0	14.9	0.0	0.0
Sabellaria spinulosa on stable Atlantic circalittoral mixed sediment (MC2211)	28.8	0.0	11.1	8.6	8.4	0.7	0.0
Sparse sponges, *Nemertesia* spp., and *Alcyonidium diaphanum* on Atlantic circalittoral mixed substrata (MC1217)	20.0	0.0	0.0	0.0	0.0	20.0	0.0
Polychaete-rich deep *Venus* community in offshore circalittoral mixed sediment (MD4211)	239.8	0.0	98.9	117.3	21.7	1.9	0.0

Jetting Burial Risk

1.2.11 **Table 1.10** shows the total area (ha) of EUNIS level 4 and level 5 habitats across the entire OCC width. The total area is then categorised by varying levels of predicted risk associated with burial via jetting. Risk ranges from 'low risk when jetting (full depth burial should be easily achieved)' to 'very high risk when jetting (highly unsuitable for burial using jetting)'.

Table 1.10: Benthic habitat disturbance (ha) across the OCC associated with jetting as a cable burial method

EUNIS habitats within Offshore Cable Corridor	Total Habitat Area (ha)	1 = Low risk when jetting (full depth burial should be easily achieved)	2 = Slight risk when jetting (full depth burial may not be achieved locally / risk of heavy machinery wear)	3 = Moderate risk when jetting (full depth burial may not be achieved over extensive areas)	4 = High risk when jetting (full depth burial unlikely to be achieved)	5 = Very high risk when jetting (highly unsuitable for burial using jetting)
Level 4	Area of habitats effected (ha)					
Atlantic Circalittoral Coarse Sediment (MC32)	547.6	0.0	0.0	4.1	199.9	343.5
Atlantic Circalittoral Sand (MC52)	1794.5	0.0	13.4	171.6	1043.1	566.5
Atlantic Infralittoral Rock (MB12)	9.1	0.0	0.0	0.0	0.0	9.1
Atlantic Infralittoral Sand (MB52)	456.3	344.5	86.7	0.0	0.0	25.1
Atlantic Offshore Circalittoral Coarse Sediment (MD32)	7896.7	0.0	403.6	473.9	3373.2	3646.1
Atlantic Offshore Circalittoral Mixed Sediment (MD42)	1669.9	0.0	0.0	9.2	98.5	1562.3
Atlantic Offshore Circalittoral Rock (MD12)	488.5	0.7	0.0	0.0	2.9	484.9
Atlantic Offshore Circalittoral Sand (MD32)	6524.1	0.0	285.9	910.9	3014.1	2313.4
Level 5	Area of habitat effected (ha)					
Sparse fauna in Atlantic infralittoral mobile clean sand (MB5231)	186.2	0.0	13.4	170.8	0.0	2.0
Sabellaria spinulosa on stable Atlantic circalittoral mixed sediment (MC2211)	359.6	0.0	0.0	0.0	191.1	168.4
Sparse sponges, *Nemertesia* spp., and *Alcyonidium diaphanum* on Atlantic circalittoral mixed substrata (MC1217)	250.5	0.0	0.0	0.0	0.0	250.5
Polychaete-rich deep *Venus* community in offshore circalittoral mixed sediment (MD4211)	2997.3	0.0	0.0	10.0	1141.6	1845.8

1.2.12 **Table 1.11** shows the percentage of EUNIS level 4 and level 5 habitats (compared to the entire OCC extent) at locations where varying levels of risk of burial via jetting are anticipated across the OCC, ranging from 'low risk when jetting (full depth burial should be easily achieved)' to 'very high risk when jetting (highly unsuitable for burial using jetting).

Table 1.11: Benthic habitat disturbance (%) across the OCC associated with jetting as a cable burial method

EUNIS habitats within Offshore Cable Corridor	Total Habitat Area	1 = Low risk when jetting (full depth burial should be easily achieved)	2 = Slight risk when jetting (full depth burial may not be achieved locally / risk of heavy machinery wear)	3 = Moderate risk when jetting (full depth burial may not be achieved over extensive areas)	4 = High risk when jetting (full depth burial unlikely to be achieved)	5 = Very high risk when jetting (highly unsuitable for burial using jetting)
Level 4	(ha)	Area of habitat effected (%)				
Atlantic Circalittoral Coarse Sediment (MC32)	547.6	0%	0%	1%	37%	63%
Atlantic Circalittoral Sand (MC52)	1794.5	0%	1%	10%	58%	32%
Atlantic Infralittoral Rock (MB12)	9.1	0%	0%	0%	0%	100%
Atlantic Infralittoral Sand (MB52)	456.3	75%	19%	0%	0%	6%
Atlantic Offshore Circalittoral Coarse Sediment (MD32)	7896.7	0%	5%	6%	43%	46%
Atlantic Offshore Circalittoral Mixed Sediment (MD42)	1669.9	0%	0%	1%	6%	94%
Atlantic Offshore Circalittoral Rock (MD12)	488.5	0%	0%	0%	1%	99%
Atlantic Offshore Circalittoral Sand (MD32)	6524.1	0%	4%	14%	46%	35%
Level 5	(ha)	Area of habitat effected (%)				
Sparse fauna in Atlantic infralittoral mobile clean sand (MB5231)	186.2	0%	7%	92%	0%	1%
Sabellaria spinulosa on stable Atlantic circalittoral mixed sediment (MC2211)	359.6	0%	0%	0%	53%	47%
Sparse sponges, *Nemertesia* spp., and *Alcyonidium diaphanum* on Atlantic circalittoral mixed substrata (MC1217)	250.5	0%	0%	0%	0%	100%
Polychaete-rich deep *Venus* community in offshore circalittoral mixed sediment (MD4211)	2997.3	0%	0%	0%	38%	62%

1.2.13 The precise 'lateral' position of crossing structures within the constraints of the OCC are not known at the time of drafting this Appendix because micro-routing within the OCC has not been confirmed at this stage. **Table 1.12** presents the indicative disturbance areas of EUNIS level 4 and level 5 habitats based on a 20 m disturbance path (associated with jetting disturbance) for each bipole within the OCC.

Table 1.12: Benthic habitat disturbance (ha) associated with jetting as a cable burial method, adjusted to the anticipated extent of actual works within the OCC (2 x 20 m cable lay area)

EUNIS habitats within Offshore Cable Corridor	Total Habitat Area	1 = Low risk when jetting (full depth burial should be easily achieved)	2 = Slight risk when jetting (full depth burial may not be achieved locally / risk of heavy machinery wear)	3 = Moderate risk when jetting (full depth burial may not be achieved over extensive areas)	4 = High risk when jetting (full depth burial unlikely to be achieved)	5 = Very high risk when jetting (highly unsuitable for burial using jetting)
Level 4	Indicative disturbance area (ha)					
Atlantic Circalittoral Coarse Sediment (MC32)	43.8	0.0	0.0	0.3	16.0	27.5
Atlantic Circalittoral Sand (MC52)	143.6	0.0	1.1	13.7	83.4	45.3
Atlantic Infralittoral Rock (MB12)	0.7	0.0	0.0	0.0	0.0	0.7
Atlantic Infralittoral Sand (MB52)	36.5	27.6	6.9	0.0	0.0	2.0
Atlantic Offshore Circalittoral Coarse Sediment (MD32)	631.7	0.0	32.3	37.9	269.9	291.7
Atlantic Offshore Circalittoral Mixed Sediment (MD42)	133.6	0.0	0.0	0.7	7.9	125.0
Atlantic Offshore Circalittoral Rock (MD12)	39.1	0.1	0.0	0.0	0.2	38.8
Atlantic Offshore Circalittoral Sand (MD32)	521.9	0.0	22.9	72.9	241.1	185.1
Level 5	Indicative disturbance area (ha)					
Sparse fauna in Atlantic infralittoral mobile clean sand (MB5231)	14.9	0.0	1.1	13.7	0.0	0.2
Sabellaria spinulosa on stable Atlantic circalittoral mixed sediment (MC2211)	28.8	0.0	0.0	0.0	15.3	13.5
Sparse sponges, *Nemertesia* spp., and *Alcyonidium diaphanum* on Atlantic circalittoral mixed substrata (MC1217)	20.0	0.0	0.0	0.0	0.0	20.0
Polychaete-rich deep *Venus* community in offshore circalittoral mixed sediment (MD4211)	239.8	0.0	0.0	0.8	91.3	147.7

Ploughing Burial Risk

1.2.14 **Table 1.13** presents the total area (ha) of EUNIS level 4 and level 5 habitats across the entire OCC width. The total area is then categorised by varying levels of predicted risk associated with burial via ploughing. Risk ranges from 'low risk when ploughing (full depth burial should be easily achieved)' to 'high risk when ploughing (full depth burial unlikely to be achieved)'.

Table 1.13: Benthic habitat disturbance (ha) across the OCC associated with ploughing as a cable burial method

EUNIS habitats within Offshore Cable Corridor	Total Habitat Area (ha)	1 = Low risk when ploughing (full depth burial should be easily achieved)	2 = Slight risk when ploughing (full depth burial may not be achieved locally / risk of heavy machinery wear)	3 = Moderate risk when ploughing (full depth burial may not be achieved over extensive areas)	4 = High risk when ploughing (full depth burial unlikely to be achieved)
Level 4	Area of habitat effected (ha)				
Atlantic Circalittoral Coarse Sediment (MC32)	547.6	4.1	0.0	199.9	343.5
Atlantic Circalittoral Sand (MC52)	1794.5	170.8	606.7	955.4	61.6
Atlantic Infralittoral Rock (MB12)	9.1	0.0	0.0	9.1	0.0
Atlantic Infralittoral Sand (MB52)	456.3	125.1	306.1	25.1	0.0
Atlantic Offshore Circalittoral Coarse Sediment (MD32)	7896.7	403.6	2296.4	4047.4	1149.3
Atlantic Offshore Circalittoral Mixed Sediment (MD42)	1669.9	0.0	50.7	902.6	716.6
Atlantic Offshore Circalittoral Rock (MD12)	488.5	0.0	3.6	0.3	484.6
Atlantic Offshore Circalittoral Sand (MD32)	6524.1	285.9	1795.4	3995.3	447.6
Level 5	Area of habitat effected (ha)				
Sparse fauna in Atlantic infralittoral mobile clean sand (MB5231)	186.2	170.8	13.4	0.0	2.0
Sabellaria spinulosa on stable Atlantic circalittoral mixed sediment (MC2211)	359.6	0.0	0.0	191.1	168.4
Sparse sponges, *Nemertesia* spp., and *Alcyonidium diaphanum* on Atlantic circalittoral mixed substrata (MC1217)	250.5	0.0	0.0	0.0	250.5
Polychaete-rich deep *Venus* community in offshore circalittoral mixed sediment (MD4211)	2997.3	0.0	644.0	1858.0	495.3

1.2.15 **Table 1.14** presents the percentage of EUNIS level 4 and level 5 habitats (compared to the entire OCC extent) at locations where varying levels of risk of burial via ploughing are anticipated, ranging from 'low risk when ploughing (full depth burial should be easily achieved)' to 'high risk when ploughing (full depth burial unlikely to be achieved)'.

Table 1.14: Benthic habitat disturbance (%) across the OCC associated with ploughing as a cable burial method

EUNIS habitats within Offshore Cable Corridor	Total Habitat Area (ha)	1 = Low risk when ploughing (full depth burial should be easily achieved)	2 = Slight risk when ploughing (full depth burial may not be achieved locally / risk of heavy machinery wear)	3 = Moderate risk when ploughing (full depth burial may not be achieved over extensive areas)	4 = High risk when ploughing (full depth burial unlikely to be achieved)
Level 4	(ha)	Area of habitat effected (%)			
Atlantic Circalittoral Coarse Sediment (MC32)	547.6	1%	0%	37%	63%
Atlantic Circalittoral Sand (MC52)	1794.5	10%	34%	53%	3%
Atlantic Infralittoral Rock (MB12)	9.1	0%	0%	100%	0%
Atlantic Infralittoral Sand (MB52)	456.3	27%	67%	6%	0%
Atlantic Offshore Circalittoral Coarse Sediment (MD32)	7896.7	5%	29%	51%	15%
Atlantic Offshore Circalittoral Mixed Sediment (MD42)	1669.9	0%	3%	54%	43%
Atlantic Offshore Circalittoral Rock (MD12)	488.5	0%	1%	0%	99%
Atlantic Offshore Circalittoral Sand (MD32)	6524.1	4%	28%	61%	7%
Level 5	(ha)	Area of habitat effected (%)			
Sparse fauna in Atlantic infralittoral mobile clean sand (MB5231)	186.2	92%	7%	0%	1%
Sabellaria spinulosa on stable Atlantic circalittoral mixed sediment (MC2211)	359.6	0%	0%	53%	47%
Sparse sponges, *Nemertesia* spp., and *Alcyonidium diaphanum* on Atlantic circalittoral mixed substrata (MC1217)	250.5	0%	0%	0%	100%

EUNIS habitats within Offshore Cable Corridor	Total Habitat Area (ha)	1 = Low risk when ploughing (full depth burial should be easily achieved)	2 = Slight risk when ploughing (full depth burial may not be achieved locally / risk of heavy machinery wear)	3 = Moderate risk when ploughing (full depth burial may not be achieved over extensive areas)	4 = High risk when ploughing (full depth burial unlikely to be achieved)
Polychaete-rich deep *Venus* community in offshore circalittoral mixed sediment (MD4211)	2997.3	0%	21%	62%	17%

1.2.16 The precise 'lateral' position of ploughing within the constraints of the OCC is not known at the time of drafting this Appendix because micro-routing within the OCC has not been confirmed at this stage. **Table 1.15** presents the indicative disturbance areas of EUNIS level 4 and level 5 habitats based on a 20 m ploughing disturbance path for each bipole within the OCC.

Table 1.15: Benthic habitat disturbance (ha) associated with ploughing as a cable burial method, adjusted to the anticipated extent of actual works within the OCC (2 x 20 m cable lay area)

EUNIS habitats within Offshore Cable Corridor	Indicative disturbance area (ha)	1 = Low risk when ploughing (full depth burial should be easily achieved)	2 = Slight risk when ploughing (full depth burial may not be achieved locally / risk of heavy machinery wear)	3 = Moderate risk when ploughing (full depth burial may not be achieved over extensive areas)	4 = High risk when ploughing (full depth burial unlikely to be achieved)
Level 4	Indicative habitat disturbance area (ha)				
Atlantic Circalittoral Coarse Sediment (MC32)	43.8	0.3	0.0	16.0	27.5
Atlantic Circalittoral Sand (MC52)	143.6	13.7	48.5	76.4	4.9
Atlantic Infralittoral Rock (MB12)	0.7	0.0	0.0	0.7	0.0
Atlantic Infralittoral Sand (MB52)	36.5	10.0	24.5	2.0	0.0
Atlantic Offshore Circalittoral Coarse Sediment (MD32)	631.7	32.3	183.7	323.8	91.9
Atlantic Offshore Circalittoral Mixed Sediment (MD42)	133.6	0.0	4.1	72.2	57.3
Atlantic Offshore Circalittoral Rock (MD12)	39.1	0.0	0.3	0.0	38.8
Atlantic Offshore Circalittoral Sand (MD32)	521.9	22.9	143.6	319.6	35.8
Level 5	Indicative habitat disturbance area (ha)				
Sparse fauna in Atlantic infralittoral mobile clean sand (MB5231)	14.9	13.7	1.1	0.0	0.2
Sabellaria spinulosa on stable Atlantic circalittoral mixed sediment (MC2211)	28.8	0.0	0.0	15.3	13.5
Sparse sponges, *Nemertesia* spp., and *Alcyonidium diaphanum* on Atlantic circalittoral mixed substrata (MC1217)	20.0	0.0	0.0	0.0	20.0
Polychaete-rich deep *Venus* community in offshore circalittoral mixed sediment (MD4211)	239.8	0.0	51.5	148.6	39.6

Mechanical Cutting Burial Risk

1.2.17 **Table 1.16** presents the total area (ha) of EUNIS level 4 and level 5 habitats across the entire OCC width. The total area is then categorised by varying levels of predicted risk associated with mechanical cutting. Risk ranges from 'low risk when using mechanical cutter (full depth burial should be easily achieved)' to 'very high risk when using mechanical cutter (highly unsuitable for burial using mechanical cutter)'.

Table 1.16: Benthic habitat disturbance (ha) across the OCC associated with mechanical cutting as a cable burial method

EUNIS habitats within Offshore Cable Corridor	Total Habitat Area	1 = Low risk when using mechanical cutter (full depth burial should be easily achieved)	2 = Slight risk when using mechanical cutter (full depth burial may not be achieved locally / risk of heavy machinery wear)	3 = Moderate risk when using mechanical cutter (full depth burial may not be achieved over extensive areas)	4 = High risk when using mechanical cutter (full depth burial unlikely to be achieved)	5 = Very high risk when using mechanical cutter (highly unsuitable for burial using mechanical cutter)
Level 4	Area of habitat effected (ha)					
Atlantic Circalittoral Coarse Sediment (MC32)	547.6	5.8	199.9	341.9	0.0	0.0
Atlantic Circalittoral Sand (MC52)	1794.5	60.1	1491.0	230.0	13.4	0.0
Atlantic Infralittoral Rock (MB12)	9.1	9.1	0.0	0.0	0.0	0.0
Atlantic Infralittoral Sand (MB52)	456.3	25.1	0.0	0.0	86.7	344.5
Atlantic Offshore Circalittoral Coarse Sediment (MD32)	7896.7	3326.3	2000.6	1695.4	874.5	0.0
Atlantic Offshore Circalittoral Mixed Sediment (MD42)	1669.9	900.1	756.7	13.1	0.0	0.0
Atlantic Offshore Circalittoral Rock (MD12)	488.5	484.6	2.9	0.3	0.0	0.7
Atlantic Offshore Circalittoral Sand (MD32)	6524.1	1791.2	2934.0	1310.4	488.5	0.0
Level 5	Area of habitat effected (ha)					
Sparse fauna in Atlantic infralittoral mobile clean sand (MB5231)	186.2	0.0	0.0	172.9	13.4	0.0
Sabellaria spinulosa on stable Atlantic circalittoral mixed sediment (MC2211)	359.6	5.8	191.1	162.7	0.0	0.0
Sparse sponges, *Nemertesia* spp., and *Alcyonidium diaphanum* on Atlantic circalittoral mixed substrata (MC1217)	250.5	250.5	0.0	0.0	0.0	0.0
Polychaete-rich deep *Venus* community in offshore circalittoral mixed sediment (MD4211)	2997.3	679.4	2247.7	70.2	0.0	0.0

1.2.18 **Table 1.17** presents the percentage of EUNIS level 4 and level 5 habitats (compared to the entire OCC extent) at locations where varying levels of risk of burial via mechanical cutting are anticipated, ranging from 'low risk when using mechanical cutter (full depth burial should be easily achieved)' to 'very high risk when using mechanical cutter (highly unsuitable for burial using mechanical cutter)'.

Table 1.17: Benthic habitat disturbance (%) across the OCC associated with mechanical cutting as a cable burial method

EUNIS habitats within Offshore Cable Corridor	Total Habitat Area	1 = Low risk when using mechanical cutter (full depth burial should be easily achieved)	2 = Slight risk when using mechanical cutter (full depth burial may not be achieved locally / risk of heavy machinery wear)	3 = Moderate risk when using mechanical cutter (full depth burial may not be achieved over extensive areas)	4 = High risk when using mechanical cutter (full depth burial unlikely to be achieved)	5 = Very high risk when using mechanical cutter (highly unsuitable for burial using mechanical cutter)
Level 4	(Ha)	Area of habitat effected (%)				
Atlantic Circalittoral Coarse Sediment (MC32)	547.6	1%	37%	62%	0%	0%
Atlantic Circalittoral Sand (MC52)	1794.5	3%	83%	13%	1%	0%
Atlantic Infralittoral Rock (MB12)	9.1	100%	0%	0%	0%	0%
Atlantic Infralittoral Sand (MB52)	456.3	6%	0%	0%	19%	75%
Atlantic Offshore Circalittoral Coarse Sediment (MD32)	7896.7	42%	25%	21%	11%	0%
Atlantic Offshore Circalittoral Mixed Sediment (MD42)	1669.9	54%	45%	1%	0%	0%
Atlantic Offshore Circalittoral Rock (MD12)	488.5	99%	1%	0%	0%	0%
Atlantic Offshore Circalittoral Sand (MD32)	6524.1	27%	45%	20%	7%	0%
Level 5	(Ha)	Area of habitat effected (%)				
Sparse fauna in Atlantic infralittoral mobile clean sand (MB5231)	186.2	0%	0%	93%	7%	0%
Sabellaria spinulosa on stable Atlantic circalittoral mixed sediment (MC2211)	359.6	2%	53%	45%	0%	0%

EUNIS habitats within Offshore Cable Corridor	Total Habitat Area	1 = Low risk when using mechanical cutter (full depth burial should be easily achieved)	2 = Slight risk when using mechanical cutter (full depth burial may not be achieved locally / risk of heavy machinery wear)	3 = Moderate risk when using mechanical cutter (full depth burial may not be achieved over extensive areas)	4 = High risk when using mechanical cutter (full depth burial unlikely to be achieved)	5 = Very high risk when using mechanical cutter (highly unsuitable for burial using mechanical cutter)
Sparse sponges, *Nemertesia* spp., and *Alcyonidium diaphanum* on Atlantic circalittoral mixed substrata (MC1217)	250.5	100%	0%	0%	0%	0%
Polychaete-rich deep *Venus* community in offshore circalittoral mixed sediment (MD4211)	2997.3	23%	75%	2%	0%	0%

1.2.19 The precise 'lateral' position of the trenches within the constraints of the OCC are not known at the time of drafting this Appendix because micro-routing within the OCC has not been confirmed at this stage. **Table 1.18** presents the indicative disturbance areas of EUNIS level 4 and level 5 habitats based on a 20 m disturbance path (associated with mechanical cutting) for each bipole within the OCC.

Table 1.18: Benthic habitat disturbance (ha) associated with mechanical cutting as a cable burial method, adjusted to the anticipated extent of actual works within the OCC (2 x 20 m cable lay area)

EUNIS habitats within Offshore Cable Corridor	Total Habitat Area	1 = Low risk when using mechanical cutter (full depth burial should be easily achieved)	2 = Slight risk when using mechanical cutter (full depth burial may not be achieved locally / risk of heavy machinery wear)	3 = Moderate risk when using mechanical cutter (full depth burial may not be achieved over extensive areas)	4 = High risk when using mechanical cutter (full depth burial unlikely to be achieved)	5 = Very high risk when using mechanical cutter (highly unsuitable for burial using mechanical cutter)
Level 4	Indicative disturbance area (ha)					
Atlantic Circalittoral Coarse Sediment (MC32)	43.8	0.5	16.0	27.4	0.0	0.0
Atlantic Circalittoral Sand (MC52)	143.6	4.8	119.3	18.4	1.1	0.0
Atlantic Infralittoral Rock (MB12)	0.7	0.7	0.0	0.0	0.0	0.0
Atlantic Infralittoral Sand (MB52)	36.5	2.0	0.0	0.0	6.9	27.6
Atlantic Offshore Circalittoral Coarse Sediment (MD32)	631.7	266.1	160.0	135.6	70.0	0.0
Atlantic Offshore Circalittoral Mixed Sediment (MD42)	133.6	72.0	60.5	1.0	0.0	0.0
Atlantic Offshore Circalittoral Rock (MD12)	39.1	38.8	0.2	0.0	0.0	0.1
Atlantic Offshore Circalittoral Sand (MD32)	521.9	143.3	234.7	104.8	39.1	0.0
Level 5	Indicative disturbance area (ha)					
Sparse fauna in Atlantic infralittoral mobile clean sand (MB5231)	14.9	0.0	0.0	13.8	1.1	0.0
Sabellaria spinulosa on stable Atlantic circalittoral mixed sediment (MC2211)	28.8	0.5	15.3	13.0	0.0	0.0
Sparse sponges, *Nemertesia* spp., and *Alcyonidium diaphanum* on Atlantic circalittoral mixed substrata (MC1217)	20.0	20.0	0.0	0.0	0.0	0.0
Polychaete-rich deep *Venus* community in offshore circalittoral mixed sediment (MD4211)	239.8	54.4	179.8	5.6	0.0	0.0