



**AQUIND Limited**

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## **AQUIND INTERCONNECTOR**

### **Environmental Statement – Volume 3 – Appendix 3.3 Qualitative Description of the Marine Cable Corridor**

The Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 – Regulation 5(2)(a)

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

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Environmental Statement – Volume 3 –  
Appendix 3.3 Qualitative Description of the  
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# APPENDIX 3.3 QUALITATIVE DESCRIPTION OF THE MARINE CABLE CORRIDOR

**Table 1 – Seabed sediments, bathymetry and seabed features along the Marine Cable Corridor**

<b>KP Range (along SCL)</b>	<b>Seabed Sediments</b>	<b>Bathymetry</b>	<b>Seabed Features</b>
<b>0-0.1</b>	Surface <sup>1</sup> and shallow geology is dominated by sand.	Moderately steepening seabed from the intertidal area. SCL depth increases from +0.5 m to -1.25 m.	Small fields of numerous boulders are present in the northern parts of the Marine Cable Corridor (extending for approximately 50 m parallel to the Survey Centreline ('SCL'), approximately 100 m to the north)

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<sup>1</sup> Note: For the purpose of this table and based on the interpretation of data of the marine survey report (MMT, 2018), 'surface geology' refers to what is at the surface, which may range between a veneer and a substantial thickness, whereas 'shallow geology' is the geology over depth, i.e. from the surface to the depth of investigation.

<p><b>0.1-2.0</b></p>	<p>Surface geology is dominated by sand and gravel.</p> <p>From Kilometre Point ('KP') 0.5, the western side of the Marine Cable Corridor are covered by sand, which crosses the SCL at approximately KP 1.5</p> <p>Shallow geology is dominated by sand and gravel that sits over hardground. The thickness varies between 0.5 m and 2.0 m. From KP 1.5 silt and sand lies over hardground. Thickness varies between 0.5 m and 6.3 m.</p>	<p>Steadily deepening seabed, with increasing KP. SCL depth increases from 1.25m to 3 m.</p>	<p>Small areas of ripples are present locally in the northern sections, around KP 0.1 and KP 1.5. A small field of occasional boulders is also present in the northernmost part at KP 1.2.</p>
<p><b>2.0-4.90</b></p>	<p>Surface geology is dominated by sand.</p> <p>Shallow geology consists of surficial sand (down to 1.5 m) overlying cross cutting silt and sand which is considered likely to be channel infill sediment (down to 7.5 m), below which is a layer of hardground.</p>	<p>Steadily deepening seabed along the route with increasing KP. SCL depth increases from 3 m to 5 m.</p> <p>The slope gradient becomes moderate from KP 4.6.</p>	<p>Fields of occasional boulders are present across the Marine Cable Corridor between KP 3.0 and KP 3.8.</p> <p>Large ripples are visible from KP 3.8</p>
<p><b>4.9-6.2</b></p>	<p>Surface geology is dominated by sand and gravel, with limited areas of silt or clay.</p> <p>Shallow geology consists of hardground at or near the surface.</p> <p>Palaeo-channel is filled with silt and sand between KP 5.2 and KP 5.56.</p>	<p>Steadily deepening seabed along the route with increasing KP. SCL depth increases from 5 m to 7 m.</p>	<p>Large ripples are seen at the beginning of the section.</p> <p>Fields of occasional boulders are also present in sections KP 4.9 to KP 5.5 and KP 5.8 to KP 6.1.</p>

<p><b>6.2-8.6</b></p>	<p>Surface geology is dominated by sand and gravel with limited areas of silt or clay.</p> <p>Shallow geology comprises silt and sand, with hardground at or close to the surface from KP 8.1.</p>	<p>Steadily deepening seabed along the route with increasing KP. SCL depth increases from 7m to 11.5m.</p>	<p>Sediment accumulation and scouring (drifts) around boulders are seen near KP 7.6.</p> <p>From KP 6.8, occasional boulders are present in a large field covering the entire corridor width. The density of boulders increases eastward and from KP 7.1 it is classified as an area with numerous boulders. This boulder field is continuous to KP 8.6.</p>
<p><b>8.6-17.5</b></p>	<p>Surface geology is dominated by sand and gravel.</p> <p>Shallow geology is generally hardground near the surface covered by only a thin veneer of recent sediment.</p> <p>A large channel is seen cutting into the hardground between KP 15.9 and KP 17.5, with sand and gravel sediment reaching a maximum thickness of 12.0 m. Several smaller channels are also seen in this section, with sediment thicknesses varying between 1.0 m and 6.0 m.</p>	<p>Very gently descending slope with increasing KP. SCL depth increases from 10.5 m to 15.5 m.</p>	<p>The section is covered by a field of numerous boulders.</p>
<p><b>17.5-24.5</b></p>	<p>Surface geology is dominated by sand and gravel, varying in thickness from a veneer to 5.9 m. The underlying shallow geology comprises hardground near the</p>	<p>Very gently descending slope, except for a prominent gradient change across a bathymetric step with associated ripples at KP 21.0. The</p>	<p>Isolated fields of numerous and occasional boulders and ripples / large ripples.</p>

	<p>surface with only a thin veneer of recent sediment.</p>	<p>maximum gradient of the slope is 7.0°.</p> <p>SCL depth increases from 11.5m to 15.5m.</p>	
<p><b>24.5-35.5</b></p>	<p>Surface geology is dominated by sand and gravel, with outcrops of hardground.</p> <p>Shallow geology is generally hardground near the surface covered by only a thin veneer of recent sediment or outcropping.</p> <p>There is a sand and gravel filled channel at around KP 27.5, with a maximum depth of 12.0 m.</p>	<p>Gently descending slope, with the exception of KP 25.6 where a bathymetric step is present, which is characterised by a ridge that suggests the presence of hardground. The maximum gradient of the slope is 12.8°.</p> <p>SCL depth increase from 14.5m to 30.5m.</p>	<p>Several areas of both boulder fields and ripples are present in the section.</p> <p>There is bedrock outcrop covering the southern parts of the corridor between KP 24.5 and KP 24.8, and between KP 24.9 and KP 25.0. There is bedrock outcrop covering the entire corridor between KP 25.6 and KP 25.9, between KP 26.2 and KP 26.6, and between 29.0 and KP 31.3. There are also two areas of outcropping hardground seen north of the route centre line at the end of this section.</p>
<p><b>35.5-45.1</b></p>	<p>Surface geology is dominated by sand and gravel, with an area of sand in the central parts of the section.</p> <p>Outcropping hardground is seen as a band crossing the entire corridor between KP 42.8 and KP 44.4.</p> <p>Shallow geology generally comprises hardground near the surface covered by only a thin veneer of recent sediment or outcropping at the surface. At KP 43.7 there is a sand</p>	<p>This section is characterised by a more moderate descending slope and a more irregular seabed, especially in the latter parts of the section.</p> <p>At around KP 41.1 the gradient of the descending seafloor increases until approximately KP 42.2, which marks a rise of the seafloor where the depth shoals over a distance</p>	<p>The sand area is often associated with ripples and large ripples. There is a sand and gravel filled channel from KP 43.7 until the end of the section.</p>



	<p>and gravel filled channel until the end of the section, with a visible sediment layer on top of the hardground. The sediment thickness varies between 0.5 m up to a maximum depth of 12.8m.</p>	<p>of 300 m from 42.0 m to 25.0 m. The deepest sounding in the section was recorded as 43.9 m adjacent to this rise.</p> <p>The maximum gradient of the slope is 14.6° at KP 42.2.</p> <p>To the west of KP 42.2 the seabed undulates between 39m and 27m. depth increases from 25m to 45m.</p>	
<p><b>45.1-52.0</b></p>	<p>Surface geology is dominated by sand, as well as gravel and sand.</p> <p>Shallow geology generally comprises an upper layer of sand and gravel, which occasionally fills deep channels cutting through the underlying hardground.</p> <p>The thickest accumulation of recent sediments in this section is found around KP 49.5. This channel has sediment thicknesses reaching over 34m, including both recent fill material and overlying sandwaves.</p>	<p>Descending slope with increasing KP, with a maximum gradient of 19.95° and a slope average of 1.56°.</p> <p>There is a significant ridge at KP 47.9, which rises and falls sharply on the centre line with local gradients of 17.8° and 18.9°.</p> <p>SCL depth increases from 33.5 m to 68.5m.</p>	<p>Notable seabed features with a series of ridges and sandwaves.</p> <p>A field of occasional boulders is observed between KP 48.0 and KP 48.5.</p> <p>Large areas of mobile sediments ranging from ripples to sandwaves are present in the section, commonly associated with the surficial sand that is present between KP 47.4 and KP 50.7.</p> <p>Between KP 45.5 and KP 49.8 there is a group of sandwaves, with a maximum height of approximately 15m.</p> <p>A train of cusped sandwaves are also present across the corridor between KP 49.0 and KP 49.7, which suggests a northeasterly current direction.</p> <p>Areas of sandwaves are observed in this section.</p>

			Data indicates accumulation over time and no/little active mobility of these features. It is possible that the sandwaves are aggregations of eroded material from the hardground.
<b>52.0-69.8</b>	<p>Surface geology is dominated by sand and gravel.</p> <p>Shallow geology comprises hard ground with intermittent cover ranging from thin veneer to up to 5 m of recent sediments.</p>	<p>Generally characterised by gradually decreasing depths.</p> <p>Between KP 65.6 and KP 66.9, the seabed shoals in roughly two steps from 65.0 m to 55.0m, and then to 48.5m. Along the centre line the steepest gradients are 6.9° at KP 65.6 and 9.9° at KP 66.7.</p> <p>SCL depth increase from 47m to 69m.</p>	<p>Abundant trawl marks.</p> <p>Between KP 65.5 and 67.0, isolated boulders are observed.</p> <p>Isolated areas of ripples are also seen.</p>
<b>69.8-109.1</b>	<p>Surface geology is dominated by sand and gravel.</p> <p>Shallow geology comprises hardground with intermittent cover ranging from a thin veneer to up to 11 m thick of recent sediments.</p> <p>The thickest recent sediment cover is associated with a channel formation between KP 85.5 and KP 91.0.</p>	<p>Generally characterised by depths that are gradually decreasing.</p> <p>At KP 106.5 the seabed shoals slightly from 44.5m to 40.0m.</p> <p>SCL depth increases from 39m to 57.5m.</p>	<p>Ripples are present for most of this section.</p> <p>Between KP 69.4 and KP 71.0, there is a section of undulating bathymetry, comprising small mounds that have between 1.0 m and 1.5 m of bathymetric relief.</p> <p>Abundant trawl marks.</p> <p>Isolated fields of occasional boulders between KP 92.3 and KP 104.7, with extensive fields of occasional and</p>

			numerous boulders from KP 106.3 to KP 109.1.
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**Table 2 - Summary of the seabed preparation areas along the UK Marine Cable Corridor (Survey Centreline)**

Start KP	End KP	Reason for Seabed Preparation
1.0	1.6	HDD Exit – zone in which exit point is anticipated
1.2	1.3	Occasional boulders
3.4	3.5	Occasional boulders
3.8	4.7	Large ripples
4.8	5.3	Large ripples
5.0	5.5	Occasional boulders
5.8	6.1	Occasional boulders
6.8	7.1	Occasional boulders
7.1	17.5	Numerous boulders
18.3	18.5	Numerous boulders
21.0	21.1	Large ripples
21.3	21.5	Occasional boulders
21.5	21.9	Numerous boulders
24.2	24.3	Occasional boulders
25.1	25.5	Numerous boulders
25.6	25.6	Slope over 10°, uneven hard ground
26.6	26.9	Numerous boulders
28.3	28.5	Occasional boulders
28.7	29.0	Numerous boulders
30.0	30.0	Slope over 10°, uneven hard ground
31.5	35.5	Sandwaves (KP 31.5-32.2; KP 32.5-32.7; KP 33.5-34.5, KP 35.3-35.4)

		Clearance anticipated for KP 31.5-32.2, KP 32.5-32.7, KP 33.7-34.5, and KP 35.4.
<b>32.5</b>	32.7	Occasional boulders
<b>33.8</b>	34.0	Occasional boulders
<b>39.4</b>	41.3	Large Ripples
<b>42.0</b>	50.7	Uneven bathymetry, may require levelling or placement of rock or mattresses; includes slope over 10° and uneven hard ground (KP 42.2, KP44.1, KP 45.7, KP 47.7-47.9, KP 48.2, KP 48.7 and KP 49.0 ), sandwaves (KP 45.4-46.0; KP 47.8-48.0 and KP 49.0-49.7), large ripples (KP 47.6-48.7; KP 50.5-50.7),slope 10° associated with sand and gravel ridge / sandwave (KP 47.0-47.1)  Clearance anticipated KP 45.3-46.1, KP 47.8-48.0, KP 48.0-48.7, and KP 49.0-49.8
<b>42.1</b>	42.2	Occasional boulders
<b>42.7</b>	42.9	Occasional boulders
<b>45.9</b>	46.6	Occasional boulders
<b>54.6</b>	54.7	Isolated bed feature (not sandwave)
<b>55.5</b>	55.5	Out of Service ('OOS') cable
<b>60.0</b>	60.0	OOS cable
<b>68.2</b>	68.2	OOS cable
<b>72.5</b>	72.5	Atlantic Crossing 1 – Cable Crossing (details will depend on final Cable Crossing Agreement)
<b>76.8</b>	76.8	OOS cable
<b>88.5</b>	88.5	OOS cable
<b>89.3</b>	89.3	OOS cable
<b>90.9</b>	90.9	OOS cable
<b>92.3</b>	92.5	Occasional boulders
<b>98.2</b>	98.2	OOS cable
<b>101.0</b>	101.3	Occasional boulders

<b>103.4</b>	103.4	OOS cable
<b>104.0</b>	104.3	Occasional boulders
<b>104.6</b>	104.7	Occasional boulders
<b>104.7</b>	104.7	OOS cable
<b>106.3</b>	107.1	Numerous boulders
<b>107.8</b>	109.0	Occasional boulders
<b>109.0</b>	109.1	Numerous boulders

Note – Clearance of bedforms (Large Ripples and Sandwaves) not anticipated at this time unless indicated above – this may change over time and will be re-assessed pre-installation

**Table 3 - Location of sandwaves and ripples along the Marine Cable Corridor**

<b>KP Start</b>	<b>KP End</b>	<b>Type of Mobile Sediment</b>
<b>3.8</b>	4.7	Large ripples
<b>4.8</b>	5.3	Large Ripples
<b>21.0</b>	21.1	Large ripples
<b>31.5</b>	32.2	Sandwaves
<b>32.5</b>	32.7	Sandwaves
<b>33.5</b>	34.5	Sandwaves
<b>35.3</b>	35.4	Sandwaves
<b>39.4</b>	41.3	Large ripples
<b>45.4</b>	46.0	Large Ripples and Sandwaves
<b>47.0</b>	47.1	Sand and gravel ridge / sandwave
<b>47.6</b>	48.7	Large ripples
<b>47.8</b>	48.0	Sandwaves
<b>49.0</b>	49.7	Sandwaves
<b>50.5</b>	50.7	Large Ripples
<b>54.6</b>	54.8	Isolated bed feature

