

Hornsea Offshore Wind Farm

Project Two

Tabular Review of EIA Conclusions in response to the amendment of Project Design Envelope – response to G10

Appendix O to the Response submitted for Deadline IV

Application Reference: EN010053

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Appendix O referred to in response to G10 – Review of EIA conclusions in response to the amendment of the Project Design Envelope

As advised in the Applicant's response to Deadline III, the Applicant has removed the following options from the design envelope:

- i) The Project's offshore export cable corridor overlap with Subzone 1 (as shown on the Offshore Works Plan in Sheet 1 (Version 3) and Sheet 2 (Version 3) of Appendix B of the Applicant's response to Deadline III); and
- ii) The Project's onshore overlap with Project One at the onshore HVDC converter/HVAC substation (as shown on the Onshore Works Plan in Sheet 27 (Version 3) of Appendix C of the Applicant's response to Deadline III).

These reductions in the design envelope has resulted in a number of minor specific amendments to the draft DCO to reflect the revised coordinates of the relevant Order limits, as presented in Table 1 below.

In terms of the offshore Project Order limits change, the consequence of this change is a reduction in the Project offshore export cable route corridor area from 533 km² to 283 km². The Applicant can confirm that the removal of the Project's export cable corridor overlap with Subzone 1 does not alter any of the Project's offshore export cable route corridor parameters (such as maximum length of offshore export cable, burial depth of the export cable, volume of cable protection and volume of sandwave clearance), as presented in Volume 1, Chapter 3: Project Description of the ES (Doc ref No 7.1.3) (see paragraphs 3.2.172 to 3.2.187 and 3.2.207 to 3.2.214) and pursuant to Schedule I and K, Part 2, Condition 1 (design parameters) of the draft DCO.

Table 2 below has been produced in response to the design envelope amendment to identify (for each assessment presented in Volume 2 of the ES that considers the impact of the Project's offshore export cable route corridor) the effect on the conclusions of the assessment. In summary, the Applicant can confirm that the removal of the Project export cable route corridor overlap with Subzone 1 will not result in the prediction of any significant effects where none had previously been identified, nor result in an increase to the worst case scenario identified. For sake of completeness, the Applicant can confirm that the proposed change will result in a reduced worst case scenario (albeit minor) for the assessment of the Project alone on oil and gas operations (potential seismic survey areas and placement of infrastructure), due to a reduction in the area of overlap between the Project and a number of licenced blocks.

In terms of the onshore Project Order limits change, the consequence of this change is a reduction in the area of the limit of deviation of Works Nos. 8a and 8b (electrical transmission station) of 0.88 ha.

Table 3 below has been produced in response to the design envelope amendment to identify (for each assessment presented in Volume 3 of the ES that considers the impact of the Project electrical transmission station) the effect on the conclusions of the assessment. In summary, the Applicant can confirm that this amendment will not result in the prediction of any significant effects where none had previously been identified, nor result in an increase to the worst case scenario identified. For sake of completeness, however, this change will result in a reduced worst case scenario (albeit minor) for Ecology and Nature Conservation, Landscape and Visual Resources, Agriculture and Land Use, Traffic and Transport, Noise and Vibration, and Air Quality and Health.

Table 1: Amendments to the draft DCO to reflect the change in the design envelope to remove the overlap between the Project and Project One at the Project's onshore HVAC/HVDC substation and at Subzone 1.

Draft DCO Section	Amendment		
Schedule A, Part 1, Authorised Development, Work Nos. 4A and 4B	Principal co-ordinates for marine export cable area (limits of deviation for Work Nos. 4A and 4B) of which the full co-ordinates are set out in the offshore works plans:		
	Point	Latitude	Longitude
	1	54° 0' 31.626" N	1° 26' 19.993" E
	2	54° 0' 18.479" N	1° 38' 37.320" E
	3	54° 0' 15.768" N	1° 40' 21.864" E
	4	53° 59' 36.924" N	2° 3' 45.936" E
	5	53° 57' 24.509" N	2° 6' 6.700" E
	6	53° 57' 1.291" N	2° 6' 31.923" E
	7	53° 55' 22.663" N	2° 2' 14.219" E
	8	53° 46' 7.286" N	1° 38' 16.673" E
	9	53° 46' 4.677" N	1° 37' 22.711" E
	11	53° 44' 47.813" N	1° 28' 38.495" E
	16	53° 44' 47.743" N	1° 27' 26.607" E
	18	53° 44' 36.477" N	1° 25' 23.743" E
	125	53° 42' 30.629" N	1° 15' 58.654" E
	136	53° 42' 28.182" N	1° 14' 34.895" E
	248	53° 39' 35.134" N	1° 6' 29.785" E
	300	53° 38' 17.582" N	1° 2' 16.928" E
	431	53° 36' 54.624" N	0° 51' 31.062" E
	433	53° 36' 15.738" N	0° 48' 52.425" E
	497	53° 35' 21.166" N	0° 43' 44.242" E
	499	53° 31' 50.425" N	0° 40' 55.898" E
	500	53° 31' 38.281" N	0° 40' 8.340" E
	505	53° 28' 36.676" N	0° 20' 3.846" E
	516	53° 31' 43.122" N	0° 12' 21.707" E
	517	53° 30' 57.432" N	0° 5' 59.890" E
	518	53° 31' 11.028" N	0° 5' 42.539" E
	519	53° 30' 42.954" N	0° 5' 10.787" E
	520	53° 30' 42.180" N	0° 5' 9.912" E
	521	53° 30' 46.588" N	0° 4' 55.345" E
	522	53° 30' 52.245" N	0° 4' 59.515" E
	523	53° 31' 25.514" N	0° 5' 24.049" E
	524	53° 31' 29.574" N	0° 5' 27.043" E
	564	53° 32' 16.976" N	0° 12' 37.072" E
	747	53° 29' 11.523" N	0° 20' 5.981" E
	985	53° 31' 28.589" N	0° 35' 44.348" E
	986	53° 32' 0.855" N	0° 37' 42.781" E
	987	53° 32' 17.793" N	0° 39' 31.883" E
	988	53° 32' 35.749" N	0° 39' 45.737" E

Draft DCO Section	Amendment	
	24	53° 46' 7.286" N 1° 38' 16.673" E
	25	53° 46' 4.677" N 1° 37' 22.711" E
	27	53° 44' 47.813" N 1° 28' 38.495" E
	32	53° 44' 47.743" N 1° 27' 26.607" E
	34	53° 44' 36.477" N 1° 25' 23.743" E
	141	53° 42' 30.629" N 1° 15' 58.654" E
	152	53° 42' 28.182" N 1° 14' 34.895" E
	264	53° 39' 35.134" N 1° 6' 29.785" E
	316	53° 38' 17.582" N 1° 2' 16.928" E
	447	53° 36' 54.624" N 0° 51' 31.062" E
	449	53° 36' 15.738" N 0° 48' 52.425" E
	513	53° 35' 21.166" N 0° 43' 44.242" E
	515	53° 31' 50.425" N 0° 40' 55.898" E
	516	53° 31' 38.281" N 0° 40' 8.340" E
	521	53° 28' 36.676" N 0° 20' 3.846" E
	532	53° 31' 43.122" N 0° 12' 21.707" E
	533	53° 30' 57.432" N 0° 5' 59.890" E
	534	53° 31' 11.028" N 0° 5' 42.539" E
	535	53° 30' 42.954" N 0° 5' 10.787" E
	536	53° 30' 42.180" N 0° 5' 9.912" E
	537	53° 30' 46.588" N 0° 4' 55.345" E
	538	53° 30' 52.245" N 0° 4' 59.515" E
	539	53° 31' 25.514" N 0° 5' 24.049" E
	540	53° 31' 29.574" N 0° 5' 27.043" E
	580	53° 32' 16.976" N 0° 12' 37.072" E
	763	53° 29' 11.523" N 0° 20' 5.981" E
	1001	53° 31' 28.589" N 0° 35' 44.348" E
	1002	53° 32' 0.855" N 0° 37' 42.781" E
	1003	53° 32' 17.793" N 0° 39' 31.883" E
	1004	53° 32' 35.749" N 0° 39' 45.737" E
	1005	53° 33' 8.117" N 0° 39' 47.665" E
	1006	53° 34' 28.861" N 0° 41' 27.396" E
	1007	53° 35' 42.522" N 0° 42' 37.802" E
	1010	53° 36' 25.571" N 0° 43' 54.129" E
	1081	53° 37' 2.569" N 0° 47' 31.846" E
	1083	53° 37' 30.986" N 0° 49' 14.023" E
	1086	53° 37' 29.991" N 0° 51' 27.606" E
	1087	53° 37' 36.904" N 0° 52' 22.841" E
	1111	53° 38' 45.654" N 0° 57' 1.237" E
	1143	53° 39' 16.652" N 1° 1' 1.016" E
	1149	53° 39' 42.566" N 1° 1' 40.167" E

Draft DCO Section	Amendment		
	1155	53° 41' 20.037" N	1° 6' 45.836" E
	1157	53° 42' 59.843" N	1° 14' 18.127" E
	1164	53° 43' 0.151" N	1° 15' 37.960" E
	1165	53° 44' 0.963" N	1° 20' 9.157" E
	1166	53° 49' 6.492" N	1° 25' 51.682" E
	1167	53° 50' 7.210" N	1° 26' 59.953" E
Schedules I and K, DMLs A2 and B2, Part 1, Paragraph 2(2), Work Nos. 4A and 4B	Principal co-ordinates for marine export cable area (limits of deviation for Work No. 4A/4B) of which the full co-ordinates are set out in the offshore works plans— Table of co-ordinates amended as per row above.		

Table 2: Consequence of the removal of the Project Two export cable corridor from Subzone 1 (C = Construction, O&M = Operation & Maintenance, D = Decommissioning).

Potential Impact	C	O&M	D	Consequence
Volume 2, Chapter 1: Marine processes (Doc ref No 7.2.1)				
Potential for sandwave clearance associated with the installation of the export cable to increase SSC within the water column.	✓			Analysis of the cable route (Volume 5, Annex 5.1.5: Bedform Analysis of the Cable Route of the ES (Doc ref No 7.5.1.5)) identified the bedforms present along the export cable route corridor. An engineering assessment of the features present along the cable corridor identified a series of locations that may require sandwave clearance prior to cable installation. None of the area identified for sandwave clearance are within the area of the Project cable route corridor that overlaps with Subzone 1. As such, the reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not change the assessments relating to this activity.
Potential for sandwave clearance associated with the installation of the export cable to deposit material on the seabed.				
Potential for sandwave clearance associated with the installation of the export cable to affect the wave regime.				
				These impacts are not considered a receptor and therefore a significance of effect is not predicted. The significance of effect on the receptors (benthic subtidal and intertidal ecology, fish and shellfish ecology, marine mammals, marine archaeology and ordnance, and infrastructure and other users) is therefore considered in the table below.

Potential Impact	C	O&M	D	Consequence
Potential for installation of cables to increase SSC within the water column and deposit material on the seabed.	✓			<p>The assessment considered a maximum adverse scenario of the installation of eight export cables of up to 150 km in length, with a target burial depth (subject to a cable burial assessment) of 3 m for the majority of the export cable and 5 m for up to 20% of the export cable (in areas with large mobile sandwaves). The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment.</p> <p>An increase in SSC is not considered to be a receptor and therefore a significance of effect is not predicted. The significance of effect on the receptor chapters is therefore considered below (under benthic subtidal and intertidal ecology, fish and shellfish ecology, marine mammals, marine archaeology and ordnance, and infrastructure and other users).</p>
Potential for the use of cable protection along the export cables in deep water (>12 m) to affect sediment transport and sediment transport pathways.		✓		<p>The assessment considered a maximum adverse scenario of up to eight export cables of 150 km in length, with up to 25% of the export cable requiring cable protection during the lifetime of the Project. The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. However the sediment transport regime is not considered to be a receptor and therefore a significance of effect is not predicted.</p>

Potential Impact	C	O&M	D	Consequence
Removal of export cables has the potential to increase SSC within the water column and deposit material on the seabed.			✓	<p>Although it is expected that most of the export cables will be left in situ, for the purposes of the EIA it was assumed that a maximum adverse scenario of eight export cables of 150 km in length would be removed. The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment.</p> <p>An increase in SSC and the deposition of material on the seabed are not considered to be a receptor and therefore a significance of effect is not predicted. The significance of effect on the receptor chapters is therefore considered below (under benthic subtidal and intertidal ecology, fish and shellfish ecology, marine mammals, marine archaeology and ordnance, and infrastructure and other users).</p>

Potential Impact	C	O&M	D	Consequence
Volume 2, Chapter 2: Benthic subtidal and intertidal ecology (Doc ref No 7.2.2)				
Temporary habitat loss/disturbance due to cable installation, maintenance and decommissioning (including anchor placements) may affect benthic ecology.	✓	✓	✓	<p>The assessment considered a maximum adverse scenario of temporary habitat disturbance, temporary increase in SSC and associated sediment deposition, and seabed disturbance leading to the release of sediment contaminants from the installation and decommissioning of up to eight export cables of 150 km in length (including associated cable barge anchor placements), with a target burial depth (subject to a cable burial assessment) of 3 m for the majority of the export cable and 5 m for up to 20% of the export cable (in areas with large mobile sandwaves) and a maximum width of disturbance of 10 m.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>
Temporary increases in SSC and associated sediment deposition from cable installation and decommissioning may affect benthic ecology.	✓		✓	
Seabed disturbances leading to the release of sediment contaminants and resulting in potential effects on benthic ecology.	✓		✓	

Potential Impact	C	O&M	D	Consequence
Long term/permanent loss of seabed habitat through presence of cable protection resulting in potential effects in benthic receptors.		✓	✓	<p>The assessment considered a maximum adverse scenario of eight export cables of 150 km in length, with up to 25% of the export cable requiring cable protection during the lifetime of the Project. The assessment assumed that cable protection will be left in situ post decommissioning.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>
Colonisation of cable protection may affect benthic ecology and biodiversity.		✓		
Alteration of seabed habitats arising from scour effects and changes in the sediment transport and wave regimes (physical processes) resulting in potential effects on benthic ecology.		✓		
Volume 2, Chapter 3: Fish and shellfish ecology (Doc ref No 7.2.3)				
Temporary habitat loss/disturbance from cable installation, maintenance and decommissioning resulting in potential effects on fish and shellfish receptors.	✓	✓	✓	<p>The assessment considered a maximum adverse scenario of temporary habitat disturbance, temporary increase in SSC and associated sediment deposition, and seabed disturbance leading to the release of sediment contaminants from the installation and decommissioning of up to eight export cables of 150 km in length (including associated cable barge anchor placements , with a target burial depth (subject to a cable burial assessment) of 3 m for the majority of the export cable and 5 m for up to 20% of the export cable (in areas with large mobile sandwaves) and a maximum width of disturbance of 10 m.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario</p>
Increased SSC as a result of cable installation and decommissioning resulting in potential effects on fish and shellfish receptors.	✓		✓	

Potential Impact	C	O&M	D	Consequence
Sediment deposition as a result of cable installation and decommissioning resulting in potential effects on fish and shellfish receptors.	✓		✓	and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.
Underwater noise as a result of cable installation resulting in potential effects on fish and shellfish receptors.	✓		✓	
Seabed disturbances leading to the release of sediment contaminants, resulting in potential effects on fish and shellfish ecology.	✓		✓	
Long term/permanent habitat loss due to presence of cable protection with potential effects on fish and shellfish ecology.		✓	✓	The assessment considered a maximum adverse scenario of up to eight export cables of 150 km in length, with up to 25% of the export cable requiring cable protection during the lifetime of the Project. The assessment assumed that cable protection will be left in situ post decommissioning.
Introduction of turbine foundations and scour/cable protection (hard substrates and structural complexity) leading to effects on fish and shellfish receptors by creating reef habitat.		✓		The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.

Potential Impact	C	O&M	D	Consequence
Electromagnetic fields (EMF) emitted by inter-array and export cables during the operational phase causing behavioural responses in fish and shellfish receptors.		✓		<p>The assessment considered a maximum adverse scenario of up to either i) eight HVAC export cables of 150 km in length with a maximum voltage of 400 kV or ii) four HVDC cables of 150 km in length with a maximum voltage of ± 600 kV, with (subject to a cable burial assessment) a target minimum burial depth of 1 m or by cable protection.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>
Volume 2, Chapter 4: Marine mammals (Doc ref No 7.2.4)				
Increased suspended sediments during cable installation, maintenance and decommissioning may impair the foraging ability of marine mammals.	✓	✓	✓	<p>The assessment considered a maximum adverse scenario of a temporary increase in SSC from the installation and decommissioning of up to eight export cables of 150 km in length, with a target burial depth (subject to a cable burial assessment) of 3 m for the majority of the export cable and 5 m for up to 20% of the export cable (in areas with large mobile sandwaves) and a maximum width of disturbance of 10 m.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>

Potential Impact	C	O&M	D	Consequence
Changes in the fish and shellfish community resulting from construction, operational and decommissioning impacts may lead to a loss in prey resources for marine mammals.	✓	✓	✓	<p>The assessment considered a maximum adverse scenario as described above under Volume 2, Chapter 3 of the ES.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>
Electromagnetic fields (EMF) emitted by inter-array and export cables may affect marine mammal behaviour.		✓		<p>The assessment considered a maximum adverse scenario of up to either i) eight HVAC export cables of 150 km in length with a maximum voltage of 400 kV or ii) four HVDC cables of 150 km in length with a maximum voltage of ± 600 kV, with (subject to a cable burial assessment) a target minimum burial depth of 1 m or by cable protection.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>

Potential Impact	C	O&M	D	Consequence
Volume 2, Chapter 5: Ornithology (Doc ref No 7.2.5)				
<p>The impact of construction, operation and maintenance, and decommissioning activities, such as increased vessel activity and underwater noise, may result in disturbance or displacement from important foraging habitat areas for birds and their prey species.</p>	✓	✓	✓	<p>As stated in paragraph 3.1.21 of Volume 1, Chapter 3: Project Description of the ES (Doc ref No 7.1.3), the Project may be connected to the National Grid using either High Voltage Alternating Current (HVAC) technology, High Voltage Direct Current (HVDC) technology or a combination of the two. If the HVAC option is taken forward, up to eight HVAC export cable circuits (each up to 150 km in length) will be required (see Table 3.25 of Volume 1, Chapter 3 of the ES). If the HVDC option is taken forward, up to two HVDC circuits; each comprising two single core subsea cables (each up to 150 km in length) in separate trenches (i.e., up to four trenches in total) will be required (see Table 3.20 of Volume 1, Chapter 3 of the ES).</p> <p>Table 5.11 of Volume 2, Chapter 5 of the ES incorrectly states, under the Potential Impact “The impact of construction activities such as increased vessel activity and underwater noise may result in disturbance or displacement from important foraging habitat areas of prey items” that the maximum adverse scenario is the “Offshore cables (HVDC transmission): installation of 800 km of export cables (four cable trenches 150 km in length) within the cable route corridor 10 m width of disturbance”.</p> <p>The Applicant would like to clarify that the maximum adverse scenario assessed was the HVAC transmission option and therefore, this should have read: “Offshore cables (HVAC transmission): installation of 1,200 km of export cables (eight cable trenches 150 km in length) within the cable route corridor, 10 m of disturbance per trench”.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>

Potential Impact	C	O&M	D	Consequence
<p>The impact of offshore undersea habitat loss due to construction of infrastructure and changes to physical processes during the construction, operation and maintenance and decommissioning phases may lead to changes in habitat available for birds and their prey species.</p>	✓	✓	✓	<p>The assessment considered a maximum adverse scenario of a temporary increase in SSC from the installation and decommissioning of up to eight export cables of 150 km in length, with a target burial depth (subject to a cable burial assessment) of 3 m for the majority of the export cable and 5 m for up to 20% of the export cable (in areas with large mobile sandwaves) and a maximum width of disturbance of 10 m.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>

Potential Impact	C	O&M	D	Consequence
Volume 2, Chapter 6: Commercial fisheries (Doc ref No 7.2.6)				
Offshore export cable construction activities leading to reduction in access to, or exclusion from, potential and/or established fishing grounds.	✓	✓	✓	The assessment considered a maximum adverse scenario of the installation and decommissioning of up to eight export cables of 150 km in length. The assessment considered an exclusion scenario of up to 1 km advisory safety zones around construction operations and during maintenance activities along the cable route, centred on the cable laying vessel (i.e., a roaming 3.1 km ² exclusion along the cable route corridor).
Displacement from the offshore export cable leading to gear conflict and increased fishing pressure on adjacent grounds.	✓		✓	The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.
Offshore export cable construction and decommissioning activities leading to displacement or disruption of commercially important fish and shellfish resources.	✓		✓	The assessment considered a maximum adverse scenario as described above under Volume 2, Chapter 3 of the ES. The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.

Potential Impact	C	O&M	D	Consequence
Offshore export cable construction and decommissioning activities and physical presence of wind farm infrastructure leading to longer steaming distances to alternative fishing grounds.	✓	✓	✓	<p>The assessment considered a maximum adverse scenario of the installation and decommissioning of up to four export cables of 150 km in length (note – for this particular impact assessment, the worst case is HVDC transmission (compared with HVAC transmission), the maximum adverse scenario is therefore four export cables of 150 km in length as opposed to eight cable of 150 km in length for the HVAC transmission option). The assessment considered an exclusion scenario of up to 1 km advisory safety zones around construction operations and during maintenance activities along the cable route, centred on the cable laying vessel (i.e., a roaming 3.1 km² exclusion along the cable route corridor).</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>
Physical presence of the offshore export cable leading to gear snagging.		✓		<p>The assessment considered a maximum adverse scenario of up to eight export cables of 150 km in length, with a minimum target burial depth (subject to a cable burial assessment) of 1 m and up to 25% of the cable requiring cable protection.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>

Potential Impact	C	O&M	D	Consequence
Electromagnetic fields, habitat alteration and other ecological impacts leading to displacement or disruption of commercially important fish and shellfish resources.		✓		<p>The assessment considered a maximum adverse scenario as described above under Volume 2, Chapter 3 of the ES.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>
Volume 2, Chapter 7: Shipping and Navigation (Doc ref No 7.2.7)				
Physical presence of partially installed cables (which may be exposed or partially buried) could result in an increased risk of anchor snagging for commercial vessels and commercial fishing vessels (in transit).	✓		✓	<p>The assessment considered a maximum adverse scenario of up to eight export cables of 150 km in length. The cables will be installed/decommissioned over a maximum duration of four years during construction and over a maximum duration of four years during decommissioning.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>

Potential Impact	C	O&M	D	Consequence
Construction activities associated with Project Two may diminish emergency response capability (including SAR) within the southern North Sea during construction.	✓		✓	<p>The assessment considered a maximum adverse scenario of up to eight export cables of 150 km in length. The cables will be constructed and decommissioned over a duration of four years.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>
Construction activities associated with Project Two may diminish pollution and salvage response capability for emergency responders.	✓		✓	
Physical presence of cables may cause an anchor snagging risk for commercial vessels and commercial fishing vessels (in transit).		✓		<p>The assessment considered a maximum adverse scenario of up to eight export cables of 150 km in length. The cables will be operational for the lifetime of the Project (approximately 25 years).</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain to not be significant in EIA terms.</p>
Physical presence of scour/cable protection may reduce navigable water depth for commercial vessels, fishing vessels (in transit) and recreational vessels.		✓	✓	<p>The assessment considered a maximum adverse scenario of up to eight export cables of 150 km in length, with cable protection of up to 1 m high and 7 m wide for up to 25% of the export cable route. The assessment assumed that cable protection will be left in situ post decommissioning.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>

Potential Impact	C	O&M	D	Consequence
Physical presence of DC export cables may cause electromagnetic interference for vessels using magnetic compasses.		✓		<p>The assessment considered a maximum adverse scenario of up to eight export cables of 150 km in length, with a minimum target burial depth (subject to a cable burial assessment) of 1 m and where burial is not possible, cable protection of up to 1 m high and 7 m wide.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>
Volume 2, Chapter 8: Aviation, Military and Communications (Doc ref No 7.2.8)				
Cable laying activity and associated vessel movements along the cable route corridor may interfere with operations within MOD Danger Areas.	✓		✓	<p>The assessment considered a maximum adverse scenario of up to two cable laying barges, one to surface lay and a second to bury the cable, plus two pre-lay works vessels and two cable post lay burial vessels, plus two tugs/support vessels for each cable laying barge, and possible additional ROV/support vessels, possible scour protection vessel. The cables will be constructed and decommissioned over a duration of four years.</p> <p>The landward end (19 km) of the Project export cable is located within the Donna Nook Danger Area. The MOD danger area does not overlap with Subzone 1 or Subzone 2.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>

Potential Impact	C	O&M	D	Consequence
Volume 2, Chapter 9: Marine archaeology and ordnance(Doc ref No 7.2.9)				
Construction and decommissioning of offshore HVAC reactive compensation substations and export cables within the export cable route corridor causing the removal or disturbance of sediments resulting in a potential effect on prehistoric land surfaces.	✓		✓	The assessment considered a maximum adverse scenario of the installation and decommissioning of up to eight export cables of 150 km in length (including associated cable barge anchor placements) and a maximum width of disturbance of 10 m.
Construction and decommissioning of offshore HVAC reactive compensation substations and export cables within the export cable route corridor resulting in a potential effect on shipwrecks and aircraft wrecks.	✓		✓	The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.
Sandwave clearance associated with cable installation along the export cable route corridor causing sediment deposition on the seabed resulting in a potential effect on a variety of heritage assets.	✓			The assessment considered a maximum adverse scenario of sandwave clearance resulting in the deposition of granular material, with each placement of material likely to form a mound of up to 1 m in height in the centre, reducing to negligible height at the edge. The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.

Potential Impact	C	O&M	D	Consequence
Volume 2, Chapter 10: Seascape and visual resources (Doc ref No 7.2.10)				
The temporary change to the existing present day seascape character through the introduction of new or uncharacteristic elements/features during the construction phase may cause direct or indirect effects.	✓		✓	<p>The assessment considered a maximum adverse scenario of the installation and decommissioning of up to eight export cables of 150 km in length (including associated cable barge anchor placements). The cables will be constructed/decommissioned over a maximum duration of four years during construction and a maximum duration of four years during decommissioning.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>
The temporary change to the existing Historic Seascape Character through the introduction of new or uncharacteristic elements/features during the construction phase may cause direct or indirect effects.	✓		✓	
The temporary change in the existing visual scenario during the construction phase may cause effects experienced by a variety of visual receptors.	✓		✓	

Potential Impact	C	O&M	D	Consequence
Volume 2, Chapter 11: Infrastructure and other users (Doc ref No 7.2.11)				
<i>Recreational users and recreational fishing</i>				
Safety zones and recommended advisory safety zones within Subzone 2 and the cable route corridor may displace sailing, motor and other recreational craft resulting in a loss of recreational activity.	✓		✓	The assessment considered a maximum adverse scenario of the installation and decommissioning of up to eight export cables of 150 km in length. The assessment considered an exclusion scenario of up to 1 km advisory safety zones around construction and decommissioning operations. The cables will be constructed and decommissioned over a duration of four years.
Safety zones and recommended advisory safety zones within Subzone 2 and the cable route corridor may result in displacement of recreational fishing vessels resulting in a loss of fishing area.	✓		✓	The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.
Recommended advisory safety zones around vessels during major maintenance activity on the cable route and 500 m safety zones around the two offshore HVAC reactive compensation substations may result in loss of recreational resource by displacement of sailing motor and other recreational craft and recreational fishing vessels.		✓		The assessment considered a maximum adverse exclusion scenario of up to 1 km advisory safety zones around maintenance activities along the cable route. The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.

Potential Impact	C	O&M	D	Consequence
<i>Aggregate extraction, cables and pipelines</i>				
The installation and decommissioning of the inter-array, interconnector and export cables may affect existing pipelines or cables.	✓		✓	<p>The assessment considered a maximum adverse scenario of the installation and decommissioning of up to eight export cables of 150 km in length, with a target burial depth (subject to a cable burial assessment) of 3 m and a maximum width of disturbance of 10 m.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>
Construction activities, safety zones and recommended advisory safety zones, operation and maintenance activities, and decommissioning activities around Subzone 2 and along the export cable route may cause a temporary loss of access to existing pipelines or cables for repair or maintenance.	✓	✓	✓	<p>The assessment considered a maximum adverse scenario of the installation and decommissioning of up to eight export cables of 150 km in length over a maximum duration of four years construction and four years decommissioning. Maximum adverse exclusion scenario of up to 1 km advisory safety zones around construction, maintenance and decommissioning activities along the cable route.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>

Potential Impact	C	O&M	D	Consequence
Installation and decommissioning of cables has the potential to lead to increased suspended sediment concentrations and deposition, which could cause a change in aggregate resource in aggregate extraction areas.	✓		✓	<p>The assessment considered a maximum adverse scenario of the installation and decommissioning of up to eight export cables of 150 km in length, with a target burial depth (subject to a cable burial assessment) of 3 m and a maximum width of disturbance of 10 m.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>
<i>Oil and gas, carbon capture and storage, and natural gas storage</i>				
Recommended advisory safety zones along the cable route may cause a reduction in potential seismic survey area.	✓	✓	✓	<p>The assessment considered a maximum adverse scenario of the installation and decommissioning of up to eight export cables of 150 km in length. The assessment considered an exclusion scenario of up to 1 km advisory safety zones around construction and decommissioning activities and during maintenance activities along the cable route.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 reduces the magnitude of impact for operators of licenced blocks 48/9a, 48/4b and 48/5a. This change does not alter the conclusions of the assessment and the significance of the effect would therefore remain as not significant in EIA terms.</p>

Potential Impact	C	O&M	D	Consequence
Drilling and the placement of infrastructure will be restricted within the cable route corridor and from within 500 m from the boundary of the cable route corridor.	✓	✓	✓	<p>The assessment considered a maximum adverse scenario of the restriction of drilling and placement of infrastructure within the AfL boundary and within 500 m from the boundary of the AfL during the construction, operation and maintenance and decommissioning phases of the Project.</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 reduces the magnitude of impact for operators of licenced blocks 48/9a, 48/4b and 48/5a. This change does not alter the conclusions of the assessment and the significance of the effect would therefore remain as not significant in EIA terms.</p>
<i>Airborne noise</i>				
Airborne noise from the cable laying vessel may exceed guideline levels for residential onshore receptors and leisure and recreational receptors.	✓			<p>The assessment considered a maximum adverse scenario of the cable laying vessel working at the closest location to the UK shore (i.e. up to the landfall of the cable laying route).</p> <p>The reduction in the Project cable route corridor to remove the area which overlaps with Subzone 1 does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effect would therefore remain as not significant in EIA terms.</p>

Table 3: Consequence of the removal of Project One/Project Two overlap at onshore HVDC converter/HVAC substation on ES conclusions (C = Construction, O&M = Operation & Maintenance, D = Decommissioning).

Potential Impact	C	O&M	D	Consequence
Volume 3, Chapter 1: Geology and ground conditions (Doc ref No 7.3.1)				
Impacts of operation and maintenance may affect the water quality of secondary aquifers and any associated surface waters together with the principal aquifer. The WFD status might also be affected.		✓		<p>The assessment considered that the HVDC converter/HVAC substation would require routine maintenance, which would involve the use of oils and chemicals. The assessment considered the risk of spillages, the potential impact on the underlying aquifers and how the risk of spillage would be managed (i.e., by applying good working practices and the use of spill kits).</p> <p>The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation would not change the use of oils and chemicals during the routine maintenance or the frequency of the visits and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.</p>
Impacts of decommissioning may cause disturbance or contamination of secondary aquifers and may affect their WFD status.			✓	<p>The assessment considered that intrusive works would be required for the removal of the cabling and associated infrastructure, which potentially may disturb or contaminate the underlying aquifers.</p> <p>The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.</p>

Potential Impact	C	O&M	D	Consequence
Volume 3, Chapter 2: Hydrology and flood risk (Doc ref No 7.3.2)				
The impacts of operation/decommissioning may affect flood risk.		✓	✓	<p>The assessment considered that the onshore HVDC converter/HVAC substation is primarily located in an area at low risk of flooding (and assumes a worst case that the construction side access has a high sensitivity to flooding). The onshore HVDC converter/HVAC substation has been designed to ensure there would be no increase in the rate of run-off.</p> <p>The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.</p>
Volume 3, Chapter 3: Ecology and nature conservation (Doc ref No 7.3.3)				
The construction/decommissioning of the onshore HVDC converter/HVAC substation will result in the loss of a linear area of field boundary woodland	✓			<p>The assessment considered that the construction of the onshore HVDC converter/HVAC substation would result in the loss of a narrow linear strip of woodland covering an area of 4,019m². The assessment also considers the proposed planting scheme which would include the replacement of this habitat.</p> <p>The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation would not reduce the amount of linear woodland removed for Project Two. Therefore, it does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.</p>

Potential Impact	C	O&M	D	Consequence
The construction/decommissioning of the onshore HVDC converter/HVAC substation will result in the loss of two sections of hedgerow and potential disturbance by pollutants	✓		✓	<p>The assessment considered that the construction of the onshore HVDC converter/HVAC substation would result in the permanent loss of hedgerow habitat including one 'important' hedgerow as defined under the Hedgerow Regulations 1997. The proposed planting of linear strips of native woodland and shrub, would help to compensate for the loss of hedgerow. The assessment also considered the potential disturbance to the hedgerow from pollutants during construction and decommissioning.</p> <p>The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation would not reduce the amount of hedgerow removed for Project Two as the areas could still be used for construction/decommissioning. It does not alter the conclusions of the assessment. The significance of the effects would therefore remain as significant in EIA terms.</p>
The construction/decommissioning of the onshore HVDC converter/HVAC substation may result in the potential disturbance of watercourses by pollutants.	✓		✓	<p>The assessment considered that the proximity of construction and decommissioning works to the watercourses may lead to potential impacts from runoff and airborne pollutants.</p> <p>The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.</p>
The construction/decommissioning of the onshore HVDC converter/HVAC substation may result in the disturbance and displacement of badgers and loss of potential foraging habitat.	✓		✓	<p>The assessment considered that badger activity has been recorded around the proposed onshore HVDC converter/HVAC substation site, however no active setts have been recorded. Whilst, pre-construction and pre-decommissioning surveys would be undertaken to confirm badger activity/presence of setts, the assessment considered that the impact on badgers would be limited.</p> <p>The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation would reduce the area of land used for Project Two for its onshore HVDC converter/HVAC substation by 0.88 ha, but does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.</p>

Potential Impact	C	O&M	D	Consequence
<p>The construction of the onshore HVDC converter/HVAC substation will result in the loss of habitat of value to foraging and commuting bats, and the disturbance and displacement of bats.</p>	✓		✓	<p>The assessment considered that the arable fields and dividing hedgerow of the onshore HVDC converter/HVAC substation site is of low value to commuting and foraging bats. However, the surrounding hedgerow and linear woodland is of importance – the linear woodland would be removed to enable construction. Replacement planting of trees and shrubs and the creation of adjacent rough grassland along field boundaries would enhance the foraging and commuting habitat. For the decommissioning of the onshore HVDC converter/HVAC substation, the assessment considered that the works would not result in the loss of any known bat roosts, and woodland of potential value to commuting and foraging bats would be retained and protected by works-free buffer zones.</p> <p>The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation would reduce the area of land available to be constructed upon for Project Two for its onshore HVDC converter/HVAC substation by 0.88 ha. However, it does not alter the total area available to be used for construction and decommissioning activities and and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.</p>

Potential Impact	C	O&M	D	Consequence
<p>Construction/decommissioning of the onshore HVDC converter/HVAC substation will result in loss of habitat of potential value to breeding birds, and displacement of birds, primarily breeding birds.</p>	✓		✓	<p>The assessment considered that hedgerows and areas of woodland and scrub within and surrounding the onshore HVDC converter/HVAC substation are of potential value to breeding birds, however ground nesting opportunities are limited. Temporary displacement of some breeding birds that may nest in the vicinity of the onshore HVDC converter/HVAC substation will be expected during construction due to habitat loss. Proposed planting would provide replacement and additional foraging and nesting opportunities. During decommissioning, the assessment considered that no habitat of potential value to nesting birds is expected to be lost and works-free zones would be established around adjacent areas of woodland planting.</p> <p>The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation would reduce the area of land constructed upon for Project Two for its onshore HVDC converter/HVAC substation by 0.88 ha. However, it does not alter the total area available to be used for construction and decommissioning activities -and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.</p>
<p>The construction/decommissioning of the onshore HVDC converter/HVAC substation may result in the temporary displacement of limited numbers of wintering and migratory birds.</p>	✓		✓	<p>The assessment considered that wintering and migratory waders and wildfowl species are largely absent from inland areas. Those species that do occur inland have wide foraging ranges and could be expected to have high adaptability when avoiding the construction/decommissioning works</p> <p>The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation would reduce the area of land constructed upon for Project Two for its onshore HVDC converter/HVAC substation by 0.88 ha. However, it does not alter the total area available to be used for construction and decommissioning activities and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.</p>

Potential Impact	C	O&M	D	Consequence
Operation will result in low-level visual disturbance, noise and vibration disturbance of habitats and wildlife during routine maintenance operations, and could result in temporary physical disturbance of habitats and wildlife, and could result in potential contamination of local water bodies through accidental spillage of chemicals or fuels during routine maintenance operations, and/or increased sedimentation as a result of physical disturbance of soils.		✓		<p>The assessment considered that the HVDC converter/HVAC substation would require routine maintenance using light vehicles only and would use the existing road network and the permanent HVDC converter/HVAC substation access. The assessment also considered that any maintenance activity would be undertaken in daylight hours. Any lighting required for maintenance activities would be limited to pathways for health and safety purposes; night time lighting would not be required on a routine basis. The assessment considered that routine maintenance would involve the use of oils and chemicals, which could cause contamination of watercourses through accidental spills or leaks. The use of oils and chemicals would be managed through good working practices and the use of spill kits.</p> <p>The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation would not change the maintenance activities (in terms of frequency of visits, lighting requirements, or the management of oils and chemicals) and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.</p>
Volume 3, Chapter 4: Intertidal birds (Doc ref No 7.3.4)				
No impacts identified at the onshore HVDC converter station and HVAC substation				N/A: No impacts identified as a result of the construction, operation and maintenance, or decommissioning of the onshore HVDC converter/HVAC substation and therefore, this change has no consequence on intertidal ornithology.
Volume 3, Chapter 5: Landscape and visual resources (Doc ref No 7.3.5)				
The impact of the onshore HVDC converter/HVAC substation construction, operation and decommissioning may affect designated landscapes, undesignated seascape resources and undesignated landscape resources.	✓	✓	✓	<p>The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation would reduce the area of land available for its onshore HVDC converter/HVAC substation by 0.88 ha. However, it does not alter the total area available to be used for construction and decommissioning activities and therefore does not alter the conclusions of the assessment. The significance of the effects remains unchanged, that is, not significant to significant in EIA terms.</p>

Potential Impact	C	O&M	D	Consequence
Close range receptors: The impact of the construction, operation and decommissioning of the onshore HVDC converter stations may affect residential receptors, community receptors, commercial/industrial receptors, users of close range Public Rights of Way (PRoW), recreation and tourism receptors and dynamic receptors.	✓	✓	✓	The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation would reduce the area of land available for its onshore HVDC converter/HVAC substation by 0.88 ha. However, it does not alter the total area available to be used for construction and decommissioning activities and therefore does not alter the conclusions of the assessment. The significance of the effects therefore remains unchanged, that is, not significant to significant in EIA terms.
Medium range receptors: The impact of the construction, operation and decommissioning of the onshore HVDC converter stations may affect community receptors, commercial/industrial receptors, users of Public Rights of Way (PRoW), recreation and tourism receptors and dynamic receptors.	✓	✓	✓	The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation would reduce the area of land available for its onshore HVDC converter/HVAC substation by 0.88 ha. However, it does not alter the total area available to be used for construction and decommissioning activities and therefore does not alter the conclusions of the assessment. The significance of the effects therefore remains as not significant in EIA terms.
Long range receptors: The impact of the construction, operation and decommissioning of the onshore HVDC converter stations may affect residential receptors, community receptors, commercial/industrial receptors, users of Public Rights of Way (PRoW), recreation and tourism receptors and dynamic receptors.	✓	✓	✓	The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation would reduce the area of land available for its onshore HVDC converter/HVAC substation by 0.88 ha. However, it does not alter the total area available to be used for construction and decommissioning activities and therefore does not alter the conclusions of the assessment. The significance of the effects therefore remains as not significant in EIA terms.

Potential Impact	C	O&M	D	Consequence
Volume 3, Chapter 6: Historic environment (Doc ref No 7.3.6)				
Construction and decommissioning works at the landfall, along the cable route (including compounds and construction side accesses) and at the site of the onshore HVDC converter/HVAC substation could result in permanent loss of, or damage to, buried archaeological remains.	✓		✓	The assessment considered that the site area for the onshore HVDC converter/HVAC substation would be up to 6 ha. The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation would reduce the area of land available for its onshore HVDC converter/HVAC substation by 0.88 ha but does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.
Construction works, operation and maintenance and decommissioning works at the site of the onshore HVDC converter/HVAC substation could potentially result in temporary/long-term reversible impacts on the settings of heritage assets including Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens.	✓	✓	✓	The assessment considered the proposed onshore HVDC converter station of 40 m height as a worst case. The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.
Construction works, operation and maintenance and decommissioning works at the landfall, along the cable route (including compounds and construction side accesses) and at the site of the onshore HVDC converter/HVAC substation could result in temporary impacts on the overall historic landscape.	✓	✓	✓	The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.

Potential Impact	C	O&M	D	Consequence
Volume 3, Chapter 7: Land use, agriculture and recreation (Doc ref No 7.3.7)				
The impacts of the construction/operation and decommissioning of the onshore HVDC converter/HVAC substation and link boxes may affect agricultural land and soils.	✓	✓	✓	<p>The assessment considered that the construction of the onshore HVDC converter/HVAC substation would lead to the loss of approximately 7.0 ha of grade 3a land. The assessment also considered that the HVDC converter/HVAC substation would require routine maintenance using light vehicles via the existing road network and the permanent HVDC converter/HVAC substation access. With regard to decommissioning, the assessment considered that the site of the onshore HVDC converter/HVAC substation would either be restored to agricultural use or the building would remain in-situ.</p> <p>The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation would not reduce the amount of land taken out of agricultural production as it may still be used for temporary compounds and access during the construction and decommissioning phases. The frequency of the maintenance visits and the type of vehicles used would not be changed therefore the removal of the overlap does not alter the conclusions of the assessment.</p> <p>The significance of the effects would therefore remain as not significant in EIA terms.</p>
The impacts of the construction, operation and decommissioning of the onshore HVDC converter/HVAC substation, TJBs and link boxes may affect the farming framework.	✓	✓	✓	<p>The assessment considered that the largest permanent loss of land from a single holding would occur from a large arable holding currently on short term licence agreement. The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation would not reduce the amount of land taken out of agricultural production as it may still be used for the construction and decommissioning of its onshore HVDC converter/HVAC substation. The change does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.</p>

Potential Impact	C	O&M	D	Consequence
The impacts during the construction, operational and decommissioning phases of the project may affect recreational receptors.	✓	✓	✓	<p>The assessment considered that the HVDC converter/HVAC substation would require routine maintenance using light vehicles via the existing road network and the permanent HVDC converter/HVAC substation access.</p> <p>The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation would not change the frequency of the maintenance visits or the vehicles used. Therefore, it does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.</p>
Volume 3, Chapter 8: Traffic and transport (Doc ref No 7.3.8)				
<p>The temporary impact of the construction work may affect severance of routes</p> <p>The temporary impact of the construction work may affect pedestrian delay.</p> <p>The temporary impact of the construction work may affect fear and intimidation.</p> <p>The temporary impact of the construction work may affect accidents and road safety.</p> <p>The temporary impact of hazardous, dangerous and abnormal loads during construction works</p>	✓			<p>The assessment considered a maximum adverse scenario for the Centrica access road (two way, combined arrivals and departures) of 101 total daily vehicles, 51 total daily HGVs and 23 abnormal loads (over whole construction) during the construction of the Project. The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation will not reduce the total number of daily vehicles, as the topsoil would still have to be removed from construction compounds. It does not change the number of abnormal loads and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant to significant in EIA terms.</p>

Potential Impact	C	O&M	D	Consequence
Impacts arising from traffic associated with operation and maintenance/decommissioning of the HVDC converter/HVAC substation may affect traffic and transport receptors		✓	✓	<p>The assessment considered that maintenance visits would be on a weekly (HVDC station) or monthly (HVAC station) basis and would be made using light vehicles via the existing road network and permanent HVDC converter/HVAC substation access.</p> <p>The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation does not alter the frequency of maintenance visits and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.</p>
Volume 3, Chapter 9: Noise and vibration (Doc ref No 7.3.9)				
The temporary impact of traffic generation on the local road network in association with the project during construction may affect receptors sensitive to noise or vibration.	✓			<p>The assessment considers that noise change is based on the two-way 24-hour flows, two-way 18 hour flows, percentage of heavy goods vehicles and speed data for 29 existing/unaltered road links. The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation will not reduce the total number of daily vehicles. It does not change the number of abnormal loads and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.</p>
The temporary impacts of HVDC converter/HVAC substation construction may affect receptors sensitive to noise or vibration.	✓		✓	<p>Although the precise number and type of plant and working methods was not specified at the time of the assessment, a number of following example scenarios were considered to enable a quantitative assessment to be undertaken (e.g., piling (4 tonne hydraulic hammer inserting tubular steel piles).</p> <p>The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation does not alter the example scenarios considered and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.</p>

Potential Impact	C	O&M	D	Consequence
The permanent impact of a 1500 MW HVDC onshore converter operation may affect receptors sensitive to noise or vibration.		✓		The assessment considered noise immisions from the operational 1,800 MW onshore HVDC converter which were predicted using SoundPLAN noise modelling software. The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation does not alter the operational noise levels and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.
The permanent impact of an 1800 MW HVDC onshore converter operation may affect receptors sensitive to noise or vibration.		✓		The assessment considered noise immisions from the operational 1,800 MW onshore HVDC converter which were predicted using SoundPLAN noise modelling software. The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation does not alter the operational noise levels and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.
The permanent impact of an 1800 MW HVAC onshore substation operation may affect receptors sensitive to noise or vibration.		✓		The assessment considered noise immisions from the operational 1,800 MW onshore HVAC converter which were predicted using SoundPLAN noise modelling software. The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation does not alter the operational noise levels and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.
The permanent impact of a combined 900 MW HVDC converter/900 MW HVAC substation operation may affect receptors sensitive to noise or vibration.		✓		The assessment considered that the operation of a combined 900 MW HVDC and 900 MW HVAC system would emit sound of a magnitude comparable with the average emissions of two separate HVAC/HVDC schemes. The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation does not alter operational noise levels and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.

Potential Impact	C	O&M	D	Consequence
Volume 3, Chapter 10: Air quality and health (Doc ref No 7.3.10)				
The temporary impacts of the onshore HVDC converter/HVAC substation construction may affect receptors sensitive to dust (human and ecological).	✓		✓	<p>The assessment considered that the dust impact for demolition is medium and the dust impact risk for earthworks, construction and track-out is high.</p> <p>The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation does not alter dust impact and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.</p>
The temporary impacts due to construction traffic may affect human and ecological receptors.	✓			<p>The assessment considered a maximum adverse scenario of 101 total daily vehicles, 51 total daily HGVs and 23 abnormal loads during the construction of the Project. The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation will not reduce the total number of daily vehicles. It does not change the number of abnormal loads and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.</p>
The impacts due to operation of the underground onshore cables and onshore HVDC converter/HVAC substation traffic may affect human and ecological receptors		✓		<p>The assessment considered that maintenance visits would be on a weekly (HVDC station) or monthly (HVAC station) basis and would be made using light vehicles via the existing road network and permanent HVDC converter/HVAC substation access.</p> <p>The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation does not alter the frequency of maintenance visits and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.</p>

Potential Impact	C	O&M	D	Consequence
The operation of the underground onshore cables and onshore HVDC converter/HVAC substation would produce electric and magnetic fields.		✓		<p>The assessment considered that the maximum electric and magnetic strengths that would be generated fall well within the relevant guideline public exposure limits, which are set to protect human health.</p> <p>The reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation does not alter the electric and magnetic strengths and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant in EIA terms.</p>
Volume 3, Chapter 11: Socio-economics (Doc ref No 7.3.11)				
The Socio-economic assessment does not assess impacts specifically related to the onshore HVDC converter/HVAC substation but assesses the project as a whole.				<p>Despite the fact that the socio-economic assessment does not assess impacts specifically related to the onshore HVDC converter/HVAC substation but assesses the project as a whole, the reduction of the Project's Order limits at the onshore HVDC converter/HVAC substation does not alter the maximum adverse scenario and therefore does not alter the conclusions of the assessment. The significance of the effects would therefore remain as not significant to significant (beneficial) in EIA terms.</p>