



codling
wind park



Environmental Impact Assessment Report

Volume 4

Appendix 10.2 Representative
Scenario and Limits of
Deviation Assessment



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APPENDIX 10.2 REPRESENTATIVE SCENARIO AND LIMITS OF DEVIATION ASSESSMENT

1 Introduction

1. Complex, large-scale infrastructure projects with a terrestrial and marine interface such as the CWP Project, are consented and constructed over extended timeframes. The ability to adapt to changing supply chain, policy or environmental conditions and to make use of the best available information to feed into project design, promotes environmentally sound and sustainable development. This ultimately reduces project development costs and therefore electricity costs for consumers and reduces CO₂ emissions.
2. Case law recognises that the plans and particulars submitted with planning applications can allow for a certain limited flexibility, where this is applied reasonably and, in a context-specific way. In addition, section 287A of the Planning and Development Act (PDA) (as inserted by the Planning and Development, Maritime and Valuation (Amendment) Act 2022) has expanded the flexibility available and allows planning applications to be made and decided before the Applicant has confirmed certain details of the project.
3. Due to the complexity of the Codling Wind Park (CWP) Project, significant and rapid progression in wind farm technology development, potential changes in environmental conditions and in policy and legislation, the Applicant considers that consenting a degree of design flexibility is appropriate and legally compliant.
4. In this regard the approach to the design development of the CWP Project has sought to introduce flexibility where required to enable the best available technology to be constructed, whilst at the same time to specify project boundaries, project components and project parameters wherever possible, whilst having regard to known environmental constraints.

2 Approach to Presenting the Project Design

5. The approach to the design development of the CWP Project considers permanent infrastructure, temporary infrastructure and installation methods.
6. In general, the CWP Project has sought to specify the location, scale and extents of permanent and temporary infrastructure, however in some cases a degree of design flexibility is required. Subject to the detail concerned, this flexibility is presented in three ways:
 - **Options:** Consent is sought for up to two options for certain permanent infrastructure details and layouts, for example, wind turbine generator (WTG) Layout Option A (250 m rotor diameter) or WTG Option B (276 m rotor diameter). Each design option is described in detail in **Chapter 4 Project Description**, which provides the details associated with each option.
 - **Dimensional flexibility:** Dimensional flexibility is described as a limited parameter range i.e. upper (maximum) and lower (minimum) values for a given detail such as cable length.
 - **Locational flexibility:** Locational flexibility of permanent infrastructure is described as Limit of Deviation (LoD) from a specific point or alignment.
7. Installation methods for permanent infrastructure have been identified and described in full, however, as with the design of permanent infrastructure, a degree of flexibility is required as final decisions on methods and techniques to be employed will not be made until the appointment of the primary contractors closer to the time of construction.

8. Where required, flexibility concerning installation methods is presented by means of options. The details associated with the installation methods are specified, where possible, or otherwise described as a limited parameter range i.e. upper (maximum) and lower (minimum) values for a given detail.

3 Representative Scenario Assessment

9. The CWP Project Environmental Impact Assessment Report (EIAR) will identify, describe and assess all of the likely significant effects of the proposed development on the environment. To achieve this for all options and dimensional flexibility, and at the same time to produce application documents that are concise and readable, each chapter of the EIAR will assess a selection of representative scenarios, rather than assessing every possible scenario. A “representative scenario” is a combination of options and dimensional flexibility that has been selected to represent all of the likely significant effects of the project on the environment. Some topics may require several representative scenarios to be identified to ensure all impacts are identified, described and assessed.
10. For ornithology this analysis for construction and operation and maintenance (O&M) phase impacts is presented in **Table 1** and **Table 2**, respectively. Each table identifies one or more representative scenarios for each impact with supporting text to demonstrate that no other scenarios would give rise to new or materially different effects; taking into consideration the potential impact of other scenarios on the magnitude of the impact or the sensitivity of the receptor(s) that is being considered.
11. Where the potential for a new or materially different impact is identified, then further representative scenarios must be assessed in full within the main chapter.
12. This is distinct from the approach to assessing locational flexibility, where differences in impacts are assessed in this Appendix. The difference in approaches arises because there is a much higher degree of confidence in the locations and alignments assessed in the main chapter than there is for the final options and dimensions.
13. Overall, this approach will ensure that the EIAR will identify, describe and assess:
 - Every impact type that could arise from the proposed development, taking account of the full range of options and dimensional flexibility;
 - Every materially different magnitude of impact that could arise from the proposed development within the proposed options and dimensional flexibility; and
 - Every materially different sensitivity of receptor that could arise from the proposed development within the proposed options and dimensional flexibility.

Table 1 Representative scenario assessment - Construction phase impacts

Impact	Relevant project details			Rationale for representative scenario(s)		
Impact 1: Direct effects on offshore and intertidal habitats during construction phase activities.	Array site (including WTGs, inter-array cables (IACs), interconnectors and offshore substation structures (OSSs))	WTG Option A	WTG Option B	Representative scenario selection	Questions to demonstrate assessment has considered all scenarios	Response
	Permanent infrastructure (WTGs, OSSs, IACs and associated infrastructure)			Impact pathways identified and parameters selection to quantify impact magnitude Non-foraging related habitat use equates to use of sea surface. The only parameters relating to spatial and temporal occupation of the array site during construction are those listed. Seabed habitat effects are considered in relation to effects on prey species. Option(s) considered as representative scenario and why WTG Option B forms the representative scenario as this represents the greatest extent of direct effects on habitat. Option(s) assessed and why Option B. Although Option A would result in a very slightly lower level of direct effects on habitat it would not introduce any new impacts and would not result in a difference to assessed impact magnitude. The difference in sea surface area affected is minimal relative to the baseline available sea area.	1. Are there infrastructure layout options (permanent or temporary) which may introduce new impacts? <i>Note - this could be a new impact entirely or the introduction of an existing impact pathway to a new receptor.</i> 2. Are there infrastructure layout options (permanent or temporary) which may introduce a materially different magnitude of impact? 3. Are there infrastructure layout options (permanent or temporary) which may introduce a material change in the sensitivity of the receptor(s) (greater or lesser)? 4. Are there alternative installation methods which may introduce new impacts? 5. Are there alternative installation methods which may introduce a materially different magnitude of impact? 6. Are there alternative installation methods which may materially alter the sensitivity of the relevant receptor(s) (greater or lesser).	1. No, WTG Option A would not introduce any new impacts. Therefore, WTG Option B forms the representative scenario basis for the assessment with WTG Option A conclusions being no different. 2. No, WTG Option A would not give rise to a materially different magnitude for Offshore / Intertidal Impact 1 (Direct effects on habitat) than Option B. Therefore, WTG Option B forms the representative scenario basis for the assessment with WTG Option A conclusions being no different. 3. No, WTG Option A will not influence the sensitivity of assessed receptors. Receptor sensitivity to this impact is not influenced by array site design option choices. Therefore, WTG Option B forms the representative scenario basis for the assessment with WTG Option A conclusions being no different. 4. No, no variation in installation methods is proposed in relation to design option choice. 5. No, no variation in installation methods is proposed in relation to design option choice. 6. No, no variation in installation methods is proposed in relation to design option choice.
	Sea surface area covered by WTG bases (m²)	3,770 (assuming 8 m diameter towers, and therefore 50.27 m² per tower)	3,817 (assuming 9 m diameter towers, and therefore 63.62 m² per tower)			
	[Note: this increases from 0 at start of construction to a maximum value when all turbines installed during construction phase.]					
	Sea surface area covered by OSS bases (m²)	No variation in permanent infrastructure in relation to design option choice; 70.88 m² per OSS tower, three OSS bases.				
	Temporary infrastructure (Installation vessels)					
	Maximum number of construction vessels within array site at one time.	No variation in temporary infrastructure in relation to design option choice.				
Offshore export cable corridor (OECC) (<MLWS)				Representative scenario selection	Questions to demonstrate assessment has considered all scenarios	Response
Permanent infrastructure OECC and associated infrastructure				No alternative scenarios for consideration in assessment.		
Sea surface area covered by OECC and associated infrastructure (m²)	No variation in permanent infrastructure in relation to design option choice No OECC or associated permanent infrastructure footprint at sea surface.					

Impact	Relevant project details			Rationale for representative scenario(s)		
	Temporary infrastructure (Installation vessels)					
	Maximum number of construction vessels within OECC at one time	No variation in temporary infrastructure in relation to design option choice				
	OECC (MLWS to MHWS)	Intertidal cable (Open cut trenches)		Representative scenario selection	Questions to demonstrate assessment has considered all scenarios	Response
	Installation methods and effects			<u>Impact pathways identified and parameters selection to quantify impact magnitude</u> Alteration of habitat within intertidal areas. The potential magnitude of this impact is described by parameters relating to the volume of intertidal habitat impacted during construction. <u>Option(s) considered as representative scenario and why</u> WTG Option A forms the representative scenario as this represents the greatest extent of direct effects on habitat (I.e. greatest extent of intertidal habitat alteration during construction) <u>Option(s) assessed and why</u> Option A. Although Option B would result in a very slightly lower level of direct effects on habitat it would not introduce any new impacts and would not result in a difference to assessed impact magnitude.	<i>1. Are there infrastructure layout options (permanent or temporary) which may introduce new impacts? Note - this could be a new impact entirely or the introduction of an existing impact pathway to a new receptor.</i> <i>2. Are there infrastructure layout options (permanent or temporary) which may introduce a materially different magnitude of impact?</i> <i>3. Are there infrastructure layout options (permanent or temporary) which may introduce a material change in the sensitivity of the receptor(s) (greater or lesser)?</i> <i>4. Are there alternative installation methods which may introduce new impacts?</i> <i>5. Are there alternative installation methods which may introduce a materially different magnitude of impact?</i> <i>6. Are there alternative installation methods which may materially alter the sensitivity of the relevant receptor(s) (greater or lesser).</i>	<div>1. No, only a single option.</div> <div>2. No, only a single option.</div> <div>3. No, only a single option.</div> <div>4. No, no variation in installation methods is proposed in relation to design option choice.</div> <div>5. No, no variation in installation methods is proposed in relation to design option choice.</div> <div>6. No, no variation in installation methods is proposed in relation to design option choice.</div>
	Volume of intertidal habitat impacted					
	Total area disturbed by cofferdam (m²)	6,100				
	Total area disturbed by intertidal cable duct installation (m²)	36,000				
	Total area in transition zone affected by support structures (m²)	6,900				
	Total area of seabed in transition zone affected by installation of cables using either open cut trenching or a shallow water trenching tool (m²)	108,000				
	Total area of disturbed intertidal habitat for landfall (intertidal OECC installation) construction activities (m²)	157,000				
	Impact 2: Disturbance and displacement to ornithological receptors in offshore and intertidal habitats	Array site	WTG Option A			
Permanent infrastructure (WTGs, OSSs, IACs and associated infrastructure)					1. No, WTG Option B would not introduce any new impacts. Therefore, WTG Option A forms the	

Impact	Relevant project details			Rationale for representative scenario(s)		
during construction phase activities.	Area of array site and surrounding buffer.	No variation in installation methods in relation to design option choice Array site + 2 km buffer = 229.61 km ² Array site + 4 km buffer = 358.63 km ²		<u>Impact pathways identified and parameters selection to quantify impact magnitude</u> Extent of displacement relates to area of array site and appropriate buffer (2 or 4 km dependant on species) and also number and duration of vessel movements during construction phase. <u>Option(s) considered as representative scenario and why</u> WTG Option A forms the representative scenario as, more vessels to construct scenario with larger no of turbines. <u>Option(s) assessed and why</u> Option A. Although Option B would result in a very slightly lower level of disturbance and displacement it would not introduce any new impacts and would not result in a difference to assessed impact magnitude.	<i>1. Are there infrastructure layout options (permanent or temporary) which may introduce new impacts? Note - this could be a new impact entirely or the introduction of an existing impact pathway to a new receptor. 2. Are there infrastructure layout options (permanent or temporary) which may introduce a materially different magnitude of impact? 3. Are there infrastructure layout options (permanent or temporary) which may introduce a material change in the sensitivity of the receptor(s) (greater or lesser)? 4. Are there alternative installation methods which may introduce new impacts? 5. Are there alternative installation methods which may introduce a materially different magnitude of impact? 6. Are there alternative installation methods which may materially alter the sensitivity of the relevant receptor(s) (greater or lesser).</i>	representative scenario basis for the assessment with WTG Option B conclusions being no different. 2. No, WTG Option B would not give rise to a materially different magnitude for Offshore/Intertidal Impact 2 (Disturbance and Displacement) than Option A. Therefore, WTG Option A forms the representative scenario basis for the assessment with WTG Option B conclusions being no different. 3. No, WTG Option B will not influence the sensitivity of assessed receptors. Receptor sensitivity to this impact is not influenced by array site design option choices. Therefore, WTG Option A forms the representative scenario basis for the assessment with WTG Option B conclusions being no different. 4. No, no variation in installation methods is proposed in relation to design option choice. 5. No, no variation in installation methods is proposed in relation to design option choice. 6. No, no variation in installation methods is proposed in relation to design option choice.
	Maximum hours of piling per WTG / OSS monopile (WTG Options A and B)	3.5				
	Maximum number of monopiles WTG / OSS installed in 24 hours (WTG Options A and B)	1-2				
	Estimated number of WTG piling days	75	60			
	Estimated number of OSS piling days	3				
	Estimated total WTG piling hours	262.5	210			
	Estimated total OSS piling hours	10.5				
	Maximum number of simultaneous piling events	1				
	Temporary infrastructure Installation vessels					
	Total construction vessels Peak vessels on site simultaneously	2,409 38	2,387 38			
OECC (<MLWS)			Representative scenario selection	Questions to demonstrate assessment has considered all scenarios	Response	
Permanent infrastructure (OECC and associated infrastructure)			No alternative scenarios for consideration in assessment.			
Total cable installation period for all three cables within the OECC - based upon 3 cables multiplied by vessel working rates (hours)		720				
Maximum number of vessels active in association with cable installation activities within the OECC at any one time		5				
Maximum length of cable to be installed in 24 hours (km)		25				

Impact	Relevant project details			Rationale for representative scenario(s)						
	OECC (MLWS to MHWS)	Intertidal cable (Open cut trenches)		Representative scenario selection	Questions to demonstrate assessment has considered all scenarios	Response				
	Installation methods and effects			<u>Impact pathways identified and parameters selection to quantify impact magnitude</u> The potential magnitude of this impact is described by parameters relating to the spatial extent of intertidal habitats within distances from construction activities at which birds would experience disturbance from visual and / or acoustic stimuli and the number of stimuli events which will occur. <u>Option(s) considered as representative scenario and why</u> Open cut trenching forms the representative scenario as no alternative methods are proposed <u>Option(s) assessed and why</u> Option A. Although Option B would result in a lower level of disturbance and displacement it would not introduce any new impacts and would not result in a difference to assessed impact magnitude.	1. Are there infrastructure layout options (permanent or temporary) which may introduce new impacts? <i>Note - this could be a new impact entirely or the introduction of an existing impact pathway to a new receptor.</i> 2. Are there infrastructure layout options (permanent or temporary) which may introduce a materially different magnitude of impact? 3. Are there infrastructure layout options (permanent or temporary) which may introduce a material change in the sensitivity of the receptor(s) (greater or lesser)? 4. Are there alternative installation methods which may introduce new impacts? 5. Are there alternative installation methods which may introduce a materially different magnitude of impact? 6. Are there alternative installation methods which may materially alter the sensitivity of the relevant receptor(s) (greater or lesser).	1. No, only a single option. 2. No, only a single option. 3. No, only a single option. 4. No, no variation in installation methods is proposed in relation to design option choice. 5. No, no variation in installation methods is proposed in relation to design option choice. 6. No, no variation in installation methods is proposed in relation to design option choice.				
	Total piling duration for temporary cofferdam (weeks)	2								
	Duration of temporary cofferdam once constructed (weeks)	4								
	Number of open cut cable duct trenches from cofferdam to the transition zone	3								
	Maximum length of open cut cable duct trenches (m)	300								
	Depth of open cut cable duct trenches (m)	3								
	Width of open cut cable duct trenches (m)	18								
	Width of seabed affected by installation (m)	40								
	Total seabed disturbed by open cut cable duct installation (m2)	36,000								
	Total area of seabed in transition zone affected by cable laying support structures (m2)	6,900								
	Maximum potential number of piling events	Total: 26 days, of which: (Cofferdam: Two weeks) (Tensioner platforms: 9 days) (TJBs: 3 days)	Total: Up to 24 days, of which: (Reception pits: May require up to 12 piling events) (Tensioner platforms: 9 days) (TJBs: 3 days)							
	Impact 3: Changes in prey availability for ornithological receptors in offshore and	Array site	WTG Option A (75 x 250 m)				WTG Option B (60 x 276 m)	Representative scenario selection	Questions to demonstrate assessment has considered all scenarios	Response
		Permanent infrastructure (WTGs, OSSs, IACs and associated infrastructure)							1. No, WTG Option B would not introduce any new impacts. Therefore, WTG Option A forms the	

Impact	Relevant project details			Rationale for representative scenario(s)		
intertidal habitats from construction phase activities.	Boulder clearance: Array site seabed clearance area (m²)	2,556,000 - 2,934,000	2,494,000 - 2,772,000	<p><u>Impact pathways identified and parameters selection to quantify impact magnitude</u></p> <p>The magnitudes of impacts to prey species relates to the extent of seabed disturbance during installation activities of WTGs, OSSs, IACs and associated infrastructure.</p> <p>It should be noted that where boulder clearance overlaps with sand wave clearance, the boulder clearance footprint will be within the sand wave clearance footprint.</p> <p>Where a range is provided, the larger values are assessed against.</p> <p><u>Option(s) considered as representative scenario and why</u></p> <p>WTG Option A forms the representative scenario as this represents the greatest extent of seabed disturbance.</p> <p><u>Option(s) assessed and why</u></p> <p>WTG option A is assessed. Although Option B would result in a very slightly lower level of seabed habitat disturbance it does not introduce any new impacts and does not result in difference to assessed impact magnitudes.</p>	<p>1. Are there infrastructure layout options (permanent or temporary) which may introduce new impacts?</p> <p><i>Note - this could be a new impact entirely or the introduction of an existing impact pathway to a new receptor.</i></p> <p>2. Are there infrastructure layout options (permanent or temporary) which may introduce a materially different magnitude of impact?</p> <p>3. Are there infrastructure layout options (permanent or temporary) which may introduce a material change in the sensitivity of the receptor(s) (greater or lesser)?</p> <p>4. Are there alternative installation methods which may introduce new impacts?</p> <p>5. Are there alternative installation methods which may introduce a materially different magnitude of impact?</p> <p>6. Are there alternative installation methods which may materially alter the sensitivity of the relevant receptor(s) (greater or lesser).</p>	<p>representative scenario basis for the assessment with WTG Option B conclusions being no different.</p> <p>2. No, WTG Option B would not give rise to a materially different magnitude for Offshore/Intertidal Impact 3 (Impacts upon prey species) than Option A. Therefore, WTG Option A forms the representative scenario basis for the assessment with WTG Option B conclusions being no different.</p> <p>3. No, WTG Option B will not influence the sensitivity of assessed receptors. Receptor sensitivity to this impact is not influenced by array site design option choices. Therefore, WTG Option A forms the representative scenario basis for the assessment with WTG Option B conclusions being no different.</p> <p>4. No, no variation in installation methods is proposed in relation to design option choice.</p> <p>5. No, no variation in installation methods is proposed in relation to design option choice.</p> <p>6. No, no variation in installation methods is proposed in relation to design option choice.</p>
	Sand wave clearance: Array site seabed clearance area (m²)	205,250 - 259,250	220,000 – 277,500			
	IAC and interconnector cable installation: Total seabed disturbed (m²)	1,911,000 - 2,214,000	1,791,000 - 2,079,000			
	WTGs and OSS anchoring operations total impact area (m²)	280,800	237,600			
	IAC and interconnector cable anchoring operations total impact area (m²)	371,520	280,800			
	Maximum hours of piling per WTG / OSS monopile	3.5				
	Maximum number of monopiles WTG / OSS installed in 24 hours	2				
	Estimated number of WTG piling days	75	60			
	Estimated number of OSS piling days	3				
	Estimated total WTG piling hours	262.5	210			
	Estimated total OSS piling hours	10.5				
	Maximum number of simultaneous piling events	1				
	Monopile seabed area per WTG (m²)	64				
	Area of scour protection per location (including monopile footprint) (m²)	3,640				
	Total WTG monopile seabed area take (with scour protection) across the array site (m²)	273,000	218,400			
Seabed area covered by OSS bases with scour protection (m²)	10,920					
Interconnector and inter-array cabling total area of seabed covered by cable protection (m²)	208,600					

Impact	Relevant project details			Rationale for representative scenario(s)		
	Volume of scour protection per location (m³)	5,365				
	Temporary infrastructure (Installation vessels)					
	JUV operations total impact area (m²)	240,000	180,000			
	Maximum total extent of seabed habitat disturbed within array site during construction (Permanent and temporary infrastructure) (m²)	6,299,570	5,826,900			
	OECC (<MLWS)					
	Permanent infrastructure (OECC and associated infrastructure)			No alternative scenarios for consideration in assessment.		
	Clearance corridor width per export cable (m)	20		Where a range is provided for relevant project details, the larger values are considered in assessment, though it is noted that the lower end of the range would not result in a material change to impact magnitude.		
	Total length of export cables for boulder clearance (km)	132		For example, the spatial extent of boulder clearance within the OECC is assessed as the highest stated area (2,616,000 m²), however it is considered that if assessment was undertaken in relation to the lowest stated area (2,220,000 m²) there would be no difference to the assessed impact magnitude.		
	Boulder clearance: OECC seabed clearance area (m²)	2,220,000 - 2,616,000				
	Sandwave clearance corridor width per cable (m)	50				
	Length of cables affected by sandwave clearance (m)	3,971				
	Sand wave clearance: OECC seabed clearance area (m²)	198,550				
	Offshore export cable installation: Total seabed disturbed (m²)	1,890,000 - 2,187,000				
	Offshore export cable anchoring operations total impact area (m²)	630,720				
	Maximum total extent of seabed habitat disturbed within OECC during construction (m²)	5,632,270				
	Seabed area covered by OECC and associated infrastructure (m²)	105,000				
	Offshore export cables – intertidal areas (MLWS to MHWS)	Intertidal cable (Open cut trenches)		Representative scenario selection	Questions to demonstrate assessment has considered all scenarios	Response
	Installation methods and effects			Impact pathways identified and parameters selection to quantify impact magnitude Alteration of habitat within intertidal areas.	1. Are there infrastructure layout options (permanent or temporary) which may introduce new impacts? Note - this could be a new impact entirely or the introduction of an existing impact pathway to a new receptor.	1. No, only a single option. 2. No, only a single option. 3. No, only a single option.
	Duration of temporary cofferdam once constructed (weeks)	4				
	Total area disturbed by cofferdam (m²)	6,100				

Impact	Relevant project details			Rationale for representative scenario(s)		
	Total area disturbed by intertidal cable duct installation (m ²)	36,000		The potential magnitude of this impact is described by parameters relating to the volume of intertidal habitat impacted during construction. <u>Option(s) considered as representative scenario and why</u> WTG Option A forms the representative scenario as this represents the greatest extent of impacts upon prey species (I.e. greatest extent of intertidal habitat alteration during construction) <u>Option(s) assessed and why</u> Option A. Although Option B would result in a marginally lower level of impacts upon prey species it would not introduce any new impacts and would not result in a difference to assessed impact magnitude.	2. Are there infrastructure layout options (permanent or temporary) which may introduce a materially different magnitude of impact? 3. Are there infrastructure layout options (permanent or temporary) which may introduce a material change in the sensitivity of the receptor(s) (greater or lesser)? 4. Are there alternative installation methods which may introduce new impacts? 5. Are there alternative installation methods which may introduce a materially different magnitude of impact? 6. Are there alternative installation methods which may materially alter the sensitivity of the relevant receptor(s) (greater or lesser)?	4. No, no variation in installation methods is proposed in relation to design option choice. 5. No, no variation in installation methods is proposed in relation to design option choice. 6. No, no variation in installation methods is proposed in relation to design option choice.
	Total area in transition zone affected by support structures (m ²)	6,900				
	Total area in transition zone affected by installation of cables using either open cut trenching or a shallow water trenching tool (m ²)	108,000				
	Total area of disturbed intertidal habitat for landfall (intertidal OECC installation) construction activities (m²)	157,000				
Impact 4: Accidental pollution in offshore and intertidal habitats during construction phase activities.	Lubricating oils, hydraulic oils and coolants required for the safe use and operation WTGs and associated equipment: Grease, hydraulic oil, gear oil, nitrogen, transformer silicon / ester oil, diesel fuel, sulphur hexafluoride (SF6), glycol / Coolants and batteries. No variation in installation methods is proposed in relation to design option choice.					
Impact 5: Accidental introduction or spread of invasive species in offshore and intertidal habitats during construction phase activities.	Maximum total construction vessels	75 (2,409 round trips)	75 (2,387 round trips)	<u>Impact pathways identified and parameters selection to quantify impact magnitude</u> The magnitudes of impacts to INNS relates to the number of vessel movements during installation activities of WTGs, OSSs, IACs and associated infrastructure. <u>Option(s) considered as representative scenario and why</u> WTG Option A forms the representative scenario as this represents the greatest number of vessel movements and therefore risk of INNS.	1. Are there infrastructure layout options (permanent or temporary) which may introduce new impacts? <i>Note - this could be a new impact entirely or the introduction of an existing impact pathway to a new receptor.</i> 2. Are there infrastructure layout options (permanent or temporary) which may introduce a materially different magnitude of impact? 3. Are there infrastructure layout options (permanent or temporary) which may introduce a material change in the sensitivity of the receptor(s) (greater or lesser)?	1. No, WTG Option B would not introduce any new impacts. Therefore, WTG Option A forms the representative scenario basis for the assessment with WTG Option B conclusions being no different. 2. No, WTG Option B would not give rise to a materially different magnitude for Offshore/Intertidal Impact 3 (introduction of INNS) than Option A. Therefore, WTG Option A forms the representative scenario basis for the assessment with WTG Option B conclusions being no different. 3. No, WTG Option B will not influence the sensitivity of assessed receptors. Receptor sensitivity to this impact is not influenced by array site design option choices. Therefore, WTG Option A forms the representative scenario basis for the
	Maximum total construction vessels	17 (118 round trips)	17 (118 round trips)			

Impact	Relevant project details			Rationale for representative scenario(s)		
				<u>Option(s) assessed and why</u> WTG option A is assessed. Although Option B would result in a very slightly lower level of INNS risk it does not introduce any new impacts and does not result in difference to assessed impact magnitudes.	<i>4. Are there alternative installation methods which may introduce new impacts?</i> <i>5. Are there alternative installation methods which may introduce a materially different magnitude of impact?</i> <i>6. Are there alternative installation methods which may materially alter the sensitivity of the relevant receptor(s) (greater or lesser)?</i>	assessment with WTG Option B conclusions being no different. 4. No, no variation in installation methods is proposed in relation to design option choice. 5. No, no variation in installation methods is proposed in relation to design option choice. 6. No, no variation in installation methods is proposed in relation to design option choice.

Table 2 Representative scenario assessment – Operation and maintenance phase impacts

Impact	Relevant project details			Rationale for representative scenario(s)		
Impact 1: Direct effects on offshore and intertidal habitats during the operational phase.	Array site	WTG Option A	WTG Option B	Representative scenario selection	Questions to demonstrate assessment has considered all scenarios	Response
	Permanent infrastructure (WTGs, OSSs IACs and associated infrastructure)			<u>Impact pathways identified and parameters selection to quantify impact magnitude</u> Non-foraging related habitat use equates to use of sea surface. Parameters relating to spatial and temporal occupation of Array Site during construction described. [Seabed habitat effects considered in relation to effects on prey species.]	1. Are there infrastructure layout options which may introduce new impacts? <i>Note - this could be a new impact entirely or the introduction of an existing impact pathway to a new receptor.</i> 2. Are there infrastructure layout options which may introduce a materially different magnitude of impact (greater or lesser)? 3. Are there infrastructure layout options which may introduce a material change in the sensitivity of the receptor(s) (greater or lesser)?	1. No, WTG Option A would not introduce any new impacts. Therefore, WTG Option B forms the representative scenario basis for the assessment with WTG Option A conclusions being no different. 2. No, WTG Option A would not give rise to a materially different magnitude for Offshore/Intertidal Impact 1 (Direct effects on habitat) than Option B. Therefore, WTG Option B forms the representative scenario basis for the assessment with WTG Option A conclusions being no different. 3. No, WTG Option A will not influence the sensitivity of assessed receptors. Receptor sensitivity to this impact is not influenced by array site design option choices. Therefore, WTG Option B forms the representative scenario basis
	Diameter of WTG towers at LAT (m)	8	9			
	Number of WTGs	75	60			
	OSS monopile diameter at mudline (m)	9	9.5			
	Number of OSSs	3				
	Sea surface area covered by WTG bases (m²)	3,770 (assuming 8 m diameter towers, and therefore 50.27 m² per tower)	3,817 (assuming 9 m diameter towers, and therefore 63.62 m² per tower)	<u>Option(s) considered as representative scenario and why</u> WTG Option B forms the representative scenario as this		

Impact	Relevant project details			Rationale for representative scenario(s)		
	Sea surface area covered by OSS bases (m²)	No variation in permanent infrastructure in relation to design option choice; 70.88 m² per OSS tower, three OSS bases.		represents the greatest extent of direct effects on habitat. <u>Option(s) assessed and why</u> Option B. Although Option A would result in a very slightly lower level of direct effects on habitat it would not introduce any new impacts and would not result in a difference to assessed impact magnitude.		for the assessment with WTG Option A conclusions being no different.
	O&M Vessels			No alternative scenarios for consideration in assessment		
	Maximum number of O&M vessels within Array Site at one time	No variation in temporary infrastructure in relation to design option choice				
	OECC (<MLWS)			Representative scenario selection	Questions to demonstrate assessment has considered all scenarios	Response
	Permanent infrastructure (OECC and associated infrastructure)			No alternative scenarios for consideration in assessment		
	Sea surface area covered by OECC and associated infrastructure (m²)	No variation in permanent infrastructure in relation to design option choice No OECC or associated permanent infrastructure footprint at sea surface				
	O&M Vessels					
	Maximum number of O&M vessels within OECC at one time	No variation in temporary infrastructure in relation to design option choice				
	OECC (MLWS to MHWS)	Intertidal cable laying Option A (Open cut trenches)		Representative scenario selection	Questions to demonstrate assessment has considered all scenarios	Response
	Permanent infrastructure (OECC and associated infrastructure)			No alternative scenarios for consideration in assessment		
Volume of intertidal habitat impacted	No variation in permanent infrastructure in relation to intertidal cable laying					
Impact 2: Disturbance and displacement to	Array site	WTG Option A	WTG Option B	Representative scenario selection	Questions to demonstrate assessment has considered all scenarios	Response

Impact	Relevant project details			Rationale for representative scenario(s)				
ornithological receptors in offshore and intertidal habitats during operational phase activities. For Array Site includes barrier effects, where flying individuals may experience increased energetic costs associated with additional travel distances from transiting around the WTG array rather through.	Permanent infrastructure (WTGs, OSSs IACs and associated infrastructure)			Impact pathways identified and parameters selection to quantify impact magnitude Extent of displacement relates to area of array site and also number and duration of vessel movements during operation phase. Option(s) considered as representative scenario and why WTG Option A forms the representative scenario due to larger no of turbines. Option(s) assessed and why Option A. Although Option B would result in a very slightly lower level of disturbance and displacement it would not introduce any new impacts and would not result in a difference to assessed impact magnitude.	<div>1. Are there infrastructure layout options (permanent or temporary) which may introduce new impacts? <i>Note - this could be a new impact entirely or the introduction of an existing impact pathway to a new receptor.</i></div> <div>2. Are there infrastructure layout options (permanent or temporary) which may introduce a materially different magnitude of impact?</div> <div>3. Are there infrastructure layout options (permanent or temporary) which may introduce a material change in the sensitivity of the receptor(s) (greater or lesser)?</div> <div>4. Are there alternative installation methods which may introduce new impacts?</div> <div>5. Are there alternative installation methods which may introduce a materially different magnitude of impact?</div> <div>6. Are there alternative installation methods which may materially alter the sensitivity of the relevant receptor(s) (greater or lesser).</div>	<div>1. No, WTG Option B would not introduce any new impacts. Therefore, WTG Option A forms the representative scenario basis for the assessment with WTG Option B conclusions being no different.</div> <div>2. No, WTG Option B would not give rise to a materially different magnitude for Offshore/Intertidal Impact 2 (Disturbance and Displacement) than Option A. Therefore, WTG Option A forms the representative scenario basis for the assessment with WTG Option B conclusions being no different.</div> <div>3. No, WTG Option B will not influence the sensitivity of assessed receptors. Receptor sensitivity to this impact is not influenced by array site design option choices. Therefore, WTG Option A forms the representative scenario basis for the assessment with WTG Option B conclusions being no different.</div> <div>4. No, no variation in installation methods is proposed in relation to design option choice.</div> <div>5. No, no variation in installation methods is proposed in relation to design option choice.</div> <div>6. No, no variation in installation methods is proposed in relation to design option choice.</div>		
	Area of array and surrounding buffer.	No variation in installation methods in relation to design option choice Array site + 2 km buffer = 225 km² Array site + 4 km buffer = 359 km²						
	Number of WTGs	75	60					
	Number of OSSs	3						
	O&M Vessels			No alternative scenarios for consideration in assessment				
	Number of operation and maintenance vessels and vessel movements within Array Site	1, 209						
	OECC (<MLWS)			Representative scenario selection			Questions to demonstrate assessment has considered all scenarios	Response
	Permanent infrastructure (OECC and associated infrastructure)			No alternative scenarios for consideration in assessment				
	Sea surface area covered by OECC and associated infrastructure (m²)	n/a						
	O&M Vessels							
	Number of operation and maintenance vessels and vessel movements within OECC	1,209						
	OECC (MLWS to MHWS)			Intertidal cable (Open cut trenches)			Representative scenario selection	Questions to demonstrate assessment has considered all scenarios

Impact	Relevant project details			Rationale for representative scenario(s)		
	Permanent infrastructure (OECC and associated infrastructure)			No alternative scenarios for consideration in assessment		
	Spatial extent of intertidal habitat impacted	No variation in permanent infrastructure in relation to intertidal cable laying option choice				
Impact 3: Changes in prey availability for ornithological receptors in offshore and intertidal habitats during the operational phase.	Array site	WTG Option A	WTG Option B	Representative scenario selection	Questions to demonstrate assessment has considered all scenarios	Response
	Permanent infrastructure WTGs, OSSs IACs and associated infrastructure			<u>Impact pathways identified and parameters selection to quantify impact magnitude</u> The magnitudes of impacts to prey species relates to the extent of seabed occupied by infrastructure during the operational period of the project. <u>Option(s) considered as representative scenario and why</u> WTG Option A forms the representative scenario as this represents the greatest extent of seabed occupied by infrastructure during the operational period of the project and hence may result in the largest degree of impact upon prey species. <u>Option(s) assessed and why</u> Option A. Although Option B would result in a very slightly lower level of direct effects on habitat it would not introduce any new impacts and would not result in a difference to assessed impact magnitude.	1. Are there infrastructure layout options which may introduce new impacts? <i>Note - this could be a new impact entirely or the introduction of an existing impact pathway to a new receptor.</i> 2. Are there infrastructure layout options which may introduce a materially different magnitude of impact (greater or lesser)? 3. Are there infrastructure layout options which may introduce a material change in the sensitivity of the receptor(s) (greater or lesser)?	1. No, WTG Option B would not introduce any new impacts. Therefore, WTG Option A forms the representative scenario basis for the assessment with WTG Option B conclusions being no different. 2. No, WTG Option B would not give rise to a materially different magnitude for Offshore/Intertidal Impact 1 (Direct effects on habitat) than Option A. Therefore, WTG Option A forms the representative scenario basis for the assessment with WTG Option B conclusions being no different. 3. No, WTG Option B will not influence the sensitivity of assessed receptors. Receptor sensitivity to this impact is not influenced by array site design option choices. Therefore, WTG Option A forms the representative scenario basis for the assessment with WTG Option B conclusions being no different.
	Seabed area covered by WTG bases with scour protection (m²)	273,000	218,400			
	Seabed area covered by OSS bases with scour protection (m²)	No variation in installation methods in relation to design option choice. 10,920				
	Interconnector and inter-array cabling total area of seabed covered by cable protection (m²)	208,600				
	Total footprint of infrastructure (km²)	0.60	0.49			
	OECC (<MLWS)			Representative scenario selection	Questions to demonstrate assessment has considered all scenarios	Response
	Permanent infrastructure (OECC and associated infrastructure)			No alternative scenarios for consideration in assessment		
Seabed area covered by OECC and associated infrastructure (m²)	105,000 (0.11 km²)					

Impact	Relevant project details			Rationale for representative scenario(s)		
	OECC – intertidal areas (MLWS to MHWS)	Intertidal cable (Open cut trenches)		Representative scenario selection	Questions to demonstrate assessment has considered all scenarios	Response
	Permanent infrastructure (OECC and associated infrastructure)			No alternative scenarios for consideration in assessment		
	Intertidal habitat area covered by OECC and associated infrastructure (m²)	N/A, as buried infrastructure is passive during O&M phase				
Impact 4 - Accidental pollution in offshore and intertidal habitats during operational phase activities.	No alternative scenarios for consideration in assessment					
Impact 6 - For Array Site only. Collision with operational WTGs.	Array site	WTG Option A	WTG Option B	Representative scenario selection	Questions to demonstrate assessment has considered all scenarios	Response
	Permanent infrastructure WTGs			Impact pathways identified and parameters selection to quantify impact magnitude Magnitude of collision impacts relate to turbine number, size, spatial configuration and operational performance parameters. Option(s) considered as representative scenario and why WTG Option A forms the representative scenario as, collision risk modelling outputs for this number and size of turbines are greater than for those for Option B. Option(s) assessed and why Both WTG options are assessed. Option B would result in a very slightly lower level of collision mortality than Option A. For herring gull, during the breeding season, collision impacts are assessed to be low in for Option A and negligible/low for Option B. Because of this slight difference in impact magnitudes both WTG options are assessed. For all other species.	1. Are there infrastructure layout options which may introduce new impacts? <i>Note - this could be a new impact entirely or the introduction of an existing impact pathway to a new receptor.</i> 2. Are there infrastructure layout options which may introduce a materially different magnitude of impact (greater or lesser)? 3. Are there infrastructure layout options which may introduce a material change in the sensitivity of the receptor(s) (greater or lesser)?	1. No, WTG Option B would not introduce any new impacts in comparison to Option A. 2. Yes, WTG Options may give rise to a materially different collision impact magnitudes. Therefore, WTG Options A and B are assessed in relation to operation and maintenance phase collision impacts. 3. No, Receptor sensitivities in relation to WTG Options A and B are the same.
	Number of turbines	75	60			
	Latitude (degrees)	53.1				
	Number of blades	3				
	Rotor radius (m)	125	138			
	Air gap (m above MSL)	36				
	Tidal offset (m)	1.72				
	Blade width (m)	7	7.9			
	Mean rotation speed (rpm) (±SD)	6.804 (1.246)	5.591 (1.402)			
	Pitch (degrees) (±SD)	6.738 (5.044)	7.248 (6.923)			



Impact	Relevant project details			Rationale for representative scenario(s)		
				WTG Options A and B do not give rise to materially different collision impact magnitudes and as such collision mortality outputs relating to Option A are referenced in relation to impact magnitude conclusions.		

4 Limit of Deviation Assessment

14. As described in **Section 2** of this document, locational flexibility of permanent and temporary infrastructure is described as a LoD from a specific point or alignment.
15. The project components for which a LoD has been defined are presented in **Table 3**. These are further described in EIAR **Chapter 4 Project Description** and have been presented on the planning drawings that accompany the planning application.

Table 3 Defined limits of deviation

Project component	LoD
Offshore project components	
WTGs	100 m from the centre point of each WTG location
WTG monopile locations	Same as WTGs.
WTG monopile scour protection	Same as WTGs.
OSSs	100 m from the centre point of each OSS location
OSS monopile locations	Same as OSSs.
OSS monopile scour protection	Same as OSSs.
IACs and interconnector cables	100 m either side of the preferred alignment of each IAC and interconnector cable 200 m from the centre point of each WTG location
Offshore export cables	250 m either side of the preferred alignment within the array site. The offshore export cable corridor (OECC) outside of the array site.
Landfall	
Transition Joint Bays (TJBs)	0.5 m either side (i.e. east / west) of the preferred TJB location
Landfall cable ducts (and associated offshore export cables within the ducts)	Defined LoD boundary with 30 – 55 m horizontal width
Intertidal cable ducts (and associated offshore export cables within the ducts)	The OECC
Intertidal offshore export cables (non ducted sections)	The OECC
Onshore substation	
Location of onshore substation revetment perimeter structure	Defined LoD boundary

16. For the purposes of the EIAR, the main chapter for ornithology assesses the specific preferred location for permanent infrastructure. However, this document provides further analysis to determine if the

proposed LoD for permanent infrastructure may give rise to any new or materially different effects, taking into consideration the potential impact of the proposed LoD on the magnitude of the impact.

17. For ornithology this analysis for construction and O&M phase impacts is presented in **Table 1** and **Table 2**, respectively. Where the potential for a LoD to cause a new or materially different effect is identified, then this is noted the tables below and is considered in full within the main chapter.

Table 4 Limit of deviation assessment - construction phase impacts

Impact	Relevant project element	Limit of deviation	Questions to demonstrate assessment has considered all scenarios	Response
Offshore and intertidal – Construction: Impact 1 – Direct effects on habitat	Array site		<p>1. Does the proposed LoD (locational flexibility) introduce new impacts? (i.e. the introduction of an existing impact pathway to a new receptor).</p> <p>2. Does the proposed LoD (locational flexibility) introduce a materially greater different of impact?</p>	<p>1. No, the implementation of the LoD does not introduce any new impact receptor pathways that have not already been considered as part of the assessment.</p> <p>2. No, the magnitude of direct effects on habitat within offshore or intertidal areas will not be materially affected by WTG micro-siting choices or cable location selections within the OECC.</p> <p>.</p>
	WTGs, OSSs	100 m from the centre point of each WTG location 100 m from the centre point of each OSS location. Cable laying vessel movements will occur around cable routes which will be within the defined LoD boundary within the array site.		
	OECC – offshore areas (<MLWS)			
	Offshore export cables (including cable protection)	Cable laying vessel movements will occur within the OECC outside of the array site.		
	OECC – intertidal areas (MLWS to MHWS) (and TJB for noise modelling)			
	TJBs	0.5 m either side (i.e. east / west) of the preferred TJB location		
	Landfall cable ducts (and associated offshore export cables within the ducts)	Defined LoD boundary		
	Intertidal cable ducts (and associated offshore export cables within the ducts)	The OECC		
Intertidal offshore export cables (non ducted sections)	The OECC			
Offshore and intertidal – Construction: Impact 2 – Disturbance and displacement	Array site		<p>1. Does the proposed LoD (locational flexibility) introduce new impacts? (i.e. the introduction of an existing impact pathway to a new receptor).</p> <p>2. Does the proposed LoD (locational flexibility) introduce a materially different magnitude of impact?</p>	<p><u>Array Site and OECC (<MLWS)</u></p> <p>1. No, the implementation of the LoD does not introduce any new impact receptor pathways that have not already been considered as part of the assessment.</p> <p>2. No, the magnitude of disturbance and displacement effects within offshore areas will not be materially affected by LoD.</p> <p><u>OECC (MLWS to MHWS)</u></p> <p>1. No, the implementation of the LoD does not introduce any new impact receptor pathways that have not already been considered as part of the assessment.</p> <p>2. Yes, the magnitude of disturbance and displacement effects within intertidal areas may be materially affected by cable</p>
	WTGs, OSSs	100 m from the centre point of each WTG location 100 m from the centre point of each OSS location. Cable laying vessel movements will occur within the defined LoD boundary within the array site.		
	Offshore export cables – offshore areas (<MLWS)			
	Offshore export cables (including cable protection)	Cable laying vessel movements will occur within the OECC outside of the array site.		

Impact	Relevant project element	Limit of deviation	Questions to demonstrate assessment has considered all scenarios	Response
	Offshore export cables – intertidal areas (MLWS to MHWS) (and TJB for noise modelling)			location selections within the OECC. On this basis two cable alignment scenarios have been assessed in relation to potential disturbance and displacement impacts: a preferred alignment scenario (with export cables centrally located within the OECC and up to approximately 250 m apart), and an alternative scenario (with maximal spread between export cables within the OECC, up to 1.6 km apart) adopted for the purposes of modelling which is referred to as the alternative alignment for modelling (AAM).
	TJBs	0.5 m either side (i.e. east / west) of the preferred TJB location		
	Landfall cable ducts (and associated offshore export cables within the ducts)	Defined LoD boundary		
	Intertidal cable ducts (and associated offshore export cables within the ducts)	The OECC		
	Intertidal offshore export cables (non ducted sections)	The OECC		
Offshore and intertidal – Construction: Impact 3 – Changes in prey availability	Array site		<p>1. Does the proposed LoD (locational flexibility) introduce new impacts? (i.e. the introduction of an existing impact pathway to a new receptor).</p> <p>2. Does the proposed LoD (locational flexibility) introduce a materially greater magnitude of impact?</p>	<p>1. No, the implementation of the LoD does not introduce any new impact receptor pathways that have not already been considered as part of the assessment.</p> <p>2. No, the magnitude of direct effects on habitat within offshore or intertidal areas will not be materially affected by LoD.</p>
	WTGs, OSSs	<p>100 m from the centre point of each WTG location</p> <p>100 m from the centre point of each OSS location.</p> <p>Cable laying vessel movements will occur within the defined LoD boundary within the array site.</p>		
	Offshore export cables – offshore areas (<MLWS)			
	Offshore export cables (including cable protection)	Cable laying vessel movements will occur within the OECC outside of the array site.		
	Offshore export cables – intertidal areas (MLWS to MHWS)			
	Intertidal cable ducts (and associated offshore export cables within the ducts)	The OECC		
	Intertidal offshore export cables (non ducted sections)	The OECC		

Table 5 Limit of deviation assessment - operational phase impacts

Impact	Relevant project element	Limit of deviation	Questions to demonstrate assessment has considered all scenarios	Response
Offshore and intertidal – Operation and	Array Site		<p>1. Does the proposed LoD (locational flexibility) introduce new impacts? (i.e. the introduction of an existing impact pathway to a new receptor).</p>	<p>1. No, the implementation of the LoD does not introduce any new impact receptor pathways that have not already been considered as part of the assessment.</p>
	WTGs, OSSs	100 m from the centre point of each WTG location		

Impact	Relevant project element	Limit of deviation	Questions to demonstrate assessment has considered all scenarios	Response
maintenance: Impact 1 – Direct effects on habitat		100 m from the centre point of each OSS location.	2. Does the proposed LoD (locational flexibility) introduce a materially different magnitude of impact?	2. No, the magnitude of direct effects on habitat within offshore or intertidal areas will not be materially affected by LoD. .
	Offshore export cables – offshore areas (<MLWS)			
	Offshore export cables (including cable protection)	The OECC		
	Offshore export cables – intertidal areas (MLWS to MHWS)			
	Intertidal cable ducts (and associated offshore export cables within the ducts)	The OECC		
	Intertidal offshore export cables (non ducted sections)	The OECC		
Offshore and intertidal – Operation and maintenance: Impact 2 – Disturbance and displacement	Array Site		1. Does the proposed LoD (locational flexibility) introduce new impacts? (i.e. the introduction of an existing impact pathway to a new receptor). 2. Does the proposed LoD (locational flexibility) introduce a materially different magnitude of impact?	1. No, the implementation of the LoD does not introduce any new impact receptor pathways that have not already been considered as part of the assessment. 2. No, the magnitude of disturbance and displacement effects within offshore or intertidal areas will not be materially affected by LoD. .
	WTGs, OSSs	100 m from the centre point of each WTG location 100 m from the centre point of each OSS location.		
	Offshore export cables – offshore areas (<MLWS)			
	Offshore export cables (including cable protection)	The OECC		
	Offshore export cables – intertidal areas (MLWS to MHWS)			
	Intertidal cable ducts (and associated offshore export cables within the ducts)	The OECC		
	Intertidal offshore export cables (non ducted sections)	The OECC		
Offshore and intertidal – Operation and maintenance: Impact 3 – Changes in prey availability	Array Site		1. Does the proposed LoD (locational flexibility) introduce new impacts? (i.e. the introduction of an existing impact pathway to a new receptor). 2. Does the proposed LoD (locational flexibility) introduce a materially different magnitude of impact?	1. No, the implementation of the LoD does not introduce any new impact receptor pathways that have not already been considered as part of the assessment. 2. No, the magnitude of direct effects on habitat within offshore or intertidal areas will not be materially affected by LoD. .
	WTGs, OSSs	100 m from the centre point of each WTG location 100 m from the centre point of each OSS location.		
	Offshore export cables – offshore areas (<MLWS)			
	Offshore export cables (including cable protection)	The OECC		
	Offshore export cables – intertidal areas (MLWS to MHWS)			
	Landfall cable ducts (and associated offshore export cables within the ducts)	Defined LoD boundary		

Impact	Relevant project element	Limit of deviation	Questions to demonstrate assessment has considered all scenarios	Response
	Intertidal cable ducts (and associated offshore export cables within the ducts)	The OECC		
	Intertidal offshore export cables (non ducted sections)	The OECC		
Offshore – Operation and maintenance: Impact 6 – Collision	Array site		1. Does the proposed LoD (locational flexibility) introduce new impacts? (i.e. the introduction of an existing impact pathway to a new receptor). 2. Does the proposed LoD (locational flexibility) introduce a materially different magnitude of impact?	1. No, the implementation of the LoD does not introduce any new impact receptor pathways that have not already been considered as part of the assessment. 2. No, the magnitude of direct effects on habitat within offshore or intertidal areas will not be materially affected by LoD.
	WTGs	100 m from the centre point of each WTG location		