



## Hornsea Project Four

### A4.6.3: Compensation Impacts Register

**Deadline: 7, Date: 10 August 2022**

**Document Reference: A4.6.3**

**Revision: 02**

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Doc. No.: A4.6.3  
Version A

Compensation Impacts Register Tab	Explanation of the change
Impact Register Explained	<p>Updated during Examination. Key to Impact Codes updated as follows:</p> <ul style="list-style-type: none"> <li>• Deletion of B2 (Suffolk Coast).</li> <li>• Deletion of C1 (Thames Estuary). C2 renamed 'South Coast of England'. 'Broadstairs to Plymouth' element of the name removed.</li> <li>• Deletion of D1 (Isles of Scilly), D2 (Rathlin Island, Moyle, Northern Ireland), and D3 (Torquay, Devon). D4 renamed 'Bailiwick of Guernsey' and re-numbered to D1.</li> <li>• Deletion of E1 (Rathlin Island, Moyle, Northern Ireland), E2 (Isles of Scilly), E3 (Celtic Sea, Wales), E4 (Plymouth Sound to Helford River), E5 (Solent) and E6 (Essex Estuaries). E7 (Humber Estuary) re-numbered to E1.</li> </ul>
Measure Search Area	<p>Updated during Examination. Removal of gannet in compensation species due to updated project position. Search areas in figure and table refined to reflect initial review of Habitats Regulation Assessment and Environmental Impact Assessment.</p> <ul style="list-style-type: none"> <li>• Onshore nesting (new): deletion of B2 (Suffolk Coast).</li> <li>• Bycatch: deletion of C1 (Thames Estuary). C2 renamed 'South Coast of England'. 'Broadstairs to Plymouth' element of the name removed.</li> <li>• Predator eradication: deletion of D1 (Isles of Scilly), D2 (Rathlin Island, Moyle, Northern Ireland), and D3 (Torquay, Devon). D4 renamed 'Bailiwick of Guernsey' and re-numbered to D1.</li> <li>• Fish habitat enhancement: deletion of E1 (Rathlin Island, Moyle, Northern Ireland), E2 (Isles of Scilly), E3 (Celtic Sea, Wales), E4 (Plymouth Sound to Helford River), E5 (Solent) and E6 (Essex Estuaries). E7 (Humber Estuary) re-numbered to E1.</li> <li>• Addition of Wenlock Platform to location in offshore nesting (repurposed).</li> <li>• Addition of Area of Highest Ecological Potential to location in offshore nesting (new).</li> </ul>
Offshore Nesting - New	<p>Updated during Examination Removal of gannet in compensation species due to updated project position. Addition of Area of Highest Ecological Potential to location.</p>
Offshore Nesting - Repurposed	<p>Updated during Examination Removal of gannet in compensation species due to updated project position. Addition of Wenlock Platform to location.</p>
Onshore Nesting	<p>Updated during Examination. Removal of gannet in compensation species due to updated project position. Deletion of B2 (Suffolk Coast).</p>
Bycatch	<p>Updated during Examination. Removal of gannet in compensation species due to updated project position. Deletion of C1 (Thames Estuary). C2 renamed 'South Coast of England'. 'Broadstairs to Plymouth' element of the name removed.</p>
Predator Eradication	<p>Updated during Examination. Deletion of D1 (Isles of Scilly), D2 (Rathlin Island, Moyle, Northern Ireland), and D3 (Torquay, Devon). D4 renamed 'Bailiwick of Guernsey' and re-numbered to D1.</p>
Fish Habitat Enhancement	<p>Updated during Examination. Removal of gannet in compensation species due to updated project position. Deletion of E1 (Rathlin Island, Moyle, Northern Ireland), E2 (Isles of Scilly), E3 (Celtic Sea, Wales), E4 (Plymouth Sound to Helford River), E5 (Solent) and E6 (Essex Estuaries). E7 (Humber Estuary) re-numbered to E1.</p>

# Hornsea 4

## Compensation Impacts Register Explained



Impact Background								
ID	Compensation species	Compensation Measure	Compensation Measure Search Area	Topic	Compensation Measure Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Commitments
Unique ID for each impact which can be used to refer between those impacts in the ES compensation annex and those in the Compensation Impact Register.	Identifies the species that the measure is compensating for	Identifies the compensation measure from which the impact is anticipated to arise.	Potential search area for the compensation measure	Identifies the environmental receptor upon which the impact is anticipated to arise	The impact and the activity that the impact arises from.	The Maximum Design Scenario (MDS) based on the the Project Description for the specific impact and activity.	The justification of why the MDS as defined is the MDS, providing reference to other development scenarios or options.	Commitments that are relevant to reduce and/or eliminate Likely Significant Effects (LSE). Primary (Design) or Tertiary (Inherent) are commitments that are embedded within the assessment at the relevant point in the EIA. Secondary commitments are incorporated to reduce LSE to acceptable levels following assessment.

Magnitude	Sensitivity	Likely Significant Effect	Justification
Identifies the expected magnitude of the impact considered, derived from topic-specific criteria.	Identifies the sensitivity of the receptor considered, derived from topic-specific criteria.	Presents the findings of the EIA. (See Table 1 for further details).	Details the justification for the projects approach taken to the Impact.

**Example**

BC-Co-O-01 (i.e. Bycatch (BC); Cornwall (Co); Operational phase (O); Impact Number (I); Impct Number (ne (O1))	Kittiwake	Onshore nesting	Suffolk	benthic ecology	Increased vessel traffic during implementation of the repurposed platform may result in interference with fishing activities in nearby fishing grounds.	Assumption is X number of vessel movements resulting in potential fishing activity interactions.	The maximum design scenario is defined by the maximum area of structures, and scour protection introduced to the water column, including surface area of vertical structures. As well as the maximum number of vessel movements required to transport materials for refurbishment.	Primary: CoCXX  Tertiary: CoCXX
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Minor	Medium	No LSE identified	Available baseline data acquired and reassessed to inform simple assessment.
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**Table 1. Key to Hornsea Four position**

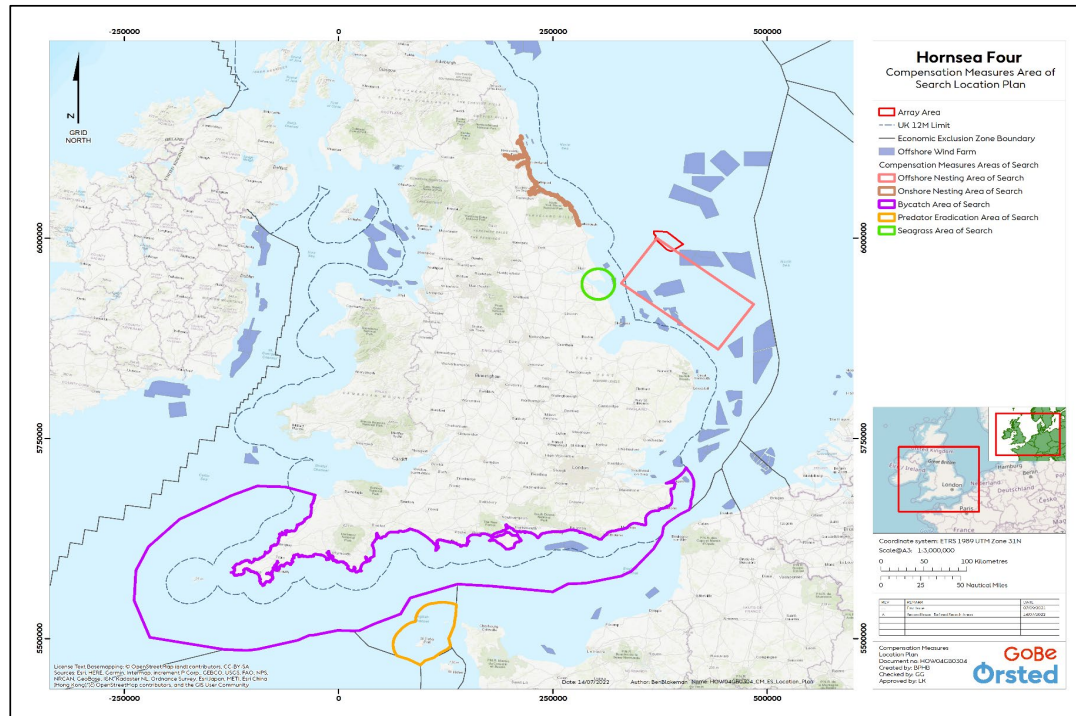
	Likely significant effect without secondary mitigation - Simple assessment. See Compensation EIA annex
	Likely significant effect without secondary mitigation - Detailed assessment upon confirmation of site selection and delivery mechanism
	No likely significant effect identified

**Table 2. Key to Impact ID Codes**

BC	Bycatch
PR	Offshore Platform - Refurbishment
PN	Offshore Platform - New
ON	Onshore Nesting
PE	Predator Eradication
SG	Seagrass
A1	Southern North Sea
B1	Cayton Bay to Newbiggin by the Sea
C2	South coast of England
D1	Bailiwick of Guernsey
E1	Humber Estuary

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## Compensation Impacts Measure Search Areas



Compensation Measure	Option	Location	Location ID	Kittiwake	Guillemot	Razorbill
Offshore nesting	New	Southern North Sea (Area of Highest Ecological Potential)	A1			
Offshore nesting	Repurposed	Southern North Sea (Wenlock platform)	A1			
Onshore nesting	New	Cayton Bay to Newbiggin by the Sea	B1			
Bycatch		South coast of England	C2			
Predator eradication		Bailiwick of Guernsey	D1			
Fish habitat enhancement	Seagrass	Humber Estuary	E1			



Impact Background												
ID	Compensation species	Compensation Measure Search Area	Compensation Measure Development Phase	Topic	Compensation Measure Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Commitments	Magnitude	Sensitivity	Likely Significant Effect	Justification
MP-PN-SNS-C-01	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Installation/Construction	Offshore - Marine Processes	Change to seabed morphology due to indentations left by construction jack-up vessels.	Jack up vessel footprint of 1,020 m <sup>2</sup> per operation, eight operations in total = 8,160 m <sup>2</sup> .	Assumes the use of jack-up vessels over dynamic positioning vessel as the former will encounter the seabed. The MDS results from the maximum number of jack up operations with the largest footprint per operation.	CoC-OFF-1	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-1 and the impact being highly limited in extent and duration, no LSE is predicted.
MP-PN-SNS-C-02	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Installation/Construction	Offshore - Marine Processes	Increases in suspended sediment concentrations and deposition of disturbed sediments to the seabed due to seabed preparation or drilling for foundation installation.	Seabed preparation for two Gravity Base Structure foundations requires removal of 7,478 m <sup>3</sup> of spoil for two structures.	Seabed preparation associated with Gravity Base Structure foundations results in the greatest volumes of sediment disturbed compared with seabed preparation and drilling associated with piled jacket		Negligible	N/A	No LSE identified	Due to the impact being highly limited in extent and duration, no LSE is predicted.
MP-PN-SNS-O-03	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/Operation & Maintenance	Offshore - Marine Processes	Change to seabed morphology due to indentations left by maintenance jack-up vessels.	Jack up vessel footprint of 1,020 m <sup>2</sup> per operation, 24 operations per year = 24,480 m <sup>2</sup> .	Assumes the use of jack-up vessels over dynamic positioning vessel as the former will encounter the seabed. The MDS results from the maximum number of jack up operations with the largest footprint per operation.	CoC-OFF-1	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-1 and the impact being highly limited in extent and duration, no LSE is predicted.
MP-PN-SNS-O-04	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/Operation & Maintenance	Offshore - Marine Processes	Changes to wave and tidal regime and sediment transport pathways from presence of foundations.	Two Gravity Base Structure foundations (up to 53 m diameter) with an operational life of 35 years.	The greatest total in-water column blockage to currents is presented by the greatest number of		Negligible	N/A	No LSE identified	Due to the impact being highly limited in extent and duration, no LSE is predicted.
MP-PN-SNS-O-05	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/Operation & Maintenance	Offshore - Marine Processes	Scour of seabed sediments around foundation and scour protection.	Greatest seabed footprint of foundation and scour protection 13,586 m <sup>2</sup> (two Gravity Base Structure foundations, associated diameter of 53 m).	The largest seabed footprint will develop the most amount of scour.		Negligible	N/A	No LSE identified	Due to the impact being highly limited in extent and duration, no LSE is predicted.
MP-PN-SNS-D-06	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Marine Processes	Increase in suspended sediment concentrations and deposition of disturbed sediment to the seabed from decommissioning activities.	Increases of suspended sediment concentrations and sediment deposition associated with the removal of two foundations.	MDS assumes the removal of foundations.		Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
MP-PN-SNS-D-07	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Marine Processes	Changes to wave and tidal regimes associated with the removal of the platform foundation.	The two foundations represent a blockage and therefore the greatest influence on wave and tidal regime once removed.	MDS assumes the removal of foundations.		Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
MP-PN-SNS-D-08	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Marine Processes	Change to seabed morphology due to indentations left by decommissioning jack-up vessels.	Jack up vessel footprint of 1,020 m <sup>2</sup> per operation, four operations in total = 4,080 m <sup>2</sup> .	Assumes the use of jack-up vessels over dynamic positioning vessel as the former will encounter the seabed. The MDS results from the maximum number of jack up operations with the largest footprint per operation.	CoC-OFF-1	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
BIE-PN-SNS-C-01	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Installation/Construction	Offshore - Benthic & Intertidal Ecology	Temporary habitat loss/disturbance and direct damage by jack-up vessels and seabed preparation works.	Total area = 15,638 m <sup>2</sup> Jack up vessel footprint of 1,020 m <sup>2</sup> per operation, eight operations in total = 8,160 m <sup>2</sup> . Foundation seabed preparation for two Gravity Base Structure foundations = 7,478 m <sup>2</sup> .	Assumes the use of jack-up vessels over dynamic positioning vessel as the former will encounter the seabed. The MDS results from the maximum number of jack up operations with the largest footprint per operation and the foundation requiring the largest areas of seabed preparation.	CoC-OFF-9	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-9 and the impact being highly limited in extent and duration, no LSE is predicted.
BIE-PN-SNS-C-02	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Installation/Construction	Offshore - Benthic & Intertidal Ecology	Increases in suspended sediment concentrations and deposition of disturbed sediments to the seabed due to seabed preparation and drilling for foundation installation.	Seabed preparation for two Gravity Base Structure foundations requires removal of 7,478 m <sup>3</sup> of spoil for two structures.	Seabed preparation associated with Gravity Base Structure foundations results in the greatest volumes of sediment disturbed compared with seabed preparation and drilling associated with piled jacket	CoC-OFF-9	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-9 and the impact being highly limited in extent and duration, no LSE is predicted.
BIE-PN-SNS-O-03	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/Operation & Maintenance	Offshore - Benthic & Intertidal Ecology	Long term loss of seabed habitat through presence of foundations and scour protection, resulting in potential effects on benthic receptors.	Foundation footprint with scour protection, based on two Gravity Base Structure foundations = 13,586 m <sup>2</sup> .	The MDS is defined by the maximum area of seabed lost as a result of the placement of structures and scour protection.	CoC-OFF-9	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-9 and the impact being highly limited in extent and duration, no LSE is predicted.
BIE-PN-SNS-O-04	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/Operation & Maintenance	Offshore - Benthic & Intertidal Ecology	Maintenance operations may result in temporary seabed disturbances and potential effects on benthic ecology.	Jack up vessel footprint of 1,020 m <sup>2</sup> per operation, 24 operations per year = 24,480 m <sup>2</sup> .	Assumes the use of jack-up vessels over dynamic positioning vessel as the former will encounter the seabed. The MDS results from the maximum number of jack up operations with the largest footprint per operation.	CoC-OFF-9	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-9 and the impact being highly limited in extent and duration, no LSE is predicted.
BIE-PN-SNS-O-05	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/Operation & Maintenance	Offshore - Benthic & Intertidal Ecology	Colonisation of foundations and scour protection may affect benthic ecology and biodiversity.	Two Gravity Base Structure foundations (up to 53 m diameter).	The MDS represents the total area of introduced hard substrate at seabed level plus the total surface area of subsea portions of foundations in contact with the water column.	CoC-OFF-7	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-7 and the impact being highly limited in extent, no LSE is predicted.
BIE-PN-SNS-O-06	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/Operation & Maintenance	Offshore - Benthic & Intertidal Ecology	Increased risk of introduction or spread of invasive and non-native species due to presence of subsea infrastructure and vessel movements (e.g. ballast water).	Two Gravity Base Structure foundations (up to 53 m diameter).	The MDS represents the total area of introduced hard substrate at seabed level plus the total surface area of subsea portions of foundations in contact with the water column.	CoC-OFF-7	Negligible	N/A	No LSE identified	Due to the impact being highly limited in extent, no LSE is predicted.
BIE-PN-SNS-D-07	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Benthic & Intertidal Ecology	Temporary loss of habitat due to operations to remove structure, and associated jack-up operations.	Total area = 10,873 m <sup>2</sup> Footprint of platform foundation structure (2,206 m <sup>2</sup> ) and associated scour protection (4,587 m <sup>2</sup> ); and Jack up vessel footprint of 1,020 m <sup>2</sup> per operation, four operations in total = 4,080 m <sup>2</sup> .	Assumes the use of jack-up vessels over dynamic positioning vessel as the former will encounter the seabed. The MDS results from the maximum number of jack up operations with the largest footprint per operation and the total area occupied by the platform	CoC-OFF-9	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
BIE-PN-SNS-D-08	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Benthic & Intertidal Ecology	Temporary increases in suspended sediment concentrations and deposition from removal of structure.	Increases of suspended sediment concentrations and sediment deposition associated with the removal of two foundations.	MDS assumes the removal of foundations.	CoC-OFF-9	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
BIE-PN-SNS-D-09	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Benthic & Intertidal Ecology	Removal of foundations leading to loss of species/habitats colonising these structures.	Total surface area of hard substrate on the platform foundation below the waterline.	The MDS is defined by the maximum area of the structure in the water column, including surface area of the vertical structure.		Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.

### Impact Background

ID	Compensation species	Compensation Measure Search Area	Compensation Measure Development Phase	Topic	Compensation Measure Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Commitments	Magnitude	Sensitivity	Likely Significant Effect	Justification
FSE-PN-SNS-C-01	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Installation/Construction	Offshore - Fish & Shellfish Ecology	Temporary habitat loss/disturbance and direct damage by jack-up vessels and seabed preparation works.	Total area = 15,638 m <sup>2</sup> Jack up vessel footprint of 1,020 m <sup>2</sup> per operation, eight operations in total = 8,160 m <sup>2</sup> . Foundation seabed preparation for two Gravity Base Structure foundations = 7,478m <sup>2</sup> .	Assumes the use of jack-up vessels over dynamic positioning vessel as the former will encounter the seabed. The MDS results from the maximum number of jack up operations with the largest footprint per operation and the foundation requiring the largest areas of seabed preparation.	CoC-OFF-9	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-9 and the impact being highly limited in extent and duration, no LSE is predicted.
FSE-PN-SNS-C-02	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Installation/Construction	Offshore - Fish & Shellfish Ecology	Increases in suspended sediment concentrations and deposition of disturbed sediments to the seabed due to seabed preparation and drilling for foundation installation.	Seabed preparation for two Gravity Base Structure foundations requires removal of 7,478 m <sup>3</sup> of spoil for two structures.	Seabed preparation associated with Gravity Base Structure foundations results in the greatest volumes of sediment disturbed compared with seabed preparation and drilling associated with piled jacket	CoC-OFF-9	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-9 and the impact being highly limited in extent and duration, no LSE is predicted.
FSE-PN-SNS-C-03	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Installation/Construction	Offshore - Fish & Shellfish Ecology	Underwater noise as a result of foundation installation (i.e. piling) and Unexploded Ordnance clearance resulting in potential effects on fish and shellfish receptors.	Piling of two foundation structures and associated Unexploded Ordnance clearance (if required).	The greatest amount of noise-generating activities.	CoC-OFF-10	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-10 and the impact being highly limited in extent and duration, no LSE is predicted.
FSE-PN-SNS-O-04	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/Operation & Maintenance	Offshore - Fish & Shellfish Ecology	Long term loss of seabed habitat through presence of foundations and scour protection, resulting in potential effects on fish and shellfish ecology.	Foundation footprint with scour protection, based on two Gravity Base Structure foundations = 13,586m <sup>2</sup> .	The MDS is defined by the maximum area of seabed lost as a result of the placement of structures and scour protection.		Negligible	N/A	No LSE identified	Due to the impact being highly limited in extent, no LSE is predicted.
FSE-PN-SNS-O-05	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/Operation & Maintenance	Offshore - Fish & Shellfish Ecology	Colonisation of foundations and scour protection may affect fish and shellfish ecology.	Two Gravity Base Structure foundations (up to 53 m diameter).	The MDS represents the total area of introduced hard substrate at seabed level plus the total surface area of subsea portions of foundations in contact with the water column.		Negligible	N/A	No LSE identified	Due to the impact being highly limited in extent, no LSE is predicted.
FSE-PN-SNS-O-06	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/Operation & Maintenance	Offshore - Fish & Shellfish Ecology	Maintenance operations may result in temporary seabed disturbances and potential effects on fish and shellfish ecology.	Jack up vessel footprint of 1,020 m <sup>2</sup> per operation, 24 operations per year = 24,480 m <sup>2</sup> .	Assumes the use of jack-up vessels over dynamic positioning vessel as the former will encounter the seabed. The MDS results from the maximum number of jack up operations with the largest footprint per operation.		Negligible	N/A	No LSE identified	Due to the impact being highly limited in extent and duration, no LSE is predicted.
FSE-PN-SNS-D-07	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Fish & Shellfish Ecology	Temporary loss of habitat due to operations to remove structure, and associated jack-up operations.	Total area = 10,873 m <sup>2</sup> Footprint of platform foundation structure (2,206 m <sup>2</sup> ) and associated scour protection (4,587 m <sup>2</sup> ); and Jack up vessel footprint of 1,020 m <sup>2</sup> per operation, four operations in total = 4,080 m <sup>2</sup> .	Assumes the use of jack-up vessels over dynamic positioning vessel as the former will encounter the seabed. The MDS results from the maximum number of jack up operations with the largest footprint per operation and the total area occupied by the platform foundation	CoC-OFF-9	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
FSE-PN-SNS-D-08	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Fish & Shellfish Ecology	Temporary increases in suspended sediment concentrations and deposition from removal of structure resulting in potential effects on fish and shellfish ecology.	Increases of suspended sediment concentrations and sediment deposition associated with the removal of two foundations.	MDS assumes the removal of foundations.	CoC-OFF-9	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
FSE-PN-SNS-D-09	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Fish & Shellfish Ecology	Effects on fish and shellfish receptors due to removal of structure leading to loss of hard substrates and structural complexity.	Total surface area of hard substrate on the platform foundation below the waterline.	The MDS is defined by the maximum area of the structure in the water column, including surface area of the vertical structure.		Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
FSE-PN-SNS-D-10	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Fish & Shellfish Ecology	Decommissioning activities producing subsea noise resulting in potential effect on fish and shellfish receptors.	Underwater noise associated with the decommissioning of the platform foundation, including (but not limited to) high powered water jetting/cutting apparatus and grinding or drilling techniques. Vessel noise from vessels undertaking the decommissioning works.	The MDS assumes the removal of the foundations by methods including abrasive cutting, with foundations cut below the seabed.		Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
MM-PN-SNS-C-01	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Installation/Construction	Offshore - Marine Mammals	Increased vessel traffic during construction may result in an increase in disturbance to or collision risk with marine mammals.	Up to 150 return trips over the 12 month repurposing period.	The maximum number of vessels transits and the maximum duration of the construction would result in the greatest potential for disturbance.	CoC-OFF-4	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-4 and the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
MM-PN-SNS-C-02	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Installation/Construction	Offshore - Marine Mammals	Increased suspended sediments arising from construction activities, such as seabed clearance or drilling, may reduce water clarity and impair the foraging ability of marine mammals.	Seabed preparation for two Gravity Base Structure foundations requires removal of 7,478 m <sup>3</sup> of spoil for two structures.	Seabed preparation associated with Gravity Base Structure foundations results in the greatest volumes of sediment disturbed compared with seabed preparation and drilling associated with piled jacket foundations		Negligible	N/A	No LSE identified	Due to the impact being highly limited in extent and duration, no LSE is predicted.
MM-PN-SNS-C-03	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Installation/Construction	Offshore - Marine Mammals	Underwater noise from foundation piling and Unexploded Ordnance clearance has the potential to cause injury or disturbance to marine mammals.	Piling of two foundation structures and associated Unexploded Ordnance clearance (if required).	The greatest amount of noise-generating activities.	CoC-OFF-10	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-10 and the impact being highly limited in extent and duration, no LSE is predicted.
MM-PN-SNS-O-04	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/Operation & Maintenance	Offshore - Marine Mammals	Increased vessel traffic during operation and maintenance may result in an increase in disturbance to, or collision with marine mammals.	Up to 72 return trips per year.	The MDS represents highest yearly level of operation and maintenance vessel round trips that would result in the greatest potential for disturbance.	CoC-OFF-4	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-4 and the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
MM-PN-SNS-D-05	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Marine Mammals	Underwater noise arising from decommissioning activities and associated vessels may cause disturbance to marine mammals.	Underwater noise associated with the decommissioning of the platform foundation, including (but not limited to) high powered water jetting/cutting apparatus and grinding or drilling techniques. Vessel noise from vessels undertaking the decommissioning works.	The MDS assumes the removal of the foundations by methods including abrasive cutting, with foundations cut below the seabed.		Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
MM-PN-SNS-D-06	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Marine Mammals	Increased vessel traffic during decommissioning activities may result in an increase in disturbance to, or collision risk with marine mammals.	Up to 150 return trips over the 12 month decommissioning period.	The maximum number of vessels transits and the maximum duration of the repurposing would result in the greatest potential for disturbance.	CoC-OFF-4	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
MM-PN-SNS-D-07	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Marine Mammals	Increased suspended sediments arising from decommissioning activities may impair the foraging ability of marine mammals.	Increases of suspended sediment concentrations and sediment deposition associated with the removal of two foundations.	MDS assumes the removal of foundations.		Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.

### Impact Background

ID	Compensation species	Compensation Measure Search Area	Compensation Measure Development Phase	Topic	Compensation Measure Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Commitments	Magnitude	Sensitivity	Likely Significant Effect	Justification
ORN-PN-SNS-C-01	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Installation/ Construction	Offshore - Offshore & Intertidal Ornithology	The impact of construction activities such as increased vessel activity and underwater noise may result in direct disturbance or displacement from important foraging and habitat areas of birds.	Up to 150 return trips over the 12 month repurposing period.	The maximum number of vessels transits and the maximum duration of the construction would result in the greatest potential for disturbance and displacement.		Negligible	N/A	No LSE identified	Due to the impact being highly limited in extent and duration, no LSE is predicted.
ORN-PN-SNS-O-02	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/ Operation & Maintenance	Offshore - Offshore & Intertidal Ornithology	The impact of physical displacement from an area around the structures may result in effective habitat loss and reduction in survival or fitness rates.	Presence of two structures.	The greatest number of structures represents the greatest displacement.		Negligible	N/A	No LSE identified	Due to the impact being highly limited in extent, no LSE is predicted.
ORN-PN-SNS-O-03	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/ Operation & Maintenance	Offshore - Offshore & Intertidal Ornithology	The impact of barrier effects caused by the physical presence of the structures may prevent clear transit of birds between foraging and breeding sites, or on	Presence of two structures.	The greatest number of structures represents the greatest displacement.		Negligible	N/A	No LSE identified	Due to the impact being highly limited in extent, no LSE is predicted.
ORN-PN-SNS-O-04	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/ Operation & Maintenance	Offshore - Offshore & Intertidal Ornithology	The impact of attraction to lit structures by migrating birds in particular may cause disorientation, reduction in fitness and possible mortality.	Operation of two offshore nesting structures. Lighting outward and not directional on all structures, maximised intensity and range to provide best visibility for aviation and shipping purposes. Red and white lighting, which has been shown to be more disorienting for migrating birds.	Provides the maximum number of structures, with maximum intensity and extent of red and white light sources to increase likelihood that birds will be attracted to structures and become disoriented.		Negligible	N/A	No LSE identified	Due to the impact being highly limited in extent, no LSE is predicted.
ORN-PN-SNS-O-05	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/ Operation & Maintenance	Offshore - Offshore & Intertidal Ornithology	The impact of maintenance activities such as increased vessel activity may result in disturbance or displacement from important foraging and habitat areas of birds.	Up to 72 return vessel trips per year plus helicopter trips.	The MDS represents highest yearly level of operation and maintenance vessel and helicopter round trips that would result in the greatest potential for disturbance and displacement.		Negligible	N/A	No LSE identified	Due to the impact being highly limited in extent and duration, no LSE is predicted.
ORN-PN-SNS-D-06	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Offshore & Intertidal Ornithology	The impact of direct disturbance and displacement due to underwater noise and vessel traffic may result in disturbance or displacement from important foraging and habitat areas of birds.	Up to 150 return trips over the 12 month decommissioning period.	The maximum number of vessels transits and the maximum duration of the decommissioning would result in the greatest potential for disturbance and displacement.		Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
CF-PN-SNS-C-01	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Installation/ Construction	Offshore - Commercial Fisheries	Construction activities and physical presence of structures leading to reduction in access to, or exclusion from established fishing grounds.	Presence of two structures.	The greatest number of structures represents the greatest reduction in access to, or exclusion from established fishing ground.	CoC-OFF-3 CoC-OFF-6 CoC-OFF-11 CoC-OFF-12	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3, CoC-OFF-6, CoC-OFF-11, and CoC-OFF-12, and the impact being highly limited in extent and duration, no LSE is predicted.
CF-PN-SNS-C-02	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Installation/ Construction	Offshore - Commercial Fisheries	Increased vessel traffic within fishing grounds as a result of changes to shipping routes and transiting construction vessel traffic leading to interference with fishing activity.	Up to 150 return trips over the 12 month repurposing period.	The maximum number of vessels transits and the maximum duration of the construction would result in the greatest potential for interference with fishing activity.	CoC-OFF-3 CoC-OFF-11	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3 and CoC-OFF-11, and the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
CF-PN-SNS-O-03	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/ Operation & Maintenance	Offshore - Commercial Fisheries	Increased vessel traffic within fishing grounds as a result of changes to shipping routes and maintenance vessel traffic from the structure leading to interference with fishing activity.	Up to 72 return trips per year.	The MDS represents highest yearly level of operation and maintenance vessel round trips that would result in the greatest potential for interference with fishing activity.	CoC-OFF-3 CoC-OFF-11	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3 and CoC-OFF-11, and the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
CF-PN-SNS-O-04	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/ Operation & Maintenance	Offshore - Commercial Fisheries	Physical presence of structures leading to reduction in access to, or exclusion from established fishing grounds.	Presence of two structures.	The greatest number of structures represents the greatest reduction in access to, or exclusion from established fishing ground.	CoC-OFF-3 CoC-OFF-6 CoC-OFF-11 CoC-OFF-12	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3, CoC-OFF-6, CoC-OFF-11, and CoC-OFF-12, and the impact being highly limited in extent and duration, no LSE is predicted.
CF-PN-SNS-D-05	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Commercial Fisheries	Increased vessel traffic within fishing grounds as a result of changes to shipping routes and transiting decommissioning vessel traffic from the structure leading to interference with fishing activity.	Up to 150 return trips over the 12 month decommissioning period.	The maximum number of vessels transits and the maximum duration of the construction would result in the greatest potential for interference with fishing activity.	CoC-OFF-3 CoC-OFF-11	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
AV-PN-SNS-O-01	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/ Operation & Maintenance	Offshore - Aviation & Radar	Increased air traffic in the area related to operation and maintenance activities in the construction phase may affect the available airspace for other users.	Helicopter operation and maintenance trips.	The maximum number of helicopter trips associated with operation and maintenance activities would result in the greatest impact on other aviation users.		Negligible	N/A	No LSE identified	As a result of the impact being highly limited in extent and duration, with the small number of helicopter trips required for the works in the context of existing activity in the area, no LSE is predicted.
SN-PN-SNS-C-01	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Installation/ Construction	Offshore - Shipping & Navigation	Construction activities may cause vessels to be deviated leading to increased encounters and therefore may also lead to increased vessel to vessel collision risk for all vessels in all weather conditions.	Up to 150 return trips over the 12 month construction period.	Maximum number of repurposing vessels over the longest construction period.	CoC-OFF-3	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3 and the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
SN-PN-SNS-C-02	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Installation/ Construction	Offshore - Shipping & Navigation	Structure will create powered and drifting collision risk for all vessels.	Presence of two structures.	The greatest number of structures represents the greatest collision risk.	CoC-OFF-3 CoC-OFF-6 CoC-OFF-12	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3, CoC-OFF-6 and CoC-OFF-12, and the impact being highly limited in extent and duration, no LSE is predicted.
SN-PN-SNS-C-03	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Installation/ Construction	Offshore - Shipping & Navigation	Construction activities may restrict the emergency response capability of existing resources.	Up to 150 return trips over the 12 month repurposing period.	Maximum number of construction vessels over the longest repurposing period.	CoC-OFF-3 CoC-OFF-6 CoC-OFF-12	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3, CoC-OFF-6, and CoC-OFF-12 and the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
SN-PN-SNS-O-04	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/ Operation & Maintenance	Offshore - Shipping & Navigation	Presence of structures may cause vessels to be deviated leading to increased encounters and therefore increased vessel to vessel collision risk for all vessel in all weather conditions.	Presence of two structures.	The greatest number of structures represents the greatest deviations.	CoC-OFF-3 CoC-OFF-6 CoC-OFF-12	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3, CoC-OFF-6 and CoC-OFF-12, and the impact being highly limited in extent and duration, no LSE is predicted.
SN-PN-SNS-O-05	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/ Operation & Maintenance	Offshore - Shipping & Navigation	Presence of structures may increase vessel to structure collision risk for all vessels.	Presence of two structures.	The greatest number of structures represents the greatest collision risk.	CoC-OFF-3 CoC-OFF-6 CoC-OFF-12	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3, CoC-OFF-6 and CoC-OFF-12, and the impact being highly limited in extent and duration, no LSE is predicted.
SN-PN-SNS-O-06	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/ Operation & Maintenance	Offshore - Shipping & Navigation	Maintenance activities may cause vessels to be deviated leading to increased encounters and therefore may also lead to increased vessel to vessel collision risk for all vessels in all weather conditions.	Up to 72 return trips per year.	The MDS represents highest yearly level of operation and maintenance vessel round trips that would result in the greatest potential for collision risk.	CoC-OFF-3	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3 and the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.

Impact Background												
ID	Compensation species	Compensation Measure Search Area	Compensation Measure Development Phase	Topic	Compensation Measure Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Commitments	Magnitude	Sensitivity	Likely Significant Effect	Justification
SN-PN-SNS-O-07	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/ Operation & Maintenance	Offshore - Shipping & Navigation	Operation and maintenance activities may restrict the emergency response capability of existing resources.	Up to 72 return vessel trips per year plus helicopter trips.	The MDS represents highest yearly level of operation and maintenance vessel and helicopter round trips that would result in the greatest restriction to emergency response capability.	CoC-OFF-3 CoC-OFF-6 CoC-OFF-12	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3, CoC-OFF-6, and CoC-OFF-12 and the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
SN-PN-SNS-D-08	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Shipping & Navigation	Decommissioning activities may cause vessels to be deviated leading to increased encounters and therefore increased vessel to vessel collision risk for all vessels in all weather conditions.	Removal of two foundations and up to 150 return trips over the 12 month decommissioning period.	Removal of foundations and maximum number of decommissioning vessels over the longest decommissioning period.	CoC-OFF-3	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
SN-PN-SNS-D-09	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Shipping & Navigation	Decommissioning structure will create powered and drifting collision risk for all vessels.	Removal of two foundations.	MDS assumes the removal of foundation.	CoC-OFF-3 CoC-OFF-6 CoC-OFF-12	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
SN-PN-SNS-D-10	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Shipping & Navigation	Decommissioning activities may restrict the emergency response capability of existing resources.	Up to 150 return trips over the 12 month decommissioning period.	Maximum number of repurposing vessels over the longest decommissioning period.	CoC-OFF-3 CoC-OFF-6 CoC-OFF-12	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
MA-PN-SNS-D-01	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Marine Archaeology	Draw-down of sediment into voids left by removed foundation leading to loss of sediment, destabilising archaeological sites and contexts, and exposing such material to natural, chemical or biological processes, and causing or accelerating loss of the same.	Removal of platform foundation.	MDS assumes the removal of foundation.	CoC-OFF-2 CoC-OFF-14	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
MA-PN-SNS-D-02	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Marine Archaeology	Penetration and compression effects of jack-up barges and anchoring of decommissioning vessels leading to total or partial loss of archaeological receptors (material or contexts).	Up to 150 return trips over the 12 month repurposing period.	Maximum number of repurposing vessels over the longest repurposing period.	CoC-OFF-2 CoC-OFF-14	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
IOU-PN-SNS-C-01	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Installation/ Construction	Offshore - Infrastructure & Other Users	Displacement of recreational craft and recreational fishing vessels resulting in a loss of recreational resource.	Up to 150 return trips over the 12 month repurposing period.	Maximum number of construction vessels over the longest repurposing period.	CoC-OFF-3 CoC-OFF-6 CoC-OFF-12	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3, CoC-OFF-6, and CoC-OFF-12 and the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
IOU-PN-SNS-O-02	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Implementation/ Operation & Maintenance	Offshore - Infrastructure & Other Users	Displacement of recreational craft and recreational fishing vessels resulting in a loss of recreational resource.	Up to 72 return trips per year.	The MDS represents highest yearly level of operation and maintenance vessel round trips.	CoC-OFF-3 CoC-OFF-6 CoC-OFF-12	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3, CoC-OFF-6, and CoC-OFF-12 and the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
IOU-PN-SNS-D-03	Kittiwake	Southern North Sea (Area of Highest Ecological Potential)	Decommissioning	Offshore - Infrastructure & Other Users	Displacement of recreational craft and recreational fishing vessels resulting in a loss of recreational resource.	Removal of two foundations and up to 150 return trips over the 12 month decommissioning period.	Removal of foundations and maximum number of decommissioning vessels over the longest decommissioning period.	CoC-OFF-3 CoC-OFF-6 CoC-OFF-12	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.



### Impact Background

ID	Compensation Species	Compensation Measure Search Area	Compensation Measure Development Phase	Topic	Compensation Measure Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Commitments	Magnitude	Sensitivity	Likely Significant Effect	Justification
BIE-PR-SNS-C-01	Kittiwake	Southern North Sea (Wenlock Platform)	Installation/ Construction	Offshore - Benthic & Intertidal Ecology	Temporary habitat loss/disturbance and direct damage by jack-up vessels.	Jack up vessel footprint of 1,020 m <sup>2</sup> per operation, two operations in total = 2,040 m <sup>2</sup> .	Assumes the use of jack-up vessels over dynamic positioning vessel as the former will encounter the seabed. The MDS results from the maximum number of jack up operations with the largest footprint per operation.	CoC-OFF-1	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-1 and the impact being highly limited in extent and duration, no LSE is predicted.
BIE-PR-SNS-O-02	Kittiwake	Southern North Sea (Wenlock Platform)	Implementation/ Operation & Maintenance	Offshore - Benthic & Intertidal Ecology	Maintenance operations may result in temporary seabed disturbances and potential effects on benthic ecology.	Jack up vessel footprint of 1,020 m <sup>2</sup> per operation, 24 operations per year = 24,480 m <sup>2</sup> .	Assumes the use of jack-up vessels over dynamic positioning vessel as the former will encounter the seabed. The MDS results from the maximum number of jack up operations with the largest footprint per operation.	CoC-OFF-1	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-1 and the impact being highly limited in extent and duration, no LSE is predicted.
BIE-PR-SNS-D-03	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Benthic & Intertidal Ecology	Temporary loss of habitat due to operations to remove structure and associated jack-up operations resulting in potential effects on benthic ecology.	Total area = 10,873 m <sup>2</sup> Footprint of platform foundation structure (2,206 m <sup>2</sup> ) and associated scour protection (4,587 m <sup>2</sup> ); and Jack up vessel footprint of 1,020 m <sup>2</sup> per operation, four operations in total = 4,080 m <sup>2</sup> .	Assumes the use of jack-up vessels over dynamic positioning vessel as the former will encounter the seabed. The MDS results from the maximum number of jack up operations with the largest footprint per operation and the total area occupied by the platform foundation.	CoC-OFF-1	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
BIE-PR-SNS-D-04	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Benthic & Intertidal Ecology	Temporary increases in suspended sediment concentrations and deposition from removal of structure resulting in potential effects on benthic ecology.	Increases of suspended sediment concentrations and sediment deposition associated with the removal of the platform foundation.	MDS assumes the removal of foundation.		Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
BIE-PR-SNS-D-05	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Benthic & Intertidal Ecology	Removal of foundations leading to loss of species/ habitats colonising these structures.	Total surface area of hard substrate on the platform foundation below the waterline.	The MDS is defined by the maximum area of the structure in the water column, including surface area of the vertical structure.		Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
FSE-PR-SNS-C-01	Kittiwake	Southern North Sea (Wenlock Platform)	Installation/ Construction	Offshore - Fish & Shellfish Ecology	Temporary habitat loss/disturbance and direct damage by jack-up vessels.	Jack up vessel footprint of 1,020 m <sup>2</sup> per operation, two operations in total = 2,040 m <sup>2</sup> .	Assumes the use of jack-up vessels over dynamic positioning vessel as the former will encounter the seabed. The MDS results from the maximum number of jack up operations with the largest footprint per operation.		Negligible	N/A	No LSE identified	Due to the impact being highly limited in extent and duration, no LSE is predicted.
FSE-PR-SNS-O-02	Kittiwake	Southern North Sea (Wenlock Platform)	Implementation/ Operation & Maintenance	Offshore - Fish & Shellfish Ecology	Maintenance operations may result in temporary seabed disturbances and potential effects on fish and shellfish ecology.	Jack up vessel footprint of 1,020 m <sup>2</sup> per operation, 24 operations per year = 24,480 m <sup>2</sup> .	Assumes the use of jack-up vessels over dynamic positioning vessel as the former will encounter the seabed. The MDS results from the maximum number of jack up operations with the largest footprint per operation.		Negligible	N/A	No LSE identified	Due to the impact being highly limited in extent and duration, no LSE is predicted.
FSE-PR-SNS-D-03	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Fish & Shellfish Ecology	Temporary loss of habitat due to operations to remove structure, and associated jack-up operations resulting in potential effects on fish and shellfish ecology.	Total area = 10,873 m <sup>2</sup> Footprint of platform foundation structure (2,206 m <sup>2</sup> ) and associated scour protection (4,587 m <sup>2</sup> ); and Jack up vessel footprint of 1,020 m <sup>2</sup> per operation, four operations in total = 4,080 m <sup>2</sup> .	Assumes the use of jack-up vessels over dynamic positioning vessel as the former will encounter the seabed. The MDS results from the maximum number of jack up operations with the largest footprint per operation and the total area occupied by the platform foundation.		Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
FSE-PR-SNS-D-04	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Fish & Shellfish Ecology	Temporary increases in suspended sediment concentrations and deposition from removal of structure resulting in potential effects on fish and shellfish ecology.	Increases of suspended sediment concentrations and sediment deposition associated with the removal of the platform foundation.	MDS assumes the removal of foundation.		Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
FSE-PR-SNS-D-05	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Fish & Shellfish Ecology	Effects on fish and shellfish receptors due to removal of structure leading to loss of hard substrates and structural complexity.	Total surface area of hard substrate on the platform foundation below the waterline.	The MDS is defined by the maximum area of the structure in the water column, including surface area of the vertical structure.		Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
FSE-PR-SNS-D-06	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Fish & Shellfish Ecology	Decommissioning activities producing subsea noise resulting in potential effect on fish and shellfish receptors.	Underwater noise associated with the decommissioning of the platform foundation, including (but not limited to) high powered water jetting/cutting apparatus and grinding or drilling techniques. Vessel noise from vessels undertaking the decommissioning works.	The MDS assumes the removal of the foundations by methods including abrasive cutting, with foundations cut below the seabed.		Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
CF-PR-SNS-C-01	Kittiwake	Southern North Sea (Wenlock Platform)	Installation/ Construction	Offshore - Commercial Fisheries	Increased vessel traffic within fishing grounds as a result of changes to shipping routes and transiting repurposing vessel traffic leading to interference with fishing activity.	Up to 150 return trips over the 12 month repurposing period.	The maximum number of vessels transits and the maximum duration of the repurposing would result in the greatest potential for interference.	CoC-OFF-3 CoC-OFF-6	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3 and CoC-OFF-6, the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
CF-PR-SNS-D-02	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Commercial Fisheries	Increased vessel traffic within fishing grounds as a result of changes to shipping routes and transiting decommissioning vessel traffic leading to interference with fishing activity.	Up to 150 return trips over the 12 month decommissioning period.	The maximum number of vessels transits and the maximum duration of the decommissioning would result in the greatest potential for interference.	CoC-OFF-3 CoC-OFF-6	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3 and CoC-OFF-6, the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
IOU-PR-SNS-C-01	Kittiwake	Southern North Sea (Wenlock Platform)	Installation/ Construction	Offshore - Infrastructure & Other Users	Vessels undertaking repurposing works may displace recreational craft and recreational fishing vessels resulting in a loss of recreational resource.	Up to 150 return trips over the 12 month repurposing period.	The maximum number of vessels transits and the maximum duration of the repurposing would result in the greatest potential for displacement.	CoC-OFF-3 CoC-OFF-6	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3 and CoC-OFF-6, the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
IOU-PR-SNS-D-03	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Infrastructure & Other Users	Vessels undertaking decommissioning works may displace recreational craft and recreational fishing vessels resulting in a loss of recreational resource.	Up to 150 return trips over the 12 month decommissioning period.	The maximum number of vessels transits and the maximum duration of the decommissioning would result in the greatest potential for displacement.	CoC-OFF-3 CoC-OFF-6	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
MM-PR-SNS-C-01	Kittiwake	Southern North Sea (Wenlock Platform)	Installation/ Construction	Offshore - Marine Mammals	Increased vessel traffic during repurposing may result in an increase in disturbance to, or collision risk with marine mammals.	Up to 150 return trips over the 12 month repurposing period.	The maximum number of vessels transits and the maximum duration of the repurposing would result in the greatest potential for disturbance.	CoC-OFF-4	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-4 and the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.

### Impact Background

ID	Compensation Species	Compensation Measure Search Area	Compensation Measure Development Phase	Topic	Compensation Measure Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Commitments	Magnitude	Sensitivity	Likely Significant Effect	Justification
MM-PR-SNS-D-02	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Marine Mammals	Increased vessel traffic during decommissioning activities may result in an increase in disturbance to, or collision risk with marine mammals.	Up to 150 return trips over the 12 month decommissioning period.	The maximum number of vessels transits and the maximum duration of the repurposing would result in the greatest potential for disturbance.	CoC-OFF-4	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
MM-PR-SNS-D-03	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Marine Mammals	Underwater noise arising from decommissioning activities and associated vessels may cause disturbance to marine mammals.	Underwater noise associated with the decommissioning of the platform foundation, including (but not limited to) high powered water jetting/cutting apparatus and grinding or drilling techniques. Vessel noise from vessels undertaking the decommissioning works.	The MDS assumes the removal of the foundations by methods including abrasive cutting, with foundations cut below the seabed.		Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
MM-PR-SNS-D-04	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Marine Mammals	Increased suspended sediments arising from decommissioning activities may impair the foraging ability of marine mammals.	Increases of suspended sediment concentrations and sediment deposition associated with the removal of the platform foundation.	MDS assumes the removal of foundation.		Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
MP-PR-SNS-C-01	Kittiwake	Southern North Sea (Wenlock Platform)	Installation/Construction	Offshore - Marine Processes	Change to seabed morphology due to indentations left by repurposing jack-up vessels.	Jack up vessel footprint of 1,020 m <sup>2</sup> per operation, two operations in total = 2,040 m <sup>2</sup> .	Assumes the use of jack-up vessels over dynamic positioning vessel as the former will encounter the seabed. The MDS results from the maximum number of jack up operations with the largest footprint per operation.	CoC-OFF-1	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-1 and the impact being highly limited in extent and duration, no LSE is predicted.
MP-PR-SNS-O-02	Kittiwake	Southern North Sea (Wenlock Platform)	Implementation/Operation & Maintenance	Offshore - Marine Processes	Change to seabed morphology due to indentations left by maintenance jack-up vessels.	Jack up vessel footprint of 1,020 m <sup>2</sup> per operation, 24 operations per year = 24,480 m <sup>2</sup> .	Assumes the use of jack-up vessels over dynamic positioning vessel as the former will encounter the seabed. The MDS results from the maximum number of jack up operations with the largest footprint per operation.	CoC-OFF-1	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-1 and the impact being highly limited in extent and duration, no LSE is predicted.
MP-PR-SNS-D-03	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Marine Processes	Increase in suspended sediment concentrations and deposition of disturbed sediment to the seabed from decommissioning activities.	Increases of suspended sediment concentrations and sediment deposition associated with the removal of the platform foundation.	MDS assumes the removal of foundation.		Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
MP-PR-SNS-D-04	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Marine Processes	Changes to wave and tidal regimes associated with the removal of the platform foundation.	The platform foundation represents a blockage and therefore the greatest influence on wave and tidal regime once removed.	MDS assumes the removal of foundation.		Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
MP-PR-SNS-D-05	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Marine Processes	Change to seabed morphology due to indentations left by decommissioning jack-up vessels.	Jack up vessel footprint of 1,020 m <sup>2</sup> per operation, four operations in total = 4,080 m <sup>2</sup> .	Assumes the use of jack-up vessels over dynamic positioning vessel as the former will encounter the seabed. The MDS results from the maximum number of jack up operations with the largest footprint per operation.	CoC-OFF-1	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
ORN-PR-SNS-C-01	Kittiwake	Southern North Sea (Wenlock Platform)	Installation/Construction	Offshore - Offshore & Intertidal Ornithology	The impact of construction activities such as increased vessel activity may result in direct disturbance or displacement from important foraging and habitat areas of birds.	Up to 150 return trips over the 12 month repurposing period.	The maximum number of vessels transits and the maximum duration of the repurposing would result in the greatest potential for disturbance and displacement.		Negligible	N/A	No LSE identified	Due to the impact being highly limited in extent and duration, no LSE is predicted.
ORN-PR-SNS-D-03	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Offshore & Intertidal Ornithology	The impact of direct disturbance and displacement due to underwater noise and vessel traffic may result in disturbance or displacement from important foraging and habitat areas of birds.	Up to 150 return trips over the 12 month decommissioning period.	The maximum number of vessels transits and the maximum duration of the decommissioning would result in the greatest potential for disturbance and displacement.		Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
MA-PR-SNS-D-01	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Marine Archaeology	Draw-down of sediment into voids left by removed foundation leading to loss of sediment, destabilising archaeological sites and contexts, and exposing such material to natural, chemical or biological processes, and causing or accelerating loss of the same.	Removal of platform foundation	MDS assumes the removal of foundation.	CoC-OFF-2 CoC-OFF-14	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
MA-PR-SNS-D-01	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Marine Archaeology	Penetration and compression effects of jack-up barges and anchoring of decommissioning vessels leading to total or partial loss of archaeological receptors (material or contexts).	Up to 150 return trips over the 12 month repurposing period.	Maximum number of repurposing vessels over the longest repurposing period.	CoC-OFF-2 CoC-OFF-14	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
SN-PR-SNS-C-01	Kittiwake	Southern North Sea (Wenlock Platform)	Installation/Construction	Offshore - Shipping & Navigation	Repurposing activities may cause vessels to be deviated leading to increased encounters and therefore may also lead to increased vessel to vessel collision risk for all vessels in all weather conditions.	Up to 150 return trips over the 12 month repurposing period.	Maximum number of repurposing vessels over the longest repurposing period.	CoC-OFF-3	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3, the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
SN-PR-SNS-C-02	Kittiwake	Southern North Sea (Wenlock Platform)	Installation/Construction	Offshore - Shipping & Navigation	Repurposing activities may restrict the emergency response capability of existing resources.	Up to 150 return trips over the 12 month repurposing period.	Maximum number of repurposing vessels over the longest repurposing period.	CoC-OFF-3 CoC-OFF-6	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3 and CoC-OFF-6, the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
SN-PR-SNS-O-03	Kittiwake	Southern North Sea (Wenlock Platform)	Implementation/Operation & Maintenance	Offshore - Shipping & Navigation	Operation and maintenance activities may restrict the emergency response capability of existing resources.	Up to 72 return vessel trips per year plus helicopter trips.	The MDS represents highest yearly level of operation and maintenance vessel and helicopter round trips that would result in the greatest restriction to emergency response capability.	CoC-OFF-3 CoC-OFF-6	Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3 and CoC-OFF-6, the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
SN-PR-SNS-D-04	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Shipping & Navigation	Decommissioning activities may cause vessels to be deviated leading to increased encounters and therefore increased vessel to vessel collision risk for all vessels in all weather conditions.	Removal of platform foundation and up to 150 return trips over the 12 month decommissioning period.	Removal of foundations and maximum number of decommissioning vessels over the longest decommissioning period.	CoC-OFF-3	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.
SN-PR-SNS-D-05	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Shipping & Navigation	Decommissioning structure will create powered and drifting collision risk for all vessels.	Removal of platform foundation.	MDS assumes the removal of foundation.	CoC-OFF-3 CoC-OFF-6	Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.

### Impact Background

ID	Compensation Species	Compensation Measure Search Area	Compensation Measure Development Phase	Topic	Compensation Measure Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Commitments
SN-PR-SNS-D-06	Kittiwake	Southern North Sea (Wenlock Platform)	Decommissioning	Offshore - Shipping & Navigation	Decommissioning activities may restrict the emergency response capability of existing resources.	Up to 150 return trips over the 12 month decommissioning period.	Maximum number of repurposing vessels over the longest decommissioning period.	CoC-OFF-3 CoC-OFF-6

Magnitude	Sensitivity	Likely Significant Effect	Justification
Negligible	N/A	No LSE identified	The requirement for, and the exact nature of decommissioning the offshore and onshore nesting structures, will be determined in consultation with the relevant authorities towards the end of the 35-year operational life of Hornsea Four.

### Impact Background

Impact Background								Magnitude	Sensitivity	Likely Significant Effect	Justification	
ID	Compensation species	Compensation Measure Search Area	Compensation Measure Development Phase	Topic	Compensation Measure Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Commitments				
GGC-ON-CBN-C-01	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Installation/Construction	Onshore - Geology and Ground Conditions	Creation of pollution pathways to groundwater due to the installation of necessary foundations (impacts to be confirmed, dependant on detailed design and site location).	The access track will be 10m wide, comprising 6m wide road (with 7m wide passing places) and additional width for topsoil storage. The maximum depth of the access track would be 1m. Track length will be dictated by site considerations.  Track length and more detailed design will be considered following site selection.	MDS is based on early design options.	CoC-ON-39 CoC-ON-34 CoC-ON-12 CoC-ON-30	Minor	Low	No LSE identified	Impact will be mitigated by stated commitments.
HFR-ON-CBN-C-03	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Installation/Construction	Onshore - Hydrology and Flood Risk	Decreases in water quality in waterbodies in close proximity to structures due to kittiwake guano.	Maximum no. of besting birds is not known at this stage.		CoC-ON-39 CoC-ON-40 CoC-ON-30 CoC-ON-31	Minor	Medium	No LSE identified	Impact will be mitigated by stated commitments.
HE-ON-CBN-C-01	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Installation/Construction	Onshore - Historic Environment	Direct (physical) impacts on designated and non-designated heritage assets from establishment of site compound, access road and foundations.	Foundation depth and volume of excavated material to be determined following site selection.  Track length and more detailed design will be considered following site selection. The access track will be 10m wide, comprising 6m wide road (with 7m wide passing places) and additional width for topsoil storage. The maximum depth of the access track would be 1m.  A temporary logistics compound may be required and the dimensions of which would be approximately 70x70m.	MDS assumes that no dewatering is required and foundation depths for built on site or pre-fabricated structures are the same.  MDS assumes access road is temporary and will not be tarmac.	CoC-ON-30 CoC-ON-22	Minor	Medium	No LSE identified	Impact can be mitigated by stated commitments.
HFR-ON-CBN-C-01	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Installation/Construction	Onshore - Hydrology and Flood Risk	Temporary disruption of local land drainage during the construction of the nesting structures, establishment of site compound and access track.	A temporary logistics compound may be required and the dimensions of which would be approximately 70x70m.  Duration of logistics compound requirement to be determined following site selection.  The access track will be 10m wide, comprising 6m wide road (with 7m wide passing places) and additional width for topsoil storage. The maximum depth of the access track would be 1m.	MDS is based on early design options.	CoC-ON-2 CoC-ON-3	Negligible	High	No LSE	Magnitude considered negligible and will therefore cannot result in a LSE.
LV-ON-CBN-C-01	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Installation/Construction	Onshore - Landscape and Visual	Temporary effects on landscape and amenity due to vegetation clearance during construction phase.	Area required for vegetation clearance and distance of hedgerows to be removed will be determined following site selection.	MDS assumes maximum vegetation clearance and hedgerow removal based on footprint of structure, site compound, working area and access track.	CoC-ON-21	Negligible	Low	No LSE	Magnitude considered negligible and will therefore cannot result in a LSE.
ENC-ON-CBN-C-01	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Installation/Construction	Onshore - Ecology and Nature Conservation	Habitat disturbance/fragmentation from vegetation clearance required for construction (if required)	Area required for vegetation clearance and distance of hedgerows to be removed will be determined following site selection.	MDS assumes maximum vegetation clearance and hedgerow removal based on footprint of structure, site compound, working area and access track.	CoC-ON-13 CoC-ON-14	Negligible	High	No LSE	Magnitude considered negligible and will therefore cannot result in a LSE.
AQ-ON-CBN-C-01	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Installation/Construction	Onshore - Air Quality	Impacts on human and ecological receptors caused by increase in air pollution due to HGV movements associated with delivery of pre-fabricated structures or constructed of structures, and construction of access track.	Construction is anticipated to comprise a maximum of 10 AADT HGV movements (subject to detailed design).	MDS is based on early design options.	CoC-ON-43 CoC-ON-19	Negligible	Low	No LSE	Magnitude considered negligible and will therefore cannot result in a LSE.
SV-ON-CBN-C-01	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Installation/Construction	Onshore - Traffic and Transport	Impacts on the local road network from increases in traffic due to HGV movements associated with delivery of pre-fabricated structures or constructed of structures, and construction of access track.	Construction is anticipated to comprise a maximum of 10 AADT HGV movements (subject to detailed design).	MDS is based on early design options.	CoC-ON-23 CoC-ON-24	Negligible	Low	No LSE	HGV movements will be relatively small with pre-fabrication minimising deliveries.
TT-ON-CBN-O-01	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Implementation/Operation	Onshore - Traffic and Transport	Impacts on the local road network from increases in traffic from vehicle movements from monitoring visits.	The number of monitoring visits is to be determined following site selection. However, it is anticipated to be low, accessing the site on foot where possible.	MDS is based on early design options.	CoC-ON-37	Negligible	Low	No LSE	No. of monitoring visits to be determined following site selection however, monitoring will be infrequent and restricted to very small numbers of vehicles.
SVV-ON-CBN-O-02	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Implementation/Operation	Onshore - Socio-economic	Impacts to local communities, coastal and onshore recreational activities due to increased risk of guano dropping.	To be defined up receipt of further information to facilitate impact assessment	MDS is based on early design options.	CoC-ON-39 CoC-ON-33	Negligible	Low	No LSE	Provision of a nesting tower will not affect socio-economics in any significant way. To be defined upon receipt of further information to facilitate impact assessment.
NV-ON-CBN-C-01	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Installation/Construction	Onshore - Noise and Vibration	Increase in noise and vibration to human and ecological receptors due to HGV movements associated with delivery of pre-fabricated structures or constructed of structures, and construction of access track.	Construction is anticipated to comprise a maximum of 10 AADT HGV movements (subject to detailed design).  Installation of necessary foundations and requirement for piling to be confirmed (dependant on detailed design and site location).	MDS is based on early design options.	CoC-ON-23 CoC-ON-39	Minor	Low	No LSE identified	Impact will be mitigated by stated commitments.
GGC-ON-CBN-C-02	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Installation/Construction	Onshore - Geology and Ground Conditions	Increased risk of contamination to soils and groundwater due to excavation of soils during the installation of nesting structures foundations (to be confirmed, dependant on detailed design and site location), excavation of access track and establishment of a site compound and temporary site infrastructure, including a site cabin and welfare facilities.	Foundation depth and volume of excavated material to be determined following site selection.  Track length and more detailed design will be considered following site selection. The access track will be 10m wide, comprising 6m wide road (with 7m wide passing places) and additional width for topsoil storage. The maximum depth of the access track would be 1m.  Track length and more detailed design will be considered following site selection.  A temporary logistics compound may be required and the dimensions of which would be approximately 70x70m.	MDS assumes that no dewatering is required and foundation depths for built on site or pre-fabricated structures are the same.  MDS assumes access road is temporary and will not be tarmac.	CoC-ON-5 CoC-ON-6 CoC-ON-7 CoC-ON-27	Minor	Low	No LSE identified	Impact will be mitigated by stated commitments.



### Impact Background

Impact Background								Magnitude	Sensitivity	Likely Significant Effect	Justification	
ID	Compensation species	Compensation Measure Search Area	Compensation Measure Development Phase	Topic	Compensation Measure Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Commitments				
HE-ON-CBN-O-01	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Implementation/ Operation	Onshore - Historic Environment	Indirect (non-physical) impacts resulting in change in the setting of heritage assets, including designated and key non-designated assets.	A temporary logistics compound may be required and the dimensions of which would be approximately 70x70m.  The access track will be 10m wide, comprising 6m wide road (with 7m wide passing places) and additional width for topsoil storage. The maximum depth of the access track would be 1m.  Maximum number of structures: 4 Maximum height of structures: 15m	MDS is based on early design options.	CoC-ON-30 CoC-ON-42	Minor	Low	No LSE identified	Impact will be mitigated by stated commitments.
HFR-ON-CBN-O-01	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Implementation/ Operation	Onshore - Hydrology and Flood Risk	Permanent disruption of local land drainage due to construction of the nesting structures.	Maximum number of structures: 4 Maximum height of structures: 15m Maximum length of structures: 40m Maximum width of structures: 10m	MDS is based on early design options.	CoC-ON-4	Minor	Medium	No LSE identified	Impact will be mitigated by stated commitments.
LUA-ON-CBN-O-01	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Implementation/ Operation	Onshore - Land Use and Agriculture	Permanent loss of agricultural land due to fencing off of surrounding area to structure.	Area fenced off around the nesting structure to be determined following site selection.  It is assumed that the temporary loss of agricultural land will be less than 20ha.	MDS is based on early design options.	CoC-ON-28	Minor	Medium	No LSE identified	Impact can be mitigated by stated commitments.
LV-ON-CBN-O-01	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Implementation/ Operation	Onshore - Landscape and Visual	Permanent loss of landscape features and changes to landscape due to installation of structures and fencing.	Maximum number of structures: 4 Maximum height of structures: 15m Maximum length of structures: 40m Maximum width of structures: 10m	MDS is based on early design options.	CoC-ON-39 CoC-ON-30	Negligible	High	No LSE identified	No. of HGV movements considered negligible and will therefore not lead to a LSE.
GCC-ON-CBN-C-03	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Installation/ Construction	Onshore - Geology and Ground Conditions	Risk to construction workers from contaminated land during installation/construction.	Foundation depth to be determined following site selection.  The maximum depth of the access track would be 1m.	MDS is based on early design options.  Note track length and more detailed design will be considered once compensation sites have been selected.	CoC-ON-9 CoC-ON-29 CoC-ON-12	Negligible	Low	No LSE	Magnitude considered negligible and will therefore cannot result in a LSE.
ENC-ON-CBN-C-02	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Installation/ Construction	Onshore - Ecology and Nature Conservation	Disturbance to protected species from vegetation clearance (if required) resulting in habitat loss and fragmentation.	Area required for vegetation clearance and distance of hedgerows to be removed will be determined following site selection.	MDS assumes area of vegetation clearance covers site compound and access track.	CoC-ON-15 CoC-ON-16 CoC-ON-17 CoC-ON-35	Moderate	High	No LSE	Site selection commitment and implementation of WSI mitigate LSE.
ENC-ON-CBN-C-03	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Installation/ Construction	Onshore - Ecology and Nature Conservation	Disturbance to protected species from temporary site lighting.	Requirement for nightworking to be determined following site selection.		CoC-ON-18	Minor	High	No LSE identified	Impact can be mitigated by stated commitments.
ENC-ON-CBN-C-04	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Installation/ Construction	Onshore - Ecology and Nature Conservation	Potential for dust generation and nitrogen deposition at designated sites from HGVs and construction plant.	Construction is anticipated to comprise a maximum of 10 AADT HGV movements (subject to detailed design).	The MDS represents highest anticipated level of construction round trips that would result in NOx emissions.	CoC-ON-19 CoC-ON-30 CoC-ON-43	Minor	Low to Medium	No LSE	Impact can be mitigated by stated commitments.
ENC-ON-CBN-D-01	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Decommissioning	Onshore - Ecology and Nature Conservation	Temporary impacts to protected species and loss of habitat due to operations to remove structure	Requirements for decommissioning yet to be determined.	n/a	Commitments to be determined at a later stage.	Minor	Low to Medium	No LSE	The need for decommissioning will need to be determined based upon technical considerations and consenting requirements at a later stage.
ENC-ON-CBN-D-02	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Decommissioning	Onshore - Ecology and Nature Conservation	Habitat disturbance/fragmentation from vegetation clearance required for decommissioning.	Requirements for decommissioning yet to be determined.	n/a	Commitments to be determined at a later stage.	Negligible	Low	No LSE	Magnitude considered negligible and will therefore cannot result in a LSE.
ENC-ON-CBN-D-03	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Decommissioning	Onshore - Ecology and Nature Conservation	Changes to habitat in area contained by fencing due to decreased nutrient concentrations from guano and removal of fencing.	Requirements for decommissioning yet to be determined.	n/a	Commitments to be determined at a later stage.	Minor	Low	No LSE identified	Impact will be mitigated by stated commitments.
ENC-ON-CBN-D-04	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Decommissioning	Onshore - Ecology and Nature Conservation	Disturbance to protected species from vegetation clearance (if required) resulting in habitat loss and fragmentation.	Requirements for decommissioning yet to be determined.	n/a	Commitments to be determined at a later stage.	Minor	High	No LSE	Site selection commitment and implementation of screening planting scheme mitigate LSE.
ENC-ON-CBN-D-05	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Decommissioning	Onshore - Ecology and Nature Conservation	Disturbance to protected species from temporary site lighting.	Requirements for decommissioning yet to be determined.	n/a	Commitments to be determined at a later stage.	Negligible	Low to Medium	No LSE identified	Magnitude considered negligible and will therefore cannot result in a LSE.
SV-ON-CBN-O-01	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Implementation/ Operation	Onshore - Socio-economic	Positive impact to local economy from monitoring requirements during operation.	The number of monitoring visits is anticipated to be low, accessing the site on foot where possible. Monitoring and maintenance activities could theoretically comprise the following:  •Removal of kittiwake guano from structure and appropriate disposal	MDS is based on early design options.		Negligible	Low to Medium	No LSE identified	Magnitude considered negligible and will therefore cannot result in a LSE.
ENC-ON-CBN-D-06	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Decommissioning	Onshore - Ecology and Nature Conservation	Potential for dust generation and nitrogen deposition at designated sites from HGVs and decommissioning plant.	Requirements for decommissioning yet to be determined.	n/a	Commitments to be determined at a later stage.	Minor	High	No LSE	Site selection commitment and implementation of screening planting scheme mitigate LSE.
ENC-ON-CBN-O-01	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Implementation/ Operation	Onshore - Ecology and Nature Conservation	Changes to habitat in area contained by fencing due to increased nutrient concentrations from guano and installation of fencing.	Area fenced off around the nesting structure to be determined following site selection.	MDS assumes impact on habitats is restricted to the fenced off area	CoC-ON-35 CoC-ON-45	Minor	Low	No LSE identified	Impact will be mitigated by stated commitments.

### Impact Background

Impact Background								Magnitude	Sensitivity	Likely Significant Effect	Justification	
ID	Compensation species	Compensation Measure Search Area	Compensation Measure Development Phase	Topic	Compensation Measure Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Commitments				
HFR-ON-CBN-C-02	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Installation/Construction	Onshore - Hydrology and Flood Risk	Temporary increased flood risk due to establishment of site compound and access road	A temporary logistics compound may be required and the dimensions of which would be approximately 70x70m.  The access track will be 10m wide, comprising 6m wide road (with 7m wide passing places) and additional width for topsoil storage. The maximum depth of the access track would be 1m.	MDS assumes that no permanent areas of hardstanding are required.	CoC-ON-39 CoC-ON-10 CoC-ON-11 CoC-ON-04	Negligible	Low to Medium	No LSE identified	It is assumed that the nesting structure will be located outside of flood zones 2 or 3. However, if this assumption is incorrect, further assessment will take place following further progression of the design and site selection process.
LUA-ON-CBN-C-01	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Installation/Construction	Onshore - Land Use and Agriculture	Temporary loss of agricultural land during construction for construction of temporary access track and temporary logistics compound.	Construction to decommissioning of access track will be considered following site selection. The access track will be 10m wide, comprising 6m wide road (with 7m wide passing places) and additional width for topsoil storage. The maximum depth of the access track would be 1m.  It is assumed that the temporary loss of agricultural land will be less than 20ha.  A temporary logistics compound may be required and the dimensions of which would be approximately 70x70m.	MDS is based on early design options.  Note track length and more detailed design will be considered once compensation sites have been selected.	CoC-ON-39	Negligible	Medium	No LSE	The loss of agricultural land will be minor (if any) due to the small size of the land required for construction or operation of the structure.
ENC-ON-CBN-C-05	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Installation/Construction	Onshore - Ecology and Nature Conservation	Potential for habitat loss and/or destruction due to construction access and compound	Construction to decommissioning of access track will be considered following site selection. The access track will be 10m wide, comprising 6m wide road (with 7m wide passing places) and additional width for topsoil storage. The maximum depth of the access track would be 1m.  A temporary logistics compound may be required and the dimensions of which would be approximately 70x70m.	MDS is based on early design options.  Note track length and more detailed design will be considered once compensation sites have been selected.	CoC-ON-7 CoC-ON-30 CoC-ON-44 CoC-ON-45	Moderate	High	No LSE	Impact can be mitigated by stated commitments. Designated sites and priority habitat will be avoided where possible.
ENC-ON-CBN-D-07	Kittiwake	Cayton Bay to Newbiggin by the Sea (B1)	Decommissioning	Onshore - Ecology and Nature Conservation	Potential for habitat loss and/or destruction due to decommissioning activities	Construction to decommissioning of access track will be considered following site selection. The access track will be 10m wide, comprising 6m wide road (with 7m wide passing places) and additional width for topsoil storage. The maximum depth of the access track would be 1m.  A temporary logistics compound may be required and the dimensions of which would be approximately 70x70m.	MDS is based on early design options.  Note track length and more detailed design will be considered once compensation sites have been selected.	CoC-ON-7 CoC-ON-30 CoC-ON-44 CoC-ON-45	Moderate	High	No LSE	Impact can be mitigated by stated commitments. Designated sites and priority habitat will be avoided where possible.

**Impact Background**

Impact Background												
ID	Compensation species	Compensation Measure Search Area	Compensation Measure Development Phase	Topic	Compensation Measure Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Commitments	Magnitude	Sensitivity	Likely Significant Effect	Justification
BC-Sc-C-1	Guillemot & Razorbill	South coast of England (C1)	Installation/ Construction	All Offshore Topics	Existing commercial fisheries activity in the area represents the baseline against which any additional impacts as a result of the bycatch measures are considered. No additional impacts are predicted as a result of the implementation of the compensation bycatch measures.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
BC-Sc-O-2	Guillemot & Razorbill	South coast of England (C1)	Implementation/ Operation & Maintenance	All Offshore Topics	Existing commercial fisheries activity in the area represents the baseline against which any additional impacts as a result of the bycatch measures are considered. No additional impacts are predicted as a result of the implementation of the compensation bycatch measures.	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Impact Background								
ID	Compensation species	Compensation Measure Search Area	Compensation Measure Development Phase	Topic	Compensation Measure Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Commitments
ENC-PE-CI-O-01	Guillemot & Razorbill	Bailiwick of Guernsey (D1)	Implementation/Operation	Onshore - Ecology and Nature Conservation	Impacts to non target predator species (i.e. species not known to be detrimental to guillemots and/or razorbills). Potential impacts could occur via consumption of dead poisoned targetted predators or direct ingestion of poison.	Duration of predator eradication to be determined plus two year period of monitoring.	Two year period of monitoring use for Canna Island predator eradication.	CoC-ON-41 CoC-ON-1
ENC-PE-CI-O-02	Guillemot & Razorbill	Bailiwick of Guernsey (D1)	Implementation/Operation	Onshore - Ecology and Nature Conservation	Habitat disturbance due to increased human activity due to implementation of eradication programme e.g. regular setting of baits or traps and monitoring work.	Duration of predator eradication monitoring to be determined plus two year period of monitoring.	Two year period of monitoring use for Canna Island predator eradication.	CoC-ON-41 CoC-ON-1
SE-PE-CI-O-01	Guillemot & Razorbill	Bailiwick of Guernsey (D1)	Implementation/Operation	Onshore - Socio-economic	Impacts to community through concern of risks to livestock and domestic animals.	n/a	n/a	CoC-ON-32
SE-PE-CI-O-02	Guillemot & Razorbill	Bailiwick of Guernsey (D1)	Implementation/Operation	Onshore - Socio-economic	Impacts to local community and land owners due to potential restrictions to land use and management practises.	n/a	n/a	CoC-ON-32
HFR-PE-CI-C-01	Guillemot & Razorbill	Bailiwick of Guernsey (D1)	Installation/Construction	Onshore - Hydrology and Flood Risk	Leaching of poison into water dependant habitat and waterbodies in close proximity to poison bait stations.	Maximum no. of bait stations to be determined	n/a	CoC-ON-41 CoC-ON-12.
TT-PE-CI-O-01	Guillemot & Razorbill	Bailiwick of Guernsey (D1)	Implementation/Operation	Onshore - Traffic and Transport	Increased traffic from vehicle movements during setting of poison and from monitoring visits.	Duration of predator eradication monitoring to be determined plus two year period of monitoring.	n/a	CoC-ON-37
NV-PE-CI-O-01	Guillemot & Razorbill	Bailiwick of Guernsey (D1)	Implementation/Operation	Onshore - Noise and Vibration	Increase in noise and vibration to human and ecological receptors due to vehicle movements during implementation.	Duration of predator eradication monitoring to be determined plus two year period of monitoring.	n/a	CoC-ON-41 CoC-ON-37
AQ-PE-CI-O-01	Guillemot & Razorbill	Bailiwick of Guernsey (D1)	Implementation/Operation	Onshore - Air Quality	Impacts on human and ecological receptors due to increase in air pollution due to vehicle movements.	Duration of predator eradication monitoring to be determined plus two year period of monitoring.	n/a	CoC-ON-19
SE-PE-RI-Q-03	Guillemot & Razorbill	Bailiwick of Guernsey (D1)	Implementation/Operation	Onshore - Socio-economic	Positive impact to local economy from monitoring requirements during operation.	Duration of monitoring and no. of FTE workers to be determined following site selection.		CoC-ON-41
SE-PE-CI-O-04	Guillemot & Razorbill	Bailiwick of Guernsey (D1)	Implementation/Operation	Onshore - Socio-economic	Impacts to tourism due to biosecurity measures.	Biosecurity measures are expected to last indefinitely.	Ongoing measures are required to ensure island stays rodent-free.	CoC-ON-41 CoC-ON-38

Magnitude	Sensitivity	Likely Significant Effect	Justification
Moderate to Major	Low to Medium	No LSE	Impact will be mitigated by stated commitments.
Moderate	Medium	No LSE	Impact will be mitigated by stated commitments.
Minor to Major (site specific)	High	No LSE	Impact will be mitigated by stated commitments.
Minor to Major (site specific)	High	No LSE	Impact will be mitigated by stated commitments.
Minor	Moderate	No LSE	Impact will be mitigated by stated commitments.
Negligible	Low	No LSE	Magnitude considered negligible and will therefore cannot result in a LSE.
Negligible	High	No LSE	Noisy activities associated with predator eradication implementation predominately relate to the use of vehicles to access sites. Such activity would be of a negligible magnitude due to the intermittent nature and low number of vehicles required. Magnitude considered negligible and therefore cannot result in a LSE.
Negligible	Moderate	No LSE	Magnitude considered negligible and will therefore cannot result in a LSE.
Negligible	Low	No LSE	Magnitude considered negligible and will therefore cannot result in a LSE.
Minor to Major (site specific)	High	No LSE	Impact will be mitigated by stated commitments.



Impact Background								
ID	Compensation species	Compensation Measure Search Area	Compensation Measure Development Phase	Topic	Compensation Measure Activity and Impact	Maximum Design Scenario (MDS)	Justification for MDS	Commitments
MP-SG-Hu-C-01	Kittiwake, Guillemot, Razorbill	Humber Estuary (E1)	Installation/Construction	Offshore - Marine Processes	Increases in suspended sediment concentrations and deposition of disturbed sediments on the seabed due to planting activities and seabed sampling.	Divers using hand tools for replanting and/or hessian sacks of seeds deployed from a vessel.	Restoration by divers or from a vessel results in the resuspension of larger volumes of sediment than planting by foot in the intertidal area.	
BE-SG-Hu-C-01	Kittiwake, Guillemot, Razorbill	Humber Estuary (E1)	Installation/Construction	Offshore - Benthic & Intertidal Ecology	Temporary habitat disturbance from planting activities and seabed sampling.	Divers using hand tools for replanting; hessian sacks of seeds deployed from a vessel; or hand tool planting in the intertidal on foot.	Replanting methods in the intertidal will result in similar levels of habitat disturbance, with on foot planting representing the MDS in the intertidal area.	CoC-OFF-8
BE-SG-Hu-C-02	Kittiwake, Guillemot, Razorbill	Humber Estuary (E1)	Installation/Construction	Offshore - Benthic & Intertidal Ecology	Increases in suspended sediment concentrations and deposition of disturbed sediments on the seabed due to planting activities and seabed sampling.	Divers using hand tools for replanting and/or hessian sacks of seeds deployed from a vessel.	Restoration by divers or from a vessel results in the resuspension of larger volumes of sediment than planting by foot in the intertidal area.	CoC-OFF-8
BE-SG-Hu-C-03	Kittiwake, Guillemot, Razorbill	Humber Estuary (E1)	Implementation/Operation & Maintenance	Offshore - Benthic & Intertidal Ecology	Change of habitat type following introduction or reinstatement of seagrass.	Creation of seagrass habitat in an area not previously supporting seagrass.	Creation of seagrass habitat will change the habitat type in the area and result in loss of another habitat type.	CoC-OFF-8
FSE-SG-Hu-C-01	Kittiwake, Guillemot, Razorbill	Humber Estuary (E1)	Installation/Construction	Offshore - Fish & Shellfish Ecology	Increases in suspended sediment concentrations and deposition of disturbed sediments on the seabed due to planting activities and seabed sampling.	Divers using hand tools for replanting and/or hessian sacks of seeds deployed from a vessel.	Restoration by divers or from a vessel results in the resuspension of larger volumes of sediment than planting by foot in the intertidal area.	
FSE-SG-Hu-C-02	Kittiwake, Guillemot, Razorbill	Humber Estuary (E1)	Installation/Construction	Offshore - Fish & Shellfish Ecology	Temporary habitat disturbance from planting activities and seabed sampling.	Divers using hand tools for replanting; hessian sacks of seeds deployed from a vessel; or hand tool planting in the intertidal on foot.	Replanting methods in the intertidal will result in similar levels of habitat disturbance, with on foot planting representing the MDS in the intertidal area.	
MM-SG-Hu-C-01	Kittiwake, Guillemot, Razorbill	Humber Estuary (E1)	Installation/Construction	Offshore - Marine Mammals	Increased vessel traffic during planting activities may result in an increase in disturbance to or collision risk with marine mammals.	Up to two vessels engaged in fish habitat enhancement.	Maximum number of vessel movements associated with the works create the greatest disturbance and collision risk.	CoC-OFF-4
MM-SG-Hu-C-02	Kittiwake, Guillemot, Razorbill	Humber Estuary (E1)	Implementation/Operation & Maintenance	Offshore - Marine Mammals	Increased vessel traffic during monitoring activities may result in an increase in disturbance to or collision risk with marine mammals.	Monitoring undertaken from a vessel.	Maximum number of vessel movements associated with the monitoring create the greatest disturbance and collision risk.	CoC-OFF-4
ORN-SG-Hu-C-01	Kittiwake, Guillemot, Razorbill	Humber Estuary (E1)	Installation/Construction	Offshore - Offshore & Intertidal Ornithology	The impact of planting activities such as increased vessel activity or planting in intertidal area on foot may result in direct disturbance or displacement from important foraging and habitat areas of birds.	Up to two vessels engaged in fish habitat enhancement or individuals on foot planting in intertidal area.	Maximum number of vessel movements or individuals on the beach associated with the works create the greatest disturbance and displacement.	
ORN-SG-Hu-C-02	Kittiwake, Guillemot, Razorbill	Humber Estuary (E1)	Implementation/Operation & Maintenance	Offshore - Offshore & Intertidal Ornithology	The impact of monitoring activities such as increased vessel activity or monitoring of the intertidal area on foot may result in disturbance or displacement from important foraging and habitat areas of birds.	Monitoring undertaken from a vessel or on foot in the intertidal area.	Maximum number of vessel movements or individuals on the beach associated with the monitoring create the greatest disturbance and displacement.	
CF-SG-Hu-C-01	Kittiwake, Guillemot, Razorbill	Humber Estuary (E1)	Installation/Construction	Offshore - Commercial Fisheries	Increased vessel traffic associated with planting may disrupt fishing activity.	Up to two vessels engaged in fish habitat enhancement.	Maximum number of vessel movements associated with the works create the greatest disruption to fishing activity.	CoC-OFF-3 CoC-OFF-11
CF-SG-Hu-C-02	Kittiwake, Guillemot, Razorbill	Humber Estuary (E1)	Implementation/Operation & Maintenance	Offshore - Commercial Fisheries	Increased vessel traffic related to monitoring or fisheries exclusion zones around the planted areas may disrupt fishing activity.	Monitoring undertaken from a vessel and a buoyed voluntary no anchor zone.	Maximum number of vessel movements and buoyed area associated with the works create the greatest disruption to fishing activity.	CoC-OFF-3 CoC-OFF-11
SN-SG-Hu-C-01	Kittiwake, Guillemot, Razorbill	Humber Estuary (E1)	Installation/Construction	Offshore - Shipping & Navigation	Vessels deviated in relation to planting works leading to increased encounters and therefore may also lead to increased vessel to vessel collision risk for all vessels in all weather conditions.	Up to two vessels engaged in fish habitat enhancement.	Maximum number of vessel movements associated with the works create the greatest vessel deviations.	CoC-OFF-3
SN-SG-Hu-C-02	Kittiwake, Guillemot, Razorbill	Humber Estuary (E1)	Implementation/Operation & Maintenance	Offshore - Shipping & Navigation	Vessels deviated in relation to monitoring works leading to increased encounters and therefore may also lead to increased vessel to vessel collision risk for all vessels in all weather conditions.	Monitoring undertaken from a vessel.	Maximum number of vessel movements associated with the works create the greatest vessel deviations.	CoC-OFF-3
MA-SG-Hu-C-01	Kittiwake, Guillemot, Razorbill	Humber Estuary (E1)	Installation/Construction	Offshore - Marine Archaeology	Disturbance of sediments from planting activities and seabed sampling resulting in a potential effect on marine archaeology receptors.	Divers using hand tools for replanting; hessian sacks of seeds deployed from a vessel; or hand tool planting in the intertidal on foot.	Replanting methods in the intertidal will result in similar levels of sediment disturbance, with on foot planting representing the MDS in the intertidal area.	CoC-OFF-2
IOU-SG-Hu-C-02	Kittiwake, Guillemot, Razorbill	Humber Estuary (E1)	Installation/Construction	Offshore - Infrastructure & Other Users	Displacement of recreational craft, recreational activities, and recreational fishing vessels resulting in a loss of recreational resource.	Up to two vessels engaged in fish habitat enhancement.	Maximum number of vessel movements associated with the works create the greatest displacement of recreational activity.	CoC-OFF-3
IOU-SG-Hu-C-02	Kittiwake, Guillemot, Razorbill	Humber Estuary (E1)	Implementation/Operation & Maintenance	Offshore - Infrastructure & Other Users	Displacement of recreational craft, recreational activities, and recreational fishing vessels resulting in a loss of recreational resource.	Monitoring undertaken from a vessel and a buoyed voluntary no anchor zone.	Maximum number of vessel movements and buoyed area associated with the works create the greatest displacement of recreational activity.	CoC-OFF-3

Magnitude	Sensitivity	Likely Significant Effect	Justification
Negligible	N/A	No LSE identified	The works will result in the disturbance of small amounts of sediment, with the sediment being released into the water column and subsequently dispersed with the tide. Given the small amounts, the natural background levels of suspended sediment in the lower parts of the water column in the UK waters, and the short term and intermittent releases of sediment, it can be concluded that there will no LSE.
Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-8 and the impact being highly limited in extent and duration, no LSE is predicted.
Negligible	N/A	No LSE identified	The works will result in the disturbance of small amounts of sediment, with the sediment being released into the water column and subsequently dispersed with the tide. Given the small amounts, the natural background levels of suspended sediment in the lower parts of the water column in the UK waters, and the short term and intermittent releases of sediment, it can be concluded that there will no LSE. Additionally, the implementation of CoC-OFF-8 will ensure no LSE arises.
Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-8 and the impact being highly limited in extent and duration, no LSE is predicted.
Negligible	N/A	No LSE identified	Due to the impact being highly limited in extent and duration, no LSE is predicted.
Negligible	N/A	No LSE identified	Due to the impact being highly limited in extent and duration, no LSE is predicted.
Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-4 and the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-4 and the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
Negligible	N/A	No LSE identified	Due to the impact being highly limited in extent and duration, no LSE is predicted.
Negligible	N/A	No LSE identified	Due to the impact being highly limited in extent and duration, no LSE is predicted.
Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3 and CoC-OFF-11, the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3 and CoC-OFF-11, the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3, the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3, the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-2 and the impact being highly limited in extent and duration, no LSE is predicted.
Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3, the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.
Negligible	N/A	No LSE identified	As a result of the implementation of CoC-OFF-3, the impact being highly limited in extent and duration, with the small number of vessels required for the works in the context of the vessel activity in the area, no LSE is predicted.