



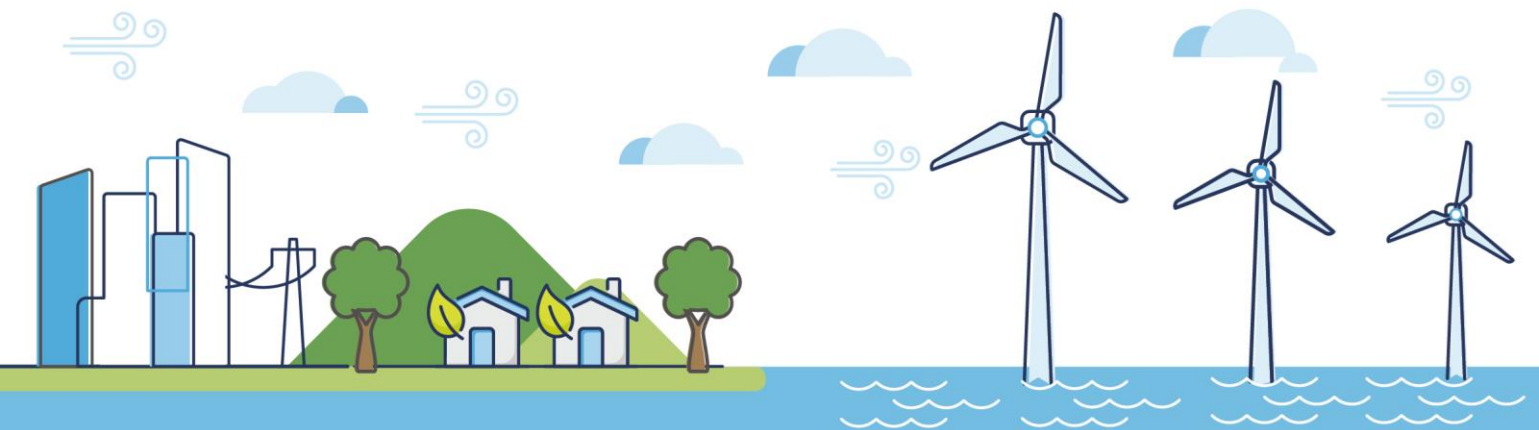
Morecambe Offshore Windfarm: Generation Assets Examination Documents

Volume 9

Response to Actions arising from Preliminary Meeting and Issue Specific Hearing 1

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Rev 01



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Glossary of Acronyms

AR8	Allocation Round 8
CfD	Contracts for Difference
cUXO	Confirmed Unexploded Ordnances
DCO	Development Consent Order
dDCO	Draft Development Consent Order
DML	Deemed Marine Licence
EIA	Environmental Impact Assessment
EnBW	Energie Baden-Württemberg
EPP	Evidence Plan Process
ES	Environmental Statement
ES	Environmental Statement
ETG	Expert Topic Group
ExA	Examining Authority
FEED	Front End Engineering Design
HRA	Habitats Regulations Assessment
IPMP	In Principle Monitoring Plan
ISH	Issue Specific Hearing
ITT	Invitation to Tenders
LBBG	Lesser black-backed gull
MLA	Marine Licence Application
MMMP	Outline Marine Mammal Mitigation Protocol
MMO	Marine Management Organisation
NEQ	Net Explosive Quantity
OSP	Offshore Substation Platform
PM	Preliminary Meeting
RWE	Rheinisch-Westfälisches Elektrizitätswerk Aktiengesellschaft
SNCBs	Statutory Nature Conservation Bodies
SoS	Secretary of State
SPA	Special Protection Area
UXO	Unexploded Ordnances
WTG	Wind Turbine Generator

Glossary of Unit Terms

kg	kilogram
km ²	square kilometre
MW	Megawatt
nm	nautical miles

Glossary of Terminology

Applicant	Morecambe Offshore Windfarm Ltd
Agreement for Lease (AfL)	Agreements under which seabed rights are awarded following the completion of The Crown Estate tender process.
Evidence Plan Process (EPP)	A voluntary consultation process with specialist stakeholders to agree the approach, and information to support, the Environmental Impact Assessment (EIA) and Habitats Regulations Assessment (HRA) for certain topics. The EPP provides a mechanism to agree the information required to be submitted to the Planning Inspectorate as part of the Development Consent Order application. This function of the EPP helps Applicants to provide sufficient information in their application, so that the Examining Authority can recommend to the Secretary of State whether or not to accept the application for examination and whether an appropriate assessment is required.
Expert Topic Group (ETG)	A forum for targeted engagement with regulators and interested stakeholders through the EPP.
Generation Assets (the Project)	Generation assets associated with the Morecambe Offshore Windfarm. This is infrastructure in connection with electricity production, namely the fixed foundation wind turbine generators (WTGs), inter-array cables, offshore substation platform(s) (OSP(s)) and possible platform link cables to connect OSP(s).
Inter-array cables	Cables which link the WTGs to each other and the OSP(s).
Morgan and Morecambe Offshore Wind Farms: Transmission Assets	The transmission assets for the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm. This includes the offshore export cables, landfall site, onshore export cables, onshore substations, 400kV cables and associated grid connection infrastructure such as circuit breaker infrastructure. Also referred to in this chapter as the Transmission Assets, for ease of reading.
Offshore substation platform(s)	A fixed structure located within the windfarm site, containing electrical equipment to aggregate the power from the WTGs and convert it into a more suitable form for export to shore.
Platform link cable	An electrical cable which links one or more OSP(s).
Windfarm site	The area within which the WTGs, inter-array cables, OSP(s) and platform link cables will be present.



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1 Introduction

1.1 Purpose of this document

1. This document addresses the Hearing Action Points raised by the Examining Authority (ExA) at the Issue Specific Hearing (ISH) 1 on 23 October 2024. This document also summarises actions noted by the Applicant during the Preliminary Meeting (PM) (held 22 October 2024) and ISH1.
2. The following appendices are attached to this document:
 - Appendix A: Seascape, Landscape and Visual Impact and Cultural Heritage Settings Assessment Sensitivity Analysis (Document Reference: 9.28.1)
 - Appendix B: Note on the R (Parkes) v Secretary of State for the Home Department [2024] EWHC 1253 (Admin) judgement (Document Reference: 9.28.2)
 - Appendix C: Frazer-Nash Report (Document Reference: 9.28.3);
 - Appendix D: Dogger Bank Amended Order (Document Reference: 9.28.4)
 - Appendix E: The Crown Estate Round 4 Information Memorandum (Document Reference: 9.28.5)

2 Response to Hearing Action Points Raised by the Examining Authority

3. **Table 2.1** provides the Applicant's response to Hearing Action Points raised by the ExA during ISH1 (and published by the Planning Inspectorate on 30 October 2024).
4. **Table 2.2** provides the actions recorded by the Applicant during the PM and ISH1 and the Applicant's response these actions.

Table 2.1 Actions recorded by the Examining Authority

ExA Action Point No.	Action	Action By	Response Due By	Applicant's Response
1	To provide Gantt charts that demonstrate the achievement of construction/ implementation of the DCO within the 7-year period sought and anticipated operation of the Proposed Development by 2030. These should include best, most-likely and worst-case scenarios taking into account the need to secure Marine Licences and separate consent and construction of the Transmission Assets project.	Applicant	Deadline 1	Gantt charts showing the realistic expected scenario and the delayed scenarios have been provided in Section 3 of this document. It also includes an explanation of the assumptions for these scenarios.
2	To submit information to support the position that the design life of foundations is only around 35 years which would therefore limit the overall life of the Proposed Development.	Applicant	Deadline 1	A detailed response to this action is provided in Section 4 of this document.
3	Revision to the draft Development Consent Order (dDCO) to secure a commitment that only one size/ type of wind turbine generator (WTG) would be installed and not a mixture of larger and smaller turbines.	Applicant	Deadline 2	The updated dDCO will be provided at Deadline 2 and will include this revision. Further changes will also be made as outlined in Table 2.2 of this document.
4	To provide a note and commentary on the R (Parkes) v Secretary of State for the Home Department [2024] EWHC 1253 (Admin) judgement in respect of the definition of "land" and whether this has implications such as for the need for a Book of Reference in this case.	Applicant	Deadline 1 if possible; alternatively, at Deadline 2 with next iteration of dDCO with intent	A detailed response to this action is provided in Appendix B: Appendix B: Note on the R (Parkes) v Secretary of State for the Home Department [2024] EWHC 1253 (Admin) judgement (Document Reference: 9.28.2).

ExA Action Point No.	Action	Action By	Response Due By	Applicant's Response
			advised at Deadline 1.	
5	To undertake (and submit a commentary on the results of) a sensitivity analysis on the potential effects of the Proposed Development in the absence of the other existing baseline offshore wind farms that would be decommissioned and therefore removed within the operational life of the Proposed Development.	Applicant	Deadline 1 if possible; alternatively at Deadline 2 with intent advised at Deadline 1.	A detailed response to this action is provided in Appendix A: Seascape, Landscape and Visual Impact and Cultural Heritage Settings Assessment Sensitivity Analysis (Document Reference: 9.28.1).
6	To submit a table listing heights of both nacelle and tip of all existing and consented wind farms in this area.	Applicant	Deadline 1	A table is provided in Section 5 of this document. The table also includes the information in response to ExA Action Point 9.
7	To submit a copy of the Frazer-Nash Report and provide commentary on its implications.	Applicant	Deadline 1	A copy is provided in Appendix C: Frazer-Nash Report (Document Reference: 9.28.3).
8	To submit further information and evidence in relation to wake loss effects on existing offshore wind farms (i.e. commentary of Frazer-Nash Report, and of any other academic or similar studies).	Ørsted IPs	Deadline 1	N/a.
9	To submit a table showing distances of Proposed Development to other Offshore Wind Farms and orientation thereto.	Applicant	Deadline 1	A table is provided in Section 5 of this document. The table also includes the information in response to ExA Action Point 5.
10	Update ES documents (clean and tracked changes) as necessary in respect of definition of km ² and other incorrect SI referencing.	Applicant	Deadline 1	As requested by the ExA, documents with errors have been updated as part of the Deadline 1 submissions. These have been made in line with the Applicant's Errata Sheet (PD1-012) provided at Procedural Deadline A. All documents with incorrect use of m ² /km ² /m ³ have been updated with Clean and

ExA Action Point No.	Action	Action By	Response Due By	Applicant's Response
				<p>Track Changed versions provided. Updated documents have been listed in a revised Guide to the Application (which is also submitted at this deadline).</p> <p>As requested by the ExA, all future Clean and Track Change versions will be Rev 2 (as opposed to Rev 2 for an updated Clean version and Rev 1 for a new Track Change version).</p>
11	Submit a copy of Dogger Bank amended Order together with commentary to assist in demonstrating compliance with the definition of a Nationally Significant Infrastructure Project under sections 14 and 15 of the PA2008.	Applicant	Deadline 1	<p>Appendix D: Dogger Bank Amended Order (Document Reference: 9.28.4) includes:</p> <ol style="list-style-type: none"> 1. The decision letter issued by the Department for Business, Energy and Industrial Strategy on 11 August 2020 in respect of an application for a non-material change to the Dogger Bank Teesside A and B Offshore Wind Farm Order 2015; 2. The Dogger Bank Teesside A and B Offshore Wind Farm (Amendment) Order 2020; and 3. The Dogger Bank Teesside A and B Offshore Wind Farm Order 2015 (as amended by the 2020 Order). <p>This amendment removed the capacity cap that had been specified in the definition of the Project A offshore works (Work No 1A) and replaced it with “more than 100 megawatts”, thus ensuring that the project would comply with the definition of a</p>

ExA Action Point No.	Action	Action By	Response Due By	Applicant's Response
				Nationally Significant Infrastructure Project under sections 14 and 15 of PA2008.
12	Submit updated documents as necessary to reflect that the Port Access and Transport Plan will be submitted to the relevant highway authority rather than if requested.	Applicant	Deadline 1	<p>The following documents have been updated in relation to the requirement for Port Access and Transport Plan to align with the Draft Development Consent Order (which will be re-submitted at Deadline 2):</p> <ul style="list-style-type: none"> ▪ Planning, Development Consent and Need Statement_Rev 02 Clean (Document Reference: 4.8) ▪ Planning, Development Consent and Need Statement_Rev 02 Tracked (Document Reference: 4.8.1)

Table 2.2 Actions recorded by the Applicant

Applicant's Action Point No.	Action	Action By	Response Due By	Applicant's Response
1	Updates to the dDCO	The Applicant	Deadline 2	<p>The following changes will be made to the dDCO at Deadline 2:</p> <ul style="list-style-type: none"> ▪ Securing that the final turbine chosen will be consistent throughout the site (i.e. no mix of options selected for the final design) ▪ Amendment of Article 14 in relation to appeals wording ▪ Highest point of ancillary structures will be 70m ▪ Remove use of "and/or" ▪ Amended aviation requirements (nos. 5, 6 and 7) clarifying that mitigations must be in place prior to the construction phase of the wind turbine generators ▪ Port Access and Transport Plan (PATP) will be needed where major components are transported over land, with major components comprising the wind turbine generators, including offshore substation platforms, and any foundations associated with either the wind turbine generators or the offshore substation platforms. ▪ Requirement 12 requires amendment approvals by the Secretary of State (SoS) or any other party acting as an approving authority ▪ Include reference to 15m above HAT unless otherwise directed by Trinity House ▪ Add in definition in relation to decommissioning requirement and Energy Act 2004 ▪ Include revised wording (based on wording provided by Natural England) in relation to strategic compensation measures ▪ Updated protective provisions (subject to discussions with the relevant Interested Parties).

Applicant's Action Point No.	Action	Action By	Response Due By	Applicant's Response
2	Provision of examples of other DCO Examinations that have utilised draft Written Questions	The Applicant	Deadline 1	This approach was undertaken for the Immingham Green Energy Terminal project (Planning Inspectorate Scheme Ref: TR030008). As set out in the Rule 6 letter for that project, the ExA provided a draft list of Written Questions prior to the Preliminary Meeting. Following the formal commencement of the Examination, a final set of Written Questions was provided.
3	Declaration of Use of Artificial Intelligence	The Applicant	Deadline 1	The Applicant will undertake positive reporting when Artificial Intelligence is used to draft documents, i.e. no declaration will be provided if Artificial Intelligence is not used. Declaration of use of Artificial Intelligence (Document Reference: 9.19) summarises the use of Artificial Intelligence in the drafting of one application document.
4	Amend ornithology documents to incorporate updated guidance from Statutory Nature Conservation Bodies.	The Applicant	Deadline 1	The Applicant has provided commentary on the updated guidance from Statutory Nature Conservation Bodies (SNCBs) (SNCB, 2024) in the following documents provided at Deadline 1: <ul style="list-style-type: none"> ▪ Offshore Ornithology Technical Note 1 (EIA) (Document Reference: 9.22) ▪ Offshore Ornithology Technical Note 2 (HRA) (Document Reference: 9.23)
5	Provide a Commitments Register	The Applicant	Deadline 1	This has been provided at Deadline 1. See Commitments Register (Document Reference: 9.31). As requested by the ExA at ISH1, this includes information on how the Emergency Response Cooperation Plan will be secured.
6	Provide a note providing clarification on the approach to the	The Applicant	Deadline 1	This has been provided in Section 6 of this document.

Applicant's Action Point No.	Action	Action By	Response Due By	Applicant's Response
	assessment of Unexploded Ordnance			
7	Provide an update on the development of without prejudice compensatory measures	The Applicant	Deadline 1	This has been provided in Update on Without Prejudice Compensation Measures (Document Reference: 9.30).
8	Submit The Crown Estate Information Memorandum	The Applicant	Deadline 1	This is provided in Appendix E: The Crown Estate Round 4 Information Memorandum (Document Reference: 9.28.5).
9	Remove Morgan transmission booster stations from figures within application documents (if being updated anyway due to errata).	The Applicant	TBC	No documents with figures presenting the Morgan transmission booster stations have required updates due to errata. Therefore, this update has not been made.
10	Correct name to Walney Aerodrome in all documents	The Applicant	Deadline 1	The Applicant has made this change to the following documents: <ul style="list-style-type: none"> ▪ Chapter 16 Civil Aviation and Military Radar_Rev 02 Clean (Document Reference: 5.1.16) ▪ Chapter 16 Civil Aviation and Military Radar_Rev 02 Tracked (Document Reference: 5.1.16.1) ▪ Appendix 16.1 Airspace Analysis and Radar Modelling_Rev 02 Clean (Document Reference: 5.2.16.1) ▪ Appendix 16.1 Airspace Analysis and Radar Modelling_Rev 02 Tracked (Document Reference: 5.2.16.1.1) ▪ Consultation Report_Rev 02 Clean (Document Reference: 4.1)

Applicant's Action Point No.	Action	Action By	Response Due By	Applicant's Response
				<ul style="list-style-type: none"> ▪ Consultation Report_Rev 02 Tracked (Document Reference: 4.1.1) ▪ National Policy Statements Accordance Report_Rev 02 Clean (Document Reference: 4.14) ▪ National Policy Statements Accordance Report_Rev 02 Tracked' (Document Reference: 4.14.1) <p>The Applicant will use Walney Aerodrome in all future instances.</p>
11	Update on protective provisions	The Applicant and Spirit Energy	TBC	The Applicant notes that Spirit Energy reserve their position to submit draft protective provisions depending on progress of agreements. The Applicant will continue to engage with Spirit Energy. Section 7 provides a visual representation of the protective provisions as currently drafted within the draft DCO (as well as other Project constraints).
12	Marine Management Organisation (MMO) to confirm the number of decimal points to be used in grid referencing of infrastructure	The Applicant and MMO	TBC	The Applicant will raise this in discussions with the MMO.
13	Produce revised version of Safety Zone Statement (APP-023) (to make clear it that the need for Safety Zones during decommissioning would be applied for)	The Applicant	Deadline 1	<p>This change has been made within:</p> <ul style="list-style-type: none"> ▪ Safety Zone Statement_Rev 02 Clean (Document Reference: 4.5) ▪ Safety Zone Statement 02 _Rev 02 Tracked (Document Reference: 4.5.1)

Applicant's Action Point No.	Action	Action By	Response Due By	Applicant's Response
14	Confirm procedure with MMO in regard to notifying MMO if fraudulent or misleading information is provided	The Applicant	TBC	The Applicant will raise this in a future meeting with the MMO and update the ExA once the procedure is confirmed.
15	Update In Principle Monitoring Plan (IPMP) (APP-148) to make it clearer by directly cross-referencing where committed monitoring measures have been secured.	The Applicant	Deadline 3	The Applicant can confirm this will be updated in the IPMP that will be provided at Deadline 3. A Commitments Register (Document Reference: 9.31) has also been submitted at Deadline 1.

3 Construction scenario programmes

3.1 Introduction

5. This text has been provided to give further explanation to the Examining Authority as to why the Schedule 2 Requirement 1 of Draft Development Consent Order (PD1-002) specifies a seven year period for commencing the authorised project from the date on which the Order comes into force is given.
6. As described within the Explanatory Memorandum (PD1-004), a seven year period for commencement was included in Sheringham Shoal and Dudgeon Extensions Offshore Wind Farm Order 2024 (Requirement 1), Triton Knoll Offshore Wind Farm Order 2013 (Requirement 2), Hornsea Four Offshore Wind Farm Order (Requirement 1) as well as other offshore wind DCOs and is considered appropriate given the scale of the project and the wider supply chain and economic climate.

3.2 Assumptions

7. The development of the realistic expected and delayed scenarios has assumed the following assumptions that are consistent between both scenarios:
 - There is no delay to the consenting process for the Morgan and Morecambe Offshore Wind Farms: Transmission Assets ('the Transmission Assets'), i.e. six months for Examination, three months for the ExA's recommendation report and three months for the SoS' decision.
 - There are no delays to Front End Engineering Design (FEED) or Detailed Design.
 - There are no delays relating to the drafting and issuing of Invitation to Tenders (ITT), and of the start of Contracting and Procurement.
 - Construction works associated with the Transmission Assets begin in Q1 2027.
 - There is no delay to the works required for the Transmission Assets project to meet the Grid Connection date in Q2 2029.
 - There is no delay in obtaining any other licences, consents or permits that might be required for the construction of the Project (including the programme for Unexploded Ordnances (UXO) investigation and clearance as explained in **Section 6.3**)

3.3 Realistic expected scenario

8. **Plate 3.1** demonstrates the realistic expected scenario for the delivery of the Project. It includes all of the key workstreams and associated linkages to

achieve implementation of the draft DCO by 2030, including the separate consent and construction of the Transmission Assets project.

9. The consideration that it is not possible to differentiate between the best and realistic expected (most likely) scenario is because the Applicant is seeking to deliver a programme which delivers the Project most effectively and based on its experience is also most likely. This notwithstanding there remain some external factors which are outside the control of the Applicant, which is why it's important to include provision in the draft DCO for the delayed scenario, as outlined below.
10. The following assumptions have been made for the realistic expected scenario:
 - The DCO is approved on time by the Secretary of State and this is not subject to legal challenge by a third party.
 - The Contracts for Difference (CfD) Allocation Round 8 (AR8) in 2026 follows a similar timeline to other recent allocation rounds, which would include:
 - Supply Chain Plan Application Window opens December 2025
 - Application Window March – April 2026 (receipt of all necessary consents and permits is a prerequisite for applicants to submit their CfD application)
 - Notification of Results June – September 2026
 - The Project places reservation agreements for the manufacture of major components, WTGs, inter-array cables, OSP(s) and possible platform link cables to connect OSP(s), following the granting of consent and once detailed design is sufficiently advanced in Q1 2026.
 - A Notice to Proceed (NtP) by the Project governance is given for the manufacture of the major components in Q4 2026 following CfD award.
 - The manufacture of the major components begins in Q1 2027, with all major components completed and delivered within 12 – 16 months.
 - The first construction activities commence towards the end of Q1 2028 with the installation of the foundations for the WTGs and OSPs.

3.4 Delayed scenario

11. **Plate 3.2** presents the delayed scenario for the delivery of the Project to justify the proposed 7-year implementation period in the draft DCO. It is important that the draft DCO includes provision for such a scenario given the potential for delay to the Programme due to various external factors outside the control of the Applicant. It is not possible to predict accurately whether, when and/or how each of these external factors will combine to result in a specific scenario,

however the Applicant has made some assumptions which it considers represent a delayed scenario:

- There is a delay to the granting of consent for the Project; while the Applicant does not foresee there being any major delays it is the case that even a relatively short delay in the granting of consent, of two to three months, could result in the Project not being eligible for CfD AR8.
- The draft DCO includes the provision of a one year extension to the time limit in the event that proceedings are begun to challenge the validity of the DCO. However, the Applicant considers that in the event that permission for a legal challenge is granted that this process can take longer than 12 months, especially if the challenge progresses to the Supreme Court. For example, the judicial review of the Norfolk Vanguard project resulted in a more than 12 months delay to the reapproval of the DCO (noting that Vanguard was also subject to delays by the Secretary of State in reaching a decision of an additional 7 months).
- The timings for CfD AR8 could be changed, which, when combined with a delay to the granting of consent, could result in the Project not being eligible to bid into CfD AR8. While the one month application windows for both AR5 and AR6 opened in March 2023 and March 2024 respectively, the one month application window for AR4 opened in December 2021¹, and the government might look to change the dates for future application windows including CfD AR8 by for example bringing the application window forward to Q4 2025. Additionally, the government might postpone future application windows so that they open and close later in the calendar year.
- If the Project was not eligible for CfD AR8 the next allocation round would be AR9, with notification of results currently expected in Q3/Q4 2027. While the Applicant is confident that the Project would be successful in securing a CfD in AR9 it is also an important consideration that historically the level of competitiveness has increased with each subsequent allocation round.
- In order to mitigate for the increased competition in later CfD allocation rounds the Applicant might need to undertake additional pre-construction site investigations and surveys, and to undertake more detailed design. This could further delay the Applicant from submitting an application for a CfD until AR10.
- NtP is delayed to Q4 2027, if the Applicant is successful in AR9, or Q4 2028 if the Applicant is delayed in securing a CfD until AR10.
- Issues in the global supply chain around the manufacture and supply of major components, WTGs, inter-array cables, OSP(s) and possible

¹ <https://www.gov.uk/government/collections/contracts-for-difference>

platform link cables, are well documented². For some major components the supply is only forecast to catch up with the demand after 2030, therefore any delays to the issuing the NtP beyond 2026 is likely to trigger additional delays as the Project competes for manufacturing slots with an increasing number of other projects globally. This could extend the time for the manufacture and delivery of the major components from 12 – 16 month to as long as 18 – 24 months. In order to mitigate these impacts the Project is already engaging with the supply chain for all major components, including the issuing of ITT for major work packages, with initial reservation agreements to secure manufacturing and production slots to be placed in Q1 2026. However, the NtP can only come once project financing is finalised and secured, which in turn will not be completed until after the award of a CfD.

- The first construction activity will be the installation of the foundations for the WTGs and OSP(s), which require the use of specialist installation vessels. As with the major components, the global supply chain for these vessels is constrained, with particular shortages for vessels capable of installing the larger foundations and turbines that will be used by the Project.
12. The above considerations and assumptions have been used to produce the delay scenario as shown in **Plate 3.2**. However there remains the possibility that several of the factors outlined above could combine in unexpected ways, with the result that the start of construction of the Project is delayed such that the full 7-year implementation period is required.

²https://www.gov.uk/government/publications/uk-renewables-deployment-supply-chain-readiness?utm_medium=email&utm_campaign=govuk-notifications-topic&utm_source=2d811d1a-b54b-410c-888c-55673e357bc6&utm_content=immediately

Plate 3.1 Realistic expected scenario

	2024				2025				2026				2027				2028				2029				2030				2031				2032			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Key Project Milestones																																				
Grid Connection																																				
CfD																																				
The Project Consent Process	█				█				█																											
Transmission Assets Consent Process	█				█				█																											
Engineering																																				
FEED	█				█																															
Detailed Design																																				
Supply Chain																																				
ITT, Contracting and Procurement																																				
Reservation Agreements																																				
Notice to Proceed																																				
Construction Activities																																				
WTG and OSP Foundations																																				
OSP																																				
Inter-array cables																																				
WTG																																				
Transmission Assets																																				
Transmission Assets Construction Activities																																				
*Consent Process refers to the Pre-application, Acceptance, Pre-examination, Examination, Recommendation and Decision and Post Decision stages.																																				

Plate 3.2 Delayed scenario

	2024				2025				2026				2027				2028				2029				2030				2031				2032			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Key Project Milestones																																				
Grid Connection																																				
CfD																																				
The Project Consent Process*	█				█				█																											
Transmission Consent Process	█				█				█																											
Engineering																																				
FEED	█				█																															
Detailed Design					█				█																											
Supply Chain																																				
ITT, Contracting and Procurement					█				█																											
Reservation Agreements									█																											
Notice to Proceed													█																							
Construction Activities																																				
WTG and OSP Foundations																	█				█				█				█				█			
OSP																	█				█				█				█				█			
Inter-array cables																	█				█				█				█				█			
WTG																													█				█			
Transmission Assets																																				
Transmission Assets Construction Activities													█				█				█															
*Consent Process refers to the Pre-application, Acceptance, Pre-examination, Examination, Recommendation and Decision and Post Decision stages. For the delayed scenario, it also includes potential Judicial Review delay.																																				

4 Evidence to support operation and maintenance duration of 35 years

4.1 Introduction

13. This text has been provided to give further explanation to the Examining Authority on the design life of the Project. As described within Chapter 5 Project Description (APP-042) of the ES, it is assumed that the operation and maintenance duration is 35 years from the date of commercial export of electricity generated by the Project. Within the draft DCO, the replacement of a foundation is not part of the authorised development. It is considered that due to engineering constraints the design life of the Project would not exceed 35 years without the need for the replacement of foundations. Evidence to support this position is provided below.

4.2 Evidence

14. The maximum design life of an offshore wind farm is typically 35 years as the primary limitation is the fatigue to the major components, WTGs, substructures (foundations) inter-array cables, OSP(s), that accumulates during wind farm operations. This fatigue drives the design of WTGs and their substructures, making longer design lives economically unfeasible. Extending the lifespan would require significantly more robust structures, resulting in higher manufacturing costs, increased weight (which complicates transport and installation), and wall thicknesses that current technology may not support.
15. During the concept design stage, the Applicant found that even achieving a 35-year operational life was challenging. The required monopile wall thickness for a foundation with a fatigue life beyond 35 years was in excess of what can be currently manufactured. Furthermore, the total foundation weight required for a design life beyond 35 years would exceed the capacity of ancillary lifting equipment of available installation vessels (for example, pile grippers), making an operational lifetime beyond 35 years impractical.
16. Additionally, WTGs with operational lifetimes exceeding 35 years face limitations in component reliability and failure probability. Developing large turbines, particularly those with capacities above 15 MW, for longer lifespans is also economically unviable due to the strength requirements for their components.

4.3 Examples of other projects with a 35 year design life

17. **Table 4.1** provides a number of examples of other recent windfarm projects with a design life of 35 years or less.

Table 4.1 Design life for other windfarm projects

Offshore windfarm	Current development phase	Design life	Source
Dogger Bank Creyke Beck	Consented (2015)	35 years	https://doggerbank.com/our-history/#:~:text=SSE%20Renewables%20is%20leading%20on,life%20of%20around%2035%20years.&text=RWE%20is%20progressing%20the%20Teesside,renamed%20Sofia%20Offshore%20Wind%20Farm.
Dogger Bank Teesside A	Consented (2015)	35 years	
Sofia Offshore Wind Farm (formerly Dogger Bank Teesside B)	Consented (2015)	35 years	
Hornsea Project Four Offshore Wind Farm	Consented (2023)	35 years	https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010098/EN010098-000696-A1%20ES%20Volume%20A1%20Non%20Technical%20Summary.pdf
Norfolk Boreas Wind Farm	Consented (2021)	35 years	https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010087/EN010087-000391-6.1.5%20Environmental%20Statement%20Chapter%205%20Project%20Description.pdf
Norfolk Vanguard Wind Farm	Consented (2022)	30 years	https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010079/EN010079-001493-Chapter%2005%20Project%20Description%20Norfolk%20Vanguard%20ES.pdf
Outer Dowsing Offshore Wind	During Examination	35 years	https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010130/EN010130-000352-6.1.3%20Chapter%203%20Project%20Description.pdf
Morgan Offshore Wind Project	During Examination	35 years	https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010136/EN010136-000159-F2.12_Morgan_Gen_ES_Climate%20change.pdf
Mona Offshore Wind Project	During Examination	35 years	https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010137/EN010137-000494-

Offshore windfarm	Current development phase	Design life	Source
			F1.1_Mona_ES_Introduction and Overarching Glossary.pdf
North Falls Offshore Windfarm	Pre-Examination	30 years	https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010119/EN010119-000455-3.1.7_ES%20Chapter%205%20Project%20Description.pdf
Dogger Bank South Offshore Wind Farms	Pre-Examination	30 years	https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010125/EN010125-000460-7.5%20ES%20Chapter%205%20Project%20Description.pdf
Morgan and Morecambe Offshore Wind Farms: Transmission Assets	Pre-Examination	35 years	https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN020032/EN020032-000424-F1.3_MMTA_ES_Project%20description.pdf

5 Heights, distances, orientation and decommissioning date of existing and consented wind farms in the Irish Sea

18. **Table 5.1** lists the offshore windfarm projects within 50km of the Project and includes the heights, distances, orientation and expected decommissioning date of existing and consented wind farms. The locations of offshore windfarms within 50km are also shown in **Figure 5.1**.

Table 5.1 Offshore windfarm projects within 50km of the Project

Offshore windfarm	Current development phase	Developer/owner	Distance from the Project (km)	Hub/Nacelle Height (m)	Maximum Blade Tip Height (m)	Orientation from MOWF	Expected Decommissioning Date ³
Morgan and Morecambe Offshore Wind Farms Transmission Assets	DCO Pre-Examination	Morgan Offshore Wind Limited (a joint venture between Energie Baden-Württemberg AG (EnBW) and bp Plc (bp), and Morecambe Offshore Windfarm Ltd (a joint venture between Zero-E Offshore Wind S.L.U. (Spain) (a Cobra group company), and Flotation Energy Ltd).	0	n/a	n/a	n/a	n/a
Mona Offshore Wind Project ⁴	DCO Examination	Mona Offshore Wind Ltd (a joint venture between EnBW and bp)	10.56 ⁵	204	364	WSW	2066
West of Duddon Sands	Active/In Operation	Ørsted and Scottish Power Renewables	12.9	90	150	N	2042

³ Based on data on operational lifetime taken from the RenewablesUK Energy Pulse database.

⁴ Heights provided are based on latest ES parameters. It is noted that the SLVIA chapter for the Project (APP-055) is based on the heights presented at PEIR stage. The difference between these values have been considered in the Report on Interrelationships with Other Infrastructure Projects (Document Reference 9.20).

⁵ The distance has increased from 10km to 10.56km due to a DCO Limits boundary change between PEIR and ES for Mona Offshore Wind Project

Offshore windfarm	Current development phase	Developer/owner	Distance from the Project (km)	Hub/Nacelle Height (m)	Maximum Blade Tip Height (m)	Orientation from MOWF	Expected Decommissioning Date ³
Morgan Offshore Wind Project Generation Assets ⁶	DCO Examination	Morgan Offshore Wind Limited (a joint venture between EnBW and bp)	16.7	204	364	NW	2066
Walney Extension 4	Active/In Operation	Ørsted A/S and partners PKA and PFA	18.8	111	188	NNW	2046
Walney 1	Active/In Operation	Ørsted A/S, Scottish and Southern Electricity Networks (SSE) and OPW	20.3	83.5	137	N	2033 ⁷
Barrow	Active/In Operation	Ørsted A/S	21.0	75	120	NE	By 2030
Walney 2	Active/In Operation	Ørsted A/S, SSE and OPW	22.7	90	150	N	2034 ³
Ormonde	Active/In Operation	Vattenfall and AMF	27.0	90	153	NNE	2040
Gwynt y Môr ⁸	Active/In Operation	Rheinisch-Westfälisches Elektrizitätswerk	28.9	79.5	133	S	2043

⁶ Heights provided are based on latest ES parameters. It is noted that the SLVIA chapter for the Project (APP-055) is based on the heights presented at PEIR stage. The difference between these values have been considered in the Report on Interrelationships with Other Infrastructure Projects (Document Reference: 9.20).

⁷ Walney Offshore Windfarm (Walney 1 & 2) Decommissioning Programme submitted in August 2009 states the windfarm will be decommissioned after 22 years

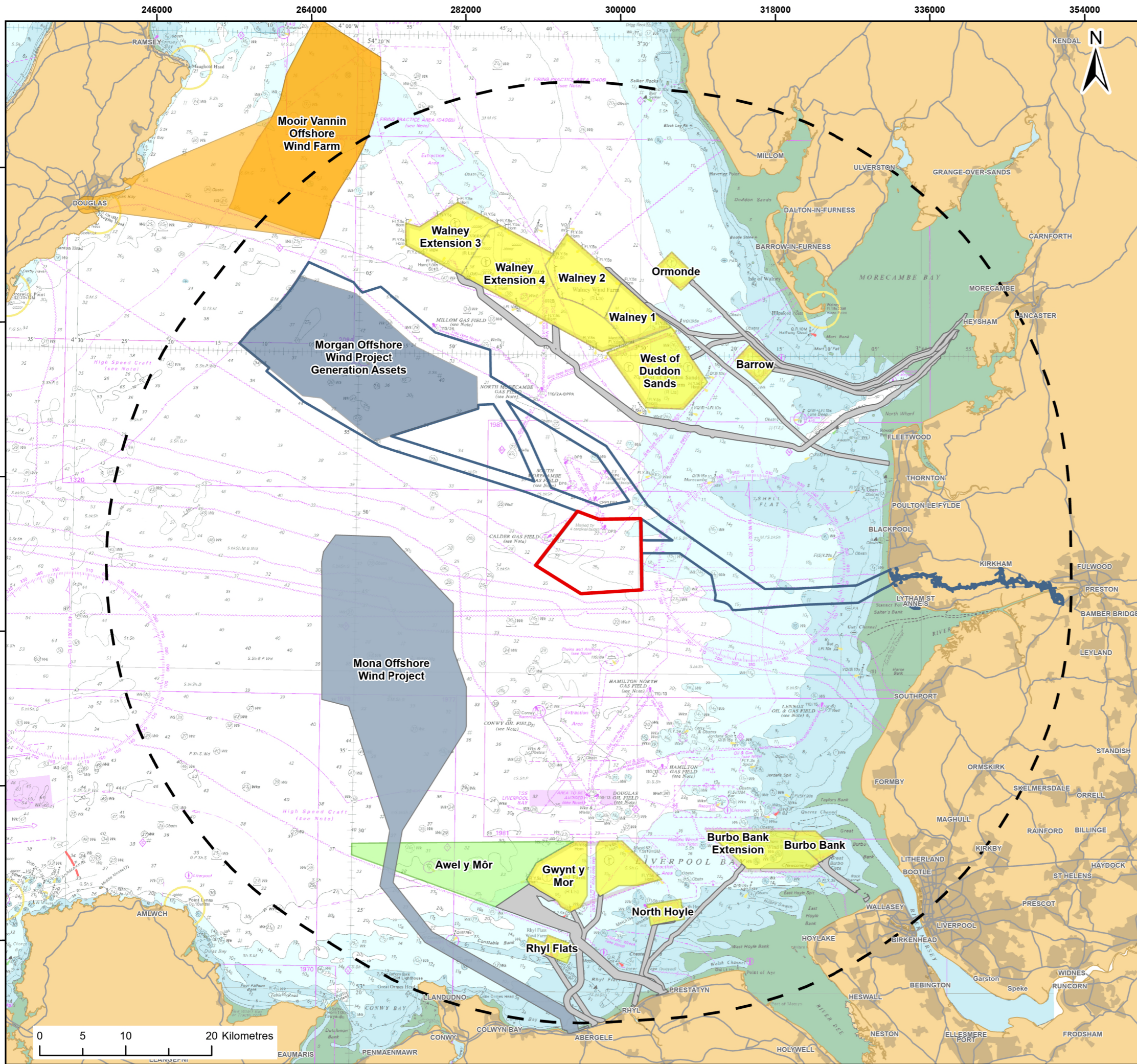
⁸ Heights provided are those used with the SLVIA assessment which align with values used within the Awel Y Môr ES. Other sources indicate a 84.4m hub/nacelle height and 137.9m maximum blade tip (<https://tethys.pnnl.gov/wind-project-sites/gwynt-y-mor>); or a 150m maximum blade tip (<https://uk.rwe.com/locations/gwynt-y-mor-offshore-wind-farm/>). The variation between these values do not result in perceptible differences to what is shown in the SLVIA visualisations or to the impacts assessed in the ES.

Offshore windfarm	Current development phase	Developer/owner	Distance from the Project (km)	Hub/Nacelle Height (m)	Maximum Blade Tip Height (m)	Orientation from MOWF	Expected Decommissioning Date ³
		Aktiengesellschaft (RWE), Npower and partners					
Awel y Môr	Consented	RWE, Stadtwerke München, and Siemens Financial Services	28.9	179	332	SSW	2055 ⁹
Burbo Bank Extension	Active/In Operation	Ørsted A/S and partners PKA and KIRKBI A/S	29.1	105	187	SSE	2045
Walney Extension 3	Active/In Operation	Ørsted A/S and partners PKA and PFA	30.7	113	195	NNW	2046
Burbo Bank ¹⁰	Active/In Operation	Ørsted A/S	33.4	83.5	187	SSE	2032
North Hoyle	Active/In Operation	RWE Renewables	36.3	67	107	S	2029
Moor Vannin ¹¹	Early planning	Ørsted A/S	43.7	Unknown	389	NW	2068
Rhyl Flats	Active/In Operation	West Coast Energy and RWE	40.0	80	133.5	S	2039

⁹ Volume 2, Chapter 1: Offshore Project Description of the Environmental Statement states start of operation 2030 with an operational lifetime of 25 years

¹⁰ Heights provided are those used with the SLVIA assessment which align with values used within the Awel Y Môr ES. Other sources indicate a 137m maximum blade tip (variation of consent under Section 36c in 2005); or a 137.4m maximum blade tip (variation of consent under Section 36c in 2024) (Construction and operation of a generating station at Burbo Bank, Liverpool Bay: variation of consent under section 36C of the Electricity Act 1989). The variation between these values do not result in perceptible differences to what is shown in the SLVIA visualisations or to the impacts assessed in the ES.

¹¹ Moor Vannin Preliminary Environmental Material Project Description: mvw01-project-descriptionpei-materials-08782828a-1.pdf. It should be noted that the Moor Vannin Wind Farm was not modelled as part of the SLVIA as the array layout was not available at the time of assessment.



Legend:

- Morecambe Offshore Windfarm Site
- Morgan and Morecambe Offshore Wind Farms: Transmission Assets (In Planning)
- Morecambe Offshore Windfarm Site 50km buffer
- Offshore Wind Cable Agreements

Windfarm status

- Fully commissioned
- Consented
- In Planning
- Concept / Early planning

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Report:
Morecambe Offshore Windfarm: Generation Assets

Title:
Offshore windfarm projects within 50km of the Project windfarm site

Figure: 5.1 Drawing No: PC1165-RHD-EX-OF-DG-Z-0174

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
P01	20/11/2024	SM	AS	A3	1:450,000

Co-ordinate system: WGS 1984 UTM Zone 30N



6 Unexploded Ordnance Technical Note

6.1 Purpose of this note

19. This text has been provided to give further explanation on the Project assessment approach for the clearance of UXOs from within the Project Order Limits. As described within Volume 4 Other Consents and Licences Required (AS-006), identification/investigation and clearance of UXOs (if required) will require separate Marine Licences post-consent. These licensable activities are not included within the Draft Development Consent Order or Deemed Marine Licence.
20. The Applicant is confident that its approach to UXO licensing follows precedent and relevant guidance from the MMO and SNCBs. Any risk in consenting these activities is minimised by first carrying out investigative surveys under a separate licence to identify if any UXO are present within the windfarm site, and then to determine the mitigation strategy including whether the targets can be avoided, removed or if they require clearance. If necessary, following the investigation campaign, a second MLA can be submitted with confirmed UXO (cUXO) numbers and locations together with details of the surrounding seabed environment and the mitigation measures. Similar post-consent MLA for UXO clearance have been approved by the MMO and Marine Scotland recently, as described in **Section 6.7.3**.

6.2 Guidance

21. The Applicant's approach to UXO licensing has been informed by the joint regulator and SNCB guidance 'Marine environment: unexploded ordnance clearance joint interim position statement' (MMO *et al.*, 2022). The guidance requires a detailed impact assessment and mitigation plan, together with a robust environmental monitoring plan supported by underwater sound monitoring, to be submitted with the MLA for UXO clearance.
22. In line with this, while a separate MLA for UXO clearance will be made, the Applicant has included an initial assessment of UXO clearance within the Environmental Statement (ES) to ensure that a holistic assessment of the Project is presented. The potential for low order clearance has been assessed, together with a worst case of high order clearance based on the precautionary principle. The Joint Interim Position Statement recognises that '*high order detonation may be needed in some limited instances as a contingency, where low noise alternatives are not feasible, or where pre-planning is not a viable option*' (MMO *et al.*, 2022). Given that the feasibility of low order clearance of UXO will be determined by future surveys, high order clearance has been assessed as a worst case. Assessments will be updated in the MLA for UXO clearance to be submitted post-consent if a clearance licence is needed.

23. Mitigation measures identified at this stage are informed by the JNCC report 'JNCC guidelines for minimising the risk of disturbance and injury to marine mammals whilst using explosives' (JNCC, 2021). The Applicant has produced an Outline Marine Mammal Mitigation Protocol (MMMP) (APP-149) which accords with the latest JNCC guidance. This will be updated and submitted as a separate document for to support the MLA for UXO clearance, based on known explosive quantities of the cUXO.
24. A European Protected Species (EPS) licence will also be needed for any potential UXO clearance activities which may have an impact on protected marine mammals. The Applicant has been advised that the regulations on EPS licensing are due to be updated before the end of 2024 (pers. comm. MMO, 2024). The Applicant considers that a UXO licensing strategy which separates these consents from the DCO would be able to better account for upcoming changes in marine licensing in future applications for investigation and clearance licences, provide an opportunity to apply the latest UXO clearance mitigation available at the time of application and to align with the latest available information to assess potential impacts.

6.3 Programme

25. Site investigation works have been completed by a survey contractor in the Project area over summer 2024. Borehole sampling at 88 locations within the Project boundary was preceded by UXO investigation of 30 x 30 metre seabed areas at each sample point using magnetometer, multi-beam echo sounder (MBES) and side-scan sonar (SSS) surveys prior to the deployment of coring machinery. No UXO were found at any of these locations. Further non-intrusive pre-construction surveys will be required as the windfarm design develops.
26. The detailed design work for the Project is programmed to be undertaken from Q3 2025 to Q2 2026, this is the same for both the realistic expected case scenario, and the delayed scenario as outlined above in **Section 3** and shown in **Plate 3.1** and **Plate 3.2**. The information needed to inform the UXO investigation survey will necessarily follow the detailed design work that determines the WTG and OSP(s) locations and inter-array cable routes; therefore, the MLA for UXO investigation survey will be submitted in Q4 2025 with the works undertaken in early 2026 once sufficient design work is completed.
27. Following the investigation survey if cUXO are found which require clearance, a MLA for UXO clearance will be submitted in late 2026 using results from the investigation campaign to inform the application. A subsequent UXO clearance campaign would be scheduled for 2027 prior to the start of construction works later that year, with scope for additional UXO clearance works in 2028 if necessary.

6.4 UXO Investigation Survey and Clearance Protocol

28. The detailed methodologies for the UXO investigation survey and clearance will be set out in the MLA to be submitted post-consent. This section outlines the protocol that will be undertaken for the UXO works post-consent; in preparing this protocol the Applicant has considered industry best practice and guidance, and of the approach undertaken by a number of recent OWF projects (as detailed in **Section 6.7**).
29. Following detailed design, the locations for the WTG, OSP(s) and inter-array cable routes will be surveyed using magnetometer, MBES and SSS to identify any potential UXO (pUXO) targets. An assessment of the pUXO targets will be undertaken by munitions experts, and if required further investigation undertaken by remote-operated vessels (ROV) to excavate around the location of any pUXO in order to determine of whether or not they are cUXO.
30. Any cUXO will be photographed and assessed for charge weight and condition by munitions experts, who will determine the appropriate UXO mitigation strategy for each cUXO. Where possible cUXO will be avoided through micro-sitting, or where it is safe they will be moved from their location and deposited at another location within the site away from any construction activities.
31. Where clearance is required the munitions experts will determine the appropriate method of clearance for each cUXO; with low order clearance prioritised if the cUXO cannot be avoided or moved. Once the UXO mitigation strategy has been finalised, the Applicant will be in a position to submit a MLA for UXO clearance which will include the exact numbers and type of cUXO and the recommended clearance methods.
32. The submission of separate MLAs for UXO investigation and clearance campaigns has precedent in a number of recent OWF projects (as detailed in **Section 6.7**). This strategy, of waiting for detailed design to undertake the UXO investigation survey, and submitting a separate MLA for UXO clearance ensures that the most up to date information is used to inform both of the UXO investigation surveys and clearance works. Another advantage of this approach is that it allows for target investigations to undertake full surveys of potential hazards or items of archaeological interest prior to applying for a clearance licence.

6.5 Approach to Detailed Impact Assessment

33. The approach to assessment of UXO clearance in the ES was to evaluate underwater noise impacts on marine mammals, fish and shellfish and impacts on the benthic environment and water column based on a desk study of potential UXO in the local area. Further information was provided in the Applicant's Response to the Rule 9 Letter for Morecambe Offshore Windfarm

Generation Assets (Response to ID R9-16 (NE Ref. E11 and F9), Doc Ref PD1-010). This was to ensure that all potential impacts of the whole project had been taken into account in the worst-case assessments. The Applicant has therefore assessed UXO clearance impacts, which may as a worst-case be necessary, within the ES as required under the EIA Regulations.

34. As outlined in **Section 6.2**, the current guidance on UXO clearance in the marine environment requires that a detailed impact assessment is included as part of the MLA for UXO clearance. It is the Applicants position that a 'detailed' assessment of the impacts from UXO clearance can only be provided once the detailed design has been progressed, and following the UXO investigation surveys.
35. Information on seabed characteristics will be gathered in detailed pre-construction surveys of the proposed infrastructure locations and through the UXO investigation surveys. This will be used to inform both the UXO mitigation strategy for the cUXO, and also to provide the baseline for the detailed impact assessment.
36. The MLA for UXO clearance, informed by the investigation survey, will include the recommended clearance method for each individual cUXO, following the mitigation hierarchy of avoidance where possible, and low noise alternatives prioritised over high order detonations where avoidance is not possible.
37. Information on target locations and type, seabed characteristics, recommended clearance and mitigation measures, and underwater noise monitoring procedures would be submitted as part of the detailed impact assessment and mitigation plan required for the MLA for UXO clearance.
38. The detailed impact assessment within the MLA for UXO clearance can then be informed by exact numbers and type of cUXO, recommended clearance methods and seabed composition around and beneath the target. This allows for a detailed mitigation plan to be developed based on a realistic clearance campaign.

6.6 Existing Mitigation

39. As outlined in **Section 6.2**, the current guidance on UXO clearance in the marine environment requires that a mitigation plan is included as part of the MLA. The Applicant considers that this is best developed post-consent following the UXO investigation survey which allows for a detailed mitigation plan to be developed based on a realistic clearance campaign. However, there are measures that have already been included within the application that are of relevance to the mitigation of effects from UXO clearance which can be used or further developed as part of the UXO clearance mitigation plan.

40. The Outline MMMP (APP-149) submitted with the application provides indicative details of marine mammal mitigation measures for UXO clearance activities. These include prioritising low order clearance techniques, the use of bubble curtains for high order clearances, marine mammal watches and the use of acoustic deterrent devices. UXO clearance and mitigation methods are rapidly evolving, with new techniques and measures approved in fast succession. Submitting an new specific MMMP with a marine licence application (MLA) for UXO clearance post-consent allows for the latest and least impactful methods and the most effective mitigation measures available at the time to be applied.
41. Potential archaeological finds will be mitigated via a specific Method Statement for the UXO investigation and any clearance works required, which will be agreed in advance by Historic England as set out in the Outline Offshore Written Scheme of Investigations (APP-154).
42. As required under the current guidance the mitigation plan will also include a robust environmental monitoring plan focused primarily on underwater noise, although including other parameters such as seabed impacts where required. Therefore, the monitoring plan is also best provided alongside the detailed impact assessment and mitigation plan following detailed design.

6.7 Examples from other projects

6.7.1 East Anglia Three Offshore Windfarm

43. The East Anglia Three Offshore Windfarm took a similar approach to UXO licensing and was consented on 7 August 2017. The project has since received a marine licence for UXO investigations and UXO clearance. The process for obtaining an investigations licence took approximately nine months¹² and obtaining a clearance licence took approximately six months,¹³ however these processes did overlap, and therefore the total process for consent was thirteen months.
44. The East Anglia Three Offshore Windfarm was requested by the MMO to submit separate licences for investigation and clearance. In the instance that investigation works are required, and are licensable activities which would require a marine licence application, the MMO will be consulted regarding the preferred approach for the Project.

¹²https://marinelicensing.marinemanagement.org.uk/mmofox5/fox/live/?thread_id=86euuabb0f4e76onc8rnbik4jnt0acs3vvh04t08uk1g87nlcmmfki3ks36mlrl5a3fepmjclec5h7ij53kndk6paqtbne2glub5&resume=1

¹³https://marinelicensing.marinemanagement.org.uk/mmofox5/fox/live/?thread_id=cahe6kh7kf0h6sic8c7pj1516jja89i6ivq3ba561ppm86sbiruvovf8tjpejaugpd9lgpi204dkarob3odbgj5fnb0Intbublq&resume=1

45. The East Anglia Three UXO clearance works began on 8 July 2024, and as of the time of writing have not yet been completed. However, the clearance campaign was expecting a long duration due to the required co-ordination within the Southern North Sea SAC and timing restrictions placed on the marine licence.

6.7.2 Dogger Bank B

46. Dogger Bank B Offshore Windfarm also applied for separate UXO investigation and clearance licences. The DCO for the project was consented in 2015 and Dogger Bank B secured Financial Investment Decision in 2020. Following that, the project was granted marine licences for UXO investigation works in 2021 and 2022. The clearance campaign ensured that archaeological documents and the MMMP were adhered to throughout the works. These are standard mitigation measures for UXO clearance activities and are similar to those detailed for the Project in **Section 6.6**.
47. Dogger Bank B's clearance campaign began on 12 February 2023 and concluded on 6 March 2023, lasting a total of 22 days.

6.7.3 Moray West Offshore Wind Farm

48. The construction of Moray West Offshore Wind Farm was consented by Marine Scotland on 14 June 2019. UXO clearance for the project required a separate marine licence. Initial investigations estimated that a maximum of 30 UXOs would require disposal, with an estimated Net Explosive Quantity (NEQ) ranging from 6 kg to 364 kg. However, UXO geophysical surveys subsequently resulted in the identification of 230 confirmed UXOs, and the UXO identification works identified an additional 51 UXOs, increasing the overall number of UXO targets requiring disposal up to 81, with a NEQ ranging from 6 kg to 94 kg. Given these new findings, a new marine licence was required, for the same licenced activity, requiring a new determination process, including an additional consultation period. Additionally, A 700 kg (NEQ) German Luftmine B was identified from an ROV video while boulders were being relocated during seabed preparation within the export cable corridor. Moray West subsequently prepared and submitted a new marine licence application for the clearance of this single UXO using low-order deflagration. Therefore, a total of four marine licences were granted by Marine Scotland.
49. The Moray West Offshore Wind Farm provides strong evidence for the efficacy and reliability of low order techniques. The Moray West Offshore Wind Farm successfully disposed of 82 UXOs using the "low-order deflagration" method. Mines, bombs, torpedoes and naval shells with explosive content varying in size from 6 to 700 kgs were successfully neutralized.

50. The Moray West Offshore Wind Farm benefited from licensing UXO clearances separately to the construction of the wind farm. This is because they were able to apply for new marine licences, as required, rather than needing to vary their existing licence repeatedly.
51. The Moray West Offshore Wind Farm was licensed by Marine Scotland, which varies from the DCO process in England, and for Morecambe Offshore Windfarm Generation Assets any potential marine licences would be regulated by the MMO. The Moray West UXO campaigns demonstrated that, even when considerably more UXO than anticipated were discovered, the developer was still able to obtain marine licenses for the clearance works which were carried out using low order techniques and completed prior to the start of construction.
52. The Moray West investigation campaign took place between February and April 2023. The clearance campaign commenced on 16 April 2023 and concluded on 2 September 2023, lasting a total of 139 days (Ocean Winds, 2024).

6.8 Baseline environment

53. The UXO consultants have identified that there is a high risk of finding UXO within the part of the Project area due to the previous use as a British military training area designated as “N130 Inskip Outer”. This area was associated with Royal Naval Air Station (RNAS) Inskip, which was originally established in 1943 as HMS Nightjar and situated 43 km to the east. An analysis of Admiralty records indicated that N130 Inskip Outer was used for anti-submarine bombing exercises, including the deployment of aerially delivered depth charges. Furthermore, airfield site plans associated with RNAS Inskip noted that “torpedo workshops” were present at the RNAS and therefore, it is also plausible that aerial torpedoes may have been fired within the N130 Inskip Outer Practice and Exercise Area during training exercises.
54. This presents a high risk to any intrusive works on the site which needs to be managed for seabed survey and infrastructure installation. It should be noted, however, that the Inskip Outer training area extends north of the Project boundary where a number of subsea cables, gas platforms and pipelines have already been successfully installed (ES Chapter 17 Infrastructure and Other Users, Figure 17.3 (APP-054).
55. UXO from WW1 and WW2 are common in the marine environment around the English coast and even when high numbers of cUXO are found, as at Moray West (**Section 6.7.3**), it is possible to clear them over a short space of time. This is evidenced by the examples in **Section 6.7** and by the number of windfarm construction projects which have also needed to conduct UXO clearance campaigns prior to the start of construction. Mitigation measures are now standard and a UXO risk mitigation strategy has been developed by

the Project. This was employed for recent borehole survey work over summer 2024 and will be further developed for all future Project activities interacting with the seabed.

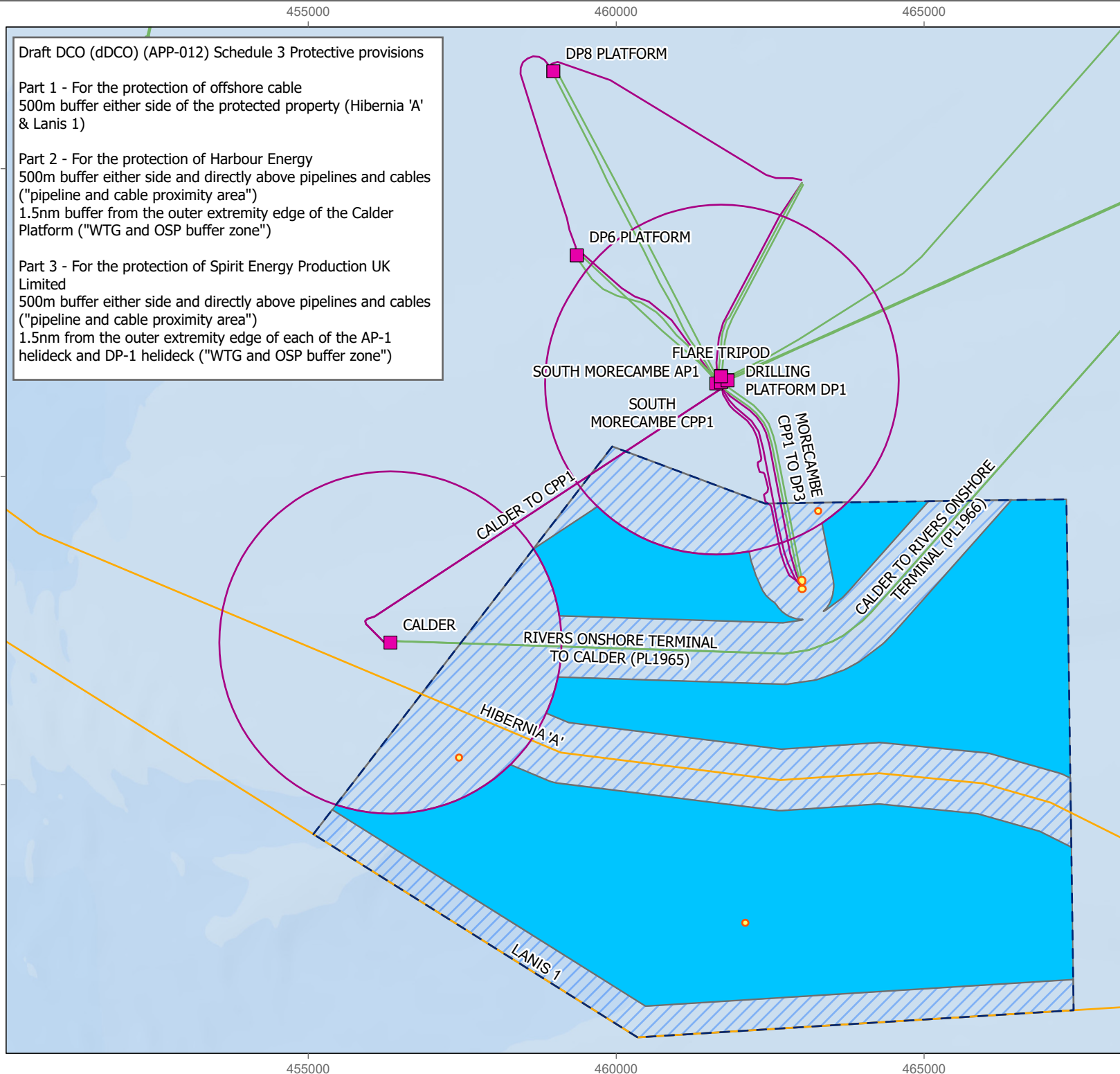
56. Further surveys following detailed design will provide a clear indication of the number of targets to investigate. This will inform marine licence applications post-consent. Standard mitigation measures can be applied to clearance activities (e.g. bubble curtains, marine mammal observers, low order clearance techniques) to reduce impacts on the marine environment to a sufficient level that marine licences for the activities can be obtained.

6.9 Summary

57. Applying for a UXO licence post-consent has been standard practice for offshore wind farm developers for a number of years. Examples have been provided in **Section 6.7** to demonstrate precedent for this approach. This facilitates accurate licence applications based on an established number of targets, rather than a speculative assessment undertaken before detailed geophysical surveys are undertaken. Consideration of the potential impacts of UXO clearance within offshore wind farm DCO applications (in addition to a separate marine licence) in line with the 'whole project assessment' principle of the EIA Regulations has been more recent.
58. The Applicant has included UXO impact assessments within relevant chapters of the ES (Marine Mammals (APP-048), Fish and Shellfish Ecology (APP-047), Benthic Ecology (APP-046)) and has included an Outline MMMP (APP-149) to address worst case potential UXO clearance impacts. Further information in regards to UXO impacts on benthic, physical processes and sediment and water quality receptors was also provided in the Applicants response to the Rule 9 letter (PD1-010). This is in line with the 'whole project assessment' principle of the EIA Regulations.
59. Whilst the Project is in a high risk area for potential UXO, investigation and clearance methodologies for this common marine hazard are well established with mitigation measures improving and developing rapidly. Recent examples have shown that large numbers of UXO can be cleared in a short space of time prior to the start of construction.
60. Separate marine licences for the UXO investigation and clearance campaign if required will follow on from a later detailed design phase of the project which has yet to be completed. Marine licences have been approved for other OWFs in similar circumstances post-consent. The Applicant is confident that UXO clearance could be undertaken for the Project with sufficient applied mitigation for similar activities to also be approved, based on mitigation measures currently available and current government guidance.

7 Project Constraint Areas

61. **Figure 7.1** presents the constraints that apply to the Project (i.e. which prevent the construction of WTGs or above sea infrastructure within certain buffer zones) as secured by the Protective Provisions as currently drafted within the Draft Development Consent Order (Schedule 3) (PD1-002).
62. The Applicant notes that Interested Parties have suggested alternative constraint buffer zones that should apply to the Project in relevant representations, namely:
- Natural England (RR-061) propose a 10km “structures exclusion zone” from the “original” Liverpool Bay Special Protection Area (SPA). This is in respect of perceived AEoI on the red-throated diver feature of this SPA. The Applicant’s position on this conclusion is set out in its Responses to Relevant Representations (PD1-011 at RR-061-064) and in Offshore Ornithology Technical Note 3 (Red-Throated Diver at Liverpool Bay SPA Update Assessment) (Document Reference: 9.24)
 - Spirit Energy (RR-077) propose a 3.3nm “unobstructed airspace requirement” from its assets. The Applicant’s position on this is set out in its Responses to Relevant Representations (PD1-011 at RR-077-50), although it is noted that the parties remain in discussion.
63. **Figure 7.2** presents the impact on the Project if these buffers were to be applied.



LEGEND

- Morecambe Offshore Windfarm site
- Unconstrained area
- Constrained area
- Platform 1.5nm buffer
- Wells
- Platform
- Pipelines & umbilicals
- Power cable
- Telecoms cable

0 4 km
0 2 nm

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PROJECT: MORECAMBE OFFSHORE WINDFARM: GENERATION ASSETS

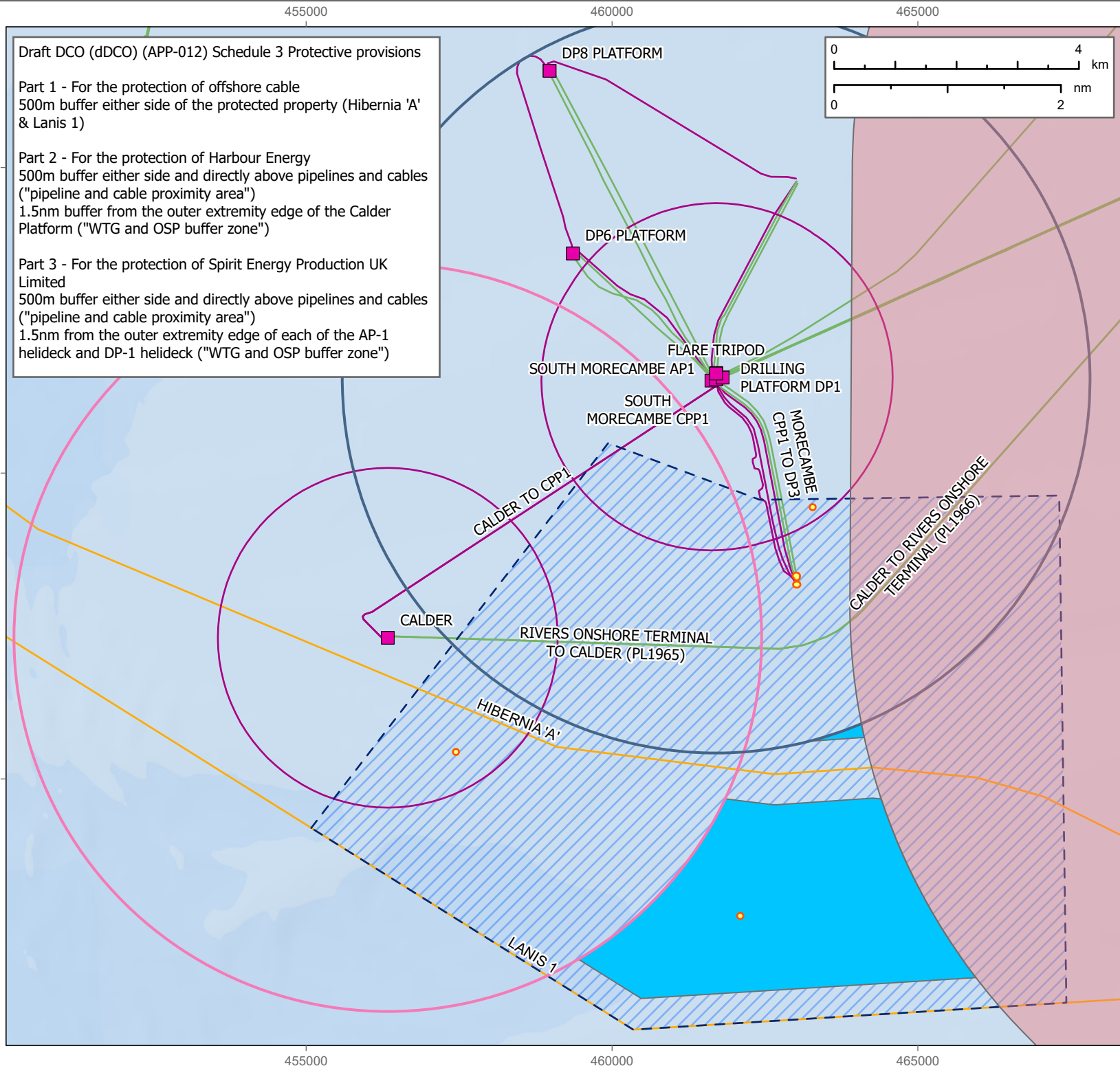
TITLE: Figure 7.1 Draft Development Consent Order: Protective Provisions

REV	DATE	COMMENTS	DRAWN	CHECKED
001	13/11/2024		SK	OG
001	15/11/2024		SWM	OG

ARCgis REF: FLO_MOR_GIS_PRJ001_MORConstraints_Rev001
DRAWING: FLO-MOR-GIS-MAP008-Morecambe Constraints-Rev002

SCALE: 1:85,000	PAGE SIZE: A4	COORDINATE SYSTEM: WGS 1984 UTM Zone 30N
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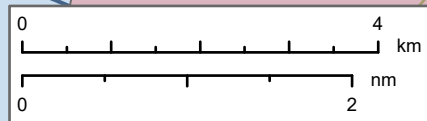


Draft DCO (dDCO) (APP-012) Schedule 3 Protective provisions

Part 1 - For the protection of offshore cable
500m buffer either side of the protected property (Hibernia 'A' & Lanis 1)

Part 2 - For the protection of Harbour Energy
500m buffer either side and directly above pipelines and cables ("pipeline and cable proximity area")
1.5nm buffer from the outer extremity edge of the Calder Platform ("WTG and OSP buffer zone")

Part 3 - For the protection of Spirit Energy Production UK Limited
500m buffer either side and directly above pipelines and cables ("pipeline and cable proximity area")
1.5nm from the outer extremity edge of each of the AP-1 helideck and DP-1 helideck ("WTG and OSP buffer zone")



LEGEND

- Morecambe Offshore Windfarm site
- Unconstrained area with relevant representation buffers
- Constrained area
- Platform 1.5nm buffer
- Calder 3.3nm buffer
- South Morecambe CPP1 3.3nm buffer
- Wells
- Platform
- Power cable
- Pipelines & umbilicals
- Telecoms cable
- Liverpool Bay SPA (original) 10km buffer

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PROJECT: MORECAMBE OFFSHORE WINDFARM: GENERATION ASSETS

TITLE: Figure 7.2 Proposed Buffers from Relevant Representations

REV	DATE	COMMENTS	DRAWN	CHECKED
001	15/11/2024		SWM	OG
002	18/11/2024		SK	OG

ARCgis REF: FLO_MOR_GIS_PRJ001_MORConstraints_Rev001
 DRAWING: FLO-MOR-GIS-MAP009-Morecambe Constraints-Rev002

SCALE: 1:85,000	PAGE SIZE: A4	COORDINATE SYSTEM: WGS 1984 UTM Zone 30N
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8 References

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Ocean Winds (2024). Low order deflagration of unexploded ordnance reduces underwater noise impacts from offshore wind farm construction. Prepared by Nuria Abad Oliva (Ocean Winds), Darren Jameson (Ocean Winds), Robert Lee (Seiche Ltd), Simon Stephenson (Seiche Ltd) and Paul Thompson (University of Aberdeen). In collaboration with EODEX.

SNCBs (2024). Joint advice note from the Statutory Nature Conservation Bodies (SNCBs) regarding bird collision risk modelling for offshore wind developments. JNCC, Natural England, Natural Resources Wales, NatureScot (August 2024)