

MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Stage 2 MCZ Assessment



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Glossary

Term	Meaning
Applicants	Morgan Offshore Wind Limited (Morgan OWL) and Morecambe Offshore Windfarm Ltd (Morecambe OWL).
Biotope	The combination of physical environment (habitats) and its distinctive assemblage of characterising species.
Conservation Objective	A statement describing the desired ecological/geological state (the quality) of a feature for which a protected area is designated.
Designated Feature	One of the habitats, species or geodiversity interests that a protected area is intended to conserve.
Development Consent Order	An order made under the Planning Act 2008, as amended, granting development consent.
Evidence Plan Process	A voluntary consultation process with specialist stakeholders to agree the approach to, and information to support, the Environmental Impact Assessment and Habitats Regulations Assessment processes for certain topics.
Expert Working Group	A forum for targeted engagement with regulators and interested stakeholders through the Evidence Plan process.
Favourable Condition	The desired state of a designated feature.
Generation Assets	The generation assets associated with the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm include the offshore wind turbines, inter-array cables, offshore substation platforms and platform link (interconnector) cables to connect offshore substations.
Landfall	The area in which the offshore export cables come onshore and the transitional area between the offshore cabling and the onshore cabling. This term applies to the entire landfall area at Lytham St. Annes between Mean Low Water Springs and the transition joint bay inclusive of all construction works, including the offshore and onshore cable routes, intertidal working area and landfall compound(s).
Maximum Design Scenario	The realistic worst-case scenario, selected on a topic-specific and impact-specific basis, from a range of potential parameters for the Transmission Assets.
Morecambe Offshore Windfarm: Generation Assets	The offshore generation assets and associated activities for the Morecambe Offshore Windfarm.
Morecambe Offshore Windfarm: Transmission Assets	The offshore export cables, landfall and onshore infrastructure required to connect the Morecambe Offshore Windfarm to the National Grid.
Morecambe Offshore Wind Limited	Morecambe Offshore Windfarm Limited is owned by Copenhagen Infrastructure Partners' (CIP) fifth flagship fund, Copenhagen Infrastructure V (CI V).
Morgan and Morecambe Offshore Wind Farms: Transmission Assets	The offshore and onshore infrastructure connecting the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm to the national grid. This includes the offshore export cables, landfall site, onshore export cables, onshore substations, 400 kV grid connection cables and associated grid connection infrastructure such as circuit breaker compounds. Also referred to in this report as the Transmission Assets, for ease of reading.

Term	Meaning
Morgan Offshore Wind Project: Generation Assets	The offshore generation assets and associated activities for the Morgan Offshore Wind Project.
Morgan Offshore Wind Project: Transmission Assets	The offshore export cables, landfall and onshore infrastructure required to connect the Morgan Offshore Wind Project to the National Grid.
Morgan Offshore Wind Limited	Morgan Offshore Wind Limited is a joint venture between JERA Nex bp (JNbp) and Energie Baden-Württemberg AG (EnBW).
Offshore export cables	The cables which would bring electricity from the Generation Assets to the landfall.
Offshore export cable corridor	The corridor within which the offshore export cables will be located.
Offshore Order Limits	See Transmission Assets Order Limits: Offshore (below).
Onshore export cables	The cables which would bring electricity from the landfall to the onshore substations.
Onshore export cable corridor	The corridor within which the onshore export cables will be located.
Onshore substations	The onshore substations will include a substation for the Morgan Offshore Wind Project: Transmission Assets and a substation for the Morecambe Offshore Windfarm: Transmission Assets. These will each comprise a compound containing the electrical components for transforming the power supplied from the generation assets to 400 kV and to adjust the power quality and power factor, as required to meet the UK Grid Code for supply to the National Grid.
Supplementary Advice on Conservation Objectives	Presents information on the attributes which are ecological characteristics or requirements of the designated species and habitats within a site. These attributes have a target which is either quantified or qualified depending on the available evidence, therefore the advice presented describes how to safeguard these attributes to achieve the Conservation Objectives.
Transmission Assets	See Morgan and Morecambe Offshore Wind Farms: Transmission Assets (above).
Transmission Assets Order Limits	The area within which all components of the Transmission Assets will be located, including areas required on a temporary basis during construction and/or decommissioning
Transmission Assets Order Limits: Offshore	The area within which all components of the Transmission Assets seaward of Mean Low Water Springs will be located, including areas required on a temporary basis during construction and/or decommissioning. Also referred to in this report as the Offshore Order Limits, for ease of reading.

Acronyms

Acronym	Meaning
Cefas	Centre for Environment Fisheries and Aquaculture Science
CSIP	Cable Specification and Installation Plan
DESNZ	Department for Energy Security and Net Zero
DCO	Development Consent Order
DDV	Drop Down Video
Defra	Department for Environment, Food and Rural Affairs
EIA	Environmental Impact Assessment
EMODnet	European Marine Observation and Data Network
EnBW	Energie Baden-Württemberg AG
EPP	Evidence Plan Process
EUSEaMap	European Union broad scale seabed habitat map
EWG	Expert Working Group
ExA	Examining Authority
HNDR	Holistic Network Design Review
IFCA	Inshore Fisheries and Conservation Authority
INNS	Invasive Non-Native Species
JNCC	Joint Nature Conservation Committee
LoSCM	Library of Strategic Compensation Measures
MCZ	Marine Conservation Zone
MDS	Maximum Design Scenario
MEEB	Measures of Equivalent Environmental Benefit
MMO	Marine Management Organisation
MPA	Marine Protected Area
MRF	Marine Recovery Fund
NTZ	No Take Zone
NGESO	National Grid Electricity System Operator
OTNR	Offshore Transmission Network Review
OWEIP	Offshore Wind Environmental Improvements Package
OWF	Offshore Wind Farm
OWL	Offshore Wind Limited
PEIR	Preliminary Environmental Information Report
SAC	Special Area of Conservation

Acronym	Meaning
SACOs	Supplementary Advice on Conservation Objectives
SNCBs	Statutory Nature Conservation Bodies
SMEEF	Scottish Marine Environmental Enhancement Fund
SPA	Special Protection Area
WMS	Written Ministerial Statement

Units

Unit	Description
%	Percentage
m	Metres
km	Kilometres
km ²	Square kilometres
MW	Megawatts
£	Pounds Stirling

1 MCZ Stage 2 (M&M Transmission) - legal and policy tests

1.1 Introduction

1.1.1 Purpose of this document

1.1.1.1 This document has been submitted as part of the Stage 2 Marine Conservation Zone (MCZ) assessment for the Morgan and Morecambe Offshore Wind Farms: Transmission Assets (referred to hereafter as ‘the Transmission Assets’) under the Marine and Coastal Access Act 2009 (MCAA). In particular, this document sets out the Applicants’ submissions on a without prejudice basis on the tests set out in section 126(7) of the MCAA (see further below) demonstrating that:

- There are no other means of proceeding with the Transmission Assets project.
- There are clear public benefits of proceeding with the Transmission Assets, which outweighs the risk of damage to the environment.
- The Applicants will undertake, or make arrangements for the undertaking of, measures of equivalent environmental benefit (MEEB).

1.1.1.2 This document should be read together with the MCZ Screening and Stage 1 Assessment Report (APP-019) and the Without Prejudice, In Principle MEEB Plan (**Appendix A**).

1.1.1.3 The MCZ Screening and Stage 1 Assessment Report (APP-019) concluded that the conservation objective of maintaining the subtidal sand and subtidal mud protected features of the Fylde MCZ in a favourable condition will not be hindered by the construction, operation and maintenance, and decommissioning phases of the Transmission Assets in isolation, or cumulatively with any other plan, project or activity. However, as set out more fully within the In Principle MEEB Plan (**Appendix A**), a Stage 2 MCZ assessment and proposed MEEB are being submitted on a without prejudice basis in response to representations received by Natural England (RR-1601) and the Planning Inspectorate’s Rule 9 letter (PD-005).

1.2 Legislative and Policy Context

1.2.1 Legislation

1.2.1.1 Sections 125 and 126 of the MCAA place a range of duties on public authorities when determining applications, including development consent order or marine licence applications, to consider the potential impact that the proposal will have on achieving the conservation objectives for an MCZ.

1.2.1.2 If the Applicants seeking the authorisation are not able to satisfy the authority that there is no significant risk of the act hindering the achievement of the conservation objectives stated for the MCZ, the Applicants must satisfy the

authority that the conditions in sections 126(7) of the Marine and Coastal Access Act 2009 can be met in that:

- (a) there is no other means of proceeding with the act which would create a substantially lower risk of hindering the achievement of those objectives;
- (b) the benefit to the public of proceeding with the act clearly outweighs the risk of damage to the environment that will be created by proceeding with it; and
- (c) the person seeking the authorisation will undertake, or make arrangements for the undertaking of, MEEB to the damage which the act will or is likely to have in or on the MCZ.

1.2.2 Policy and Guidance

- 1.2.2.1 The Overarching National Policy Statement (NPS) for Energy (EN-1) (Department for Energy Security and Net Zero, 2023a) details the purpose of MCZs, which is to conserve marine flora or fauna, marine habitats or types of marine habitat or features of geological or geomorphological interest and highlights that the Secretary of State's decision making is bound by the duties in relation to MCZs imposed by sections 125 and 126 of the Marine and Coastal Access Act 2009.
- 1.2.2.2 The NPS for Renewable Energy Infrastructure (EN-3) (Department for Energy Security and Net Zero, 2023b) states that the Applicants should refer to the latest Department for Environment, Food and Rural Affairs (Defra) compensation guidance.
- 1.2.2.3 NPS EN-1 and EN-3 highlight the urgent need to meet the UK Government's energy objectives by defining nationally significant low carbon infrastructure as a Critical National Priority (CNP). The CNP policy explains how the Secretary of State will consider a MCZ derogation case, in light of the need for CNP infrastructure projects. **Table 1.1** summarises the relevant NPS EN-1 and EN-3 policies.

Table 1.1: Relevant policies within NPS EN-1 and NPS EN-3

Paragraph	Policy
NPS EN-1	
4.2.13	"Where residual impacts relate to Habitats Regulations Assessment (HRA) or Marine Conservation Zone (MCZ) then the Applicant must provide a derogation case, if required, in the normal way in compliance with the relevant legislation and guidance."
4.2.19 and 4.2.20	"Where, following Appropriate Assessment, CNP Infrastructure has residual adverse impacts on the integrity of sites forming part of the UK national site network, either alone or in combination with other plans or projects, the Secretary of State will consider making a derogation under the Habitats Regulations. Similarly, if during an MCZ assessment, CNP Infrastructure has residual impacts which significantly risk hindering the achievement of the stated conservation objectives for the MCZ, the Secretary of State will consider making a derogation under section 126(7) of the Marine and Coastal Access Act 2009."

Paragraph	Policy
4.2.21	“...the Secretary of State will consider the particular circumstances of any plan or project, but starting from the position that energy security and decarbonising the power sector to combat climate change: • requires a significant number of deliverable locations for CNP Infrastructure and for each location to maximise its capacity. This NPS imposes no limit on the number of CNP infrastructure projects that may be consented. Therefore, the fact that there are other potential plans or projects in different locations that can help meet the need for CNP Infrastructure is unlikely to be treated as an alternative solution. Further, the existence of another way of developing the proposed plan or project which results in a significantly lower generation capacity is unlikely to meet the objectives and therefore be treated as an alternative solution; and • are capable of amounting to imperative reasons of overriding public interest (IROPI) for HRAs, and, for MCZ assessments, the benefit to the public is capable of outweighing the risk of environmental damage, for CNP Infrastructure.
4.2.22	“For MCZs, where an applicant has shown there are no other means of proceeding which would create a substantially lower risk, and the benefit to the public outweighs the risk of damage to the environment, the Secretary of State must be satisfied that measures of equivalent environmental benefit will be undertaken.”
NPS EN-3	
2.8.265	“With increasing deployment of offshore wind farms and offshore transmission, environmental impacts upon SACs SPAs, and Ramsar sites and MCZs (individually and as part of a network) may not be addressed by avoidance, reduction, or mitigation alone, therefore compensatory measures (through derogation for SACs SPAs, Ramsar sites, and MCZs) may be required at a plan or project level where adverse effects on site integrity and/or on conservation objectives cannot be ruled out.”
2.8.266	“For many receptors, the scale of offshore wind and offshore transmission developments, and potential in-combination effects, means compensation could be required and applicants must refer to the latest Defra compensation guidance when making their assessments.”
2.8.267	“If, during the pre-application stage, SNCBs indicate that the proposed development is likely adversely to impact a protected site, the applicant should include with their application such information as may reasonably be required to assess potential derogations under the Habitats Regulations or the Marine and Coastal Access Act 2009.”
2.8.268	“Where such an indication is given later in the development consent process, the applicant should share this information as soon as reasonably practical.”
2.8.269	“This information includes: assessment of alternative solutions, showing the relevant tests on alternatives have been met; a case showing that the relevant tests for IROPI or Measures of Equivalent Environmental Benefit have been met; and appropriate securable environmental compensation, which will ensure no net loss to the Marine Protected Areas (MPA) network and help ensure that the MPA target (including any interim target) set under the Environment Act 2021 targets can be met.”
2.8.270	“Provision of such information will not be taken as an acceptance of adverse impacts, and if applicants dispute the likelihood of adverse effects they can provide this information as part of their application, ‘without prejudice’ to the Secretary of State’s final decision on the impacts of the potential development.”
2.8.271	“If, in these circumstances, an applicant does not supply information required for the assessment of a potential derogation, consent may be refused as there will be no expectation that the Secretary of State will allow the applicant the opportunity to provide such information following the examination.”

Paragraph	Policy
2.8.272	“It is vital that applicants consider the need for compensation as early as possible in the design process, as ‘retrofitting’ compensatory measures will introduce delays and uncertainty to the consenting process. Applicants are encouraged to include all compensatory measures considered, with reasoning for why they have been discounted.”
2.8.273	“Applicants should work closely at an early stage in the pre-application process with SNCBs, and Defra, in conjunction with the relevant regulators, Local Planning Authorities, National Park Authorities, landowners and other relevant stakeholders to develop a compensation plan for all protected sites adversely affected by the development.”
2.8.274	“Before submitting an application, applicants should seek the views of the SNCB and Defra, as to the suitability, securability and effectiveness of the compensation plan to ensure that the overall coherence of the National Site Network for the impacted SAC/SPA/MCZ feature is protected. Consultation should also take place throughout the pre-application phase with key stakeholders (e.g., via the evidence plan process and use of expert topic groups).”
2.8.275	“In cases where such views are provided, the applicant should include a copy of this information with the compensation plan in their application for further consideration by the Examining Authority and Secretary of State.”
2.8.276	“The British Energy Security Strategy contains a commitment to introduce mechanisms to support strategic compensatory measures, to compensate for environmental impacts and reduce delays to individual projects.”
2.8.277	“Strategic compensation is defined as a measure or a series of measures that can be delivered at scale and/or extended timeframes, which cannot be delivered by individual offshore wind and/ or offshore transmission project developers in isolation. Any measure(s) would usually be led and delivered by a range of organisations, including Government, industry and relevant stakeholders. Strategic compensation measures would normally be identified at a plan level and applied across multiple offshore wind projects to provide ecologically meaningful compensation to designated site habitats and species adversely impacted, ensuring the coherence of the MPA network.”
2.8.278	“This may include central coordination for measures delivered across a series of projects or biogeographic region.”
2.8.279	“Applicants will be able to access tools and mechanisms to support identification of suitable compensation and facilitate delivery of strategic compensation measures where appropriate.”
2.8.280	“The government is still developing its policies on strategic compensation through the Collaboration on Offshore Wind Strategic Compensation (COWSC) programme, and guidance will be published in due course.”
2.8.281	“The government will work collaboratively with industry and stakeholders to develop strategic compensation for projects currently in the consenting process (where possible) as well as for future developments.”
2.8.282	“Not every impact for every project will initially fall within the strategic compensation proposals, so applicants should continue to discuss with SNCBs and Defra the need for site specific or strategic compensation at the earliest opportunity.”
2.8.283	“Applicants should also coordinate with other marine industry sectors, e.g., oil and gas, who might also need to find compensatory measures. This will ensure compensatory measures are complementary and/or take advantage of opportunities to join together to deliver strategic compensation. Applicants should demonstrate they have consulted with those industries/stakeholders who are affected by any proposed compensation measures.”

1.3 Fylde Marine Conservation Zone

- 1.3.1.1 A description of the Fylde MCZ, its designated features and the conservation objectives is set out in detail in **section A.1.5** of the Without Prejudice, In Principle Measures of Equivalent Environmental Benefit (MEEB) Plan (**Appendix A:**) and is briefly summarised below.
- 1.3.1.2 The Fylde MCZ is located in Liverpool Bay, between 3 and 20 km off the Fylde coast and Ribble Estuary, covering an area of 260.6 km². It is designated for two broadscale marine habitat features: Subtidal sand and Subtidal mud.
- 1.3.1.3 A condition assessment for the features of the Fylde MCZ was published in October 2023, which concluded that both features are in favourable condition. The conservation objective for the Subtidal Mud and Subtidal Sand features of the Fylde MCZ is therefore that the protected habitats are maintained in favourable condition.
- 1.3.1.4 For each designated feature, favourable condition means that, within the MCZ:
- its extent is stable and increasing; and
 - its structures and functions, its quality, and the composition of its characteristic biological communities (including the diversity and abundance of species forming part or inhabiting the habitat) are sufficient to ensure that it remains healthy and does not deteriorate.
- 1.3.1.5 Any temporary deterioration in condition is to be disregarded if the habitat is sufficiently healthy and resilient to enable its recovery. Any alteration to a feature brought about entirely by natural processes is to be disregarded when determining whether a designated feature is in favourable condition.
- 1.3.1.6 A description of the potential level of impact from the Transmission Assets on the Fylde MCZ is set out in **section A.1.6** of the Without Prejudice, In Principle MEEB Plan (**Appendix A**).

1.4 No other means of proceeding

- 1.4.1.1 This section of the without prejudice Stage 2 MCZ assessment and MEEB case assesses whether there are ‘no other means of proceeding’ with the Transmission Assets for the purposes of the test set out in section 126(7)(a) of the MCAA.
- 1.4.1.2 Section 126(8) of the MCAA states “other means of proceeding with an act” includes a reference to proceeding with it (a) in another manner, or (b) at another location.
- 1.4.1.3 The Defra draft best practice guidance for developing compensatory measures in relation to marine protected areas (Defra, 2021) states that when considering alternative means or alternative solutions, this should consider “*all feasible, less harmful and reasonable options*”, which could include:

“...looking at whether the proposal could happen at a different location, using different routes across a site or making changes to scale, method, size or timing. These are not exhaustive, and the responsible authority should consider what is appropriate for the application on a case-by-case basis, including both operational and decommissioning aspects.”

1.4.1.4 The guidance goes on to state:

“Defra’s policy position is that ecological criteria, conservation objectives and network status should outweigh economic considerations over the lifetime of the activity. While alternative solutions should be legally and technically feasible, options should not usually be discounted for purely financial reasons.

Alternative solutions or other means of proceeding should be limited to those which would deliver the same overall outcome for the activity whilst creating a substantially lower risk of impact to the MPA.”

1.4.1.5 NPS EN-1 sets out that there is no limit or cap imposed on the number of critical national priority (CNP) projects coming forward. NPS EN-1 states that *“the fact that there are other potential plans or projects deliverable in different locations to meet the need for CNP infrastructure is unlikely to be treated as an alternative solution”*. Paragraph 4.2.22 of NPS EN-1 states: *“where an applicant has shown there are no deliverable alternative solutions, and that there are IROPI, compensatory measures must be secured by the Secretary of State as the competent authority, to offset the adverse effects to site integrity as part of a derogation”*.

1.4.1.6 In line with the requirements of the MCAA and the Defra (2021) draft guidance, the methodology adopted in this document takes the following steps, following a similar process to HRA derogation:

- Step 1 – summarise the Transmission Assets need and its objectives in order to allow the assessment to determine whether the other means of proceeding achieve the same overall objective(s)/outcome.
- Step 2 – identify the risk and extent of hindering the conservation objectives of the Fylde MCZ in order to allow the assessment to determine whether the other means of proceeding are substantially less damaging to the MCZ.
- Step 3 – consider whether any potential other means of proceeding, including different location, using different routes across the MCZ, changes to scale/size or using a different method are feasible (financially, legally and technically).
- Step 4 – consider whether any feasible other means of proceeding identified in Step 3 would have a substantially lesser effect on the MCZ conservation objectives.

Step 1: Need case and project objectives

1.4.1.7 The need for the Transmission Assets is set out in full in section 4 of the Planning Statement (APP-233). The Transmission Assets are required to connect the Generation Assets of the Morgan Offshore Wind Project and the

Morecambe Offshore Windfarm to the UK electricity transmission network, contributing to:

- The UK Government's ambition to deliver 50 GW of offshore wind by 2030;
- Delivering much needed investment and securing construction and operations jobs in the UK;
- Securing the UK's energy supply; and
- The UK's response to the climate change crisis.

- 1.4.1.8 By facilitating the expansion of renewable energy supply, the Transmission Assets would contribute towards meeting the UK Government's climate targets. The UK Government's 'net zero target' of Greenhouse Gas (GHG) emissions for the year 2050 is to be 100% lower than the 1990 level (Climate Act (2050 Target Amendment) Order 2019). In order to achieve necessary ongoing reductions in emissions, the UK Committee on Climate Change (CCC) recommended that the UK government should set out an intention to support 1 to 2 GW of offshore wind per year, provided costs continue to fall, with a view to phasing out subsidies in the 2020s. The Department for Energy Security and Net Zero (DESNZ) 'Clean Power Capacity Range' for low carbon generation was established in the Clean Power 2030 Action Plan, which sets out a capacity range for offshore wind of 43 – 50 GW deployed by 2030.
- 1.4.1.9 It is also necessary to take account of the predicted increase in electricity demand as the Government expects electricity demand to increase and the UK CCC has identified a necessity to deploy 3 GW of wind a year to reach 430 TWh by 2050 and reach the target 40 GW of de-rated electricity capacity by 2030.
- 1.4.1.10 Energy security is required to ensure a secure, reliable and uninterrupted supply is delivered to consumers. It is imperative that consumers are able to rely on an effective and efficient electricity system that can respond and adapt quickly to changes and shocks to ensure a consistent supply. Reliance on global markets leaves the UK vulnerable to disruptions to its electricity supply, which is why the UK Government has set an ambition of achieving 50 GW of offshore wind by 2030 (British Energy Security Strategy (2022)).
- 1.4.1.11 The UK Government has set out the urgent need for a rapid increase in the roll out of renewable energy infrastructure. Paragraph 3.3.61 of NPS EN-1 underlines the urgent need for a combination of CNP to be rolled out for both energy security and Net Zero. Paragraph 3.3.58 of NPS EN-1 states that:
- "Given the urgent need for new electricity infrastructure and the time it takes for electricity NSIPs to move from design conception to operation, there is an urgent need for new (and particularly low carbon) electricity NSIPs to be brought forward as soon as possible, given the crucial role of electricity as the UK decarbonises its economy."*
- 1.4.1.12 **Table 1.2** below sets out the objectives of the Transmission Assets and demonstrates how these are aligned to policy.

Table 1.2: Objectives of the Transmission Assets

Objective	Policy basis for objective
Reduce Greenhouse Gas Emissions: the Transmission Assets would provide the connection for Morgan Offshore Wind Project and the Morecambe Offshore Windfarm to the UK electricity transmission network. Each wind farm will have a generating capacity exceeding 100MW and would significantly contribute towards meeting the UK Government's statutory greenhouse gas reduction targets and targets to produce 43 - 50GW of offshore wind by 2030.	Paragraph 2.2.1 of NPS EN-1: <i>"In June 2019 the UK became the first major economy to legislate for a 2050 Net Zero Greenhouse Gases ('GHG') emissions target through the Climate Change Act 2008 (2050 Target Amendment) Order 2019" and "In April 2021, the Government legislated for the sixth carbon budget (CB6), which requires the UK to reduce GHG emissions by 78 per cent by 2035 compared to 1990 levels".</i> The UK Government's Net Zero Strategy (2021) set a key policy of achieving 40 GW of offshore wind by 2030. The DESNZ 'Clean Power Capacity Range' for low carbon generation was established in the Clean Power 2030 Action Plan, which sets out a capacity range for offshore wind of 43 – 50 GW deployed by 2030. Paragraph 4.2.4 of NPS EN-1: <i>"there is a critical national priority (CNP) for the provision of nationally significant low carbon infrastructure".</i> Paragraph 4.2.5 of NPS EN-1 confirms that CNP includes all onshore and offshore generation that does not involve fossil fuel combustion. Paragraph 4.2.2 of NPS EN-1: <i>"energy security and net zero ambitions will only be delivered if we can enable the development of new low carbon sources of energy at speed and scale."</i>
Contribute to security of the UK's energy supply: offshore wind contributes to energy security by providing low-carbon power from renewable resources contributing to an overall diverse UK energy generation mix. The Morgan Offshore Wind Project and the Morecambe Offshore Windfarm are substantial assets with anticipated capacities exceeding 100 MW, which would contribute a high number of MWs/GWs to the electricity grid, helping to ensure the UK has a secure supply of energy.	Paragraph 2.5.1 of NPS EN-1: <i>"Given the vital role of energy to economic prosperity and social well-being, it is important that our supplies of energy remain secure, reliable and affordable"</i> Paragraph 2.5.6 of NPS EN-1: <i>"The British Energy Security Strategy emphasises the importance of addressing our underlying vulnerability to international energy prices by reducing our dependence on imported oil and gas, improving energy efficiency, remaining open minded about our onshore reserves including shale gas, and accelerating deployment of renewables, nuclear, hydrogen, CCUS, and related network infrastructure, so as to ensure a domestic supply of clean, affordable, and secure power as we transition to net zero"</i> The UK Government set an ambition to achieve 50 GW of offshore wind by 2030 in the UK Government's subsequent British Energy Security Strategy (2022). British Energy Security Strategy (2022), paragraph 3.3.20: <i>"Wind and solar are the lowest cost ways of generating electricity, helping reduce costs and providing a clean and secure source of electricity supply (as they are not reliant on fuel for generation). Our analysis shows that a secure, reliable, affordable, net zero consistent system in 2050 is likely to be composed predominantly of wind and solar."</i>

Objective	Policy basis for objective
Contribute to the affordability of the UK's energy supply: The Transmission Assets, as part of the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm aims to contribute to increasing affordability of the UK's energy supply.	The Government committed in its page 94 of its Net Zero Strategy (2021) to “ensure that customers pay a fair, affordable price for their energy, and can engage with a retail energy market that offers the products and services required to make choices that support net zero”. This is reiterated in paragraph 3.3.13 of NPS EN-1. NPS EN-1 paragraph 3.3.16: “If demand for electricity doubles by 2050, we will need a fourfold increase in low carbon generation and significant expansion of the networks that transport power to where it is needed. In addition, we committed in the Net Zero Strategy to take action so that by 2035, all our electricity will come from low carbon sources, subject to security of supply, whilst meeting a 40-60 per cent increase in electricity demand. This means that the majority of new generating capacity needs to be low carbon”. NPS EN-1 paragraph 3.3.20: “Wind and solar are the lowest cost ways of generating electricity, helping reduce costs and providing a clean and secure source of electricity supply (as they are not reliant on fuel for generation). Our analysis shows that a secure, reliable, affordable, net zero consistent system in 2050 is likely to be composed predominantly of wind and solar.”
Coordination: Coordinate and coexist with other activities, developers and operators.	NPS EN-1 paragraph 3.3.71: “For regions with multiple windfarms or offshore transmission projects it is expected that a more coordinated approach will be delivered. For these areas, this approach is likely to reduce the network infrastructure costs as well as the cumulative environmental impacts and impacts on coastal communities by installing a smaller number of larger connections, each taking power from multiple windfarms instead of individual point-to-point connections for each windfarm” NPS EN-3 paragraph 2.8.48: “Applicants are encouraged to work collaboratively with those other developers and sea users on co-existence/co-location opportunities, shared mitigation, compensation and monitoring where appropriate. Where applicable, the creation of statements of common ground between developers is recommended. Work is ongoing between government and industry to support effective collaboration and find solutions to facilitate to greater co-existence/co-location.”

Step 2: Extent of risk to the Fylde MCZ

- 1.4.1.13 The MCZ Stage 1 Assessment concluded that, for all the impacts assessed, there is no significant risk of hindering the conservation objectives of the Fylde MCZ, and therefore the Without Prejudice, In-Principle MEEB Plan is provided without prejudice to that position.
- 1.4.1.14 **Section A.1.6** of the Without Prejudice, In-Principle MEEB Plan (**Appendix A**) sets out in detail a consideration of the potential for the Transmission

Assets to have an impact on the Fylde MCZ. **Table A. 4** in the Without Prejudice, In-Principle MEEB Plan details how the Applicants have followed the mitigation hierarchy in the development of the Transmission Assets to avoid and reduce the level of potential impact.

- 1.4.1.15 The assessment has been undertaken on the basis of a 'maximum design scenario' (MDS). The MDS for long term habitat loss within the Fylde MCZ is for up to 30,400 m² of long-term habitat loss within the Fylde MCZ, as a result of cable protection for ground conditions and cable crossings, which equates to 0.012% of the total area of the MCZ.
- 1.4.1.16 As the requirements for, and exact locations of, any cable protection for ground conditions within the Fylde MCZ are not yet known, the Applicants have applied a precautionary approach which assumes that all of the potential cable protection for ground conditions could be installed in either the subtidal sand or subtidal mud feature of the Fylde MCZ. As such, it is important to note that the MDS for subtidal sand and subtidal mud should not be added together as both of those values would not be realised in any construction scenario.
- 1.4.1.17 Following the submission of the consent application and the Stage 1 MCZ Screening and Assessment Report (APP-019), the MDS for the Fylde MCZ has been updated in the Without Prejudice, In-Principle MEEB Plan (**Appendix A:**) for the more realistic assumption that, based on the site specific survey data collected by the Applicants, the location of the cable crossing for the Morgan offshore export cables will fall within the subtidal mud feature in the west of the Fylde MCZ. This updates the approach presented in the MCZ Screening and Stage 1 Assessment Report (APP-019) which assumed that the cable crossing could occur in either the subtidal sand or subtidal mud feature.
- 1.4.1.18 The MDS for the subtidal sand feature of the Fylde MCZ is, therefore, for up to 26,400 m² of long term habitat loss during the construction and operation and maintenance phases, equating to 0.01% of the total extent of the subtidal sand feature in the MCZ. The MDS for the subtidal mud feature of the Fylde MCZ is for up to 30,400 m² of long term habitat loss during the construction and operation and maintenance phases, equating to 0.07% of the total extent of the subtidal mud feature.
- 1.4.1.19 As set out in **section A.1.6.4** of the Without Prejudice, In-Principle MEEB Plan (**Appendix A**), the Transmission Assets have adopted a range of commitments to reduce the potential for impacts on the features of the Fylde MCZ. This will limit the extent of habitat loss, including through limiting the amount of infrastructure that the Applicants can place in the MCZ.
- 1.4.1.20 The impact of long term habitat loss will only occur in the construction and operation and maintenance phases as the Applicants have committed to ensuring all external cable protection used within the Fylde MCZ is designed to be removable on decommissioning, therefore there will likely be no permanent loss of habitats within the Fylde MCZ extending post-decommissioning. The requirement for removal of cable protection within the Fylde MCZ will be agreed with stakeholders and regulators in line with best practice at the time of decommissioning (and secured in decommissioning

programmes required under the Development Consent Order and by section 105(2) of the Energy Act 2004).

- 1.4.1.21 The MCZ Screening and Stage 1 Assessment Report (APP-019) identified the following physical attributes of the subtidal sand and subtidal mud protected features of the Fylde MCZ are relevant to long term habitat loss.
- Extent and distribution.
 - Structure: sediment composition and distribution.
 - Supporting processes: energy/exposure.
 - Supporting processes: sediment movement and hydrodynamic regime (habitat).
- 1.4.1.22 The extents of the subtidal mud and subtidal sand feature will be largely maintained within the MCZ with <0.1% of each feature affected by long term habitat loss (0.07% and 0.01% respectively). The effect of long-term habitat loss will be highly localised and limited to discrete areas which require cable protection. Cable protection will result in the introduction of new hard substrate however, as noted above, this will impact a very small proportion of the Fylde MCZ.
- 1.4.1.23 The MCZ Screening and Stage 1 Assessment Report (APP-019) identified the following biological attributes of the protected features, of relevance to long term habitat loss:
- Distribution: presence and spatial distribution of biological communities.
 - Structure and function: presence and abundance of key structural and influential species.
 - Structure: species composition of component communities.
- 1.4.1.24 The installation of cable protection and cable crossing on the sedimentary features of the Fylde MCZ could result in localised mortality of associated biological communities and their replacement, over time, by a community with a potentially different species composition and different key structural and influential species. As mentioned above, only a small proportion of the relevant features will be impacted and therefore it is considered highly unlikely that this would have an impact on the overall presence, distribution or composition of the biological community across the Fylde MCZ. The biological productivity of this feature as a feeding ground for fish will not be affected by the predicted long term habitat loss and habitat alteration largely due to the small scale and localised nature of the impact.

Step 3 – Consideration of other means of proceeding

- 1.4.1.25 In his decision on Hornsea Three, when considering derogations under the HRA regime, the Secretary of State published the following advice on the scope of alternatives that required consideration:
- “The Secretary of State does not consider the development of alternative forms of energy generation to meet the objectives for the Project. Alternatives to the Project considered by the Secretary of State are consequently limited either to Do Nothing or to alternative wind farm projects.”*

1.4.1.26 The same approach was followed in the Hornsea Project Four decision. The Secretary of State's advice for Hornsea Project Three and Hornsea Project Four aligns with Defra (2021) draft guidance which established that the consideration of alternative solutions need not go beyond the form of energy generation proposed, to deliver the objectives of renewable energy production: *"Examples of alternatives that may not meet the original objective include a proposal that: offers nuclear instead of offshore wind energy"*. This approach was also taken in the Sheringham and Dudgeon Extension decision, including in respect of a stage 2 assessment under the MCAA.

1.4.1.27 This stage considers the following:

- i. 'Do nothing' scenario
- ii. Alternative locations or routes across the MCZ
- iii. Alternative size, scale or design; and
- iv. Conclusion on alternatives

'Do nothing' scenario

1.4.1.28 The Defra Compensatory Measures Guidance 2021 states that: "It is unlikely in most cases that the 'do nothing' option (i.e. no proposed activity) would be an acceptable alternative as it would not deliver the same overall objective as 'the activity'. However, it is useful to provide a comparison for other alternatives and to act as a baseline against which public benefits can be assessed. Where it is most likely to be an option is where no or limited tangible public benefit can be demonstrated."

1.4.1.29 Given the need case for the Transmission Assets set out above, the alternative of not developing the Transmission Assets to connect the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm to the UK electricity transmission network would not satisfy the project objectives identified in **Table 1.2**. The 'do nothing' scenario was also not considered as a feasible alternative in previous offshore wind farm decisions ((Hornsea Project Three, Norfolk Boreas, Norfolk Vanguard, East Anglia ONE North, East Anglia TWO, Hornsea Project Four, SEP and DEP). For these reasons, this scenario is not considered further.

Alternative locations or routes across the MCZ

Alternative locations

1.4.1.30 Volume 1, Chapter 4: Site selection and consideration of alternatives of the Environmental Statement (AS-026) sets out the results of the site selection process and consideration of alternatives undertaken for the Transmission Assets.

1.4.1.31 The Morgan Offshore Wind Project and the Morecambe Offshore Windfarm will both be located in the east Irish Sea. Both wind farms were scoped into the 'Pathways to 2030' workstream under the Offshore Transmission Network Review (OTNR). The OTNR aims to consider, simplify, and wherever possible facilitate a collaborative approach to offshore wind projects connecting to the National Grid.

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- 1.4.1.32 Under the OTNR, the National Grid Electricity System Operator is responsible for assessing options to improve the coordination of offshore wind generation connections and transmission networks and has undertaken a Holistic Network Design Review (HNDR). A key output of the HNDR process was the recommendation that the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm should work collaboratively to develop proposals for their respective offshore wind farms to the National Grid electricity transmission network at Penwortham in Lancashire. The identification of the point of connection at Penwortham formed the basis for the landfall and cable corridor selection process. Further detail relating to the HNDR process and identification of the point of connection at Penwortham is set out in Annex 5.2 to the Applicants' response to Hearing Action Points 6, 8, 9, 19 & 26 (REP3-041).
- 1.4.1.33 Volume 1, Chapter 4: Site selection and consideration of alternatives of the Environmental Statement (AS-026) details the robust process undertaken to select the offshore cable corridor and landfall for the Transmission Assets. This process identified a single landfall option at Lytham St Annes.
- 1.4.1.34 As set out in section 4.8 of Volume 1, Chapter 4: Site selection and consideration of alternatives of the Environmental Statement (AS-026), the offshore cable corridor was determined based on a range of factors, including: (i) selecting the shortest route from the Generation Assets to the landfall location, whilst avoiding environmental sensitivities and existing infrastructure so far as possible, (ii) achieving a technically feasible route, and (iii) that could be refined to limit infrastructure requirements, such as a need for cable protection.
- 1.4.1.35 For all of the reasons set out in Volume 1, Chapter 4: Site selection and consideration of alternatives of the Environmental Statement (AS-026), together with Volume 1, Annex 4.1: Selection and refinement of cable landfall (APP-031) and Volume 1, Annex 4.2: Selection and Refinement of Offshore Infrastructure (APP-032) there is no alternative landfall or cable route that would constitute a potential other means of proceeding with the Transmission Assets.

Alternative route across the MCZ

- 1.4.1.36 The Fylde MCZ could not be avoided entirely by the cable route for the Transmission Assets due to its north-south extent between the Generation Assets and the point of interconnection at Penwortham. Routing around the Fylde MCZ to reach landfall location at Lytham St Anne's was not feasible due to the existing cables that run east/west through the MCZ which would need to be crossed in the shallow waters between the east edge of the MCZ and the coast.
- 1.4.1.37 These offshore constraints, together with engineering feasibility and the location of the grid connection point at the Penwortham National Grid substation made an overlap with the Fylde MCZ unavoidable (further details in Volume 1, Chapter 4: Site Selection and Consideration of Alternatives of the ES (AS-026) and Volume 1, Annex 4.2: Selection and refinement of offshore infrastructure (APP-032)).

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- 1.4.1.38 As outlined in Volume 1, Chapter 4: Site Selection and Consideration of Alternatives of the ES (AS-026) and Volume 1, Annex 4.2: Selection and refinement of offshore infrastructure (APP-032), the final offshore export cable route has been designed to cross the Fylde MCZ at its the narrowest point to minimise the interaction with, and impacts on, the Fylde MCZ.
- 1.4.1.39 It is therefore considered that there is no potential other means of proceeding with the Transmission Assets that avoids the potential impact through an alternative route selection.

Alternative size, scale or design

- 1.4.1.40 The concern raised by Natural England in its relevant representation (RR-1601) is that the use of cable protection within the Fylde MCZ would result in a hindrance to the conservations objectives of the MCZ. The potential other means of proceeding relating to design need to be considered in that context, which could include:
- Changes to scale/size:
 - Reduce the number of export cables.
 - Reduce the length and width of cable protection in the MCZ.
 - Changes to method
 - Bury all cables in the MCZ.
 - Use no cable protection within the MCZ
- 1.4.1.41 Each of these is addressed in turn below.
- 1.4.1.42 **Reduce the number of export cables** – The number of export cables has already been reduced as far as possible at this stage, being designed to accommodate the anticipated installed capacity of the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm. Paragraph 4.2.21 of NPS EN-1 notes that *“the existence of another way of developing the proposed plan or project which results in a significantly lower generation capacity is unlikely to meet the objectives and therefore be treated as an alternative solution.”* Given any further reduction in export cables could result in a reduction in capacity, this is not considered a genuine other means of proceeding and is not considered further.
- 1.4.1.43 **Reduce the area of cable protection** – The Applicants approach to cable protection design accords with the requirement to follow the mitigation hierarchy as set out in NPS EN1. The cable route takes the shortest route from the Generation Assets to the landfall point, crossing the MCZ at the narrowest point. By doing so, this has already minimised the area of associated cable protection. Other steps were taken by the Applicants to reduce the potential for cable protection use within the MCZ, including (i) designing the corridor to minimise the number of crossings with existing cables, therefore reducing cable crossing requirements, (ii) a commitment within the Outline Offshore CSIP (APP-220) to limit the extent of cable protection to 3% of the offshore export cable route within the Fylde MCZ. Noting that the Applicants have reduced the extent of cable protection proposed within the Fylde MCZ from up to 20% to 3% following consultation

on the Preliminary Environmental Information Report during pre-application statutory consultation. Any further reduction in the area is not technically feasible at this stage and is not considered further as a potential other means of proceeding.

- 1.4.1.44 **Bury all cables within the MCZ** – The Applicants have committed to only using cable protection in the event that cable burial is unsuccessful (CoT47). The Outline Offshore Cable Specification and Installation Plan (CSIP) (APP-220) includes for cable burial to be the preferred option for cable protection, where practicable (CoT54). The Outline CSIP also includes an Outline Cable Burial Risk Assessment (CBRA) (APP-219). As set out in the Outline CSIP (REP2-022) ground conditions within the Fylde MCZ are largely sand and clay with some areas of slightly gravelly seabed. Whilst slightly gravelly clay or slightly gravelly sand sediments are currently not anticipated to hinder cable burial via the trenching techniques under consideration, more dense areas of gravel, if present, could present a risk of reduced burial, leading to the need for cable protection. Based on the initial survey results from four vibrocores/cone penetration tests, the use of additional cable protection for ground conditions within the Fylde MCZ is not envisaged. However, due to the limited survey data used to extrapolate seabed conditions across the MCZ, isolated disparate ground conditions could still be present. As such, the MDS allows for a maximum 3% cable protection for ground conditions within the Fylde MCZ (as a contingency only should later surveys indicate discrete areas of harder seabed where cable burial to the target depth cannot be reached). It is not feasible at this pre-consent stage to commit to burying all of the offshore export cable. As this is not technically feasible, it is not considered further as a potential other means of proceeding.
- 1.4.1.45 **Use no cable protection within the MCZ** – As noted above, up to four cables will need to cross the Lanis 1 telecoms cable, and it is not technically feasible at this stage to confirm that all cables can be buried to sufficient depth to avoid a need for protection. Surface laid cables without protection would be at risk of snagging, such as with anchors, and would represent a risk to health and safety. In addition, this would risk damage to cables and therefore disruption to electricity supply from the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm to the National Grid. As this is not technically feasible, it is not considered further as a potential other means of proceeding.

Step 4 – assessment of any feasible other means of proceeding

- 1.4.1.46 For the reasons set out above, the Applicants have demonstrated that they undertook careful and extensive consideration of potential other means of proceeding in ensuring the risks to the conservation objectives of the Fylde MCZ are minimised as far as possible.
- 1.4.1.47 No feasible other locations, scale or methods are available to deliver the project objectives with a substantially lesser effect on the MCZ, in comparison to the selected cable route and cable protection parameters included in the MDS for the Transmission Assets.

1.5 Clear Public Benefits

- 1.5.1.1 This section of the without prejudice Stage 2 MCZ assessment and MEEB case assesses whether the benefit to the public of proceeding with the Transmission Assets clearly outweighs the risk of damage to the environment that will be created by proceeding with it for the purposes of the test set out in section 126(7)(b) of the MCAA.
- 1.5.1.2 The Applicants are not aware of any specific guidance that exists for assessing public benefit in relation to the MCAA. It is recognised that there are obvious parallels with HRA guidance with respect to assessing IROPI. In accordance with the draft Defra guidance (Defra, 2021) which considers MCZs alongside other site designations as part of a “*ecologically coherent network of MPAs [Marine Protected Areas]*” and states that “*the impact of a development within an MPA should be considered in a consistent way*”, it is considered appropriate to refer to HRA guidance on IROPI as a proxy for assessing clear public benefit with respect to the MCAA.
- 1.5.1.3 The following definitions are provided by the Defra Guidance (Defra, 2021):
- “imperative – it’s essential that it proceeds for public interest reasons
 - in the public interest – it has benefits for the public, not just benefits for private interests
 - overriding – the public interest outweighs the harm, or risk of harm, to the integrity of the European site that’s predicted by the appropriate assessment”.
- 1.5.1.4 The decision of the Secretary of State in respect of Hornsea Four summarised the key principles above in defining IROPI:
- Imperative: Urgency and importance: There would usually be urgency to the objective(s) and it must be considered “indispensable” or “essential”. In practical terms, this can be evidenced where the objective falls within a framework for one or more of the following:
 - Actions or policies aiming to protect fundamental values for citizens’ life (health, safety, environment);
 - Fundamental policies for the State and the Society; or
 - Activities of an economic or social nature, fulfilling specific obligations of public service.
 - Public interest: The interest must be a public rather than a solely private interest (although a private interest can coincide with delivery of a public objective);
 - Long-term: The interest would generally be long-term. Short-term interests are unlikely to be regarded as overriding because the conservation objectives of the Habitats and Birds Directives are long term interests; and
 - Overriding: The public interest of development must outweigh the harm, or risk of harm, to the integrity of the protected site.

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- 1.5.1.5 In relation to MCZ assessments, paragraphs 4.2.18 - 4.2.22 of NPS EN-1 confirm that the starting point for a derogation assessment is that energy security and decarbonising the power sector to combat climate change is capable of amounting to a benefit to the public that is capable of outweighing the risk of environmental damage.
- 1.5.1.6 The need for the Transmission Assets is set out in detail within the Planning Statement (APP-233) and is summarised below in the context of the tests set out in the MCAA.

Public benefit of the Transmission Assets

- 1.5.1.7 The Transmission Assets, as a key component of the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm, bring three main benefits to the public through fulfilment of the project objectives set out in **Table 1.2** above: (a) reduction in greenhouse gas emissions contributing to tackling climate change, b) energy security and (c) affordability of supply. This subsection looks at each of these benefits in turn.

a) Reduction in greenhouse gas emissions

International obligations on climate change

- 1.5.1.8 The United Nations Convention on Climate Change supreme decision-making body is termed the Conference of Parties (CoP) which reviews the implementation of the Convention and any other legal instruments that the CoP adopts and takes decisions necessary to promote the effective implementation of the Convention, including institutional and administrative arrangements. In 2021, the CoP was held in Glasgow. The conference negotiated a global agreement (UNFCCC, 2021) with the key goal of limiting increases of global temperatures to ‘well below 2°C compared to pre-industrial levels’. The parties also agreed to “pursue efforts to limit the temperature increase to 1.5°C”. This was a development of the earlier United Nations (2015) agreement for a binding and universal agreement on climate from all the parties. The (UNFCCC) 2021 agreement was reached by 196 parties, seeking to prevent a “climate catastrophe” by keeping temperature rises within 1.5°C.

National obligations on climate change

- 1.5.1.9 The Climate Change Act 2008 (the Climate Act) is the basis for the UK’s approach to tackling and responding to climate change. It requires that emissions of carbon dioxide and other GHG are reduced and that climate change risks are adapted to.
- 1.5.1.10 Through the Climate Act, the UK government has set a target to significantly reduce UK GHG emissions by 2050 and a path to get there. The Climate Act also established the CCC to ensure that emissions targets are evidence-based and independently assessed. In addition, the Climate Act requires the Government to assess the risks and opportunities from climate change for the UK, and to adapt to them.

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- 1.5.1.11 The Climate Act commits the UK government by law to reducing GHG emissions by at least 100% of 1990 levels (net zero) by 2050. This includes reducing emissions from the devolved administrations (Scotland, Wales and Northern Ireland), which currently account for about 20% of the UK's emissions. The 100% target was based on advice from the CCC's 2019 report, 'Net Zero – The UK's contribution to stopping global warming'.
- 1.5.1.12 BEIS (2019) outlines the following potential health risks resulting from climate change:
- Existing health problems become worse as temperatures increase;
 - Malnutrition could become more widespread as crop yields are affected by increased drought conditions in some regions, leading to reduced food production;
 - Warmer temperatures could increase the range over which disease-carrying insects are able to survive and thrive;
 - Vulnerable people will be at risk of increased heat exposure and the number of deaths due to temperature extremes is expected to increase in the future (although in the long term there will likely be fewer health problems related to cold temperatures); and
 - The role of offshore wind is key in achieving the UK Government renewable energy targets for 2030 and 2050. The offshore wind industry presents an opportunity to utilise and further develop the UK's maritime engineering skills as other industries decline (such as shipbuilding and North Sea oil) to secure supply chain and other employment opportunities in the UK. The importance of maximising opportunities for the involvement of local businesses and communities in offshore wind has been highlighted as a key success factor for the sector in the UK (TCE, 2014).
- 1.5.1.13 The Transmission Assets will enable the abatement of fossil fuel generation within the UK Grid, through the transmission of renewable energy generated by the Generation Assets. The Transmission Assets, in combination with the Morgan Generation Assets and Morecambe Generation Assets, is predicted to have a significant beneficial effect on greenhouse gas emissions during its operational phase, as set out in the Environmental Statement – Volume 4, chapter 1: Climate change (APP-138).

b) Energy Security

- 1.5.1.14 An ambition set out in the UK Government's Energy White Paper, 'Powering our Net Zero Future' 2021, the Net Zero Strategy: Build Back Greener (2021) and the British Energy Security Strategy (2022) is to have 40GW offshore wind by 2030, a fourfold increase on today's installed capacity. The DESNZ 'Clean Power Capacity Range' for low carbon generation was established in the Clean Power 2030 Action Plan, which sets out a capacity range for offshore wind of 43 – 50 GW deployed by 2030.
- 1.5.1.15 Even with major improvements in overall energy efficiency, the Government expects that demand for electricity is likely to increase, as significant sectors

of energy demand switch from being powered by fossil fuels to using electricity. As a result of this electrification of demand, total electricity consumption (measured in terawatt hours (TWh) over a year) could double by 2050.

- 1.5.1.16 In 2020, the CCC identified that as demand grows, more capacity will be needed and its balanced scenario would necessitate deploying 3 GW a year of wind, to reach 430 TWh by 2050, and reach the target 40 GW of de-rated electricity capacity by 2030, and 65 to 125 GW by 2050.
- 1.5.1.17 NPS EN-1 concludes that in order to secure energy supplies that enable Government obligations for 2050 to be met, there is an urgent need for new (and particularly low carbon) energy NSIPs to be brought forward as soon as possible (para. 3.3.83). The Transmission Assets would contribute significantly towards meeting these obligations.
- 1.5.1.18 The UK need for greater energy security is further recognised in NPS EN-1, which states:
- “2.5.1 Given the vital role of energy to economic prosperity and social well-being, it is important that our supplies of energy remain secure, reliable and affordable”*
- “2.5.6 The British Energy Security Strategy emphasises the importance of addressing our underlying vulnerability to international energy prices by reducing our dependence on imported oil and gas, improving energy efficiency, remaining open minded about our onshore reserves including shale gas, and accelerating deployment of renewables, nuclear, hydrogen, CCUS, and related network infrastructure, so as to ensure a domestic supply of clean, affordable, and secure power as we transition to net zero”*
- 1.5.1.19 The Transmission Assets, as a key component of the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm, will contribute towards the Clean Power Capacity Range’ for offshore wind set out in the Clean Power 2030 Action Plan.
- 1.5.1.20 These projects would contribute to increased overall energy security and network resilience which is required to meet future energy demand.

c) Affordability of Electricity Supply

- 1.5.1.21 Generation of electricity from offshore wind farms is economically beneficial to the UK consumer because:
- Wind generation is an essential element of the delivery plan for the urgent decarbonisation of the UK electricity sector. This is important not only to reduce power-related emissions, but also to provide a timely next-step contribution to a future generation portfolio which is capable of supporting the decarbonisation of transport and heat sectors, through electrification;
 - As part of a diverse generation mix, wind generation contributes to improve the stability of capacity utilisations among renewable generators. By being connected at the transmission system level, large-scale offshore wind generation can and will play an important role in the

resilience of the UK electricity system from an adequacy and system operation perspective;

- The UK is a global leader in offshore wind generation, with assets becoming bigger and cheaper, with each subsequent project providing a real-life demonstration that size and scale works for new offshore wind and providing benefits to consumers in the process.
- Offshore wind is already highly competitive against other forms of conventional and low-carbon generation, both in the UK and more widely.

1.5.1.22 The Transmission Assets is a significant infrastructure asset and will provide significant electricity generation capacity to the grid, which in turn will assist to drive down consumer prices.

Public benefit against damage to the Fylde MCZ

1.5.1.23 The relevant public benefit relating to the Transmission Assets must be set against the weight of the conservation interest protected by the MCAA, having regard to the nature and extent of the harm identified to the conservation objectives, alone or in-combination with other plans and projects. The effects upon the Fylde MCZ are assessed in the MCZ Screening and Stage 1 Assessment Report (APP-019). There is potential for long term habitat loss from the installation of external cable protection in the MCZ, however the alone and in-combination assessment concludes that there is no significant risk of hindering the conservation objectives of the Fylde MCZ.

1.5.1.24 In weighing up the public interests delivered by the Transmission Assets with these conservation interests, account needs to be taken of the fact that the benefits of the Transmission Assets include conservation benefits for the marine habitats concerned. The Transmission Assets contribution to reducing the effects of climate change will have ecological benefits which outweigh/override the effects outlined above. Global warming places many species at risk, with a loss of suitable habitat including marine habitat and/or prey due to changing conditions. Rapid, large changes in global temperatures and changes in rainfall patterns may lead to significant rises in sea temperatures, habitat and benthic community changes and changes to the status of the MCZ, and in turn the extinction of certain species that cannot adapt rapidly.

Clear Public Benefits Summary

1.5.1.25 This section demonstrates that there is a clear public benefit to delivering the Transmission Assets.

1.5.1.26 The environmental and social benefits to the UK from increasing the generation of low carbon energy are clear, with the Transmission Assets providing a critical contribution. The Transmission Assets, as a key component of the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm, contributes to the UK's legally binding climate change targets by helping to decarbonise the UK's energy supply, whilst contributing

to the essential tasks of ensuring security of supply and providing low cost energy for consumers in line with the UK Government's national policies.

- 1.5.1.27 If the Secretary of State concludes that Transmission Assets could risk hindering the conservation objectives of the Fylde MCZ, there is a clear public benefit in delivering the project and the policy objectives they would serve, which outweighs the risks to the conservation objectives of the Fylde MCZ.

1.6 Conclusion

- 1.6.1.1 The Applicants maintain that derogation under the MCAA is not required, in accordance with the findings of the MCZ Screening and Stage 1 Assessment Report (APP-019) that there will be no risk to the conservation objectives of the Fylde MCZ as a result of the Transmission Assets.
- 1.6.1.2 Should the Secretary of State disagree with this position, the evidence presented in this document clearly demonstrates that there are no other means of proceeding which could deliver the project objectives and which would have a substantially lesser effect on the MCZ conservation objectives, in accordance with the need for the Transmission Assets.
- 1.6.1.3 There are clear public benefits to the delivery of the Transmission Assets, as outlined in **Section 1.5**, which outweigh the risks to the conservation objectives of the Fylde MCZ.

1.7 References

Department for Business, Energy & Industrial Strategy (BEIS) (2019). The UK's Draft Integrated National Energy and Climate Plan (NECP). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/774235/national_energy_and_climate_plan.pdf, Accessed April 2025.

Defra (2021) Best practice guidance for developing compensatory measures in relation to Marine Protected Areas, Available at: https://consult.defra.gov.uk/marine-planning-licensing-team/mpa-compensation-guidance-consultation/supporting_documents/mpacompensatorymeasuresbestpracticeguidance.pdf, Accessed April 2025.

Department for Energy Security and Net Zero (2023A). "National Policy Statement for Renewable Energy Infrastructure (EN-3). Available at: <https://www.gov.uk/government/publications/national-policy-statement-for-renewable-energy-infrastructure-en-3>, Accessed April 2025.

Department for Energy Security and Net Zero (2023B). "National Policy Statement for Renewable Energy Infrastructure (EN-3). Available at: <https://www.gov.uk/government/publications/national-policy-statement-for-renewable-energy-infrastructure-en-3>, Accessed April 2025.

HM Government (2021) Net Zero Strategy: Build Back Greener. Available at: <https://assets.publishing.service.gov.uk/media/6194dfa4d3bf7f0555071b1b/net-zero-strategy-beis.pdf>, Accessed April 2025.

HM Government (2022) British Energy Security Strategy. Available at: <https://assets.publishing.service.gov.uk/media/626112c0e90e07168e3fdb3/british-energy-security-strategy-web-accessible.pdf>, Accessed April 2025.

The Crown Estate (2014). UK Offshore Wind Supply Chain. Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/277798/bis-14-578-offshore-wind-supply-chain-capabilities-and-opportunities.pdf, Accessed May 2025.

Appendix A: Without Prejudice, In Principle Measures of Equivalent Environmental Benefit (MEEB) Plan

A.1 Without Prejudice, In-Principle MEEB Plan

A.1.1 Introduction

A.1.1.1 Background

- A.1.1.1.1 Morgan Offshore Wind Limited (Morgan OWL), a joint venture between JERA Nex bp (JNbp) and Energie Baden-Württemberg AG (EnBW), is developing the Morgan Offshore Wind Project. The Morgan Offshore Wind Project is a proposed wind farm in the east Irish Sea.
- A.1.1.1.2 Morecambe Offshore Windfarm Ltd (Morecambe OWL), owned by Copenhagen Infrastructure Partners' (CIP) fifth flagship fund, Copenhagen Infrastructure V (CI V), is developing the Morecambe Offshore Windfarm, also located in the east Irish Sea.
- A.1.1.1.3 The Morgan Offshore Wind Project: Generation Assets ('Morgan Generation Assets') and Morecambe Offshore Windfarm: Generation Assets ('Morecambe Generation Assets') are both offshore windfarm projects which, once operational, will each have a capacity of over 100 MW making them Nationally Significant Infrastructure Projects under the Planning Act 2008, as amended (referred to here as 'the Planning Act 2008').
- A.1.1.1.4 Both the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm were scoped into the 'Pathways to 2030' workstream under the Offshore Transmission Network Review (OTNR). The OTNR aims to consider, simplify, and wherever possible facilitate a collaborative approach to offshore wind projects connecting to the National Grid.
- A.1.1.1.5 Under the OTNR, the National Grid Electricity System Operator (NGESO) is responsible for assessing options to improve the coordination of offshore wind generation connections and transmission networks and has undertaken a Holistic Network Design Review (HNDR). A key output of the HNDR process was the recommendation that the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm should work collaboratively in consenting the connection for the two offshore wind farms to the National Grid electricity transmission network at Penwortham in Lancashire.
- A.1.1.1.6 Following a direction by the Secretary of State under section 35 of the Planning Act 2008 (as amended), Morgan OWL and Morecambe OWL (hereafter the Applicants) are jointly seeking a single development consent for their electrically separate transmission assets comprising aligned offshore export cable corridors to landfall and aligned onshore export cable corridors to separate onshore substations (including associated temporary and permanent infrastructure) and onward connection to the National Grid electricity transmission network at the point of interconnection at Penwortham, Lancashire.

A.1.1.2 Overview of the Transmission Assets

- A.1.1.2.1 The purpose of the Morgan and Morecambe Offshore Wind Farms: Transmission Assets (referred to hereafter as 'the Transmission Assets') is to connect the Morgan Offshore Wind Project: Generation Assets and

Morecambe Offshore Windfarm: Generation Assets (referred to collectively as the 'Generation Assets') to the National Grid. The key components of the Transmission Assets, relevant to this Without Prejudice, In-Principle Measures of Equivalent Environmental Benefit (MEEB) Plan, are outlined in full in Volume 1, Chapter 3: Project Description of the Environmental Statement (APP-024) and are summarised as follows:

- Offshore elements:
 - offshore export cables and associated cable protection and cable crossings. These export cables will bring the electricity generated by the Generation Assets to the landfall for onward transmission.
- Landfall:
 - landfall site: this is where the offshore export cables are jointed to the onshore export cables via the transition joint bays. This term applies to the entire area between Mean Low Water Springs and the transition joint bays. Although it should be noted that the landfall site does not spatially overlap with an MCZ.

A.1.1.2.2 The Transmission Assets Order Limits: Offshore (hereafter referred to as the Offshore Order Limits) covers approximately 624 km² and includes all the offshore elements of the Transmission Assets seaward of Mean Low Water Springs. The Transmission Assets are composed of up to six offshore export cables (up to four for the Morgan Offshore Wind Project and up to two for the Morecambe Offshore Windfarm). The maximum length of an offshore export cable through the Fylde Marine Conservation Zone (MCZ) is up to 16 km per cable for each of the four Morgan offshore export cables and up to 12 km per cable for each of the two Morecambe offshore export cables (88 km in total for all six cables) which represents 18.18% of the total offshore export cable length for the Transmission Assets (i.e. 484 km). The project design requirements for these cables in terms of seabed preparation, burial and cable protection are outlined in **section A.1.6**.

A.1.1.3 Purpose of the document

A.1.1.3.1 Given the interaction between the Transmission Assets and the Fylde MCZ, an MCZ Screening was undertaken in support of the application for consent which identified the possibility that activities associated with the Transmission Assets could be capable of significantly affecting the designated features of the Fylde MCZ. This site was, therefore, screened into a Stage 1 MCZ assessment (APP-019). The MCZ Screening and Stage 1 Assessment Report (APP-019), concluded that the conservation objective of maintaining the subtidal sand and subtidal mud protected features of the Fylde MCZ in a favourable condition will not be hindered by the construction, operation and maintenance, and decommissioning phases of the Transmission Assets in isolation, or cumulatively with any other plan, project or activity. This conclusion was primarily based on the localised nature of the potential impacts and the limited extent of infrastructure required to be installed in the Fylde MCZ (up to 30,400 m² of long-term habitat loss which equates to 0.012% of the total area of the Fylde MCZ, as detailed in **section A.1.6.3**). This limited extent means a large percentage of the Fylde MCZ will be preserved enabling the

continued presence, distribution and function of the communities and species which characterise the protected subtidal sand and subtidal mud features.

- A.1.1.3.2 The application for consent for the Transmission Assets was submitted to the Planning Inspectorate in October 2024 and formally accepted in November 2024. In January 2025, Natural England provided a Relevant Representation (RR-1601) stating that Natural England do not agree with the Applicants' conclusion of no likelihood of hindering the conservation objectives of Fylde MCZ. Natural England advised that the MCZ assessment should proceed to a Stage 2 assessment and that the Applicants should provide a without prejudice MEEB case to address the impact of long term habitat loss on the Fylde MCZ. In February 2025, the Planning Inspectorate issued a Rule 9 letter (PD-005) which highlighted Natural England's Relevant Representation and requested that that the information sought by Natural England should be provided, or the Applicants should provide robust information in its place to satisfy the concerns and to inform the Planning Inspectorate's consideration of the effects relating to the MCZ assessment. Whilst the Applicants maintain that the Transmission Assets will not hinder the conservation objectives of the Fylde MCZ, as detailed in the MCZ Screening and Stage 1 Assessment Report (APP-019), and a Stage 2 MCZ assessment is not required, the Applicants are providing this In-Principle MEEB Plan on a precautionary and without prejudice basis to address the requests from Natural England and the Planning Inspectorate and to enable further consultation on Stage 2 assessment to be undertaken during the Planning Inspectorate examination of the Development Consent Order (DCO) application.
- A.1.1.3.3 This document, therefore, provides the Applicants' Without Prejudice, In-Principle MEEB Plan to support the Stage 2 MCZ Assessment. This Without Prejudice, In-Principle MEEB Plan has been produced entirely without prejudice to the Applicants' position provided in the MCZ Screening and Stage 1 Assessment Report (APP-019), which concluded that there will be no significant risk of hindering the conservation objectives of the Fylde MCZ. The other tests that require consideration as part of the Stage 2 MCZ Assessment, as outlined in **paragraph A.1.2.1.4**, are addressed separately in the **MCZ Stage 2 (M&M Transmission) - legal and policy tests** document of which this document is appended.
- A.1.1.3.4 This document defines the potential long term impacts to the Fylde MCZ and outlines the preferred option for MEEB which has been discussed and agreed with Natural England (i.e. strategic compensation). This document also demonstrates why strategic compensation is considered to be the most appropriate measure for the Transmission Assets, should the Secretary of State reach the conclusion that the Transmission Assets will have a significant risk of hindering the conservation objectives of the Fylde MCZ.

A.1.1.4 Implications of the construction scenarios

- A.1.1.4.1 A range of construction scenarios have been identified as the exact timings for construction for each of the offshore wind farms is still unknown. Further information on the construction scenarios is provided in section 3.9.2 of Volume 1, Chapter 3: Project description of the Environmental Statement (AS-024) and within Rule 9 - ES Assessment of Construction Scenarios (AS-070).

The construction scenarios can be categorised as outlined in the following sections.

In isolation

- Either construction of the Morgan Offshore Wind Project: Transmission Assets only (i.e. where the Morecambe Offshore Windfarm does not proceed to construction) with an indicative total construction duration of 36 months; or
- Construction of the Morecambe Offshore Windfarm: Transmission Assets only (i.e. where the Morgan Offshore Wind Project does not proceed to construction) with an indicative total construction duration of 30 months.

Concurrent

- At a high level this encompasses construction of the Morgan Offshore Wind Project: Transmission Assets and the Morecambe Offshore Windfarm: Transmission Assets at the same time. Within the concurrent scenario, the two projects could be delivered as follows:
 - Same start or finish:
 - Where construction of both projects commences at the same time and Morecambe Offshore Windfarm: Transmission Assets completes construction first (based on its shorter indicative total construction period of 30 months) ahead of Morgan Offshore Wind Project: Transmission Assets (which has an indicative total construction period of 36 months); or
 - Where the Morgan Offshore Wind Project: Transmission Assets commences construction first and Morecambe Offshore Windfarm: Transmission Assets commences construction approximately 6 months later with both projects completing construction at the same having an indicative total construction duration of 36 months and Morecambe Offshore Windfarm: Transmission Assets having an indicative total construction duration of 30 months).
 - Indicative Total Duration: 36 months for concurrent construction (same start or finish)

Sequential

- Sequential construction, where the Morgan Offshore Wind Project: Transmission Assets are constructed first and the Morecambe Offshore Windfarm: Transmission Assets are constructed second, or vice versa. In a sequential scenario, no element of the construction works will occur concurrently. The commencement of construction for the second project will only take place once the construction of the first offshore wind farm's transmission assets has been fully completed. For example, in the event Morgan Offshore Wind Project: Transmission Assets constructs first, Morgan OWL would establish its own working areas as part of the Project

A works and reinstate them upon the completion of its construction works. Subsequently, Morecambe Offshore Windfarm: Transmission Assets would establish its working areas as part of the Project B works and would reinstate them upon the completion of its own construction period, or vice versa.

- This may include:
 - Immediate sequential construction of the Transmission Assets with no gap between the completion of construction of the transmission assets for the first offshore wind farm and commencement of construction of the transmission assets for the second offshore wind farm.
 - Indicative Total Duration: Up to 66 months for sequential construction.
 - Sequential construction with a gap of up to a maximum of four years between completion of construction of the transmission assets for the first offshore wind farm and commencement of construction of the transmission assets for the second offshore wind farm. Noting that under the draft DCO (AS-004) the second project must be commenced within 7 years of the coming into force of the DCO.
 - Indicative Total Duration: Construction of Morgan Offshore Wind Project: Transmission Assets for up to 36 months, with up to 48 months between completion of Morgan Offshore Wind Project: Transmission Assets and Morecambe Offshore Windfarm: Transmission Assets starting construction plus construction of Morecambe Offshore Windfarm: Transmission Assets for 30 months. This is an overall period of 120 months although active construction activities would only take place for a combined period of up to 66 months for the transmission assets of both offshore wind farms.

Implications for the MCZ assessment

- A.1.1.4.2 The predicted impacts on the Fylde MCZ are no different if the Morgan Offshore Wind Project: Transmission Assets and the Morecambe Offshore Windfarm: Transmission Assets are delivered concurrently or sequentially. This is because for long term habitat loss, the key consideration is the maximum extent of the seabed lost, regardless of how long it takes to get to the maximum extent. The total spatial footprint of the infrastructure is the same for all sequential and concurrent scenarios. The timescale associated with the installation of the infrastructure, whether it is all installed concurrently or over a longer time period, will not materially change the long term nature of the habitat loss (>35 years) within the Fylde MCZ which is being considered in this document to inform any compensation that may be required.
- A.1.1.4.3 Should the Morgan Offshore Wind Project: Transmission Assets or the Morecambe Offshore Windfarm: Transmission Assets proceed in isolation, it would be necessary to deliver only the scale of measures required to achieve adequate MEEB that are proportionate to the impacts predicted from the given project in isolation. This will only be feasible if the adopted MEEB measures

are ecologically scalable. If they are not, the Applicant that proceeds to construction in isolation would be responsible for delivering the MEEB measures to the extent required to address its respective impacts.

A.1.1.5 Structure of the report

A.1.1.5.1 The structure of this Without Prejudice, In-Principle MEEB Plan is as follows.

- **Section A.1.1** – Introduction.
- **Section A.1.2** – Legislation and guidance.
- **Section A.1.3** – Consultation.
- **Section A.1.4** – Methodology.
- **Section A.1.5** – Fylde MCZ.
- **Section A.1.6** – Establishing the level of potential impact on the Fylde MCZ.
- **Section A.1.7** – MEEB plan.
- **Section A.1.8** – Conclusion.

A.1.2 Legislation and guidance

A.1.2.1 Marine and Coastal Access Act 2009

Stage 1 assessment

A.1.2.1.1 Section 126 of the Marine and Coastal Access Act 2009 places specific duties on regulatory bodies relating to MCZs and marine licence decision making. Section 126 applies where:

- *(a) A public authority has the function of determining an application (whenever made) for authorisation of the doing of an act, and*
- *(b) The act is capable of affecting (other than insignificantly) -*
 - *(i) The protected features of an MCZ and/or*
 - *(ii) Any ecological or geomorphological process on which the conservation of any protected feature of an MCZ is (wholly or in part) dependent.*

A.1.2.1.2 The authority must not grant authorisation for the doing of the act unless the Applicants seeking the authorisation satisfy the authority that there is no significant risk of the act hindering the achievement of the conservation objectives stated for the MCZ.

A.1.2.1.3 The Statutory Nature Conservation Bodies (SNCBs) have responsibility under the Marine and Coastal Access Act 2009 to give advice on how to identify the activities that are capable of affecting the designated features and the processes which they are dependent upon.

Stage 2 assessment

- A.1.2.1.4 If the Applicants seeking the authorisation are not able to satisfy the authority that there is no significant risk of the act hindering the achievement of the conservation objectives stated for the MCZ, that Applicants must satisfy the authority that the conditions in sections 126(7)(b) and (c) of the Marine and Coastal Access Act 2009 can be met in that:
- *(a) there is no other means of proceeding with the act which would create a substantially lower risk of hindering the achievement of those objectives;*
 - *(b) the benefit to the public of proceeding with the act clearly outweighs the risk of damage to the environment that will be created by proceeding with it; and*
 - *(c) the person seeking the authorisation will undertake, or make arrangements for the undertaking of, MEEB to the damage which the act will or is likely to have in or on the MCZ.*
- A.1.2.1.5 Parts (a) and (b) are addressed separately in the **MCZ Stage 2 (M&M Transmission) - legal and policy tests**. The information presented in this document focuses only on MEEB and is provided on a precautionary and without prejudice basis.

A.1.2.2 Guidance on MEEB

- A.1.2.2.1 The Overarching National Policy Statement (NPS) for Energy (EN-1) (Department for Energy Security and Net Zero, 2023) details the purpose of MCZs, which is to conserve marine flora or fauna, marine habitats or types of marine habitat or features of geological or geomorphological interest and highlights that the Secretary of State's decision making is bound by the duties in relation to MCZs imposed by sections 125 and 126 of the Marine and Coastal Access Act 2009.
- A.1.2.2.2 The NPS for Renewable Energy Infrastructure (EN-3) (Department for Energy Security and Net Zero, 2023) states that the Applicants should refer to the latest Department for Environment, Food and Rural Affairs (Defra) compensation guidance.

Defra best practice guidance

- A.1.2.2.3 The latest Defra (2021) best practice guidance for developing compensatory measures in relation to Marine Protected Areas (MPAs), which includes MCZs, lays out the following advice to assist relevant authorities when considering the specific issue of when and how compensatory measures should be considered for developments that may impact on a MPAs. Defra advise that MEEB should:
- link to the conservation objectives for the site or feature and address the specific damage caused by the permitted activity;
 - focus on providing the same ecological function as the species or habitat that the activity is damaging OR, where this is not technically possible,

provide functions and properties that are comparable to those that originally justified designation;

- not negatively impact on any other sites or features;
- ensure the overall coherence of designated sites and the integrity of the MPA network; and
- be able to be monitored to demonstrate that they have delivered effective and sustainable compensation for the impact of the project. The monitoring and management strategy must require further action to be taken if the compensation is not successful.

A.1.2.2.4 Regarding the provision of measures with the same or comparable ecological functions Defra presents a hierarchy within which to consider measures:

- address same impact at same location;
- same ecological function different location;
- comparable ecological function same location; and
- comparable ecological function different location.

A.1.2.2.5 The preferred MEEB would adhere to the first scenario in the hierarchy, addressing the same impact at the same location, however, should this not be possible, the Applicants should consider options at other levels of the hierarchy. This guidance highlights how Defra have prioritised the ecological function of the feature (habitat or species) above its exact location whether that be inside or outside the designated site. However, measures within a site are preferable to those outside.

A.1.2.2.6 Beyond the environmental value and function of the affected feature and the location of the compensatory measure it is also important to consider:

- the extent of the impact (the number and status of the features affected);
- how quickly compensatory measures are expected to be functioning and contributing to the MPA network; and
- the confidence in the measure being entirely effective and ability for its success to be monitored and managed.

A.1.2.2.7 The Defra (2021) guidance specifies that ideally measures should be in place, functioning and contributing to the MPA network before development begins. The guidance notes that this may not be feasible for some projects, however, the compensation must be secured financially and logistically before the feature is impacted. Defra do, however, recognise that this is not always possible.

A.1.2.2.8 Defra entered a consultation period in 2024 regarding updates to guidance for MPA Assessment (Defra, 2024). This consultation sought views on policies that support updated guidance for carrying out environmental assessments in relation to MPAs and the next steps in reforming legislation that underpins MPA assessments to help streamline decision-making for offshore wind applications. Defra intend to update their MPA guidance to provide a clear framework that developers and decision makers can use to determine how to avoid, reduce, mitigate and compensate for the impacts of their projects on

MPAs. Specifically, the updated guidance will focus on the delivery of compensatory measures for marine industries by providing advice on how measures agreed at the plan level can be secured at the project level.

- A.1.2.2.9 **Table A. 1** provides an overview of the minimum requirements for MEEB provided in the Defra (2021) guidance, along with reference to where they have been addressed within this MEEB plan.

Table A. 1: MEEB Requirements (Defra, 2021)

MEEB Requirement	Where has this been addressed?
The extent of the impact – the number and status of the features affected	Provided in sections A.1.6.3 and A.1.5.4 respectively.
The environmental value and function of the affected feature	Provided in section A.1.5.3 .
The environmental value and function of the proposed compensatory measure	Provided in section A.1.7 for all proposed MEEB options.
The location of the proposed compensatory measure	
How quickly compensatory measures are expected to be functioning and contributing to the network	
The confidence in the measure being entirely effective	
Ability for its success to be monitored and managed accordingly	

Marine Recovery Fund (MRF) guidance

- A.1.2.2.10 In January 2025, Defra acknowledged in a Written Ministerial Statement (WMS) that multiple offshore wind projects are at risk because there are currently no ecologically effective options that developers can deliver themselves to compensate for their unavoidable impacts on seabed habitats within Special Areas of Conservation (SACs) and MCZs (UK Parliament, 2025). Without suitable measures, these projects cannot be delivered. Defra has, therefore, committed in the WMS to the delivery of sufficient MPA designations and/or extensions to provide strategic compensation for likely benthic environmental impacts resulting from offshore wind developments.
- A.1.2.2.11 The WMS confirms that, in all cases, MPA designations will be delivered by Defra and that those designations and associated management will be funded by the offshore wind developers that successfully apply to use this measure through the MRF.
- A.1.2.2.12 In January 2025, the Department for Energy Security and Net Zero (DESNZ) published interim guidance for offshore wind farm developers explaining how the strategic compensation measures in the Offshore Wind Environmental Improvement Package (OWEIP) Library of Strategic Compensation Measures (LoSCM) can be referred to prior to the MRF being operational (DESNZ, 2025). The only approved strategic benthic compensation measure currently in the LoSCM is the designations of new MPAs and/or extensions to existing

MPAs. Applicants will be required to pay into the MRF to access MPA designations/extensions as a compensation measure.

- A.1.2.2.13 The DESNZ (2025) guidance states that Applicants wishing to rely on MPA designations and/or extensions as compensation for benthic impacts should work closely with SNCBs, and Defra, to determine whether this would provide appropriate compensation measures of a type suitable for a proposed development's potential adverse effect. It is recognised that the detailed information usually expected by DESNZ Secretary of State may not be fully available until the Government's MPA designation/extension programme is complete. The WMS therefore commits to the production of high-level Implementation and Monitoring Plans, which should be obtained from Defra by the applicants and provided to the DESNZ Secretary of State before works which give rise to the adverse effect for which compensation is required can commence.
- A.1.2.2.14 As an application progresses, the draft DCO requirements regarding compensation measures may be updated as more clarity on MPA designations and/or extensions becomes available, and certainty as to the type of compensation which is available and is being delivered increases over time.
- A.1.2.2.15 In March 2025, Defra opened a consultation on how the MRF will function with a view to using responses to finalise the design of the MRF (Defra, 2025). The consultation, which closes on 12 May 2025, seeks views on the proposed application process, costs and charges, and how the MRF will deliver compensatory measures.

A.1.3 Consultation

- A.1.3.1.1 Section 127(1) of the Marine and Coastal Access Act 2009 states that "The appropriate statutory conservation body may give advice and guidance as to... (e) which activities are, or are not, of equivalent environmental benefit (for the purposes of section 126(7)(c)) to any particular damage to the environment (within the meaning of that provision)". This Without Prejudice, In-Principle MEEB Plan therefore aims to facilitate discussions with relevant stakeholders regarding the key elements of the plan on a without prejudice basis.

A.1.3.2 Pre-application consultation

Evidence Plan Process

- A.1.3.2.1 An Evidence Plan Process (EPP) was developed for the Transmission Assets, seeking to ensure engagement with the relevant aspects of the Environmental Impact Assessment (EIA) process throughout the pre-application phase. The development and monitoring of the Evidence Plan and its subsequent progress was undertaken by the EPP Steering Group. The Steering Group comprised the Planning Inspectorate, the Applicants, the Marine Management Organisation (MMO), Natural England, Historic England, the Environment Agency and the Local Planning Authorities as the key regulatory and bodies.
- A.1.3.2.2 As part of the EPP, Expert Working Groups (EWGs) were set up to discuss and agree topic specific issues with the relevant stakeholders.

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- A.1.3.2.3 A benthic ecology, fish and shellfish and physical processes EWG was established with the SNCBs which included representatives from the MMO, The Centre for Environment Fisheries and Aquaculture Science (Cefas), the Environment Agency, Natural England, The North West Wildlife Trust, Joint Nature Conservation Committee (JNCC) and the North Western Inshore Fisheries and Conservation Authority. Discussion during the pre-application phase regarding the impact of the Transmission Assets on MCZs focussed on the MCZ Screening and Stage 1 MCZ Assessment Report (APP-019), providing consultees with information on the benthic subtidal surveys within the Transmission Assets which overlap with relevant MCZs, the proposed approach to the assessment, the outputs of the assessments, Section 42 feedback and refinements to the project design for the final application.

Statutory consultation responses

- A.1.3.2.4 The preliminary findings of the EIA process were published in the Preliminary Environmental Information Report (PEIR) in October 2023. The PEIR was prepared to provide the basis for formal consultation under the Planning Act 2008. This included consultation with statutory bodies under Section 42 and 47 of the Planning Act 2008, as presented in **Table A. 2**. The PEIR included the MCZ Screening and Stage 1 Assessment Report (APP-019) which facilitated engagement with the SNCBs on the conclusions regarding the impact of the Transmission Assets on the Fylde MCZ and discussion regarding the requirement for MEEB for the Transmission Assets.
- A.1.3.2.5 Following the feedback received during Section 42 consultation a number of refinements were made to the project design within the Fylde MCZ which resulted in significant reductions in the area of long term habitat loss associated with cable protection (**Table A. 2**) as well as temporary habitat loss/disturbance. These refinements were initially discussed with the benthic ecology, fish and shellfish and physical processes EWG in February 2024 and then formally presented in the EWG meetings in August and September 2024. The reductions to the project design parameters in the Fylde MCZ were received favourably by the SNCBs.

A.1.3.3 Post-application/Pre-examination consultation

- A.1.3.3.1 The application for consent for the Transmission Assets was submitted in October 2024 and formally accepted in November 2024. Relevant Representations were received from consultees in January 2025, including Natural England (RR-1601). In addition, the Applicants held a meeting with Natural England to discuss the Fylde MCZ and potential MEEB options on 12 February 2025 where Natural England confirmed that their position is that the preferred approach is strategic compensation over project led methods for MEEB for the Transmission Assets (**Table A. 2**).

A.1.3.4 Summary of consultation responses received

- A.1.3.4.1 A summary of the key items raised during the pre-application and pre-examination phases, which are relevant to this Without Prejudice, In-Principle MEEB Plan is presented in **Table A. 2**, together with how these have been

considered in the production of this plan. It should however be noted that formal responses to for all consultation responses received during the pre-application phase are provided in the Consultation Report (APP-170) submitted as part of the DCO application.

Table A. 2: Summary of key consultation comments raised during consultation activities undertaken for the Transmission Assets relevant to the Without Prejudice, In-Principle MEEB Plan.

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this MEEB plan
November 2023	Natural England – Section 42 Responses	Natural England advised that where possible, the avoid, reduce, mitigate hierarchy should be employed to reduce environmental impacts. Natural England acknowledged the likelihood of needing cable protection within Fylde MCZ and therefore advised that the developer should explore options for a Stage 2 MCZ assessment including an In-Principle MEEB Plan.	The mitigation hierarchy was considered throughout the development of the Transmission Assets (see Table A. 4) and in the production of the MCZ Screening and Stage 1 Assessment Report (APP-019). As part of this mitigation hierarchy process the project design was refined between PEIR and the final ES. The area of long term habitat loss associated with cable protection in the Fylde MCZ was significantly reduced by approximately 81% from 159,580 m² to 30,400 m². Furthermore, the area of temporary habitat disturbance/loss within the Fylde MCZ was reduced due to a reduction in sandwave clearance width from 104 m to 60 m for Morgan offshore export cables and 104 m to 48 m for Morecambe offshore export cables. For the final application the Applicants' position remained that there is no significant risk to the achievement of the conservation objectives of the Fylde MCZ, and that a Stage 2 assessment is not required.
February 2024	Natural England – 3rd benthic ecology, fish and shellfish and physical processes EWG	The Applicants presented the key section 42 responses received from SNCBs following the publication of the PEIR and the proposed actions to be taken to address these comments including proposed refinements to the parameters for cable protection and sandwave clearance within the Fylde MCZ. Natural England welcomed the reductions in the Maximum Design Scenario (MDS) for long term habitat loss but considered their advice to be unchanged. Natural England still expect to see a Without Prejudice, In-Principle MEEB plan as part of the application.	The Applicants consider that a robust and precautionary assessment of the impacts of the Transmission Assets, alone and cumulatively with other plans and projects, has been undertaken and presented in the MCZ and Stage 1 Assessment Report (APP-019). For the final application the Applicants' position remained that there is no significant risk to the achievement of the conservation objectives of the Fylde MCZ, and that a Stage 2 assessment is not required.
		Natural England were unable to comment regarding their preference of MEEB. Natural England did however highlight the oyster bed restoration MEEB proposed for	This In-Principle MEEB Plan has been provided on a precautionary and without prejudice basis to explore potential options for MEEB should the Secretary of State deem it

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this MEEB plan
		the Sheringham and Dudgeon extension projects. They also highlighted a mechanism was being developed for designated site extension and therefore this option could be considered as part of the long list.	necessary. The Sheringham and Dudgeon extension projects and Hornsea 3 have both been considered in the process of developing this plan. However, the development of suitable MEEB is site specific and therefore the MEEB options accepted for other projects (e.g. oyster beds as MEEB for the Cromer Shoal Chalk Beds MCZ) may not be the most suitable option for the Fylde MCZ (with its sedimentary features). The development of the MEEB plan has included consideration of strategic and project-led compensation measures which would result in an enhancement or creation of habitat with the same or similar function to the designated features of the Fylde MCZ. This consideration is detailed in section A.1.7 . As outlined below, the Applicants and Natural England are in agreement that the preferred approach is likely to be strategic compensation over project led methods for MEEB for the Transmission Assets (CoT136; Table A. 6).
		In addition to habitat creation MEEB, Natural England agreed that removal of pressures such as aggregate extraction could be considered, however removal of marine litter is not favoured for future projects.	The removal of pressure including the removal of disused cables and pipelines, as well as the removal of marine debris, have been considered in the long list as well as the use of artificial reef structures built in to cable protection (Table A. 7). These measures have not however been taken forward as the proposed MEEB for the Transmission Assets on Natural England's advice as well as their inability to adequately address the function of the designated features of the Fylde MCZ.
		Natural England confirmed that nature inclusive design was deemed as enhancement rather than MEEB.	
August 2024	Natural England, MMO, Cefas, Environment Agency and The Wildlife Trust – 4th benthic ecology, fish and shellfish and	The Applicants presented the confirmed MDS reductions to be included in the final application, together with the updated commitments relevant to the Fylde MCZ. Natural England again welcomed the reductions but were unable to give an agreement during the EWG as to whether MEEB would be required.	The Applicants welcomed this consideration and notes Natural England's written response following the 4 th EWG (see below).

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this MEEB plan
	physical processes EWG		
September 2024	Natural England written response following the 4 th benthic ecology, fish and shellfish and physical processes EWG	Natural England welcomed the work put into refining the project design in order to reduce effects on the Fylde MCZ. However, Natural England stated that they could only assess the MDS that is put forward and therefore, Natural England could not provide agreement at that stage. Natural England would review this position when the full assessment is provided.	The Applicants welcomed Natural England's acknowledgement of the efforts made to reduce the MDS for the Fylde MCZ.
January 2025	Natural England – Relevant representation (RR-1061)	Natural England did not agree with the Applicants' conclusion of no likelihood of hindering the conservation objectives of Fylde MCZ as a result of the Transmission Assets alone or cumulatively. Consequently they advise that MEEB will be required. Natural England highlighted that the progression of strategic compensation has come about due to the extreme difficulties in delivering project specific benthic compensation. At this stage, Natural England do not believe that there is merit in progressing and/or placing reliance upon project specific benthic compensation measures. Natural England advised that whilst cable protection is in situ, the extent and distribution of the site features can neither be maintained or restored. Therefore the Transmission Assets cable protection is considered to result in lasting habitat change from sedimentary habitat to hard substrate. Natural England disagreed with the characterisation of the scale of long term habitat loss as small.	The Applicants' MCZ Screening and Stage 1 Assessment Report (APP-019) concluded that cable protection for the Transmission Assets would not affect the conservation objectives of the Fylde MCZ. In regard to the request to provide Without Prejudice MEEB, the Applicants maintain that a Stage 2 MCZ Assessment and MEEB are not required. As per the request by the Examining Authority (ExA) in the Rule 9 Letter (PD-005) to provide a Without Prejudice MEEB, the Applicants have begun engagement with Natural England on possible MEEB options (see meeting referenced below in this table). Natural England highlighted their preference for strategic led measures through the MRF as MEEB for the Transmission Assets, noting that the Applicants may wish to also provide a project led long list similar to other projects currently going through examination (e.g. Five Estuaries Offshore Wind Farm and Outer Dowsing Offshore Wind (Generating Station)). As per the request from the ExA, the Applicants have prepared this Without Prejudice In-Principle Stage 2 MCZ Assessment for Deadline 1.

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this MEEB plan
		Natural England are concerned that the Applicants have not committed to the removal of cable protection in the decommissioning phase.	The Applicants acknowledge Natural England's concerns and recognise the importance of sustainable and removable cable/scour protection. As detailed in the Outline Cable Specification and Installation Plan (CSIP) (APP-220), the Transmissions Assets design is considering multiple cable protection options. As outlined in Table A. 6 the Outline CSIP (APP-220) identifies that cable burial is the preferred option for cable protection where practicable (CoT54) and should any external cable protection be required within the Fylde MCZ, it will be designed to be removable upon decommissioning (CoT108) with the requirement for removal agreed with stakeholders and regulators at the time of decommissioning (CoT109, Table A. 6). The Applicants have also committed to no rock dumping within the Fylde MCZ secured through the deemed marine licence as part of the draft DCO, in acknowledgment that this is the least recoverable type of cable protection.
		Natural England welcomed the MDS refinements and consideration for the mitigation hierarchy displayed by the Applicants however they advise further mitigation options should be explored to minimise the impact to the Fylde MCZ.	The Applicants have considered all reasonable options for reducing the MDS in accordance with the mitigation hierarchy, as outlined in Table A. 4 , that are possible at this stage of the project. The exact requirements for cable protection within the Fylde MCZ will be informed through survey works pre-construction and Detailed Offshore Cable Specification and Installation Plans CSIP(s) will be developed in accordance with the Outline Offshore CSIP (APP-220).
		Natural England advised that the Applicants should provide more information regarding the location of any predicted loss in terms of where it sits in relation any designated features.	Details of cable protection material and volumes for the Transmission Assets are provided in sections 3.12.6 of Volume 1, Chapter 3: Project description (AS-024) with further details provided in the Outline CSIP (APP-220). These detail: - the location of crossings are shown in Volume 1, Annex 3.1: Offshore Crossing Schedule ((APP-025); - requirements for cable protection due to ground conditions (Table 3.7 in Volume 1, Chapter 3: Project description (AS-024));

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this MEEB plan
			within the Fylde MCZ, and MDS for up to 4 cable crossings (up to 4,000 m³ of cable protection) and a 3% cable protection contingency for ground conditions (26,400 m³ of cable protection) as detailed in section 7.2 and section 7.3 in the Outline CSIP (APP-220)), The Applicants have outlined the level of the potential impact of cable protection on the Fylde MCZ in section A.1.6. The Applicants are now able to confirm that the cable crossing will occur wholly within the subtidal mud feature.
February 2025	Meeting with Natural England	Natural England reiterated their request that the Applicants provide a without prejudice MEEB plan.	The Applicants and Natural England are in agreement that the preferred approach is likely to be strategic compensation over project led methods for MEEB for the Transmission Assets. In section A.1.7 the Applicants have provided details regarding the project led compensation measures which have been considered and why, in the Applicants' view, strategic compensation, as agreed with Natural England, is the most appropriate MEEB options for the Transmission Assets (CoT136; Table A. 6).
		Natural England confirmed that their preferred MEEB for the Transmission Assets is the strategic compensation route and that compensation at a project level would not provide the ecological function needed to compensate for the loss of the subtidal mud or subtidal sand features. They highlighted that project led measures these would likely be challenging to implement and relied on compliance from other organisations.	
		Natural England confirmed that the Transmission Assets is on Defra's list of projects earmarked for the strategic compensation, and that subtidal sand and subtidal mud features are included as features to be compensated for.	The WMS confirms that Defra are committed to designating new MPAs and/or extending existing MPAs in Secretary of State waters to deliver sufficient strategic compensation to compensate for likely environmental effects of offshore wind development for projects that received a lease from the Crown Estate (TCE) under Leasing Round 4 and associated transmission infrastructure projects, thereby including the Transmission Assets.
		In response to the Applicants outlining their short listed project led MEEB options, Natural England highlighted that project led measures such as bivalve seeding and native oyster bed creation are not suitable for this project as they would not produce like-for-like compensation.	To demonstrate consideration of all potential options the Applicants have considered project-led measures including bivalve seeding, the creation of native oyster beds and seagrass restoration (section A.1.7.3) however as noted above the preferred MEEB for the Transmission Assets is likely to be strategic compensation (CoT136; Table A. 6).

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this MEEB plan
		Natural England also highlighted that seagrass restoration is not considered to be a successful measure in the long term in many areas due to water quality issues and a requirement for heavy management.	
		Natural England stated that in-principle it should be possible for the impacts from the Transmission Assets to occur before strategic compensation is in place provided the Applicants state they are committed to strategic compensation. The crucial point to be agreed in examination is the area of seabed to be impacted	The Applicants welcome this advice and have provided the MDS for the area of habitat loss in section A.1.6 .
		Natural England reiterated their concerns regarding decommissioning of cable protection within the Fylde MCZ and stated that the Applicants would need to commit to the removal of cable protection during the decommissioning phase and were content with the use of concrete mattresses as cable protection.	As outlined in Table A. 4 , the Applicants are committed to ensuring that any external cable protection installed within the Fylde MCZ (if any is required) will be designed to be removable upon decommissioning (CoT108). The requirement for removal of cable protection within the Fylde MCZ will be agreed with stakeholders and regulators at the time of decommissioning (CoT109, Table A. 6) The Applicants have also committed to no rock dumping within the Fylde MCZ secured through the deemed marine licence as part of the draft DCO, in acknowledgment that this is the least recoverable type of cable protection.
February 2025	Planning Inspectorate – Rule 9 Letter	The Planning Inspectorate highlighted Natural England's Relevant Representation and requested that that the information sought Natural England should be provided or robust information be submitted in its place to satisfy the concerns and to inform our consideration of the effects relating to the MCZ assessment.	The Applicants' MCZ Screening and Stage 1 Assessment Report (APP-019) concluded that cable protection for the Transmission Assets would not affect the conservation objectives of the Fylde MCZ. In regard to the request to provide Without Prejudice MEEB, the Applicants maintain that a Stage 2 MCZ Assessment and MEEB are not required. As per the request by the ExA in the Rule 9 Letter (PD-005) to provide a Without Prejudice MEEB, the Applicants have begun engagement with Natural England on possible MEEB options (see meeting referenced below in this table). Natural England highlighted their preference for strategic led measures through the MRF as MEEB for the Transmission Assets, noting that the Applicants may wish to also provide a project led long list similar

Date	Consultee and type of response	Comment raised	Response to comment raised and/or where considered in this MEEB plan
			to other projects currently going through examination (e.g. Five Estuaries Offshore Wind Farm and Outer Dowsing Offshore Wind (Generating Station)). As per the request from the ExA, the Applicants have prepared this Without Prejudice In-Principle Stage 2 MCZ Assessment for Deadline 1.

A.1.4 Methodology

A.1.4.1.1 To develop this Without Prejudice, In-Principle MEEB Plan for the Transmission Assets, a longlist of potential measures, both strategic compensation measures and project-led measures, was developed to outline all potential MEEB which could provide equivalent benefit to the features potentially impacted by the Transmission Assets. These potential measures have been outlined in **section A.1.7**, with further detail provided including information such as:

- where each measure falls within Defra's mitigation hierarchy (outlined in **paragraph A.1.2.2.4**);
- logistical feasibility (i.e. how the measure would be implemented including relevant examples of the measure being implemented successfully);
- timeframe (i.e. how long it would take for the measure to become functional); and
- monitoring (i.e. what would be required to monitor the measure to ensure that it is a success).

A.1.4.1.2 An overall feasibility score was assigned for each of the potential measures taking into account the factors detailed in **paragraph A.1.4.1.1**. Measures with a medium or low overall feasibility score were screened out of further investigation. As outlined in **Table A. 2**, the Applicants and Natural England are in agreement that strategic compensation is likely to be the preferred MEEB option for the Transmission Assets.

A.1.5 Fylde MCZ

A.1.5.1 Overview

A.1.5.1.1 The Fylde MCZ was designated as an MCZ on the 29 January 2016. The Fylde MCZ is located in Liverpool Bay, between 3 and 20 km off the Fylde coast and Ribble Estuary, covering an area of 260.6 km² (Natural England, 2023a) (**Figure A. 1**).

A.1.5.1.2 Figure A. 1 shows the delineation between the Transmission Assets for Morgan OWL (1A) and Morecambe OWL (1B) within the Fylde MCZ. For completeness it also shows the overlapping temporary works areas (3A/3B) within the Fylde MCZ, the nearshore work areas (2A/2B) and the intertidal work areas (4A/4B). On all subsequent drawings, only work areas 1A and 1B are shown as these are the areas within which cables will be installed. Further details on the work numbers is provided in the draft DCO (AS-004) and shown in the work plans (APP-151 to APP-155).

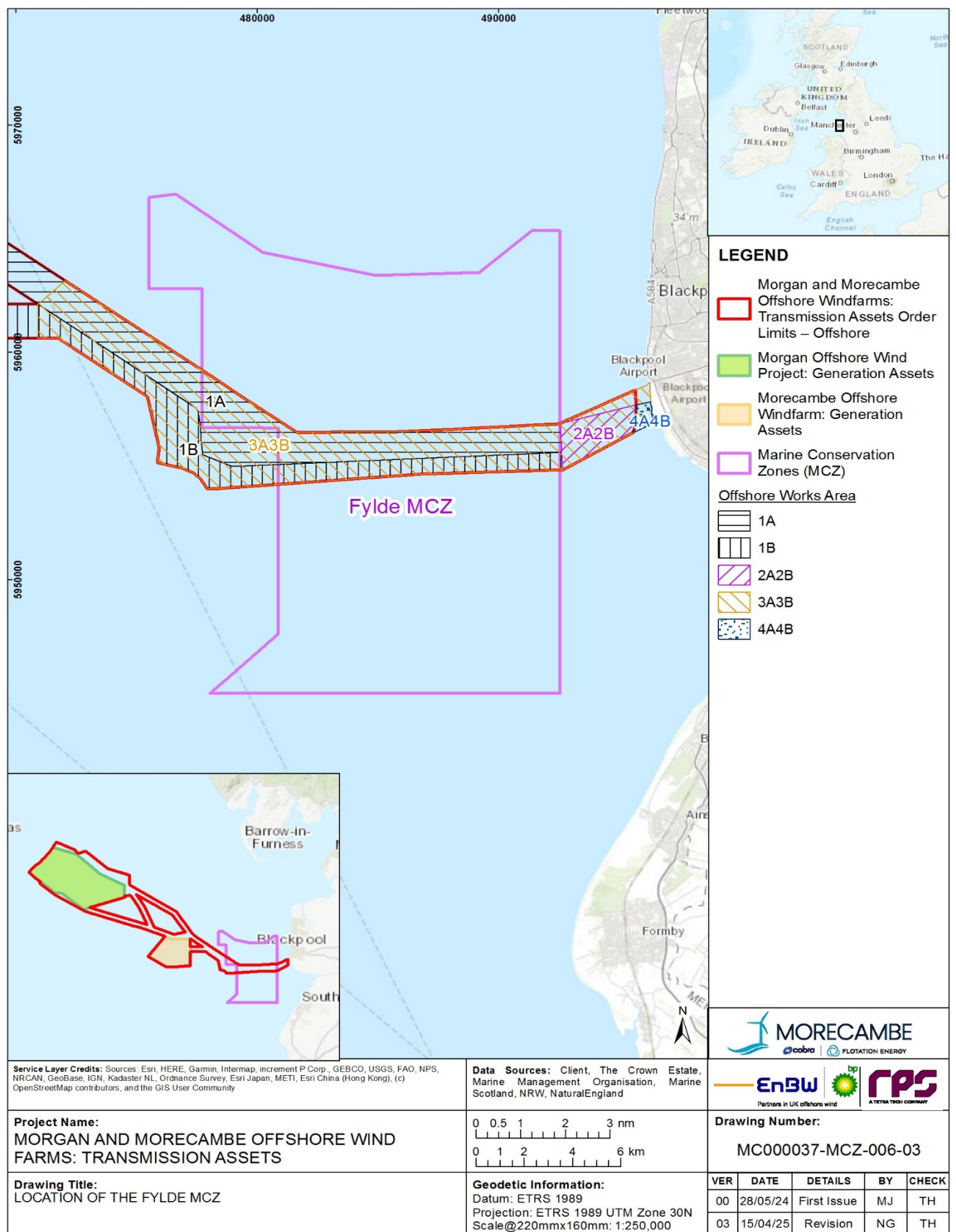


Figure A. 1: Location of the Fylde MCZ.

A.1.5.2 Designated features

A.1.5.2.1 The Fylde MCZ is designated for two broadscale marine habitat features: Subtidal sand and Subtidal mud. These features are considered to be good representatives of the seabed habitats and communities found on the east side of Liverpool Bay. The distribution of these features within the Fylde MCZ is shown in **Figure A. 2**. There is a small area of high energy circalittoral rock which falls within the limits of the MCZ, but this is not a designated feature of the Fylde MCZ (**Figure A. 2**).

A.1.5.2.2 **Table A. 3** presents the designated features of the Fylde MCZ, with their spatial extents within the MCZ, and the general management approach as stated in Natural England's Supplementary Advice on Conservation Objectives (SACOs) (Natural England, 2023b) and the condition of the features as detailed in Natural England (2023c).

Table A. 3: Designated features of the Fylde MCZ, recorded extents, feature condition and general management approach

Designated Features (Natural England, 2023a)	Spatial Extent within MCZ (km ²) (Natural England, 2023b)	Feature Condition (Natural England, 2023c)	General Management Approach (Natural England, 2023a)
Subtidal mud (A5.3)	44.147	Favourable	Maintain in favourable condition
Subtidal sand (A5.2)	216.271	Favourable	Maintain in favourable condition

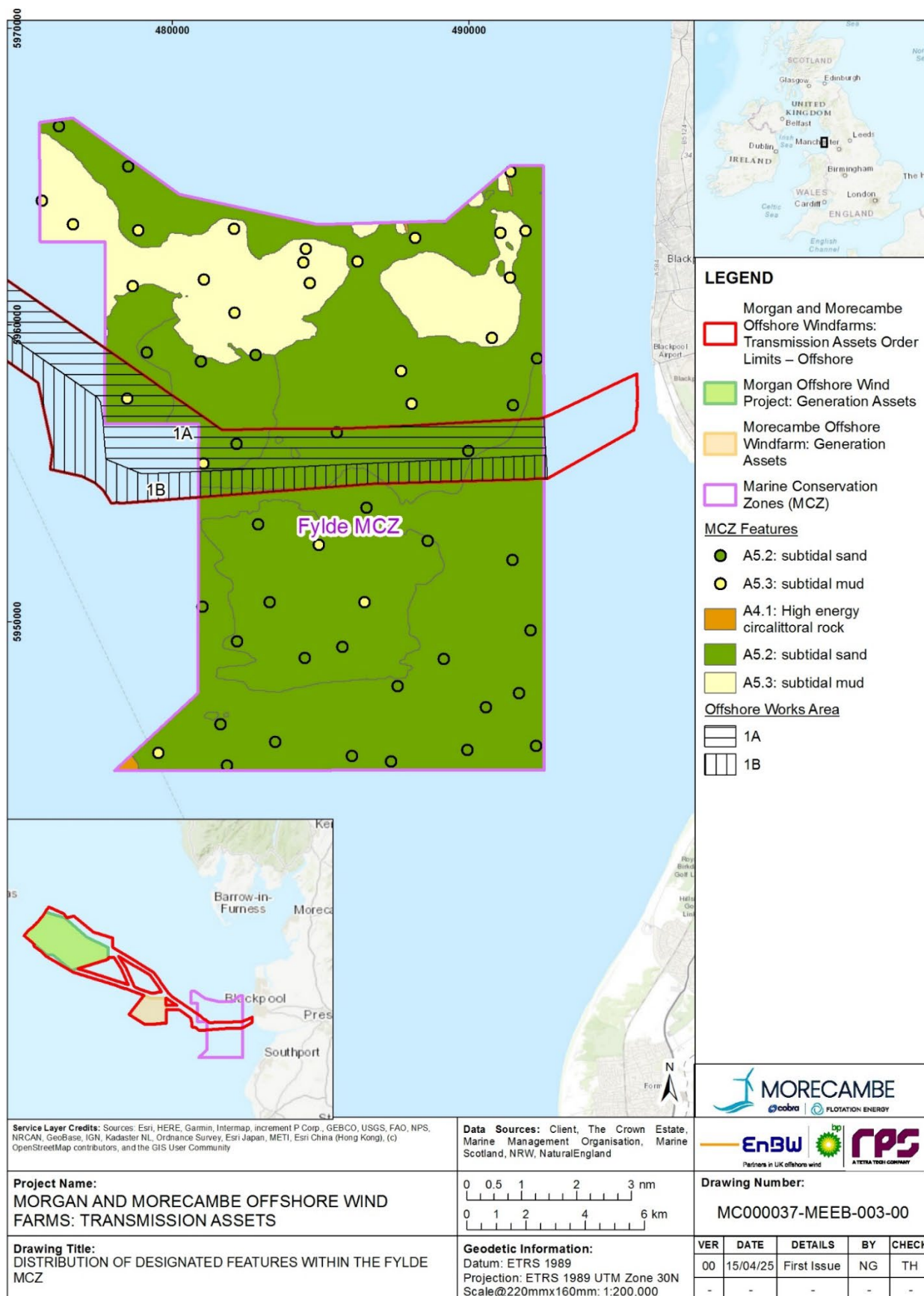


Figure A. 2: Distribution of designated features within the Fylde MCZ (Defra, 2015).

Subtidal sand

A.1.5.2.3 **Figure A. 2** shows data from Defra (2015) which indicates that the subtidal sand feature extends across the majority of the MCZ. There is some disagreement between the broad scale habitat data and the point samples, which were collected a year apart, however both data sets indicate that the majority of the Fylde MCZ is composed of subtidal sand. This was further confirmed by the Environment Agency and Natural England surveys in 2015 (Environment Agency and Natural England, 2015), which mapped the 'sublittoral sand' (A5.2) biotope across the MCZ. This survey identified a number of biotopes in association with the subtidal sand including:

- *Moerella* spp. with venerid bivalves in infralittoral gravelly sand (SS.SCS.ICS.MoeVen);
- *Glyceria lapidum* in impoverished infralittoral mobile gravel and sand (SS.SCS.ICS.Glap); and
- *Abra alba* and *Nucula nitidosa* in circalittoral muddy sand (SS.SSa.CMuSa.AalbNuc).

A.1.5.2.4 The site-specific surveys conducted for the Transmission Assets (detailed in Volume 2, Annex 2.1: Benthic subtidal and intertidal ecology technical report of the ES (APP-046)) sampled within the Fylde MCZ. The biotopes identified from this survey are shown in **Figure A. 3** and included SS.SSa.CMuSa.AalbNuc as previously identified, along with the following higher level biotopes:

- infralittoral fine sand (SS.SSa.IFiSa); and
- circalittoral muddy sand (SS.SSa.CMuSa).

Subtidal mud

A.1.5.2.5 The Defra (2015) data indicates that the subtidal mud feature occupies a swathe of seabed across the north of the MCZ (**Figure A. 2**). Some of the point samples, however, suggest a wider, albeit patchier, distribution of the subtidal mud feature than indicated by the broad scale habitat data. The majority of the subtidal mud feature being in the north of the site was further confirmed by the Environment Agency and Natural England 2015 survey (Environment Agency and Natural England, 2015), which mapped the 'sublittoral mud' (A5.3) biotope across the MCZ. This survey identified the following biotopes:

- *Amphiura filiformis*, *Kurtiella bidentata* and *Abra nitida* in circalittoral sandy mud (SS.SMu.CSaMu.AfilKurAnit); and
- *Echinocardium cordatum* and *Ensis* spp. in lower shore and shallow sublittoral slightly muddy fine sand (SS.SSa.IMuSa.EcorEns).

1.7.1.1 The site-specific surveys conducted for the Transmission Assets identified the following biotopes (**Figure A. 3**):

- SS.SMu.CSaMu.AfilKurAnit; and

-
- *Lagis koreni* and *Phaxas pellucidus* in circalittoral sandy mud (SS.SMu.CSaMu.LkorPpel).

A.1.5.2.6 The seapens and burrowing megafauna habitat was also identified at sample stations to the west of the Fylde MCZ (outside of its boundary). The station in closest proximity to the Fylde MCZ was located 86 m from the boundary. Although the extent of this habitat as displayed in **Figure A. 3** indicates that it overlaps with the Fylde MCZ the sample station where the habitat was precautionarily identified lies outside the boundary of the Fylde MCZ and the area of overlap represents a precautionary buffer around this sample station where the seapens and burrowing megafauna habitat could occur. None of the sample stations within the Fylde MCZ were identified as representing the seapens and burrowing megafauna habitat.

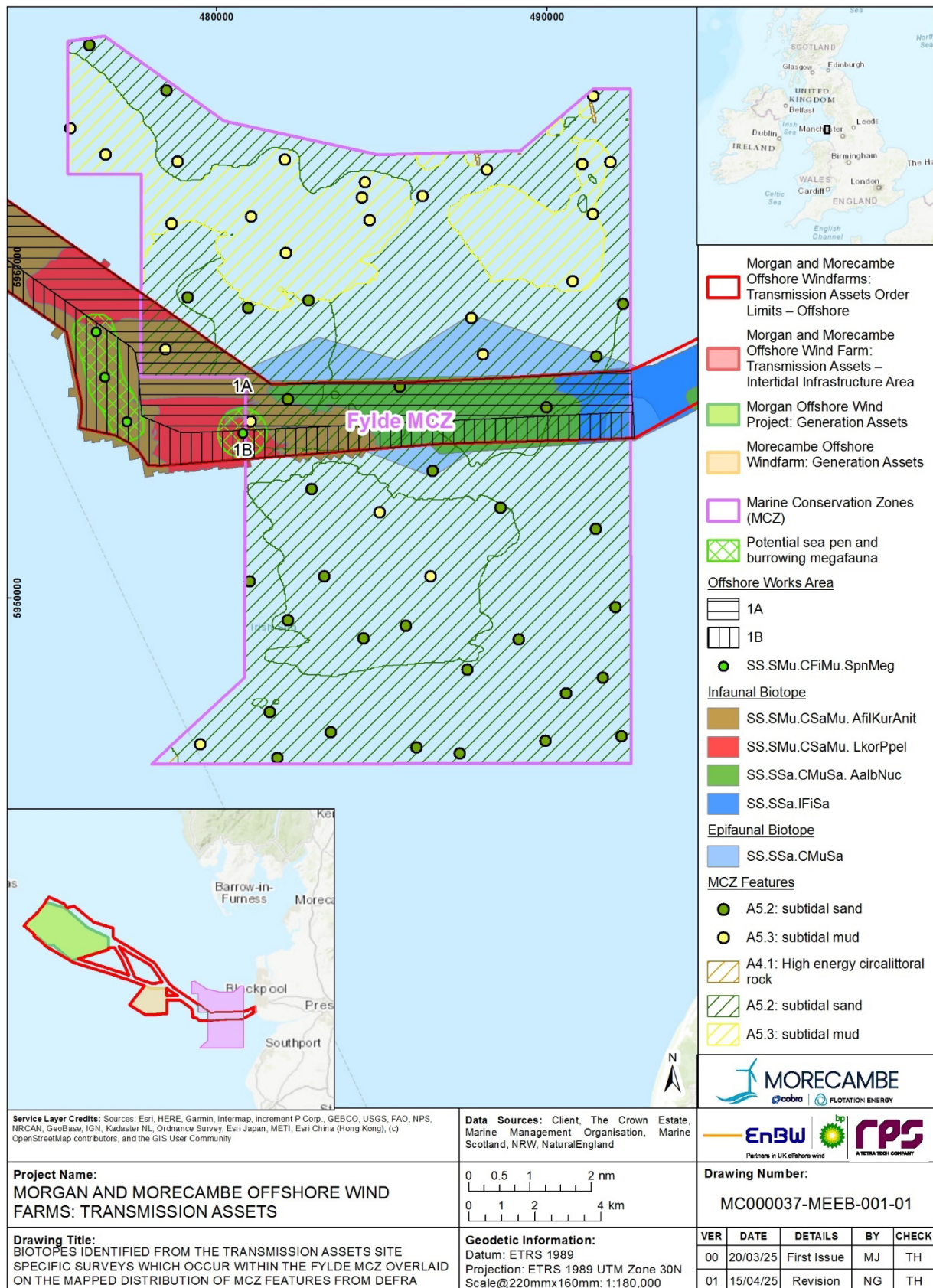


Figure A. 3: Biotopes identified from the Transmission Assets site specific surveys which occur within the Fylde MCZ overlaid on the mapped distribution of MCZ features from Defra.

A.1.5.3 Value and function of the designated features

- A.1.5.3.1 The SACO for the Fylde MCZ (Natural England, 2023b) details how the Subtidal Sand and Subtidal Mud features function as important nursery and spawning grounds for several commercially important fish species, including sole (*Solea solea*), European plaice (*Pleuronectes platessa*) and whiting (*Merlangius merlangus*) (Environment Agency, 2015). Additionally, these habitats support rich bivalve populations including the small nut-shell (*Nucula nitidosa*), razor shell (*Pharus legumen*) and the white furrow shell (*Abra alba*). It is this bivalve community which defines the function of the Fylde MCZ as a site of high biological productivity. The Fylde MCZ also overlaps with the Liverpool Bay Special Protection Area (SAC) which is designated for red-throated diver (*Gavia stellata*), little gull (*Hydrocoloeus minutus*), common scoter (*Melanitta nigra*), little tern (*Sternula albifrons*), common tern (*Sterna hirundo*) and waterfowl assemblages (JNCC, 2020). Some of these species use the area within the Liverpool Bay Special Protection Area (SPA) for breeding as well as feeding (Natural England *et al.*, 2016). All of the designated bird species that feed within the SPA forage for either bivalves, molluscs, crustaceans and worms or small fish species (Natural England *et al.*, 2022), which the habitat within the Fylde MCZ is able to provide due to its designation.

A.1.5.4 Conservation objectives

- A.1.5.4.1 A condition assessment for the features of the Fylde MCZ was published in October 2023, which concluded that both features are in favourable condition (**Table A. 3**) (Natural England, 2023c). The conservation objective for the Subtidal Mud and Subtidal Sand features of the Fylde MCZ are therefore that the protected habitats are maintained in favourable condition (**Table A. 3**).
- A.1.5.4.2 For each designated feature, favourable condition means that, within the MCZ:
1. extent is stable increasing; and
 2. its structures and functions, its quality, and the composition of its characteristic biological communities (including the diversity and abundance of species forming part or inhabiting the habitat) are sufficient to ensure that it remains healthy and does not deteriorate.
- A.1.5.4.3 Any temporary deterioration in condition is to be disregarded if the habitat is sufficiently healthy and resilient to enable its recovery.
- A.1.5.4.4 Any alteration to a feature brought about entirely by natural processes is to be disregarded when determining whether a designated feature is in favourable condition.

A.1.5.5 Summary of existing infrastructure and pressures on Fylde MCZ

- A.1.5.5.1 Commercial fishing is not currently prohibited within the Fylde MCZ, including the use of bottom towed gear (e.g. seine nets, beam trawl, otter

trawls, pelagic trawls and dredging) which is known to be particularly harmful for seabed habitats. However, the MMO has highlighted that due to the low levels of fishing at the site it is unlikely that this activity will result in a significant effect on the site (MMO, 2016). Although, as noted in Volume 2, Chapter 6: Commercial fisheries (APP-054), the area of the Irish Sea around the Fylde MCZ is important for shellfish landing, including king scallops *Pecten maximus* and queen scallops *Aequipecten opercularis*. Demersal and pelagic fish species, such as sole *Solea solea*, and European plaice *Pleuronectes platessa*, were also landed but in much lower numbers.

A.1.5.5.2 There is, however, some existing infrastructure within the MCZ, including seven active telecom cables and an interconnector cable which primarily pass through the south of the Fylde MCZ. Only the Isle of Man to UK Interconnector 1, which was installed in 2000, has a licence to install cable protection within the Fylde MCZ should it be required in the future. However, to date, as far as the Applicants are aware, no cable protection has been installed within the boundary of the MCZ for the Isle of Man to UK Interconnector 1 (Manx Utilities Ltd., 2017).

A.1.5.5.3 The Fylde MCZ may also be affected by the presence of marine debris. Debris can reduce sedimentary habitat availability, negatively affect marine organisms through entanglement and ingestion and depending on the type and size of the debris can either result in lethal or sub-lethal impacts for the organism affected (Gall and Thompson, 2015). In addition, debris can also facilitate the spread of Invasive Non-Native Species (INNS) throughout UK waters. Research conducted by Cefas, funded by Defra, highlights how INNS are using marine debris to “hitchhike” through the seas, in some cases arriving in the UK from places as far afield as the east coast of America (Cefas and Defra, 2023).

A.1.6 Establishing the level of potential impact on the Fylde MCZ

A.1.6.1.1 The MCZ Stage 1 Assessment concluded that, for all the impacts assessed, there is no significant risk of hindering the conservation objectives of the Fylde MCZ, and therefore this Without Prejudice, In-Principle MEEB Plan is provided without prejudice to that position.

A.1.6.2 Consideration of the mitigation hierarchy

A.1.6.2.1 The Applicants are committed to minimising the impact of long term habitat loss from the Transmission Assets on the Fylde MCZ. This is demonstrated through the application of the mitigation hierarchy throughout the pre-application process which has provided clear steps regarding how to minimise the impact of a project on the natural environment. **Table A. 4** lays out how the first two stages of the hierarchy, avoid and minimise, have been applied to the Transmission Assets. The third stage is to remediate/restore habitats affected by impacts to reduce, as far as possible, the residual impacts that a project has on a designated site/feature. As a last resort, the mitigation hierarchy states that

compensation for any residual harm should be undertaken through habitat creation or restoration. This stage is addressed in **section A.1.7**.

Table A. 4: Application of the mitigation hierarchy within the development of the MCZ Stage 1 assessment

Mitigation hierarchy stage	How the mitigation hierarchy stage has been applied
Avoid	The avoid principle was first applied through the Offshore Export Cable Corridor routing exercise which sought to identify the shortest route from the Agreement for Lease areas to the selected landfall location at Lytham St Annes, whilst avoiding environmental sensitivities, such as MCZs, as well as third-party/existing seabed users. The Offshore Export Cable Corridor routing exercise was driven by consideration of the guiding principles described in Volume 1, Chapter 4: Site Selection and Consideration of Alternatives of the ES (APP-030) and TCE Cable Route Protocol (TCE, 2021). The Offshore Export Cable Corridor search area was defined to minimise interaction with any designated sites, avoiding the Shell Flat and Lune Deep SAC and the West of Walney MCZ and West of Copeland MZC to the north. The Fylde MCZ could not, however, be avoided entirely due to its north-south extent between the Generation Assets and the point of interconnection at Penwortham. Routing around the Fylde MCZ to reach landfall location at Lytham St Anne's was not feasible due to the existing cables that run east/west through the MCZ which would need to be crossed in the shallow waters between the east edge of the MCZ and the coast. These offshore constraints, together with engineering feasibility and the location of the grid connection point at the Penwortham National Grid substation made an overlap with the Fylde MCZ unavoidable (further details in Volume 1, Chapter 4: Site Selection and Consideration of Alternatives of the ES (APP-030) and Volume 1, Annex 4.2: Selection and refinement of offshore infrastructure (APP-032)).
Reduce/minimise	As outlined in Volume 1, Chapter 4: Site Selection and Consideration of Alternatives of the ES (APP-030) and Volume 1, Annex 4.2: Selection and refinement of offshore infrastructure (APP-032), the final offshore export cable route has been designed to cross the Fylde MCZ at its the narrowest point to minimise the interaction with, and impacts on, the Fylde MCZ. Refinements were made to the project description (Volume 1, Chapter 3: Project description of the ES (APP-024)) post-PEIR to significantly reduce the extent of long term habitat loss within the Fylde MCZ as follows. • The MDS for the total length of offshore export cables within the Fylde MCZ has reduced from 94.8 km to 88 km (i.e. 16 km for each of the four Morgan offshore export cables and 12 km for each of the two Morecambe offshore export cables) as a result of further design and route identification. • The MDS for cable protection in the Fylde MCZ due to ground conditions was reduced from 20% to 3% contingency for the Morgan offshore export cables and from 15% to 3% contingency for the Morecambe offshore export cables. Cable protection will only be required in the event that cable burial is unsuccessful (CoT47, Table A. 6). Post-PEIR a number of other project refinements were made to significantly reduce other impacts on the Fylde MCZ include the extent of temporary habitat loss as follows. • The proportion of cables requiring sandwave clearance was reduced from 60% to 5% for the Morgan offshore export cables and 30% to 5% for the Morecambe offshore export cables (CoT47, Table A. 6). • The width of disturbance associated with sandwave clearance was reduced from 104 m to 60 m for the Morgan offshore export cables and from 104 m to 48 m for the Morecambe offshore export cables.

Mitigation hierarchy stage	How the mitigation hierarchy stage has been applied
	• The width of disturbance associated with boulder clearance for the Morecambe offshore export cables was reduced from 25 m to 20 m. • The requirement for a Morgan Offshore Booster Station was removed from the project design, reducing the potential for indirect impacts on the Fylde MCZ from changes in physical processes as there will be no surface piercing infrastructure associated with the Transmission Assets. • The MDS for the volume of spoil arising from sandwave clearance within the Fylde MCZ has reduced from 1,268,642 m³ (previously calculated as a proportion of the overall spoil generated for the Transmission Assets) to 270,000 m³. The offshore export cable route has been designed to minimise the number of crossings with existing cables, and therefore long term habitat loss resulting from cable protection requirements, within the Fylde MCZ. The Applicants have made all possible endeavours to move the cable crossings outwith the Fylde MCZ however there are restrictions associated with existing infrastructure (i.e. Hibernia Atlantic which runs north west/south east to the west of the Transmission Assets just outside of the Fylde MCZ) and engineering constraints (e.g. the need to cross the cable at a 90 degree angle). As such, whilst it was possible to move the Morecambe offshore export cable crossings westward beyond the boundary of the MCZ (i.e. no cable crossings are required for the Morecambe offshore export cables within the Fylde MCZ), the Morgan offshore export cables must cross the Lanis 1 cable within the Fylde MCZ (see Figure A. 4). Therefore, the Applicants have sought to reduce the parameters of the crossing, such as length and height, to minimise its impact. As outlined in Volume 1, Chapter 3: Project description of the ES (APP-024) and Table A. 6 the Applicants are committed to ensuring that any external cable protection installed within the Fylde MCZ (if any is required) will be designed to be removable upon decommissioning (CoT108, Table A. 6). The requirement for removal of cable protection within the Fylde MCZ will be agreed with stakeholders and regulators at the time of decommissioning (CoT109, Table A. 6). The Applicants have also committed to no rock dumping within the Fylde MCZ secured through the deemed marine licence as part of the draft DCO, in acknowledgment that this is the least recoverable type of cable protection. This will restrict the habitat loss within the Fylde MCZ to the operation and maintenance phase only. As outlined in the Applicants' response to RR-1601.37 (within Annex 3.2.7 to Response to RR-1601 Natural) and Table A. 6, the Applicants have committed to the use of low order clearance only and high order UXO clearance will not be authorised under the DCO which will substantially reduce crater sizes and therefore the area affected by temporary habitat disturbance as a result of this activity. As secured in the Outline Offshore CSIP (document reference J15), the Controlled Flow Excavator will be the only method used for sandwave clearance within the Fylde MCZ which will ensure that sediment will be deposited in areas of similar sediment character. As part of the detailed design process micro-siting of the offshore export cables within the corridor will be considered where successful burial could pose a challenge or where a higher risk of remedial works such as external cable protection may be required (CoT134, Table A. 6). This measure will likely increase the success of cable burial and therefore reduce the need for cable protection, minimising the potential impact of long term habitat loss on the Fylde MCZ.

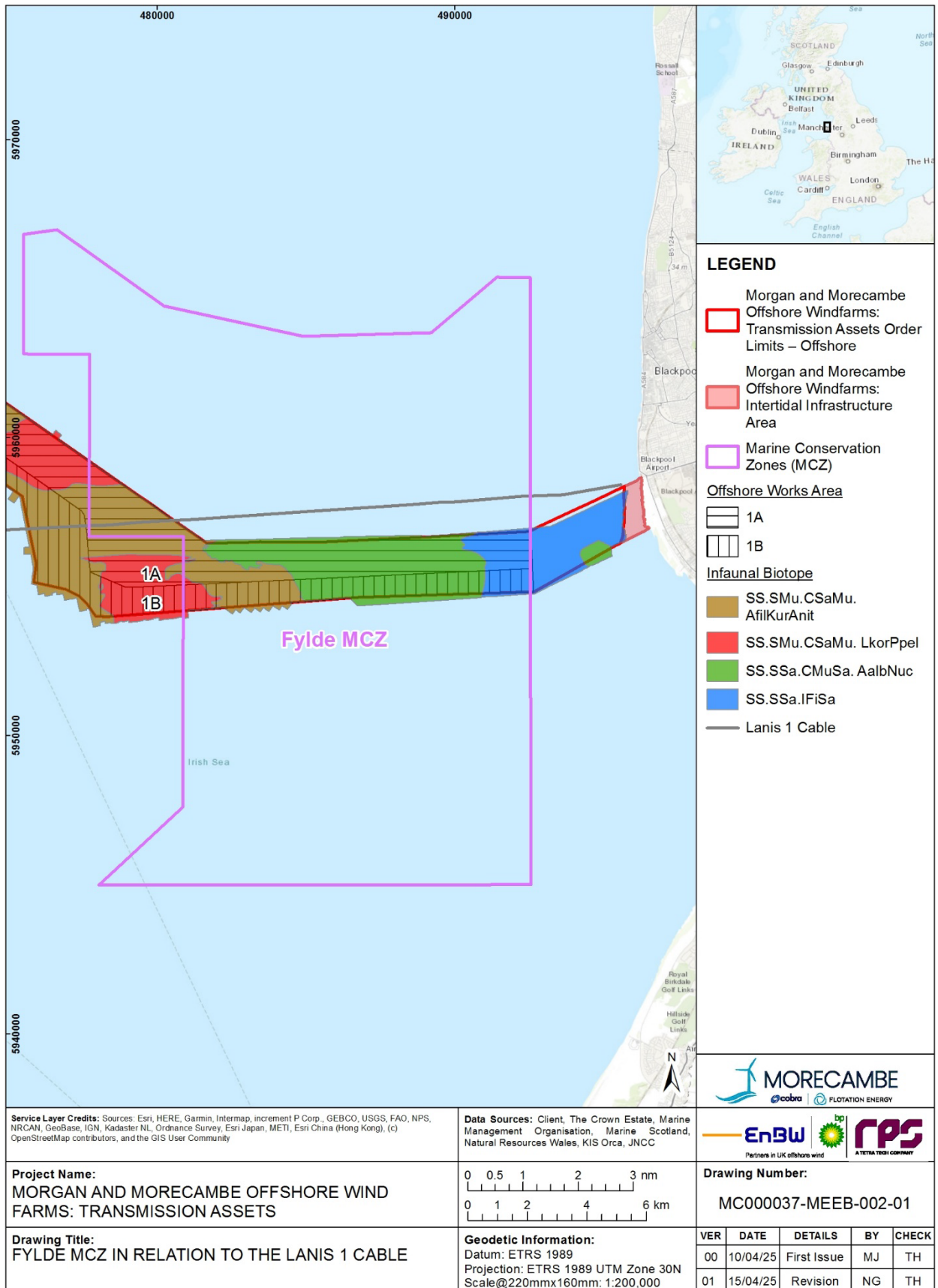


Figure A. 4: Fylde MCZ in relation to the Lanis 1 cable

A.1.6.3 Maximum design scenario

- A.1.6.3.1 The MDS for long term habitat loss within the Fylde MCZ is presented in **Table A. 5** which shows that there may be up to 30,400 m² of long-term habitat loss within the Fylde MCZ which equates to 0.012% of the total area of the MCZ.
- A.1.6.3.2 The Applicants have committed to limiting the deployment of cable protection within the Fylde MCZ to within two years of the end of the construction phase. Any cable protection installed beyond this period would require a new marine licence application. This is secured in the Outline Offshore Operation and Maintenance Plan (document reference J19) (CoT115; **Table A. 6**).
- A.1.6.3.3 As the requirements for, and exact locations of, any cable protection for ground conditions within the Fylde MCZ are not yet known, the Applicants have applied a precautionary approach which assumes that all of the potential cable protection for ground conditions could be installed in either the subtidal sand or subtidal mud feature of the Fylde MCZ. As such, it is important to note that the MDS for subtidal sand and subtidal mud should not be summed as both of those values would not be realised in any construction scenario.
- A.1.6.3.4 Following the submission of the consent application and the Stage 1 MCZ Screening and Assessment Report (APP-019), the MDS for the Fylde MCZ has been updated for the more realistic assumption that, based on the site specific survey data collected by the Applicants, the location of the cable crossing for the Morgan offshore export cables will fall within the subtidal mud feature in the west of the Fylde MCZ (see **Figure A. 4**). This updates the approach presented in the Stage 1 MCZ Screening and Assessment Report (APP-019) which assumed that the cable crossing could occur in either the subtidal sand or subtidal mud feature.
- A.1.6.3.5 The MDS for the subtidal sand feature of the Fylde MCZ assumes that all of the potential long term habitat loss associated with cable protection within the MCZ could occur within this feature. The location of cable crossing is, however, known and this will be within the subtidal mud feature and is considered in **paragraph A.1.6.3.5** below. The MDS for the subtidal sand feature is, therefore, for up to 26,400 m² of long term habitat loss during the construction and operation and maintenance phases (**Table A. 5**), equating to 0.01% of the total extent of the subtidal sand feature in the MCZ. This is a reduction of 4,000 m² for the subtidal sand feature compared to that presented in the Stage 1 MCZ Screening and Assessment Report (APP-019) on the basis that cable protection for the cable crossing is no longer included within the MDS for this feature.
- A.1.6.3.6 The MDS for the subtidal mud feature of the Fylde MCZ also assumes that all of the long term habitat loss associated with cable protection for ground conditions within the MCZ could occur within this feature. The MDS for the subtidal mud feature also assumes that the long term habitat loss associated with the cable crossings will occur only within this feature. Therefore, the MDS for the subtidal mud feature is for up to 30,400 m² during the construction and operation and maintenance phases (**Table A. 5**), equating to 0.07% of the total extent of the subtidal mud feature.

This value is unchanged from the value presented in the Stage 1 MCZ Screening and Assessment Report (APP-019).

Table A. 5: MDS for long term habitat loss within the Fylde MCZ in the construction and operation and maintenance phases.

Project element	Justification		Long term habitat loss (m ²)
	Morgan Offshore Wind Project	Morecambe Offshore Wind Farm	
Cable protection for ground conditions	- Four offshore export cables up to 16 km each within Fylde MCZ (64 km total) 3% of the 64 km of Morgan offshore export cables requiring cable protection - Cable protection width of 10 m 19,200 m² of long term habitat loss associated with cable protection for ground conditions	- Two offshore export cables up to 12 km each within Fylde MCZ (24 km total) 3% of the 24 km of Morecambe offshore export cables requiring cable protection - Cable protection width of 10 m 7,200 m² of long term habitat loss associated with cable protection for ground conditions	26,400 (in the subtidal sand and/or subtidal mud feature) ¹
Cable protection due to asset crossing	- One cable crossing may be needed for the four Morgan offshore export cables within the MCZ - Each crossing with a width of 20 m and length of 50 m 4,000 m² of long term habitat loss associated with cable protection for cable crossing	There will be no cable crossings for the Morecambe offshore export cables.	4,000 (in the subtidal mud feature only)
Long term habitat loss (m ²)	23,200	7,200	30,400 m²
Total	30,400 m² (0.012% of the total 260 km² MCZ area) Subtidal sand: 26,400 m² (0.01% of the area of this feature in the MCZ)¹ Subtidal mud: 30,400 m² (0.07% of the area of this feature in the MCZ)¹		

¹ As outlined in **paragraph A.1.6.3.2**, the MDS for each protected feature assumes that all of the potential long term habitat loss associated with cable protection for ground conditions could occur wholly within either the subtidal sand or the subtidal mud feature. The MDS assumes that the cable protection for the cable crossing will only occur in the subtidal mud feature

A.1.6.4 Measures adopted as part of the Transmission Assets (Commitments)

A.1.6.4.1 **Table A. 6** details the measures (commitments) adopted as part of the Transmission Assets to reduce the potential for impacts on the features of the Fylde MCZ. These measure are documented in Volume 1, Annex 1.5.3: Commitments Register (AS-030) of the Environmental Statement and will help to ensure that the MDS for long term habitat loss is reduced as much as possible, for example measures have been adopted which put limits on the amount of infrastructure that the Transmission Asset project may place within the Fylde MCZ as well as what may happen to it during decommissioning.

Table A. 6: Measures (commitments) adopted as part of the Transmission Assets relevant to the Fylde MCZ.

Commitment number	Measure adopted	How the measure will be secured
CoT45	The Outline Offshore CSIP (APP-220) for the Fylde MCZ includes: details of cable burial depths, cable protection, and cable monitoring. The Outline CSIP also includes an Outline Cable Burial Risk Assessment (CBRA) (APP-219). Detailed CSIP(s) and CBRA(s) will be prepared by the Applicants covering the full extent of their respective offshore export cable corridors. Detailed CSIPs will be developed in accordance with the Outline Offshore CSIP (APP-220) and will ensure safe navigation is not compromised including consideration of under keel clearance. No more than 5% reduction in water depth (referenced to Chart Datum) will occur at any point on the offshore export cable corridor route without prior written approval from the licensing authority in consultation with the MCA and Trinity House.	DCO Schedule 14 (Marine Licence 1: Morgan Offshore Wind Project Transmission Assets) Part 2 – Condition 18(1)(e) (Preconstruction plans and documentation) and DCO Schedule 15 (Marine Licence 2: Morecambe Offshore Wind Farm Transmission Assets), Part 2 - Condition 18(1)(e) (Preconstruction plans and documentation).
CoT47	The Outline Offshore CSIP (APP-220) includes measures to limit the extent of cable protection to 3% of the offshore export cable route within the Fylde MCZ (excluding cable crossings) and sandwave clearance up to 5% of the offshore export cable route within the Fylde MCZ. Within the Fylde MCZ, external cable protection will only be used where deemed to be essential, e.g. for cable crossings or in the instance that adequate burial/reburial is not possible for any section of the route through the Fylde MCZ. The Outline Offshore CSIP (APP-220) also includes measures to limit sandwave clearance to up to 5% of the offshore export cable corridor route within the Fylde MCZ. Material arising from sandwave clearance in the Fylde MCZ will be deposited within the Fylde MCZ. The requirements for cable protection and sandwave clearance will be informed	DCO Schedule 14 (Marine Licence 1: Morgan Offshore Wind Project Transmission Assets) Part 2 – Condition 18(1)(e) (Preconstruction plans and documentation) and DCO Schedule 15 (Marine Licence 2: Morecambe Offshore Wind Farm Transmission Assets), Part 2 - Condition 18(1)(e) (Preconstruction plans and documentation).

Commitment number	Measure adopted	How the measure will be secured
	through survey works pre-construction. Detailed Offshore CSIP(s) will be developed in accordance with the Outline Offshore CSIP (APP-220).	
CoT49	Construction Method Statement(s) (CMSs) including Offshore Cable Specification and Installation Plan(s), will be produced and implemented prior to construction. These will contain details of cable installation and methodology.	DCO Schedule 14 (Marine Licence 1: Morgan Offshore Wind Project Transmission Assets) Part 2 – Condition 18(1)(e) (Preconstruction plans and documentation) and DCO Schedule 15 (Marine Licence 2: Morecambe Offshore Wind Farm Transmission Assets), Part 2 - Condition 18(1)(e) (Pre-construction plans and documentation).
CoT54	An Outline Offshore CSIP (APP-220) will include for cable burial to be the preferred option for cable protection, where practicable. Detailed Offshore CSIP(s) will be developed in accordance with the Outline Offshore CSIP (APP-220).	DCO Schedule 14 (Marine Licence 1: Morgan Offshore Wind Project Transmission Assets) Part 2 – Condition 18(1)(e) (Preconstruction plans and documentation) and DCO Schedule 15 (Marine Licence 2: Morecambe Offshore Wind Farm Transmission Assets), Part 2 – Condition 18(1)(e) (Preconstruction plans and documentation).
CoT64	Detailed Marine Mammal Mitigation Protocols (MMMPs) will be developed and implemented in accordance with the Outline MMMP (APP-223), to reduce the risk of injury to marine mammals. The Detailed MMMP(s) will include measures to apply in advance of and during surveys and UXO clearance. The Detailed MMMP(s) will include for the use of low order techniques only. The detailed MMMP(s) will be approved by MMO, in consultation with Natural England. The detailed MMMP(s) will require the implementation of a mitigation hierarchy with regard to Unexploded Ordnance (UXO) clearance as follows: – Avoid UXO; and – Clear UXO with low order techniques. Low order techniques or avoidance of confirmed UXO are not always possible and are dependent upon the individual circumstances surrounding each UXO. Should high order UXO techniques be required, a separate marine licence will be applied for and will include consideration of secondary mitigation measures such as Noise Abatement Systems (NAS).	DCO Schedule 14 (Marine Licence 1: Morgan Offshore Wind Project Transmission Assets) Part 2 – Condition 20(1)(b) (Low order unexploded ordnance clearance) and DCO Schedule 15 (Marine Licence 2: Morecambe Offshore Wind Farm Transmission Assets), Part 2 – Condition 20(1)(b) (Low order unexploded ordnance clearance).

Commitment number	Measure adopted	How the measure will be secured
CoT65	Offshore Environmental Management Plan(s) (EMPs) will be developed and will include details of: • a marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents during construction and operation of the authorised scheme for activities carried out below MHWS; • a chemical risk review to include information regarding how and when chemicals are to be used, stored and transported in accordance with recognised best practice guidance; • waste management and disposal arrangements; • the appointment and responsibilities of a fisheries liaison officer; • a fisheries liaison and coexistence plan (which accords with the outline fisheries liaison and co-existence plan) to ensure relevant fishing fleets are notified of commencement of licensed activities pursuant to condition and to address the interaction of the licensed activities with fishing activities; • measures to minimise disturbance to marine mammals and rafting birds from vessels; and • measures to minimise the potential spread of invasive non-native species, including adherence to IMO ballast water management guidelines.	DCO Schedule 14 (Marine Licence 1: Morgan Offshore Wind Project Transmission Assets) Part 2 – Condition 18(1)(f) (Preconstruction plans and documentation) and DCO Schedule 15 (Marine Licence 2: Morecambe Offshore Wind Farm Transmission Assets), Part 2 – Condition 18(1)(f) (Preconstruction plans and documentation).
CoT108	The Outline Offshore CSIP (APP-220) submitted as part of the application for development consent, includes for all external cable protection used within the Fylde MCZ to be designed to be removable on decommissioning. Detailed Offshore CSIP(s) will be developed in accordance with the Outline Offshore CSIP (APP-220).	DCO Schedule 14 (Marine Licence 1: Morgan Offshore Wind Project Transmission Assets) Part 2 – Condition 18(1)(e) (Preconstruction plans and documentation) and DCO Schedule 15 (Marine Licence 2: Morecambe Offshore Wind Farm Transmission Assets), Part 2 – Condition 18(1)(e) (Preconstruction plans and documentation).
CoT109	The requirement for removal of cable protection within the Fylde MCZ will be agreed with stakeholders and regulators at the time of decommissioning. Removal of cable protection will be in accordance with the Offshore Decommissioning Programme(s).	DCO Schedule 2A Requirement 21 (Offshore decommissioning) and DCO Schedule 2B Requirement 21 (Offshore decommissioning).
CoT115	An Offshore In-Principal Monitoring Plan (OIPMP) has been prepared and	DCO Schedule 14 (Marine Licence 1: Morgan Offshore Wind Project

Commitment number	Measure adopted	How the measure will be secured
	submitted as part of the application for development consent. The OIPMP includes for monitoring of the recovery of sediments and benthic communities within representative areas of the Fylde MCZ potentially impacted by sandwave clearance, cable installation and cable protection, at appropriate temporal intervals. Detailed Offshore Monitoring Plans will be produced prior to operation and maintenance phases in accordance with the OIPMP, and will be approved in consultation with statutory advisors and regulators.	Transmission Assets) Part 2 - Condition 18(1)(d) (Pre-construction plans and documentation) and DCO Schedule 15 (Marine Licence 2: Morecambe Offshore Wind Farm Transmission Assets), Part 2 - Condition 18(1)(d) (Pre-construction plans and documentation)
CoT116	Any material arising from sandwave clearance within the Transmission Assets Order Limits will be deposited in close proximity to the works and within the licensed disposal sites within the Order Limits, as detailed in the Dredging and Disposal - Site Characterisation Plan prepared and submitted as part of the application for development consent.	DCO Schedule 14 (Marine Licence 1: Morgan Offshore Wind Project Transmission Assets) Part 1 - Condition 2(g) (Design Parameters) and Part 2 – Condition 16(4) (Chemicals, drilling and debris); and DCO Schedule 15 (Marine Licence 2: Morecambe Offshore Wind Farm Transmission Assets) Part 1 - Condition 2(g) (Design Parameters) and Part 2 – Condition 16(4) (Chemicals, drilling and debris).
CoT117	The Outline Offshore CSIP (APP-220) includes details for any jack-up vessels used within the Fylde MCZ to be stationary. No walking jack-ups would be used within the Fylde MCZ. Detailed CSIP(s) will be developed in accordance with the Outline Offshore CSIP (APP-220).	DCO Schedule 14 (Marine Licence 1: Morgan Offshore Wind Project Transmission Assets) Part 2 - Condition 18(1)(e) (Pre-construction plans and documentation) and DCO Schedule 15 (Marine Licence 2: Morecambe Offshore Wind Farm Transmission Assets), Part 2 - Condition 18(1)(e) (Preconstruction plans and documentation).
CoT134	As part of the detailed design process, micro-siting of the offshore export cables within the corridor will be considered where successful burial could pose a challenge or where a higher risk of remedial works such as external cable protection may be required.	DCO Schedule 14 (Marine Licence 1: Morgan Offshore Wind Project Transmission Assets) Part 2 – Condition 18(1)(e) (Pre-construction plans and documentation) and DCO Schedule 15 (Marine Licence 2: Morecambe Offshore Wind Farm Transmission Assets), Part 2 - Condition 18(1)(e) (Pre-construction plans and documentation).
CoT136	Should benthic compensation be required, the MRF will be the preferred and prioritised option, and the project-led options would only be considered where the MRF option is not made available to the Applicants.	N/A

A.1.6.5 Feature sensitivity

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- A.1.6.5.1 The impact of long term habitat loss will only occur in the construction and operation and maintenance phases as the Applicants have committed to ensuring all external cable protection used within the Fylde MCZ is designed to be removable on decommissioning (CoT108 (**Table A. 6**). The Applicants have also committed to no rock dumping within the Fylde MCZ secured through the deemed marine licence as part of the draft DCO, in acknowledgment that this is the least recoverable type of cable protection. There will, therefore, likely be no permanent loss of habitats within the Fylde MCZ extending post-decommissioning. However, the requirement for removal of cable protection within the Fylde MCZ will be agreed with stakeholders and regulators in line with best practice at the time of decommissioning (CoT109, **Table A. 6**).
- A.1.6.5.2 The MCZ Screening and Stage 1 Assessment Report (APP-019) identified the following physical attributes of the subtidal sand and subtidal mud protected features of the Fylde MCZ are relevant to long term habitat loss.
- Extent and distribution.
 - Structure: sediment composition and distribution.
 - Supporting processes: energy/exposure.
 - Supporting processes: sediment movement and hydrodynamic regime (habitat).
- A.1.6.5.3 The extents of the subtidal mud and subtidal sand feature will be largely maintained within the MCZ with <0.1% of each feature affected by long term habitat loss (0.07% and 0.01% respectively). The effect of long term habitat loss will be highly localised and limited to discrete areas which require cable protection. Cable protection will result in the introduction of new hard substrate however, as noted above this will impact a very small proportion of the Fylde MCZ.
- A.1.6.5.4 The MCZ Screening and Stage 1 Assessment Report (APP-019) identified the following biological attributes of the protected features, of relevance to long term habitat loss:
- Distribution: presence and spatial distribution of biological communities.
 - Structure and function: presence and abundance of key structural and influential species.
 - Structure: species composition of component communities.
- A.1.6.5.5 The installation of cable protection and cable crossing on the sedimentary features of the Fylde MCZ could result in localised mortality of associated biological communities and their replacement, over time, by a community with a different species composition and different key structural and influential species. Only a small proportion of the relevant features will be impacted (0.01% of the subtidal sand feature or 0.07% of the subtidal mud feature) and therefore it is considered highly unlikely that this would have an impact on the overall presence, distribution or composition of the biological community across the Fylde MCZ. The biological productivity of this feature as a feeding ground for fish will not be affected by the

predicted long term habitat loss and habitat alteration largely due to the small scale and localised nature of the impact.

- A.1.6.5.6 Whilst the Applicants maintain that the Transmission Assets will not hinder the conservation objectives of the Fylde MCZ, consultation with the SNCBs (as detailed in **Table A. 2**) highlighted that they consider that the impact of long term habitat loss from the Transmission Assets could potentially hinder the conservation objectives of the Fylde MCZ and that MEEB is required. The Examining Authority has, therefore, requested that the Applicants provide a Stage 2 MCZ Assessment as requested by the SNCBs.

A.1.7 MEEB

A.1.7.1 Overview

- A.1.7.1.1 A review of all potential MEEB options for the Transmission Assets was undertaken under the following categories:

- **Strategic compensation measures** – strategic compensation would be implemented via a payment into the MRF currently being developed by Defra, to deliver an MPA boundary extension or a new MPA designation (see **section A.1.2.2**) or other SNCB-led initiatives if they come forward in the future. As outlined in **section A.1.7.2** and noted in **Table A. 2**, Natural England and the Applicants are in agreement that strategic compensation is likely to be the preferred option for MEEB (should MEEB be required) for the Transmission Assets; **or**
- **Project led measures** – as noted above, Natural England and the Applicants are in agreement that strategic compensation is likely to be the preferred option for MEEB. However, noting that the Applicants may wish to also provide a project led long list similar to other projects currently going through examination (e.g. Five Estuaries Offshore Wind Farm and Outer Dowsing Offshore Wind (Generating Station)), the Applicants have also considered a longlist of potential project-led MEEB options for the Transmission Assets. This is summarised in **section A.1.7.3**, including consideration of how each of the potential MEEB options relates to the value and functions of the protected features of the Fylde MCZ.

A.1.7.2 Strategic compensation measures – contribution to the MRF

Overview

- A.1.7.2.1 If MEEB is deemed to be required by the Secretary of State, it is the view of Natural England (**Table A. 2**) and the Applicants that strategic compensation measures is likely to be the preferred method for the delivery of MEEB (see CoT136, **Table A. 6**). This is primarily because it is the only measure identified that would provide like-for-like compensation for the long term loss of the subtidal sand and subtidal mud features of the Fylde MCZ. This would be actioned through the Applicants contributing to the MRF.

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- A.1.7.2.2 The creation of an MRF is under the scope of Part 13 of the Energy Act 2023 and, as detailed in **section A.1.2.2**, Defra have announced that they are committed to the delivery of sufficient MPA designations and/or extensions to provide strategic compensation for likely benthic environmental impacts resulting from offshore wind developments. As discussed in **paragraph A.1.2.2.15**, Defra opened a consultation on how the MRF will function in March 2025 which closes on 12 May 2025. Natural England have, however, confirmed (see **Table A. 2**) that the list of developments being considered by Defra includes the Transmission Assets. Recent guidance from the DESNZ (2025) confirms that the only approved strategic benthic compensation measure currently in the LoSCM is the designation of new MPAs and/or extensions to existing MPAs. Applicants will be required to pay into the MRF to access MPA designations/extensions as a compensation measure.
- A.1.7.2.3 Strategic compensation in the form of a payment into the MRF to access MPA designations/extensions will satisfy the top two levels of the MEEB hierarchy (**paragraph A.1.2.2.4**) by addressing the same impact at the same location (i.e. if the boundary of the Fylde MCZ is extended) or by addressing the same ecological function at a different location (i.e. if the boundary of another MCZ is extended or a new MCZ is designated).
- A.1.7.2.4 As outlined in Defra's WMS, it is anticipated that an Implementation and Monitoring Plan would be provided by the MRF Operator (once operational) to the Applicants for submission to the DESNZ Secretary of State. However, until the Government's MPA designation/extension programme is complete, it is understood that high-level Implementation and Monitoring Plans could be obtained from Defra by the Applicants and provided to the DESNZ Secretary of State before works which give rise to the adverse effect for which compensation is required can commence. As outlined in the DESNZ (2025) guidance, these plans will contain the following information:
- High level explanation as to how designation of an MPA will compensate for effects on each relevant habitat and, where possible, ratios used.
 - Implementation timetable and an explanation of the MPA designation process.
 - Information on current monitoring, long term management and reporting of MPAs, and any differences for MPAs designated for compensation purposes.
 - Information on how the effectiveness of the MPA designation would be maintained in terms of enforcement and adaptive management.
 - Commitment to providing an updated Implementation and Monitoring Plan as the designation process continues and detail is resolved.

Value and function

- A.1.7.2.5 As noted above, strategic compensation in the form of a payment into the MRF to contribute to Defra's programme of

MPA designations/extensions would provide protection to habitats with the same ecological functions as the subtidal sand and subtidal mud features of the Fylde MCZ. This would satisfy either the first or second level in the mitigation hierarchy, i.e. addressing the same ecological value and function at the same or a different location.

- A.1.7.2.6 The details of Defra's MPA designations/extensions programme are not currently in the public domain, but the Applicants understand that Defra are adopting a strategic approach to determine locations for new MPAs or MPA extensions.

Confidence

- A.1.7.2.7 The delivery of strategic compensation in the form of a payment into the MRF to access MPA designations/extensions will provide the Secretary of State with a high level of confidence in the enhanced protection of the required habitats with the same value and function as the subtidal sand and subtidal mud features of the Fylde MCZ in the event that they conclude that MEEB is required. The use of strategic compensation via the MRF was considered a viable option and accepted and approved wholly or partly in substitution for project led measures by the Secretary of State for the Sheringham and Dudgeon Offshore Wind Farm Extension Projects (SEP and DEP) with the DCO wording providing the ability to make payments into the MRF in the event it becomes functional prior to construction. This approach of strategic compensation measures through payment into the MRF instead of project led measures is also currently proposed for the Outer Dowsing Offshore Wind Farm. The extension of the boundary of the Inner Dowsing, Race Bank and North Ridge SAC has been proposed as a without prejudice MEEB for the Outer Dowsing OWF due to the loss of Annex I biogenic reef, giving confidence in the feasibility of this measure for the Transmission Assets.

Scale and location

- A.1.7.2.8 The scale and location of these strategic measures would be determined by Defra, as the operator of the MRF. The scale of the compensatory habitat that will need to be designated will relate to the predicted impacts from the MDS (**section A.1.6**) however, the ratio of MEEB to impact will be determined by Defra in consultation with SNCBs and will be used to determine the size of the monetary contribution made by the Applicants.
- A.1.7.2.9 The Applicants understand that the location of the MPA extension/designation will be determined by Defra as the MRF operator. Ultimately the evidence base and decision-making process for choosing the MEEB location(s) will be outlined by Defra.

Proposed approach

- A.1.7.2.10 As noted above the approach to the delivery of an MPA extension or the creation of a new MPA would be for the Applicants to contribute to an MRF. The creation of the MRF is under the scope of Part 13 of the Energy Act 2023, however it has yet to be set up for England or Wales although it is anticipated to be introduced in late 2025 (UK Parliament, 2025).

Although Defra has already begun work on this, the timelines of some projects mean that they will still be delayed if they are required to wait for MPA designations and associated management to be functioning. Where this is the case, the DESNZ Secretary of State and the MMO may consider circumstances where the adverse effect can occur before compensation is in place. Where this is permitted, a greater amount of environmental compensation is likely to be needed to make up for the time delay and developers will be required to pay into the MRF before any adverse effect can occur. Natural England have however confirmed that for the Transmission Assets construction may start before the strategic compensation measures are in place following a commitment to strategic compensation measures (**Table A. 2**).

- A.1.7.2.11 Implementation of this measure by Defra will involve a number of administrative processes, stakeholder consultations, and analysis of the socio-economic impacts of designation, including on commercial fisheries. The designation extension would ultimately be delivered by Defra in conjunction with JNCC and Natural England. It would require collaboration between relevant authorities, environmental agencies, and stakeholders to ensure compliance with regulatory frameworks. The processes followed during the designation of the existing MCZs are shown in **Figure A. 5** and **Figure A. 6** below, taken from Defra (2013).

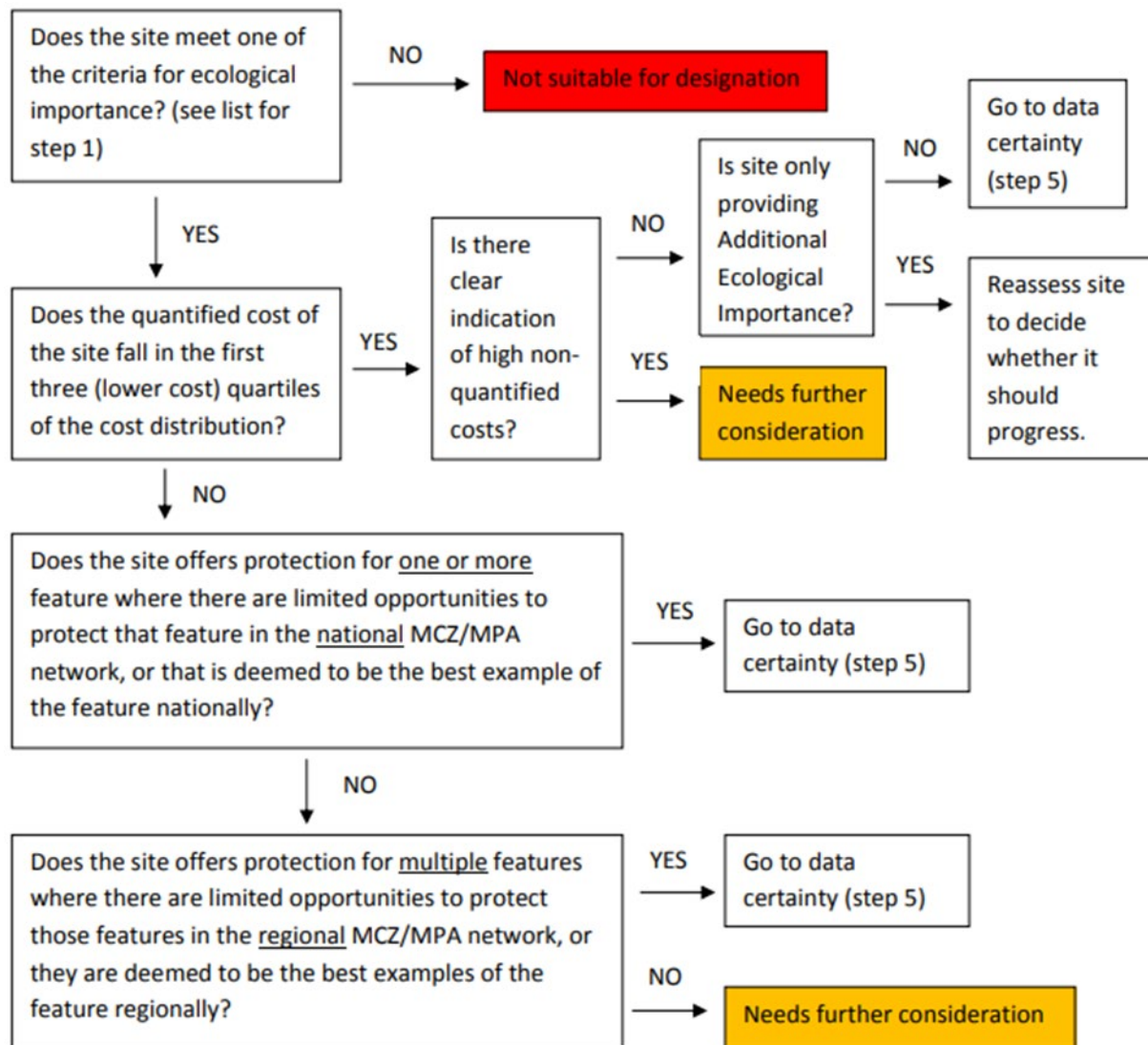


Figure A. 5: Ecological contribution and socio-economic impacts in designating an MCZ (source: Defra, 2013)

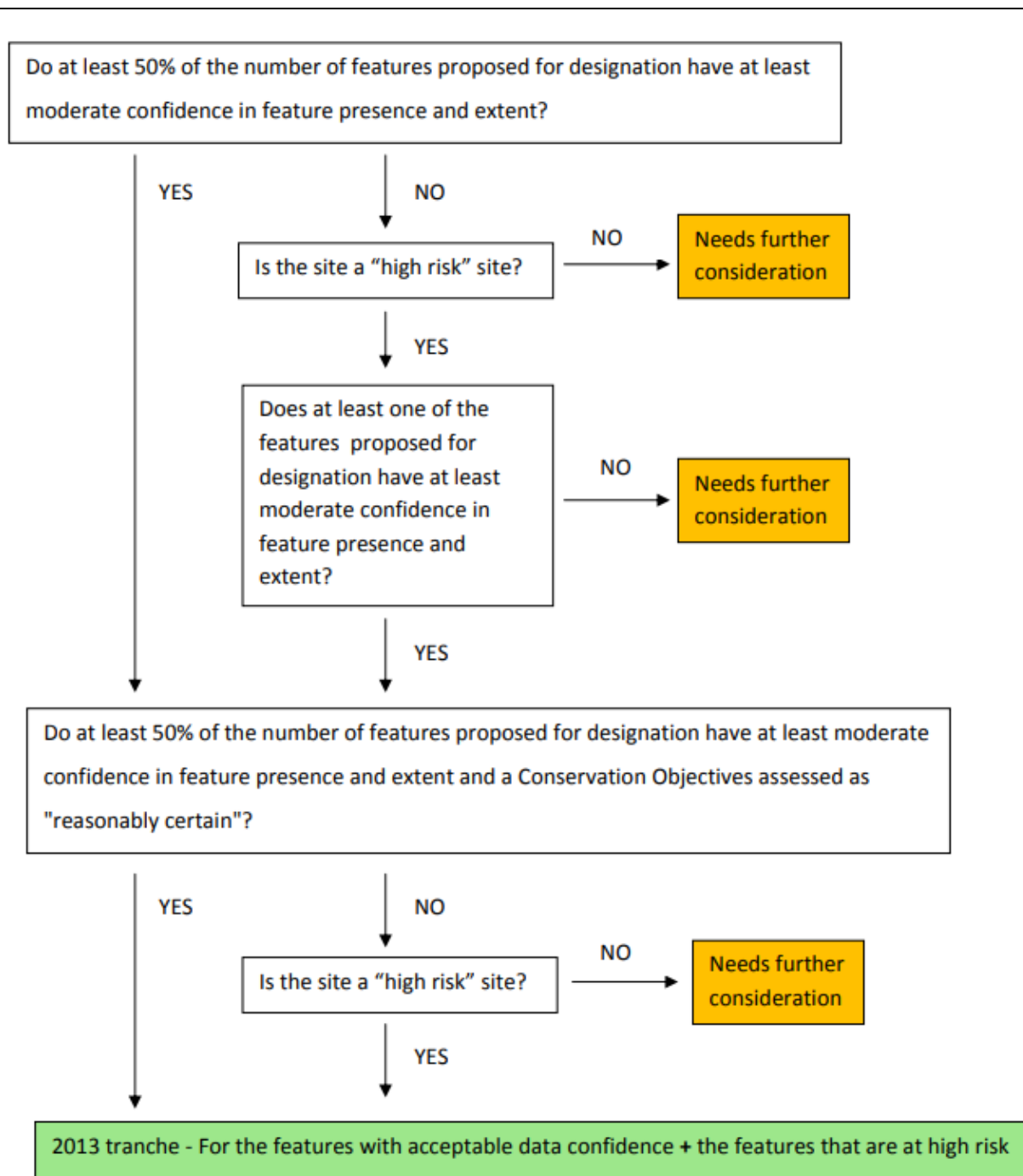


Figure A. 6: Data certainty when designating an MCZ (source: Defra, 2013)

Consents and licences

- A.1.7.2.12 The guidance provided by DESNZ (2025) stipulates that the DCO should include a requirement to provide post-consent evidence that the agreed contribution to the MRF has been paid. The DCO should also include a requirement to provide a full Implementation and Monitoring Plan as soon as this is available from Defra on the completion of the MPA designations/extension programme.

Monitoring and adaptive management

- A.1.7.2.13 The DESNZ (2025) guidance explains that, where consent is granted, DESNZ Secretary of State will usually expect to see greater clarity and certainty regarding the compensation and the ongoing management and monitoring before works which give rise to the adverse effect for which compensation is required can commence. There will also be a requirement to provide a high-level Implementation and Monitoring Plan, prior to construction. It is, however, recognised that the detailed information usually expected by DESNZ Secretary of State may not be fully available until the Government's MPA designation/extension programme is complete. The WMS (UK Parliament, 2025) therefore commits to the production of high-level Implementation and Monitoring Plans, which should be obtained from Defra by the Applicants and provided to the DESNZ Secretary of State before construction. However, as noted above Natural England have confirmed that for the Transmission Assets construction may start before the strategic compensation measures are in place following a commitment to strategic compensation measures (**Table A. 2**).

A.1.7.3 Project-led Compensation Measures

- A.1.7.3.1 As noted in **section A.1.7.2**, Natural England and the Applicants are in agreement that strategic compensation is likely to be the preferred and best method for the delivery of MEEB (if required) for the Transmission Assets (**Table A. 2**) (CoT136, **Table A. 6**). The Applicants have however explored options for MEEB including project-led measures, as the final details of the MRF are not yet finalised.
- A.1.7.3.2 The project-led measures considered are outlined in **Table A. 7** and have been grouped based on the Defra hierarchy of compensatory measures (Defra, 2021). The levels of the hierarchy are included in the first column of **Table A. 7**. This hierarchy was developed to act as a framework which highlights Defra's preferred approach to the development of MEEB. The preferred scenario is that the measures developed benefit the same feature which is impacted by the development. Each step down the hierarchy moves away from this ideal scenario, with reduced certainty of success and a likely increase in the extent of the measure required to reach equivalent environmental benefit.
- A.1.7.3.3 The project-led measures identified that were considered by the Applicants as having potential for feasibility in **Table A. 7** are discussed in more detail in **paragraphs A.1.7.3.4 to A.1.7.3.57**.

Table A. 7: Summary of potential MEEB for the Fylde MCZ considered for the Transmission Assets

(red = unlikely to be feasible; amber = uncertain; and green = potential to be feasible)

Defra (2021) hierarchy step	Potential Measure	Measure Description and Examples	Feasibility				Overall Feasibility Score
			Deliverability	Spatial Scale	Timescale and Potential Monitoring Requirements	Structure and Function	
Measures to address the same impact at the same location (within the Fylde MCZ)	Removal of disused cables and pipelines	This measure would involve the removal of disused cables and pipelines that cross the Fylde MCZ to decrease the area in the Fylde MCZ affected by the impact of long term habitat loss.	The deliverability of this measure would be based on the ability of surveys and public data to identify relevant infrastructure for removal within the Fylde MCZ and would be subject to an agreement being reached with the owner of the infrastructure in question. There are currently no known disused cables or pipelines within the Fylde MCZ, making this measure unfeasible.	The ratio of the area of infrastructure removal cannot be determined as there isn't any suitable infrastructure for removal in this area.	The delivery time for this measure would depend on the length of cable/pipeline removed. There are however no known disused cables or pipelines within the Fylde MCZ.	Whilst this measure would likely reinstate the functionality of the subtidal sand and subtidal mud features affected, there are however no known disused cables or pipelines within the Fylde MCZ.	Unlikely – there is currently a lack of cables and pipelines to be removed within the Fylde MCZ for this measure to be considered feasible.

Defra (2021) hierarchy step	Potential Measure	Measure Description and Examples	Feasibility				Overall Feasibility Score
			Deliverability	Spatial Scale	Timescale and Potential Monitoring Requirements	Structure and Function	
	Removal of marine debris/plastic/other rubbish	Marine debris is equivalent to the introduction of hard substrate into a soft sediment environment. This measure would therefore involve the removal of marine debris from within the Fylde MCZ to improve the habitat quality and functionality of the features within the MCZ (i.e. removing the introduced hard substrate and the long term habitat loss and INNS implications associated with that). Marine debris removal was used as a compensation measure for the Hornsea Three Offshore Windfarm (Orsted, 2022a).	This measure is highly deliverable as demonstrated by Hornsea Three, which delivered this measure as part of their sandbank compensation plan (Orsted, 2022a). JNCC and Natural England have however produced an advice note regarding this measure and concluded that they could not support the use of marine debris removal as a compensation measure (JNCC <i>et al.</i> , 2023).	The ratio of the area of marine debris removal to the area associated with the Transmission Assets long term habitat loss would be determined in consultation with Defra and SNCBs.	Other projects such as Hornsea Three have undertaken similar campaigns of debris removal within a period of approximately six weeks (Orsted, 2022b). In terms of monitoring, pre and post-measure could take account of the marine debris in the Fylde MCZ and aim to estimate if this measure has been able to significantly decrease debris.	The removal of marine debris would improve the quality of the sedimentary habitat available within the Fylde MCZ and would likely reinstate the functionality of the subtidal sand and subtidal mud features affected. This measure would improve habitat with the same structure and function as the designated features of the Fylde MCZ.	Unlikely– the SNCBs do not deem this to be a suitable measure (see Table A. 2).

Defra (2021) hierarchy step	Potential Measure	Measure Description and Examples	Feasibility				Overall Feasibility Score
			Deliverability	Spatial Scale	Timescale and Potential Monitoring Requirements	Structure and Function	
	Bivalve seeding	This measure involves the introduction of bivalve specimens within the Fylde MCZ (e.g. small nut-shell (<i>Nucula nitidosa</i>), razor shell (<i>Ensis magnus</i>) and the white furrow shell (<i>Abra alba</i>) or blue mussels (<i>Mytilus edulis</i>).	There are no examples of this measure being put in practice for the species of bivalve identified within the MCZ. There are however examples for the commercial seeding of blue mussels (<i>Mytilus edulis</i>) (Bangor Mussel Producers Association, 2008), the methodology for which could be applied, with bivalves then left in place rather than being commercially harvested.	The ratio of the area of bivalve seeding to the area associated with the Transmission Assets long term habitat loss would be determined in consultation with Defra and SNCBs.	Bivalves can take a couple of years to mature depending on the species, therefore the measure is likely to require at least five years or more to deliver. Regarding monitoring, pre- and post-measure grab survey to determine if the introduced bivalves survived and were able to improve the abundance and distribution of the population.	Bivalves form part of the community structure for both the subtidal sand and subtidal mud features. However the hard substrate habitats formed by clusters of bivalves such as blue mussels represent a different hard substrate-based community. As a result this community may have different functions to the sedimentary features of the Fylde MCZ however this will depend on the density of the bivalves.	Potential – bivalve seeding has proven methods for commercially viable species such as blue mussel. Further detail provided in paragraphs A.1.7.3.42 to A.1.7.3.57 . Natural England have, however, expressed that this measure is less suitable than the MRF as it will not deliver like for like compensation for the Fylde MCZ (Table A. 2).

Defra (2021) hierarchy step	Potential Measure	Measure Description and Examples	Feasibility				Overall Feasibility Score
			Deliverability	Spatial Scale	Timescale and Potential Monitoring Requirements	Structure and Function	
Measures to address the same ecological function at a different location (outside the Fylde MCZ)	Bivalve seeding	As above for bivalve seeding within the Fylde MCZ, this measure involves the introduction of bivalve specimens, but at a location outside the MCZ.	There are no examples of this measure being put in practice for the species of bivalve identified within the MCZ. There are however examples for the commercial seeding of blue mussels (<i>Mytilus edulis</i>) (Bangor Mussel Producers Association, 2008), the methodology for which could be applied within or around the Fylde MCZ, with bivalves then left in place rather than being commercially harvested.	The ratio of the area bivalve seeding to the area associated with the Transmission Assets long term habitat loss would be determined in consultation with Defra and SNCBs.	Bivalves can take a couple of years to mature depending on the species, therefore the measure is likely to require at least five years or more. Monitoring may involve pre- and post-measure grab survey to determine if the introduced bivalves survived and were able to improve the abundance and distribution of the population.	Bivalves form part of the community structure for both the subtidal sand and subtidal mud features. However the hard substrate habitats formed by clusters of bivalves such as blue mussels represent a different hard substrate-based community. As a result this community may have different functions to the sedimentary features of the Fylde MCZ however this will depend on the density of the bivalves.	Potential – bivalve seeding has proven methods for commercially viable species such as blue mussel. Further detail provided in paragraphs A.1.7.3.42 to A.1.7.3.57 . Natural England have, however, expressed that this measure is less suitable than the MRF as it will not deliver like for like compensation for the Fylde MCZ (Table A. 2).
Measures to address a similar ecological function at the same location	Deployment of artificial reefs	This measure involves the deployment of artificial reef structures within the Fylde MCZ as	Artificial reefs have been deployed in numerous locations around the UK including Loch Linnhe (SAMS,	The ratio of the area of artificial reef to the area associated with the Transmission Assets long term	It generally takes some years for artificial reefs to be colonised by biological communities to the	Artificial reefs represent a hard substrate habitat compared to the sedimentary habitats designated for the Fylde MCZ. They do however	Unlikely – there are examples of artificial reefs being deployed in the UK however not as

Defra (2021) hierarchy step	Potential Measure	Measure Description and Examples	Feasibility				Overall Feasibility Score
			Deliverability	Spatial Scale	Timescale and Potential Monitoring Requirements	Structure and Function	
(within the Fylde MCZ)		part of the cable protection infrastructure.	2007) and Poole Bay (BU, 2021). They have not, however, been implemented as a MEEB before and as outlined in Table A. 2 Natural England confirmed that nature inclusive design is classed as enhancement and not MEEB.	habitat loss would be determined in consultation with Defra and SNCBs.	extent that they are able to achieve their objectives (UNEP, 2009). Monitoring may involve annual diver or DDV surveys to measure the area of the artificial reef colonised and record the ecological community found in the vicinity of the structures.	act as refuge for some fish species although primarily the structure and function of these habitats does not align with the features of the Fylde MCZ.	a MEEB and this measure is unlikely to be accepted as MEEB by Natural England.
	<i>Sabellaria</i> sp. reef creation	This measure involves the creation of <i>Sabellaria spinulosa</i> reefs either within the Fylde MCZ as part of cable protection or outside the Fylde MCZ.	This would likely involve the growing of reef pieces in labs/nurseries before transplanting them to the seabed as described in Franzitta <i>et al</i> (2022). There are no examples of this measure being put in practice at scale.	The ratio of the area of reef creation to the area associated with the Transmission Assets long term habitat loss would be determined in consultation with Defra and SNCBs.	The timeframe associated with this measure is unknown as this kind of <i>Sabellaria</i> reef creation has not been attempted before at scale. Monitoring may involve annual DDV monitoring surveys to determine if the fragments survived	The structure and function of <i>Sabellaria</i> sp. reef is similar to artificial reefs above, where there may be some overlapping functions primarily the structure and function of these habitats does not align with the features of the Fylde MCZ.	Unlikely – this methodology for implementing this measure is untested beyond one study and the timeframe for delivery is uncertain.

Defra (2021) hierarchy step	Potential Measure	Measure Description and Examples	Feasibility				Overall Feasibility Score
			Deliverability	Spatial Scale	Timescale and Potential Monitoring Requirements	Structure and Function	
					introduction survived and if they were able to grow.		
Measures to address a similar ecological function at a different location (outside the Fylde MCZ)	Native oyster (<i>Ostrea edulis</i>) bed creation	This measure would involve the planting of a native oyster bed within the Irish Sea/on the north west coast of England, as they have been shown to function as a nursery ground for fish.	Successful delivery has been demonstrated by numerous windfarm projects which have created native oyster beds around the UK (e.g. Dornoch Environmental Enhancement Project). This measure is proposed as the MEEB for the Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects.	The ratio of native oyster bed area to the area associated with the Transmission Assets long term habitat loss would be determined in consultation with Defra and SNCBs.	Following the installation of oysters, successful recruitment appears to vary between 1 to 3 years (Loch Ryan, Scotland), or 6 to 8 years (Lough Foyle) (NRW, 2021). Regular monitoring by divers or DDV may be required as the reef is becoming established to ensure oysters are fixed and growing. Following this,	As a hard substrate habitat the structure of this habitat is very different from the sedimentary habitats of the Fylde MCZ however there may be some overlap in functioning e.g. both habitats will provide food and refuge for juvenile fish.	Potential – evidence of successful project around the UK with established methods and known timescale. Further detail provided in paragraphs A.1.7.3.5 to A.1.7.3.24 . Natural England have, however, expressed that this measure is less suitable

Defra (2021) hierarchy step	Potential Measure	Measure Description and Examples	Feasibility				Overall Feasibility Score
			Deliverability	Spatial Scale	Timescale and Potential Monitoring Requirements	Structure and Function	
					annual surveys to measure oyster size, abundance and distribution to quantify success.		than the MRF as it will not deliver like for like compensation for the Fylde MCZ (Table A. 2).
	Subtidal seagrass bed creation	This measure would involve the planting of seagrass beds in coastal waters outside the Fylde MCZ, (e.g. Morecambe Bay or Barrow).	There are a number of ongoing seagrass restoration projects throughout the UK, which are successfully delivering the restoration of seagrass beds e.g. Plymouth Sound Seagrass Restoration Project (Ocean Conservation Trust, 2021).	The ratio of new/restored seagrass bed to the area associated with the Transmission Assets long term habitat loss would be determined in consultation with Defra and SNCBs.	Seagrass meadows require multiple years to grow and establish. In a study by Greiner <i>et al.</i> (2013) restored beds were predicted to accumulate carbon at a rate that is comparable to natural seagrass beds after 12 years. Monitoring may involve annual diver or DDV surveys to determine if the seagrass seedling/seeds had rooted and to monitor the	As a sediment-based habitat seagrass beds will have a similar ecological structure to subtidal sand and subtidal mud and therefore it is also likely to have similar ecological functions.	Potential - evidence of successful project around the UK with established methods and known timescale. Further detail provided in paragraphs A.1.7.3.25 to A.1.7.3.41 . Natural England have, however, expressed that this measure is not suitable for the Fylde MCZ as it will not deliver like for like

Defra (2021) hierarchy step	Potential Measure	Measure Description and Examples	Feasibility				Overall Feasibility Score
			Deliverability	Spatial Scale	Timescale and Potential Monitoring Requirements	Structure and Function	
					seagrass distribution and the ecological community.		compensation (Table A. 2).
	Kelp forest creation and/or management	This measure would involve the planting of kelp to create a new kelp bed, active management of kelp or the passive protective designation of an area of kelp to protect and enhance an existing kelp forest.	Kelp habitat has been identified in the region along the Cumbrian coast (Burrows <i>et al.</i> , 2014). There is only one example of kelp restoration in the UK and this is through passive methods (Sussex Kelp Recovery Project, 2023)	The ratio of the new/restored kelp forest to the area associated with the Transmission Assets long term habitat loss would be determined in consultation with Defra and SNCBs.	Timescale of delivery would depend on whether active or passive restoration was pursued. It is currently unknown how long active restoration would take however passive restoration is likely to occur on a decadal timescale. Monitoring may involve annual diver or DDV surveys would determine the growth rate of kelp as well as the community composition of the habitat.	This habitat includes a mix of sediment and hard substrate which could include community structures that align with the designated features of the Fylde MCZ. There are also likely to be overlapping functions such as refuge fore young fish and habitat for infaunal species.	Unlikely – there is a lack of information regarding restoration of kelp and uncertainties regarding timescales.

Defra (2021) hierarchy step	Potential Measure	Measure Description and Examples	Feasibility				Overall Feasibility Score
			Deliverability	Spatial Scale	Timescale and Potential Monitoring Requirements	Structure and Function	
	Creation of saltmarsh	This measure involves the creation of coastal saltmarsh through the breaching of sea defences or nature-based design.	Saltmarsh restoration has been successfully delivered across the UK with the nearest project to the Fylde MCZ being Hesketh Out Marsh in the Ribble Estuary (Rewilding Britain, 2024).	The ratio of the area with saltmarsh to the area associated with the Transmission Assets long term habitat loss would be determined in consultation with Defra and SNCBs.	Saltmarsh creation projects can take 1.5 to 6 years depending on the size of the project (Environment Agency, 2021a). Monitoring may involve annual walkover or boat based surveys may be required to document the extent of the change and monitor the communities found within the site, in particular if any juvenile fish were found at the site.	This habitat represents very different conditions when compares to the subtidal sand and mud features and therefore is likely to contain a very different community structure however they are likely to share some functions such as acting as a refuge for juvenile fish.	Uncertain – there is a clear methodology for this measure however the timescales can be long.
	Horse mussel (<i>Modiolus modiolus</i>) bed creation	This measure involves the creation of horse mussel beds as they are known to provide shelter for a number of	This measure could involve enhancement of a degraded bed or the creation of a new bed within the Irish Sea, which is part of its historic range. There are few	The ratio of new horse mussel bed to the area associated with the Transmission Assets long term habitat loss would be determined in	It is likely to take a number of years to determine whether this measure is successful. Monitoring will require annual DDV surveys to determine if there	As a hard substrate habitat the structure of this habitat is very different from the sedimentary habitats of the Fylde MCZ however there may be some overlap in functioning e.g. both habitats will provide	Uncertain – the methodology associated with this measure has not been tested at scale.

Defra (2021) hierarchy step	Potential Measure	Measure Description and Examples	Feasibility				Overall Feasibility Score
			Deliverability	Spatial Scale	Timescale and Potential Monitoring Requirements	Structure and Function	
		molluscs as well as fish.	examples of this measure, however research by Fariñas-Franco <i>et al.</i> (2013) concluded that translocated mussel clumps had a positive population-level impact.	consultation with Defra and SNCBs.	is an increase in the mussel population.	food and refuge for juvenile fish.	
	Removal of INNS	This measure would involve the removal of INNS, such as leathery sea squirt (<i>Styela clava</i>), zebra mussels (<i>Dreissena polymorpha</i>), and the carpet sea squirt (<i>Didemnum vexillum</i>), which have been identified as the key-risk INNS associated with fisheries within the North West Inshore Fisheries and Conservation Authority (IFCA) district (North	This approach has not been previously used as a MEEB, however there are established methods for the removal of INNS. According to Thresher and Kurtis (2003), popular methods include physical removal and the use of biocides, which are effective on a small to medium scale.	The ratio of area cleared of INNS to the area associated with the Transmission Assets long term habitat loss would be determined in consultation with Defra and SNCBs.	This measure could be implemented within the time between consent and construction. Pre and post measure diver or DDV surveys would be required to determine change in INNS abundance.	The removal of INNS could potentially improve the quality of sedimentary habitats where INNS have displaced native species. These habitats could potentially have the same structure and function as the protected features of the Fylde MCZ however INNS tend to prefer hard substrate habitats therefore the improvement of these habitats would not represent like-for-like compensation.	Unlikely – largely due to the scalability of the methodology and its potential to be successful long term.

Defra (2021) hierarchy step	Potential Measure	Measure Description and Examples	Feasibility				Overall Feasibility Score
			Deliverability	Spatial Scale	Timescale and Potential Monitoring Requirements	Structure and Function	
		Western IFCA, 2023).					
	Improve sustainability of scallop fisheries	This measure could involve instigating measures to improve wild scallop stocks for example creating a sustainable fishing education programme or the creation of a sustainable scallop nursery which could be used to enhance wild populations in the Irish sea which have been degraded.	There is one example of a sustainable scallop farm being implemented in Câr y Môr in Pembrokeshire, Wales, which is the first 'regenerative ocean farm' in the region. Founded as a community benefit society in 2019, this project expanded over three years to establish a 3-hectare ocean farm where seaweed, mussels, native oysters, and scallops are cultivated (Gov.Wales, 2023).	The ratio of area of scallop fishery to the area associated with the Transmission Assets long term habitat loss would be determined in consultation with Defra and SNCBs.	An education program could be developed and deployed within a few years of being approved however the creation and running of a sustainable scallop fishery could take longer. In term of monitoring this measure would require a baseline pre-measure survey to determine the condition of the scallop population followed by post-measure surveys following the implementation of the measure to determine if abundance has increased.	Scallops inhabit sedimentary habitats such as subtidal sand therefore improving habitats for this species will lead to better conditions for communities with the same structure and function as the protected features of the Fylde MCZ.	Uncertain – due to the limited number of successful project and uncertainty around setting up a scallop fishery.

Defra (2021) hierarchy step	Potential Measure	Measure Description and Examples	Feasibility				Overall Feasibility Score
			Deliverability	Spatial Scale	Timescale and Potential Monitoring Requirements	Structure and Function	
	Deployment of artificial reefs	As for deployment of artificial reefs within the Fylde MCZ, this measure involves the deployment of artificial reef structures, but outside the MCZ.	Artificial reefs have been deployed in numerous locations around the UK including Loch Linnhe (SAMS, 2007) and Poole Bay (BU, 2021). They have not however been implemented as a MEEB measure before.	The ratio of area of artificial reef to the area associated with the Transmission Assets long term habitat loss would be determined in consultation with Defra and SNCBs.	It generally takes some years for artificial reefs to be colonised by biological communities to the extent that they are able to achieve their objectives (UNEP, 2009). Monitoring would likely involve annual diver or DDV surveys to measure the area of the artificial reef colonised and record the ecological community found in the vicinity of the structures.	Artificial reefs represent a hard substrate habitat compared to the sedimentary habitats designated for the Fylde MCZ. They do however act as refuges for some fish species although primarily the structure and function of these habitats does not align with the features of the Fylde MCZ.	Uncertain - there are examples of artificial reefs being deployed in the UK however not as part of MEEB.

Project-led Compensation Measures Short List

- A.1.7.3.4 Although Natural England and the Applicants are in agreement that strategic compensation is likely to be the preferred and best option for delivering like-for-like MEEB if this is required (**Table A. 2**), the Applicants have explored other options for MEEB delivery including project-led compensation measures. The long list of measures in **Table A. 7** outlines all of the potential options identified by the Applicants however some project-led options have been identified as more feasible than others, the most feasible options have been outlined in greater detail below.

Planting of native oyster beds

Overview

- A.1.7.3.5 Historically, native oysters have faced significant challenges, including overexploitation, pollution, disease, habitat loss, and the introduction of non-native species, which has led to a drastic reduction in their population. Native oysters provide key ecosystem services such as improving water quality and providing nursery habitats to a variety of species of fish. Former oyster grounds in UK waters covered many shallow sublittoral areas along the west and east English coast (Bennema *et al.*, 2020; Preston *et al.*, 2020). Native oyster historical distribution data, mapped by the Universities of Exeter and Edinburgh for the Environment Agency (Environment Agency, 2021b), indicate past native oyster populations along the south edge of Morecambe Bay where it meets the Irish Sea and along the northwest coast of Cumbria, suggesting potential areas for restoration near to the Fylde MCZ.

Value and function

- A.1.7.3.6 The planting of native oyster beds near the Fylde MCZ would introduce hard substrate habitats, deviating from the predominantly sedimentary nature of the area. Oyster beds, however, increase habitat complexity and therefore support a diverse biological community (Pogoda *et al.*, 2019). Studies of native oyster reefs in the Netherlands have found the reef to be associated with a variety of species including blue mussels, queen scallops (*Aequipecten opercularis*), sand mason worms (*Lance conchilega*) and the sand gaper (*Mya arenaria*) (Didderen *et al.*, 2020).
- A.1.7.3.7 Oyster beds are important fish nursery habitats, providing shelter for juveniles as well as providing a source of food by increasing prey abundance (Preston *et al.*, 2020). This aligns with the functional role of the subtidal sand and mud features present in the MCZ (**paragraph A.1.5.3.1**). Although the habitat created by oyster beds may not support benthic communities identical to those found in the subtidal mud and sand features, the overall ecological function would be comparable. By providing additional habitat complexity and serving as nurseries for various marine species, native oyster beds would enhance biodiversity and ecosystem resilience.

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- A.1.7.3.8 Additionally, as oysters are filter feeders, they can improve water quality by removing impurities. Particles that are not eaten are deposited as pseudofaeces, enriching sediment and contributing to nutrient removal from the water column and also to carbon sequestration as their shells are made from calcium carbonate (Fodrie *et al.*, 2017).
- A.1.7.3.9 As a result of these factors this measure is likely to only satisfy the last step on the mitigation hierarchy relating to measures which address a similar ecological function at a different location (outside the Fylde MCZ). Furthermore as outlined in **Table A. 2**, Natural England have stated that they do not consider that this measure would be suitable as a MEEB for the Transmission Assets as it would not represent like-for like compensation. This measure is therefore deemed less favourable than strategic compensation which is Natural England and the Applicants' likely preferred option.

Confidence

- A.1.7.3.10 There are several projects across the UK that have been actively working to increase native oyster numbers, including The Wales Native Oyster Restoration Project in Milford Haven. Numerous windfarm projects have successfully created native oyster beds around the UK (e.g. Dornoch Environmental Enhancement Project). This measure is also proposed as the MEEB for the Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects.
- A.1.7.3.11 The Dornoch Environmental Enhancement Project created a reef habitat utilising a blend of aggregate pebbles sourced from onshore locations and discarded oyster shells. For the Sheringham and Dudgeon Offshore Windfarm Extension Projects, the proposed deployment and maintenance of an oyster bed spanning 10,000 m², with an average density of five oysters per m², is intended to offset habitat loss (Equinor, 2023). This MEEB strategy, targets habitats closely related to subtidal mixed sediment areas based on Natural England guidance (2022). The project plans to reintroduce 52,500 oysters in both the first and second years. While specific details regarding the project's success are pending as it is yet to be installed, insights gained from the endeavour offer valuable guidance for the execution of native oyster bed planting initiatives around the Fylde MCZ.
- A.1.7.3.12 The historical records of oyster beds in the region suggests that conditions are favourable for restoration, adding confidence to the likelihood of success. The established methodology, comparable ecological functions and historical basis for introduction give relatively high confidence in the feasibility of the measure. As mentioned above however Natural England have stated that they do not consider that this measure would be suitable as a MEEB for the Transmission Assets as it would not represent like-for like compensation (**Table A. 2**).

Consultation

- A.1.7.3.13 The delivery of this measure would require consultations with SNCBs and fishing communities to ensure that the right notice was given and that the right location was chosen to ensure that the MEEB is suitable and results in minimal disturbance.

Scale and location

- A.1.7.3.14 The size of an oyster bed required to deliver equivalent environmental benefit to the area of long term habitat loss would be at least the same area (30,400 m²). However, a much larger ratio is likely to be required to account for oyster mortality and to ensure a self-sustaining oyster bed. The proposed oyster bed of 10,000 m² for the Sheringham and Dudgeon Offshore Windfarm Extension Projects will represent a greater than 1:5 ratio of MEEB (Equinor, 2023).
- A.1.7.3.15 Native oyster historical distribution data indicate past native oyster populations along the south west corner of Morecambe Bay where it meets the Irish Sea and along the north west coast of Cumbria (Environment Agency, 2021b).
- A.1.7.3.16 Habitat suitability would be a key consideration when developing this measure as water depth, seabed dynamics and oxygen content amongst other factors are important in determining the survival success of native oysters. A study would therefore need to be undertaken to identify the most appropriate location for this measure.

Proposed approach

- A.1.7.3.17 This measure aims to produce a self-sustaining oyster bed in the region and would involve the planting of a native oyster bed within the Irish Sea/on the northwest coast of England. There are a number of example projects which can be drawn on, which demonstrate successful methodologies for cultivating and introducing native oysters.
- A.1.7.3.18 Drawing inspiration from the Dornoch Environmental Enhancement Project, this measure would likely involve creating a reef habitat utilising a blend of aggregate pebbles sourced from onshore locations and discarded oyster shells (cultch) and seeding with juvenile oysters ('spat') which could be supplied by the Morecambe Bay Hatchery which has supplied other similar projects (Seawilding, 2021).
- A.1.7.3.19 The target average minimum density would be 5 live oysters per m² as OSPAR defines native oyster beds as occurring at densities of 5 or more per m² (OSPAR, 2021).
- A.1.7.3.20 It is anticipated that a marine licence application would need to be submitted to the MMO for the deployment of cultch.

Consents and licences

- A.1.7.3.21 The consents and licences to enable this MEEB to take place would be issued by SNCBs such as Natural England and the MMO.

Monitoring and adaptive management

- A.1.7.3.22 Monitoring efforts, including periodic surveys to assess oyster size, abundance, and distribution, would be integral to quantifying the measure's success and guiding adaptive management strategies.

Funding

- A.1.7.3.23 The Applicants would be expected to provide the full funding required to enable a successful project-led MEEB.

Programme

- A.1.7.3.24 The timeline for successful recruitment following oyster installation varies, with intervals ranging from 1 to 3 years in locales like Loch Ryan, Scotland, to more protracted periods of 6 to 8 years observed in locations like Lough Foyle (NRW, 2021).

Subtidal seagrass bed creation

Overview

- A.1.7.3.25 An alternative method for creating equivalent environmental benefit may be to enhance an unprotected sedimentary habitat so that it is better able to provide environmental services similar to those associated with the Fylde MCZs protected features. This option would involve the creation of a seagrass bed or enhancement of the extent of an existing bed.
- A.1.7.3.26 Seagrass beds are in active decline, reducing by a rate of 1.4% per year (Short *et al.*, 2010). Seagrass beds are usually found in shallow waters of up to four metres depth, therefore this measure could not be implemented within the Fylde MCZ. There currently are no active subtidal seagrass bed restoration projects in the region (north west England), however seagrass beds are currently present in Cumbria (northeast of the Fylde MCZ) and seagrass has historically been more extensive in this region (Green *et al.*, 2021). A study to assess the potential for seagrass restoration in Morecambe Bay identified potential locations for restoration (Roosecote Bay) and the likely size of a site which would benefit from restoration (49 hectares) (Clifford, 2021).

Value and function

- A.1.7.3.27 Seagrass meadows have been identified as vital native fish nursery habitats in the UK, which is one of the key functions of the subtidal sand and mud features of the Fylde MCZ. Seagrass meadows are also sedimentary-based habitats that are capable of supporting the same fish species that use the Fylde MCZ as a nursery, such as European plaice and cod (*Gadus morhua*) (Unsworth *et al.*, 2021). Additionally, a number of bivalves are known to colonise seagrass meadows, along with polychaetes and crustaceans (Unsworth *et al.*, 2021). Seagrass beds also stabilise sediment and act as significant carbon sinks (Duarte *et al.*, 2013).
- A.1.7.3.28 Although seagrass beds may not support benthic communities identical to those found in the subtidal mud and sand features, the overall ecological function may be comparable. By providing additional habitat complexity and serving as nurseries for various marine species, seagrass beds would enhance biodiversity and ecosystem resilience.
- A.1.7.3.29 As a result of these factors this measure is likely to satisfy only the last step on the mitigation hierarchy relating to measures which address a similar

ecological function at a different location (outside the Fylde MCZ). Furthermore as outlined in **Table A. 2**, Natural England have stated that that do not consider that this measure would be suitable as a MEEB for the Transmission Assets as it is not considered to be a successful long term method for compensation due to water quality issues along large areas of the coast and the requirement for heavy management to support the continued existence of the beds. This measure is therefore deemed less favourable than strategic compensation which is Natural England and the Applicants' likely preferred option.

Confidence

- A.1.7.3.30 There are a number of examples of seagrass restoration around the UK. For example, the Seagrass Ocean Rescue project started restoration in small experimental areas in Dale in West Wales, including monitoring of results. This has now been scaled up to a much larger project in North Wales, aiming to restore 10 ha of seagrass and now includes restoration in other locations in Wales, including Burry Inlet and the Severn Estuary.
- A.1.7.3.31 Intertidal seagrass restoration projects in the north west England include work by the Cumbria Wildlife Trust in the Walney Channel near Barrow. However, there are currently no examples of subtidal restoration projects in northwest England.
- A.1.7.3.32 The proposal to restore seagrass beds, despite being unable to be implemented within the Fylde MCZ due to depth limitations, offers a potential avenue for achieving environmental benefits equivalent to those associated with the MCZ's protected features. The identification of potential restoration sites, such as Roosecote Bay in Morecambe Bay, coupled with appropriate restoration techniques, demonstrates the feasibility of seagrass restoration efforts. As mentioned above however, Natural England have stated that they do not consider that this measure would be suitable as a MEEB for the Transmission Assets due to the lack of long term success likely with this measure (**Table A. 2**).

Consultation

- A.1.7.3.33 Due to the proximity of this measure to the coast, potentially in the intertidal zone community consultation would be required. The project would also need to consult with SNCBs such as Natural England to ensure that the measure meets their requirements for MEEB.

Scale and location

- A.1.7.3.34 The size of seagrass bed required to deliver equivalent environmental benefit to the area of long term habitat loss would at least the same area (30,400 m²). However, a much larger ratio is likely to be required, covering an area greater than the area lost as a result of the long term habitat loss from cable protection and cable crossings installed within Fylde MCZ. This will account for seagrass mortality and to ensure a self-sustaining seagrass bed.
- A.1.7.3.35 A study would need to be undertaken to identify the most appropriate location for restoration efforts, based on historical seagrass distribution and current

environmental conditions. However, the Wildlife Trust and Natural England, in partnership with Orsted and the Crown Estate, undertook a project to assess the potential for seagrass restoration in Morecambe Bay the findings of which identified potential locations for restoration (Roosecote Bay), the likely size of a site which would benefit from restoration (49 hectares) as well as detailing appropriate restoration techniques (Clifford, 2021).

Proposed approach

- A.1.7.3.36 This project would involve the creation of a seagrass bed or enhancement of the extent of an existing bed. There are a number of methodologies which have been trialled for the planting of seagrass, the two most common methods are reseedling (for example via placing seeds in hessian bags with sand and deploying them on the seabed) and replanting (collecting adult shoots and transplanting them on to the seabed) (Environment Agency *et al.*, 2021).
- A.1.7.3.37 Before seeds or shoots can be deployed it would be essential to establish a supplier of materials, conduct surveys of the proposed site to ensure it is suitable for the scale of restoration required and address any licencing requirements.
- A.1.7.3.38 It is anticipated that a marine licence application would need to be submitted to the MMO and SNCB approval would be required for the collection and planting of seeds or plants.

Monitoring and adaptive management

- A.1.7.3.39 Surveys would be required every year for the first few years to determine if the seagrass seedling/seeds had rooted and to monitor the spread of seagrass as well as the community which inhabits this habitat, in particular the fish and benthic species. Monitoring would likely include measurement of percentage seagrass cover, density, and shoot length and an assessment of seagrass bed diversity. It is likely that monitoring would be required for at least 10 years to assess the success of the restoration activities.

Funding

- A.1.7.3.40 The Applicants would be expected to provide the full funding required to enable a successful project-led MEEB.

Programme

- A.1.7.3.41 Seagrass meadows require multiple years to grow and establish. In a study by Greiner *et al.* (2013) restored beds were predicted to accumulate carbon at a rate that is comparable to natural seagrass beds after 12 years.

Bivalve seeding

Overview

- A.1.7.3.42 Bivalve seeding would support the subsurface sedimentary community affected by habitat loss from cable protection installation by increasing the population of bivalve species via the release of bivalves directly into the Fylde

MCZ or into a neighbouring MCZ with similar species. Alternatively, seeding could occur outside an MCZ, depending on the specific objectives of the programme. The key bivalve species in the Fylde MCZ include *Nucula nitidosa*, *Ensis magnus* and *Abra alba* (Natural England, 2023a). As there are currently limited examples of seeding of these species of bivalve, another option is to introduce blue mussels within the Fylde MCZ.

- A.1.7.3.43 This measure would improve habitat condition, benefiting the benthic communities and infer wider ecosystem benefits, such as providing a food source for local bird populations.

Value and function

- A.1.7.3.44 This measure effectively addresses a key function of the Fylde MCZ as a habitat for bivalves in both the subtidal sand and subtidal mud features, and it indirectly enhances the wider ecosystem by increasing food availability for fish and birds.
- A.1.7.3.45 Bivalves contribute significantly to the subsurface sedimentary community, promoting sediment stability and nutrient cycling. They serve as a food source for various predators and help maintain the overall health and biodiversity of the marine environment. In particular, bivalves are the main food source for the common scoter (*Melanitta nigra*), a designated feature of the Liverpool Bay SPA, which has been identified as a bivalve specialist (Durinck *et al.*, 1993) and so could benefit from this measure.
- A.1.7.3.46 As a result of these factors this measure is likely to satisfy only the last step on the mitigation hierarchy relating to measures which address a similar ecological function at a different location (outside the Fylde MCZ). Furthermore as outlined in **Table A. 2**, Natural England have stated that they do not consider that this measure would be suitable as a MEEB for the Transmission Assets as it would not represent like-for like compensation. This measure is therefore deemed less favourable than strategic compensation which is Natural England and the Applicants' likely preferred option.

Confidence

- A.1.7.3.47 This measure has not previously been implemented as a MEEB, however the process of bivalve seeding for commercial purposes is well-established (Bangor Mussel Producers Association, 2008).
- A.1.7.3.48 Based on the comparable ecological functions this measure could provide, as well as the established methods involved in bivalve seeding, specifically in relation to blue mussels, there is high confidence in the feasibility of this measure. As mentioned above however, Natural England have stated that they do not consider that this measure would be suitable as a MEEB for the Transmission Assets as it would not represent like-for like compensation (**Table A. 2**).

Consultation

- A.1.7.3.49 The project will need to consult with SNCBs such as Natural England to ensure that the measure meets their requirements for MEEB. It is also likely that

fishing communities will need to be consulted to prevent disruption and enable the establishment of the bivalve communities without disturbance.

Scale and location

- A.1.7.3.50 The area over which bivalves would be deployed would need to be determined, with consideration given to the spatial scale that would be required to deliver equivalent environmental benefit to the area of long term habitat loss (30,400 m²). The number of bivalves that would be required to confer a significant environmental benefit would also need to be determined, taking into account likely mortality rates, with the aim of establishing a self-sustaining population. The results of the pilot study (see below) would feed into this calculation.

Proposed approach

- A.1.7.3.51 This measure aims to increase the population of bivalve species by releasing them directly into the Fylde MCZ or another area to enhance the local ecosystem. Established methods for growing, harvesting, and introducing bivalve species, typically used for commercial species such as mussels, provide a foundation for this initiative. To ensure ecological compatibility, introduced bivalves should be cultivated from local brood stock, minimising the impact of hatchery-based shellfish aquaculture.
- A.1.7.3.52 Implementing a bivalve seeding programme involves several logistical considerations. The implementation steps include assessing suitable sites for local brood stock collection and release. For mussels, this would likely be via dredging of juvenile (seed) mussels from known beds, which would require a specialised vessel. There are a limited number of such vessels in the region, alternatively, a vessel could be mobilised from Holland where this is common practise. The mussels would then re-laid at the chosen reseeded site and be left here, rather than then being harvested as for commercial applications.
- A.1.7.3.53 A pilot study would likely be required to check on survival and growth rates following the relaying of the bivalves.

Consents and licences

- A.1.7.3.54 The consents and licences to enable this MEEB to take place would be issued by SNCBs such as Natural England and the MMO.

Monitoring and adaptive management

- A.1.7.3.55 This measure would necessitate surveys for the first few years following the introduction to assess survival rates, growth rates and improvements in population abundance and distribution of the introduced bivalves species. A pre-introduction survey would also be beneficial to establish baseline bivalve abundance levels at the introduction site.

Funding

- A.1.7.3.56 The Applicants would be expected to provide the full funding required to enable a successful project-led MEEB.

Programme

- A.1.7.3.57 Bivalve seeding can be implemented within a relatively short period. Bivalves take a couple of years to mature, so the overall project may take around five years from start to finish. The specific timescales involved in this measure may vary depending on the species chosen, with blue mussels reaching 2.5 inches within three years in deep waters in good conditions (Dare, 1980).

A.1.8 Conclusion

- A.1.8.1.1 This Without Prejudice, In-Principle MEEB Plan is provided on a precautionary basis, and without prejudice of the conclusions of the MCZ Screening and Stage 1 Assessment Report (APP-019) which state that there is no significant risk of hindering the conservation objectives of the MCZ as a result of Transmission Assets.
- A.1.8.1.2 Should the Secretary of State determine that MEEB be required, Natural England and the Applicants are in agreement that strategic compensation measures are likely to be the preferred and best method for the delivery of MEEB for the Fylde MCZ (see CoT136, **Table A. 6**).
- A.1.8.1.3 In line with other projects currently going through examination (e.g. Five Estuaries Offshore Wind Farm and Outer Dowsing Offshore Wind (Generating Station)), the Applicants have, however, also explored a longlist of potential project-led MEEB options.
- A.1.8.1.4 This document therefore demonstrates that both strategic compensation, in the form of a payment into the MRF to access Defra's programme of MPA designations/extensions, and project-led compensation options are available for MEEB for the Transmission Assets should the Secretary of State conclude that there is a significant risk of the conservation objectives of the Fylde MCZ being hindered.

A.1.9 References

ABPmer (2017) White Paper: UK Marine Habitat Creation Schemes. A summary of completed managed realignment and regulated tidal exchange projects. Southampton, ABPmer Ltd.

Allen (2022) Towards an Economic Value of Native Oyster Restoration in Scotland: Provisioning, Regulating and Cultural Ecosystem Services, Available at:

Accessed April 2025.

Bangor Mussel Producers Association (2008) Code of Good Practice for mussel seed movements, Available at: <https://www.nw-ifca.gov.uk/app/uploads/Code-of-Good-Practice-seed-mussel-movement.pdf>, Accessed April 2025.

Bayraktarov, E., Saunders, M.I., Abdullah, S., Mills, M., Beher, J., Possingham, H.P., Mumby, P.J. and Lovelock, C.E. (2016) The cost and feasibility of marine coastal restoration. *Ecol Appl*, 26, 1055-1074.

BEIS (2023). Overarching National Policy Statement for Energy (EN-1). E. I. S. Department for Business. Available at : <https://assets.publishing.service.gov.uk/media/65bbfbdc709fe1000f637052/overarching-nps-for-energy-en1.pdf>, Accessed April 2025.

Bennema, F.P., Engelhard, G.H. and Lindeboom, H. (2020). *Ostrea edulis beds in the central North Sea: delineation, ecology, and restoration*. *ICES Journal of Marine Science*, 77(7-8).

BU (2021) Revisiting a 3D printed artificial reef, Available at:

Accessed April 2025.

Burrows, M. T., Smale, D., O'Connor, N., Van rein, H., and Moore, P. (2014) Marine Strategy Framework Directive Indicators for UK Kelp Habitats Part 1: Developing proposals for potential indicators, Available at: <https://data.jncc.gov.uk/data/b75b2973-55f6-4f1c-8560-b33d83d19f81/JNCC-Report-525-FINAL-WEB.pdf>, Accessed April 2025.

Burt, A.J., Raguain, J., Sanchez, C. *et al.* (2020) The costs of removing the unsanctioned import of marine plastic litter to small island states. *Sci Rep* 10, 14458, Accessed April 2025.

Clifford, D. (2021) Seagrass meadow recovery in Morecambe Bay: investigating restoration potential and techniques for a highly tidal environment. Available at:

Accessed April 2025.

Connor, D.W., Allen, J.H., Golding, N., Howell, K.L., Lieberknecht, L.M., Northern, K.O., and Reker, J.B. (2004). The Marine Habitat Classification for Britain and Ireland. Version 04.05.

Dare, P.J. (1980) *Mussel Cultivation in England and Wales*, Available at:

Accessed April 2025.

Defra (2013) Steps for assessing Marine Conservation Zone proposals. [Online] Available at:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/221041/pb13896-mcz-selection-process.pdf, Accessed: April 2025.

Defra (2015) Defra MAGIC map, Available at: <https://magic.defra.gov.uk/MagicMap.aspx>, Accessed: April 2025.

Defra (2021) Best practice guidance for developing compensatory measures in relation to Marine Protected Areas, Available at: https://consult.defra.gov.uk/marine-planning-licensing-team/mpa-compensation-guidance-consultation/supporting_documents/mpacompensatorymeasuresbestpracticeguidance.pdf, Accessed April 2025.

Defra (2024) Consultation on policies to inform updated guidance for Marine Protected Area (MPA) assessments, Available at: https://consult.defra.gov.uk/offshore-wind-environmental-improvement-package/consultation-on-updated-guidance-for-environmental/supporting_documents/090224%20OWEIP%20Consultation%20on%20updated%20policies%20to%20inform%20guidance%20for%20MPA%20assessments_.pdf, Accessed April 2025.

Defra (2025) Open consultation: Offshore wind: Setting up the Marine Recovery Fund, Available at: <https://www.gov.uk/government/consultations/offshore-wind-setting-up-the-marine-recovery-fund>, Accessed April 2025.

Department for Energy Security and Net Zero (2023). "National Policy Statement for Renewable Energy Infrastructure (EN-3). Available at : <https://www.gov.uk/government/publications/national-policy-statement-for-renewable-energy-infrastructure-en-3>, Accessed April 2025.

Department for Energy Security and Net Zero (2025) Strategic compensation measures for offshore wind activities: Marine Recovery Fund interim guidance, Available at: <https://www.gov.uk/government/publications/strategic-compensation-measures-for-offshore-wind-activities-marine-recovery-fund-interim-guidance/strategic-compensation-measures-for-offshore-wind-activities-marine-recovery-fund-interim-guidance>, Accessed April 2025.

Didderen *et al.* (2020) Biodiversity of North Sea Native Oyster Reefs : Notes From The Netherlands, Available at: [REDACTED] Accessed April 2025.

Duarte, C. M., Kennedy, H., Marbà, N. and Hendriks, I. (2013). Assessing the capacity of seagrass meadows for carbon burial: Current limitations and future strategies. *Ocean and Coastal Management*, 83: 32-38.

Durinck, J., Christensen, KD., Skov, H., and Danielsen, F. (1993). *Diet of the Common Scoter Melanitta nigra and Velvet Scoter Melanitta fusca wintering in the North Sea*. *Ornis Fennica*. 70. 215-218.

Equinor (2023) Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects - Appendix 1: In-Principle Cromer Shoal Chalk Beds (CSCB) Marine Conservation Zone (MCZ) Measures of Equivalent Environmental Benefit (MEEB) Plan (Revision C) (Clean Version), Available at: [https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010109/EN010109-001087-5.7.1%20In-Principle%20Measures%20of%20Equivalent%20Environmental%20Benefit%20Plan%20\(R%20Revision%20C\)%20\(Clean%20Version\).pdf](https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010109/EN010109-001087-5.7.1%20In-Principle%20Measures%20of%20Equivalent%20Environmental%20Benefit%20Plan%20(R%20Revision%20C)%20(Clean%20Version).pdf), Accessed April 2025.

European Marine Observation Data Network (EMODnet) (2019). Seabed Habitats Initiative. Financed by the European Union under Regulation (EU) No 508/2014 of the European Parliament and of the Council of 15 May 2014 on the European Maritime and Fisheries Fund. Available at: [REDACTED] Accessed: July 2024.

Environment Agency. (2015) Fylde MCZ Environment Agency Baseline survey PSA analysis 2015: Environment Agency, Available at: [REDACTED] Accessed April 2025.

Environment Agency (2021a) Saltmarsh Restoration Handbook UK and Ireland, Available at: [REDACTED] Accessed April 2025.

Environment Agency (2021b) Historical oyster habitat and fisheries in English coastal waters, Available at: <https://environment.data.gov.uk/dataset/c3c60843-e831-43ba-8bef-054437e60f7c>, Accessed April 2025.

Environment Agency, ZSL and University of Portsmouth (2021) Seagrass Restoration Handbook UK and Ireland, Available at : [REDACTED] Accessed April 2025

Farinas-Franco, J. M., Allcock, L., Smyth, D. and Roberts, D. (2013) Community convergence and recruitment of keystone species as performance indicators of artificial reefs. *Journal of Sea Research*, 78, 59-74.

Fodrie FJ, Rodriguez AB, Gittman RK, Grabowski JH, Lindquist NL, Peterson CH, Piehler MF, Ridge JT. 2017 Oyster reefs as carbon sources and sinks. *Proc. R. Soc. B* 284: 20170891. [REDACTED]

Green, A.E., Unsworth, R.K.F., Chadwick, M.A. and Jones, P.J.S. (2021). *Historical Analysis Exposes Catastrophic Seagrass Loss for the United Kingdom*. *Frontiers in Plant Science*, 12(629962).

Greiner, J. T., McGlathery, K. J., Gunnell, J., and McKee, B. A. 2013. Seagrass restoration enhances “blue carbon” sequestration in coastal waters. *PloS one*, 8(8), e72469.

Heriot-Watt University (2021) Dornoch Firth enhancement project reaches 20,000 oysters milestone, Available at: [REDACTED] Accessed May 2024.

Ingenia (2023) How artificial reefs boost biodiversity, Available at: [REDACTED] Accessed April 2025.

JNCC (2023) Liverpool Bay SPA, Available at : <https://jncc.gov.uk/our-work/liverpool-bay-spa/>, Accessed April 2025.

JNCC, Natural England, Natural Resources Wales, NatureScot and DAERA (2023) Statutory Nature Conservation Body joint advice on marine debris removal as compensation for impacts to benthic habitats from development, Available at: <https://data.jncc.gov.uk/data/a2b71fd2-8687-4dc7-8224-d6b8c3beed95/sncb-joint-advice-marine-debris-removal.pdf>, Accessed April 2025.

Manx Utilities Ltd (2017) Isle of Man Interconnector Repair and Maintenance: Ecological Assessment.

Minister for Water and Flooding (2025) Marine Environment Statement (UIN HCWS394), Available at: [REDACTED]
[REDACTED] ccessed April 2025.

MMO (2016) Managing commercial fisheries in marine protected areas (MPA) Call for evidence - Consultation responses overview, Available at:
https://assets.publishing.service.gov.uk/media/5a74a84bed915d0e8bf1a146/Managing_fisheries_in_MPA_-_Stakeholder_responses_March_2016.pdf, Accessed April 2025.

Natural England, Natural Resources Wales and Joint Nature Conservation Committee (2016) Liverpool Bay / Bae Lerpwl potential Special Protection Area (pSPA) -Proposal for extension to existing site and adding new features, Available at :
<https://assets.publishing.service.gov.uk/media/5a756006e5274a4358bd0021/liverpool-bay-bae-lerpwl-spa-departmental-brief.pdf>, Accessed April 2025.

Natural England, Natural Resources Wales and Joint Nature Conservation Committee (2022) Liverpool Bay / Bae Lerpwl Special Protection Area Conservation Advice Package.

Natural England (2023a) Fylde MCZ Site Information, Available at:

[REDACTED]
[REDACTED] Accessed April 2025.

Natural England (2023b) Supplementary advice for the Fylde MCZ. Available at:

[REDACTED]
[REDACTED] Accessed April 2025.

Natural England (2023c) Fylde MCZ - Feature Condition – Condition of Marine Features at this Site, Available at:

[REDACTED]
[REDACTED] Accessed April 2025.

NRW (2021) Restoring marine and coastal habitats in Wales: identifying spatial opportunities and benefits, Available at:

[REDACTED]
[REDACTED] Accessed April 2025.

North Western IFCA (2023) Biosecurity in the NWIFCA District, Available at:

https://www.nw-ifca.gov.uk/biosecurity/#:~:text=The%20following%20species%20are%20the,American%20Lobster%20Homarus%20americanus*, Accessed April 2025.

NRW (2021) Restoring marine and coastal habitats in Wales: identifying spatial opportunities and benefits, Available at:

[REDACTED]
[REDACTED] Accessed April 2025.

Ocean Conservation Trust (2021) Winter Seagrass Planting in Plymouth Sound, Available at:

[REDACTED]
Accessed April 2025.

Ofgem (2019) SHEPD Subsea Cable Reopener Submission Recovery of Protection Costs under Licence Condition CRC3F: Recovery of uncertain costs, Available at:

https://www.ofgem.gov.uk/sites/default/files/docs/2019/06/shepd_subsea_cable_reopener_submission_redacted.pdf, Accessed April 2025.

Orsted (2022a) Appendix 1: Marine Debris Removal Campaign: Desktop Study, Available at: [https://nsip-documents.planninginspectorate.gov.uk/published-documents/EN010080-003625-Hornsea%20Three%20SBIP%20Appendix%20One%20Marine%20Debris%20Removal%20Campaign%20Desktop%20Study%20\(07108734_A\).pdf](https://nsip-documents.planninginspectorate.gov.uk/published-documents/EN010080-003625-Hornsea%20Three%20SBIP%20Appendix%20One%20Marine%20Debris%20Removal%20Campaign%20Desktop%20Study%20(07108734_A).pdf), Accessed April 2025.

Orsted (2022b) Notice of Marine Debris Removal Survey Commencement, Available at: https://www.eastern-ifca.gov.uk/wp-content/uploads/2022/06/HOW03_OFF_EX-NtM-Marine-Debris-Removal-07746729_A.pdf, Accessed May 2024.

OSPAR (2021) *Ostrea edulis* Beds, Available at: [REDACTED]

[REDACTED] Accessed April 2025.

Pogoda, B., Brown, J., Hancock, B., Preston, J., Pouvreau, S., Kamermans, P., Sanderson, W., von Nordheim, H. (2019) The Native Oyster Restoration Alliance (NORA) and the Berlin Oyster Recommendation: bringing back a key ecosystem engineer by developing and supporting best practice in Europe. *Aquat Living Resour* 32 (13).

Preston J., Gamble, C., Debney, A., Helmer, L., Hancock, B. and zu Ermgassen, P.S.E. (2020). *European Native Oyster Habitat Restoration Handbook*. The Zoological Society of London, UK., London, UK.

SAMS (2007) The Loch Linnhe Artificial Reef, Available at:

[REDACTED] Accessed May 2024.

Seawilding (2021) Restoring Seagrass & Oysters to North West Scotland, Available at:

[REDACTED] Accessed April 2025.

Short, F. T., Carruthers, T. J. R., Waycott, M., Kendrick, G. A. F., Ourqurean, J. W. and Callabine, A. (2010). *Zostera marina*. The IUCN red list of threatened species. IUCN Global Species Programme Red List Unit.

SMEEF (2023) SMEEF Impact Report 2021-2023, Available at: [REDACTED]

[REDACTED] Accessed April 2025.

SMEEF (2024) What is SMEEF? Available at: [REDACTED]

Accessed April 2025.

The Crown Estate. (2021). Cable Route Identification and Leasing Guidelines. Available at: [REDACTED]

[REDACTED] Accessed April 2025.

UK Parliament (2025) Written Statement UIN HCWS394. Available at [REDACTED]

[REDACTED] Accessed April 2025.

UNEP (2009) Guidelines for the Placement of Artificial Reefs, Available at:

[REDACTED] Accessed April 2025.

Unsworth, Butterworth, Freeman, Fox and Priscott (2021) *The ecosystem service role of UK Seagrass meadows*, Available at: [REDACTED]
[REDACTED] Accessed April 2025.