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MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

Environmental Statement

Volume 1, Chapter 4: Site selection and consideration of alternatives

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Image of an offshore wind farm

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Morgan Offshore Wind Ltd

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Glossary

Term	Meaning
Applicant	Morgan Offshore Wind Limited
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for a Nationally Significant Infrastructure Project (NSIP).
Environmental Impact Assessment	A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the EIA Directive and EIA Regulations, including the publication of an Environmental Statement.
Environmental Statement	The document presenting the results of the Environmental Impact Assessment (EIA) process for the Morgan Offshore Wind Project Generation Assets.
Expert Working Group (EWG)	A forum for targeted engagement with regulators and interested stakeholders through the Evidence Plan process.
Evidence Plan process	The Evidence Plan process is a mechanism to agree upfront what information the Applicant needs to supply to the Planning Inspectorate as part of the Development Consent Order (DCO) application for the Morgan Offshore Wind Project Generation Assets.
Inter-array cables	Cables which connect the wind turbines to each other and to the offshore substation platforms. Inter-array cables will carry the electrical current produced by the wind turbines to the offshore substation platforms.
Interconnector cables	Cables that may be required to interconnect the Offshore Substation Platforms in order to provide redundancy in the case of cable failure elsewhere.
Marine licence	The Marine and Coastal Access Act 2009 requires a marine licence to be obtained for licensable marine activities. Section 149A of the Planning Act 2008 allows an applicant for a DCO to apply for 'deemed marine licences' as part of the development consent process.
Maximum design scenario	The scenario within the design envelope with the potential to result in the greatest impact on a particular topic receptor, and therefore the one that should be assessed for that topic receptor.
Morgan Array Area	The area within which the wind turbines, foundations, inter-array cables, interconnector cables, scour protection, cable protection and offshore substation platforms (OSPs) forming part of the Morgan Offshore Wind Project Generation Assets will be located.
Morgan Array Scoping Boundary	The Preferred Bidding Area that the Applicant was awarded by The Crown Estate as part of Offshore Wind Leasing Round 4. The term used to define the boundary used at the time the Scoping Report was submitted.
Morgan Offshore Wind Project	The Morgan Offshore Wind Project is comprised of both the generation assets and offshore and onshore transmission assets and associated activities.
Morgan Offshore Wind Project Generation Assets	This is the name given to the Morgan Generation Assets as a whole (includes all infrastructure and activities associated with the project construction, operations and maintenance, and decommissioning).

Term	Meaning
Morgan Potential Array Area	The area that was presented in the Morgan Generation Assets PEIR as the area within which the wind turbines, foundations, inter-array cables, interconnector cables and offshore substation platforms (OSPs) forming the Morgan Generation Assets. This area was the boundary consulted on during statutory consultation and subsequently refined for the application for Development Consent.
Morgan and Morecambe Offshore Wind Farms Transmission Assets	The transmission assets for the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm. This includes the Offshore Substation Platforms (OSPs), interconnector cables, Morgan offshore booster station, offshore export cables, landfall site, onshore export cables, onshore substations, 400kV grid connection cables and associated grid connection infrastructure such as circuit breaker infrastructure. These assets are not included in this DCO application.
Non-statutory consultee	Organisations that an applicant may choose to consult in relation to a project who are not designated in law but are likely to have an interest in the project.
National Policy Statements	The national policy statements published by the Department for Energy Security and Net Zero in 2023.
Offshore Wind Leasing Round 4	The Crown Estate auction process which allocated developers preferred bidder status on areas of the seabed within Welsh and English waters and ends when the Agreement for Lease (AfL) is signed.
Preferred Bidding Areas	The Applicant identified two Preferred Bidding Areas (Morgan and Mona) within the Northern Wales and Irish Sea Bidding Area. In February 2021, The Crown Estate awarded the Applicant the right to develop up to 1.5 GW of wind capacity within each of the two Preferred Bidding Areas.
Preliminary Environmental Information Report	A report that provides preliminary environmental information in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. This is information that enables consultees to understand the likely significant environmental effects of a project, and which helps to inform consultation responses.
Round 4 Habitats Regulations Assessment	The Plan Level Habitats Regulations Assessment undertaken by The Crown Estate for UK offshore leasing Round 4.
Scoping Opinion	Sets out the Planning Inspectorate's response (on behalf of the Secretary of State) to the Scoping Report prepared by the Applicants. The Scoping Opinion contains the range of issues that the Planning Inspectorate, in consultation with statutory stakeholders, has identified should be considered within the Environmental Impact Assessment process.
Scoping Report	A report setting out the proposed scope of the Environmental Impact Assessment process. The Morgan Offshore Wind Project Generation Assets Scoping Report was submitted to The Planning Inspectorate (on behalf of the Secretary of State) for the Morgan Offshore Wind Project in June 2022.
Secretary of State for the Department for Energy Security and Net Zero	The decision maker with regards to the application for development consent for the Morgan Offshore Wind Project Generation Assets.
Statutory consultee	Organisations that are required to be consulted by an applicant pursuant to the Planning Act 2008 in relation to an application for development consent. Not all consultees will be statutory consultees (see non-statutory consultee definition).

Term	Meaning
The Northern Wales and Irish Sea Bidding Area	The Northern Wales and Irish Sea Bidding Area was one of four Bidding Areas identified by The Crown Estate through the Offshore Wind Leasing Round 4 process. North Wales region (16), Irish Sea region (17) and the Anglesey region (refined) were combined into the Northern Wales and Irish Sea Bidding Area 4.
The Planning Inspectorate	The agency responsible for operating the planning process for applications for development consent under the Planning Act 2008.
Wind turbines	The wind turbine generators, including the tower, nacelle and rotor.

Acronyms

Acronym	Description
AfL	Agreement for Lease
AHEF	Archaeology and Heritage Engagement Forum
AONB	Area of Outstanding Natural Beauty
AoS	Area of Search
CCS	Carbon Capture and Storage
CION	Connection and Infrastructure Operations Note
DCO	Development Consent Order
DESNZ	Department for Energy Security and Net Zero
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
EWG	Expert Working Group
GHG	Greenhouse gas
HRA	Habitats Regulations Assessment
ISAA	Information to Support Appropriate Assessment
JNCC	Joint Nature Conservation Committee
LSE	Likely Significant Effect
MCZ	Marine Conservation Zone
MHWS	Mean High Water Springs
MMO	Marine Management Organisation
MNEF	Maritime Navigation Engagement Forum
MPA	Marine Protected Area
NE	Natural England
NGESO	National Grid Electricity System Operator
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project

Acronym	Description
OFTO	Offshore Transmission Owner
OTNR	Offshore Transmission Network Review
PEIR	Preliminary Environmental Information Report
SAC	Special Area of Conservation
SNCB	Statutory Nature Conservation Body
SoS	Secretary of State
SPA	Special Protection Area
TCE	The Crown Estate
UK	United Kingdom
ZTV	Zone of Theoretical Visibility

Units

Unit	Description
%	Percentage
km^2	Square kilometres
km	Kilometres
nm	Nautical miles
GW	Gigawatts
MW	Megawatts
°C	Degrees Celsius
TWh	Terrawatt Hour

4 Site selection and alternatives

4.1 Introduction

4.1.1 Overview

4.1.1.1 This chapter of the Environmental Statement presents a description of the site selection process and the approach undertaken by Morgan Offshore Wind Limited (the Applicant) to develop the Morgan Offshore Wind Project Generation Assets (hereafter Morgan Generation Assets).

4.1.1.2 This chapter sets out the stages of design evolution that the Morgan Generation Assets has been through, from project inception to submission of the application for Development Consent. The site selection process is described in the following stages:

- Stage 1- The Crown Estate leasing Round 4 and identification of Morgan Agreement for Lease (AfL) area and scoping boundary
- Stage 2 - Generation and Transmission Assets split following the Holistic Network Design Review outcome
- Stage 3 - Pre-application engagement (non/statutory) with stakeholders and communities
- Stage 4 - Refinement of the Morgan Potential Array Area.

4.1.1.3 This chapter relates solely to the Morgan Generation Assets.

4.1.1.4 The Morgan Offshore Wind Project has been scoped into the Pathways to 2030 workstream under the Offshore Transmission Network Review (OTNR). The OTNR aims to consider, simplify and wherever possible facilitate collaborative approach to offshore wind projects connecting to the UK National Grid. 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). In July 2022, the UK Government published the 'Pathway to 2030 Holistic Network Design' documents, which set out the approach to connecting 50 GW of offshore wind to the National Grid (NGESO, 2022). A key output of the HNDR process was the conclusion that the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm should work collaboratively in connecting their two wind farms to the National Grid electricity transmission network at Penwortham in Lancashire. Although the projects are being developed by separate companies, which means it is not feasible for all aspects of both projects to be consented under a single application, the Applicant intends to deliver a coordinated grid connection with the Morecambe Offshore Windfarm, including the sharing of offshore and onshore export cable corridors and grid connection location at Penwortham.

4.1.1.5 Given the grid connection arrangements, the consenting strategy for the Morgan Generation Assets and the Morecambe Offshore Windfarm is as follows:

- A stand-alone Development Consent Order (DCO) application to consent the construction, operations and maintenance, and decommissioning of the generation assets of the Morgan Offshore Wind Project.
- A stand-alone DCO application to consent the construction, operations and maintenance, and decommissioning of the generation assets of the Morecambe Offshore Windfarm

- A separate application to consent the construction, operations and maintenance and decommissioning of the transmission assets required to enable the export of electricity from both the Morgan Generation Assets and the Morecambe Offshore Windfarm to the National Grid entry point at Penwortham.

4.1.1.6 Volume 1, Chapter 3: Project description of the Environmental Statement details the infrastructure included with the Morgan Generation Assets application.

4.1.1.7 In order to achieve this, the Applicant, together with the applicant for the Morecambe Generation Assets, has requested, and been granted, a direction from the Secretary of State under section 35 of the 2008 Act to pursue a transmission assets consent (covering both projects' offshore and onshore transmission infrastructure) through the DCO process.

4.1.2 Purpose of chapter

4.1.2.1 This chapter provides a description of the site selection process and the approach undertaken by the Applicant to develop the Morgan Generation Assets and sets out the stages of design evolution that the Morgan Generation Assets has been through, from project inception to submission.

4.1.2.2 This chapter also:

- Outlines the site selection and consideration of alternatives process for the Morgan Array Area;
- Outlines the approach taken to define the spatial boundaries of the Morgan Array Area;
- Explains the siting decisions taken by the Applicant; and
- Explains the steps undertaken to refine the Morgan Array Area to application submission.

4.1.2.3 This chapter describes the process by which the Morgan Array Area has evolved. The final layout of the wind turbines will be confirmed at the final design stage (post-consent).

4.1.2.4 The consideration of alternatives for offshore cable burial and/or cable protection and inter-array and interconnector cables within the Morgan Array Area is not described, as this chapter is focused on site selection and design development. The inter-array and interconnector cable locations are entirely dependent on the positioning of the turbines and Offshore Substation Platforms (OSPs) as these cables connect the turbines and OSPs respectively. Cable burial and cable protection final details will also be confirmed at the final design stage.

4.1.3 Project overview

4.1.3.1 The Morgan Generation Assets includes the following infrastructure:

- Wind turbines and their associated foundations
- Offshore substation platform(s) and associated foundations
- Subsea inter-array and interconnector cables.

4.1.3.2 Information on the key parameters for the Morgan Generation Assets can be found in Volume 1, Chapter 3 of this Environmental Statement (document reference F1.3). Figure 1.1 identifies Morgan Array Area where the Morgan Generation Assets will be located.

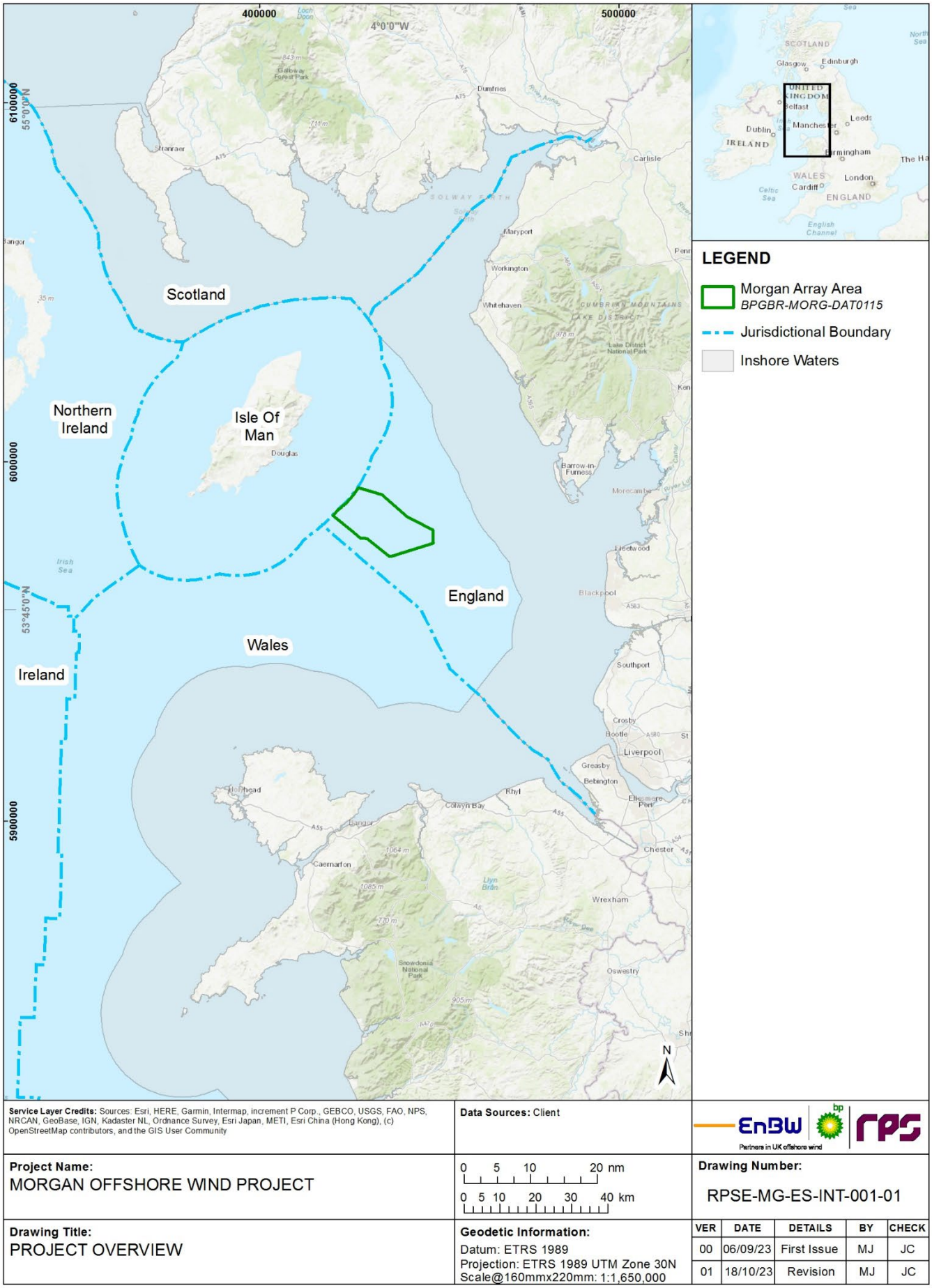

Figure 4.1: Morgan Offshore Wind Project: Generation Assets, Morgan Array Area.

4.1.3.3 The Applicant has followed a staged site selection and design iteration process from inception to the point of submission of the application for Development Consent. The following key factors have driven the process and are listed in chronological area:

- Stage 1: The Crown Estate Leasing Round 4 and identification of Morgan Agreement for Lease area
- Stage 2: Generation and Transmission Assets split following the Holistic Network Design Review outcome
- Stage 3 Pre-application engagement (non/statutory) with stakeholders and communities
- Stage 4: Refinement of the Morgan Potential Array Area

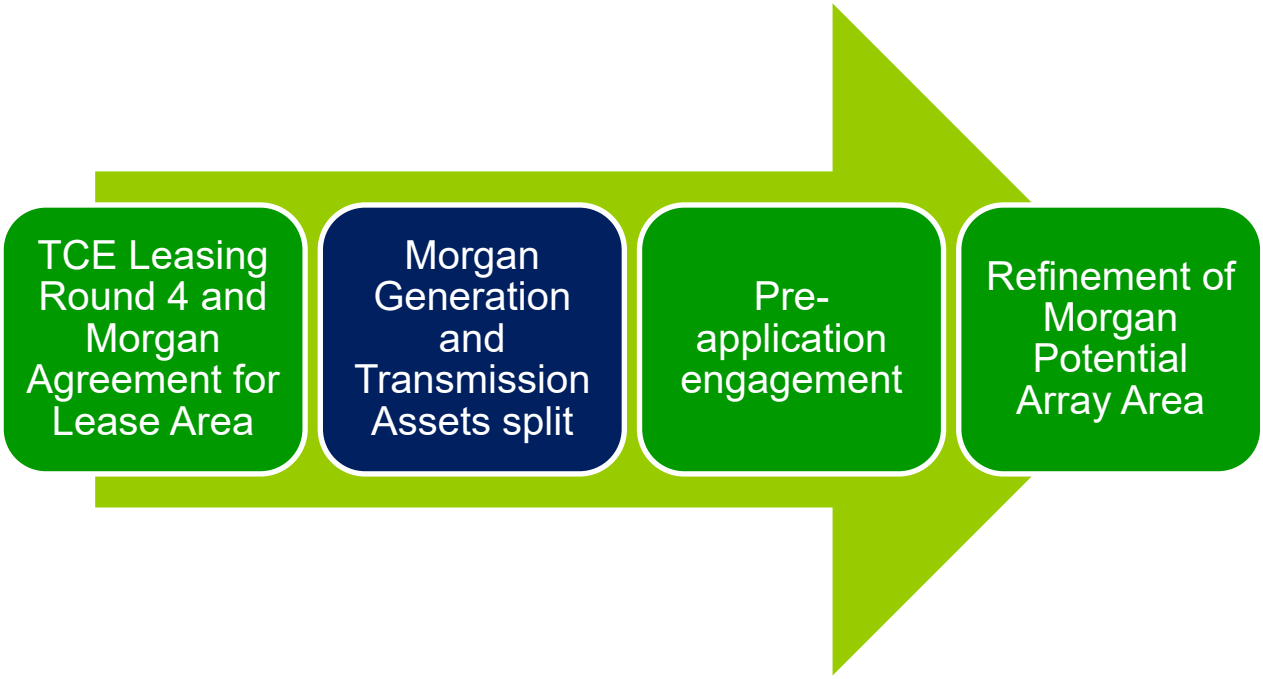

Figure 4.2 Flowchart of the refinement process.

4.1.4 Stage 1: The Crown Estate Leasing Round 4 and identification of Morgan Agreement for Lease (AfL) area

The Crown Estate - Offshore Wind Leasing Round 4

4.1.4.1 As described in Volume 1, Chapter 1: Introduction to the Environmental Statement, Offshore Wind Leasing Round 4 was instigated by The Crown Estate (TCE) in September 2019. TCE initially identified 18 locations around England, Wales and Northern Ireland that could potentially be developed for offshore wind. Through extensive spatial analysis of technical resources and constraints, Geographic Identification Systems (GIS) and qualitative analysis, the sites were refined by TCE to a total of four Bidding Areas in England and Wales. The Northern Wales and Irish Sea Bidding Area (once combined) was one of these four areas known as 'Bidding Area 4'.

4.1.4.2 These bidding areas were offered by TCE as 'the strongest opportunities for new offshore wind leasing development, on the basis that they are technically feasible, contain large areas of available resource, and offer lower levels of consenting constraint' (TCE 2019a).

4.1.4.3 Bidding Area 4 covers an area of approximately 8,500 km^2 (shown in Figure 4.6) and has water depths up to 50 m, with an average water depth of 34 m.

4.1.4.4 A Characterisation Area Report – Irish Sea (17) (2019b) was prepared by TCE that identified the environmental designations within Bidding Area 4 and the European marine designations including key features and species present (e.g. reefs, birds and fish). The report also identified several other constraints from activities such as fishing, other energy infrastructure, NATS radar, defence and navigation.

4.1.4.5 In order to bid into Round 4, projects were required to meet certain criteria. A summary of the relevant spatial siting requirements and project/bid compliance is summarised in Table 4.1 below.

Table 4.1: Offshore Wind Leasing Round 4 bidding rules (TCE 2019a).

Offshore Wind Leasing Round 4 criteria	Morgan Generation Assets compliance
All Projects must be located entirely within a single Bidding Area.	Morgan Generation Assets is located entirely within the North Wales and Irish Sea Bidding Area.
Projects must avoid certain hard constraints (data source) identified within the Bidding Areas: • IMO traffic separation schemes and deep-water channels (UKHO) • Offshore Wind Agreement for Lease / Lease area / Zone Development Agreement (ZDA) / Preferred Bidder Letter (TCE) • Aggregates Production Agreement / Exploration and Option Agreement / Preferred Bidder Letter (TCE) • Capital and navigation dredging licensed areas (TCE) • Coastal outfalls lease area (TCE) • Natural gas storage agreement for lease / lease area (TCE).	The Morgan Array Area is located to avoid all hard constraints as shown in Figure 4.6.
Projects may not be located within 7.5 km of an existing offshore wind farm (meaning a wind farm at any stage of development which has been awarded an agreement for lease or lease from The Crown Estate unless the owner of the existing offshore wind farm has given its written consent). Note that in 2019 (TCE 2019d), the distance was 5 km from existing offshore wind projects and the distance was increased based on market feedback and TCE's analysis (TCE, 2019e).	The Morgan Array Area is located at least 7.5 km away from existing offshore wind farms as shown in Figure 4.4.
For the duration of the Preferred Bidder Letter, TCE will not (i) grant any other offshore wind rights to third parties within the Project Boundary or within a 5 km buffer of it or (ii) include the Project Boundary within any marine aggregates tender processes.	The Morgan Array Area is located more than 5 km away from the Mona Offshore Wind Project and Morecambe Generation Assets.

4.1.4.6 The Applicant selected Bidding Area 4 as the preferred region based on the lower number of identified known constraints in comparison to the other Bidding Areas available.

Morgan Agreement for Lease Area

4.1.4.7 In order to identify potential project locations within Bidding Area 4, an extensive constraints analysis exercise was undertaken by TCE and the Applicant. This included a high level review of environmental and physical constraints was undertaken to

identify a study area where more detailed analysis could be carried out (described below).

4.1.4.8 The Morgan AfL Area was identified by the Applicant through analysis of engineering, environmental, economic and consenting considerations. Further study work was undertaken on the Morgan AfL Area to understand key issues such as designated sites, shipping routes, other offshore industries and offshore ornithology.

4.1.4.9 The key constraints considered with regard to the identification of the Morgan AfL Area included:

- Physical parameters (water depths, wave heights, ground conditions and wind resource)
- Grid connection (distances to and available capacity)
- Ecological designations:
  - Avoidance, where practicable, of overlap with European designated sites including:
    - Special Areas of Conservation (SAC): Avoidance of Solway Firth SAC, Morecambe Bay SAC, Shell Flat and lune Deep SAC and North Anglesey Marine / Gogledd Môn Forol SAC
    - Special Protection Area (SPA): Decision taken to maintain a 10 km offset from the Liverpool Bay SPA (described in 4.1.4.13)
  - Avoidance of Marine Conservation Zones including West of Copeland and West of Walney MCZs.
- Other environmental considerations:
  - Avoidance of TCE defined ‘hard constraints (described in Table 4.1)
  - Avoidance of direct overlap with oil and gas platforms (nearest platform, Millom West, located approximately 2.96 km from Morgan Array Area)
  - Avoidance of military disposal sites
  - Consideration of commercial fishing activities
  - Consideration of shipping and navigation routes
  - Consideration of pipelines and cables infrastructure
- Other constraint considerations:
  - Consideration of wrecks
  - Consideration of aviation constraints (both military and civil aviation)
  - Consideration of seascape, landscape and visual constraints.

4.1.4.10 The Morgan AfL area was considered suitable for the development of an offshore wind farm as it met the key requirements: environmentally acceptable (based on information available at that time), as well as feasible from an engineering perspective (and a conclusion of no adverse effect on integrity was concluded in the Round 4 Plan Level HRA).

4.1.4.11 The Morgan AfL Area is approximately 500 m from the Isle of Man territorial waters boundary, as required by The Crown Estate.

4.1.4.12 Following the submission of this bid EnBW and bp were awarded Preferred Bidder status for two sites (Mona and Morgan) within Bidding Area 4, as part of a competitive tender process.

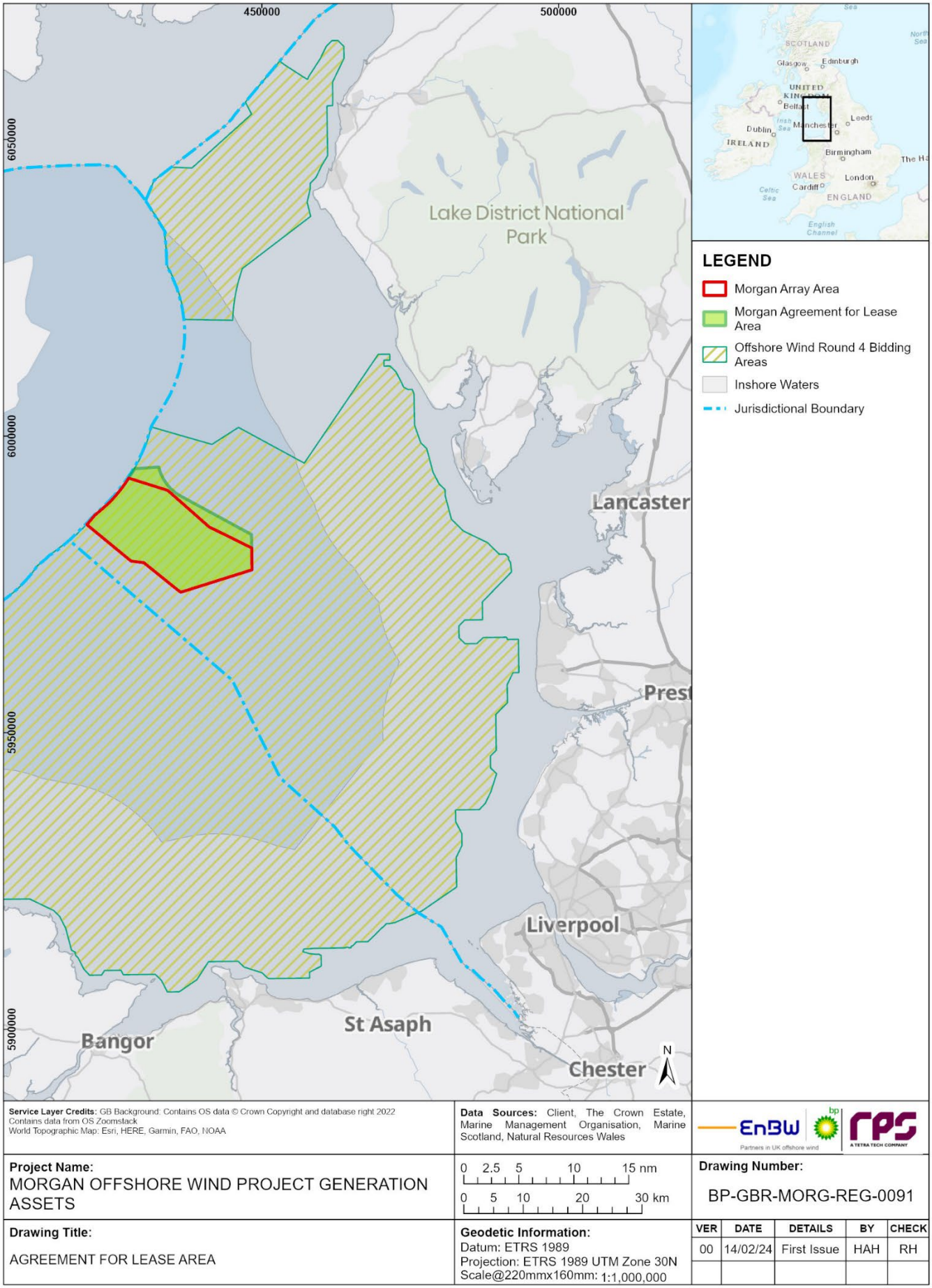

Figure 4.3: Morgan Generation Assets Agreement for Lease Area.

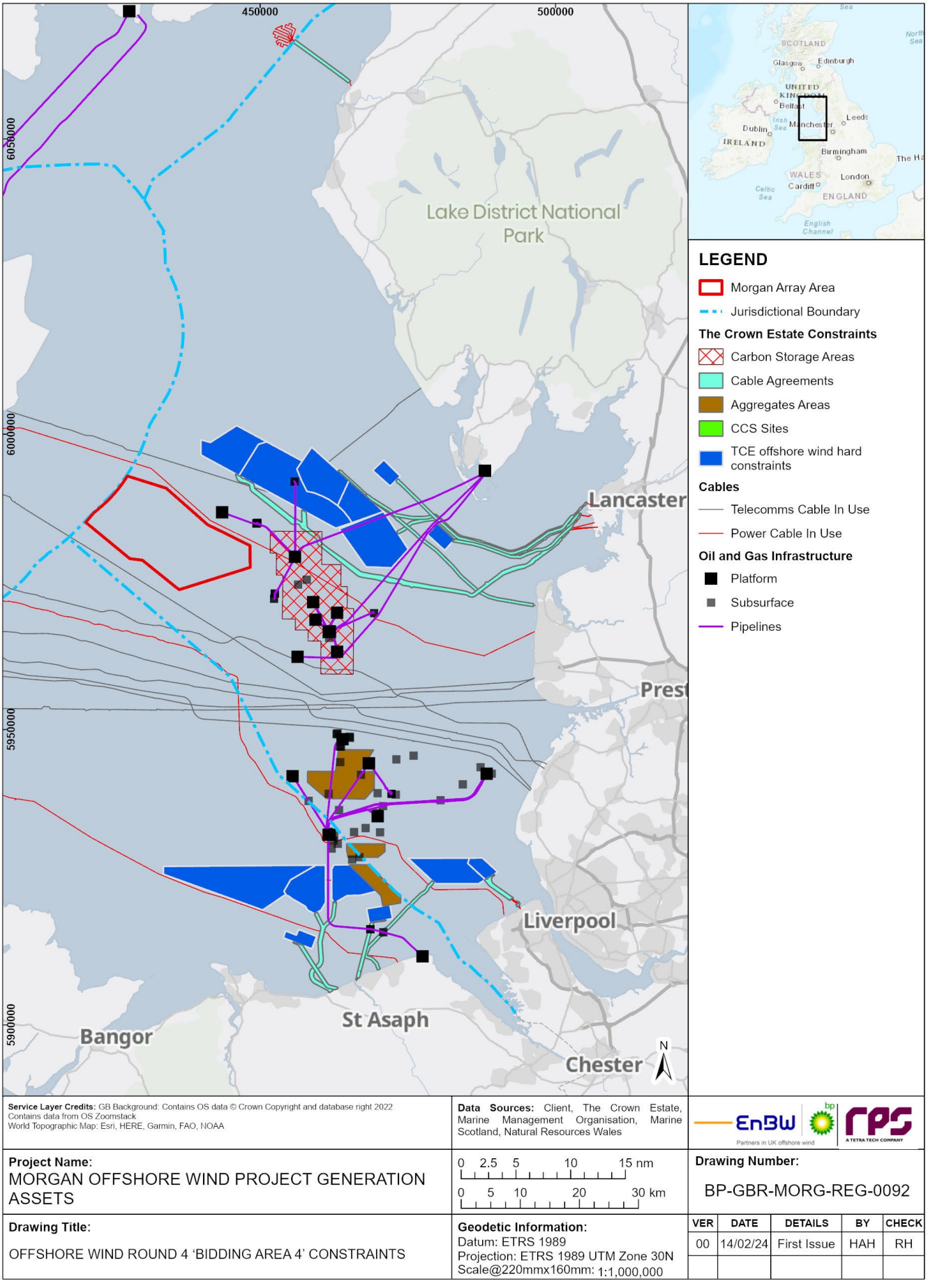

Figure 4.4: Offshore Wind Round 4 'Bidding Area 4' Constraints.

Restricted alternatives

4.1.4.13 The Morgan AfL Area extent was limited in various directions, as described below:

- To the north east by the need to maintain 7.5 km from existing offshore wind farms (Walney and Walney Extensions) as described in Table 4.1.
- To the south and by the need to maintain 5 km separation from the Mona Agreement for Lease area, which was awarded prior to the Morgan Agreement for Lease area as part of Offshore Leasing Round 4.
- To the west, by the extent of the Northern Wales and Irish Sea bidding area (see Figure 4.6) and the Isle of Man territorial waters.
- To the east by the presence of existing oil and gas infrastructure associated with the Millom West, North Morecambe and Dalton fields (see Figure 4.4).
- To the east a project decision was taken at bid stage to maintain a 10 km offset from the Liverpool Bay SPA. This distance aligns with feedback from SNCBs within the Offshore Wind Leasing Round 4 Bidding Area Report (v2.0) (TCE, 2019b). The other ecological designations that were avoided are shown in Figure 4.6.

4.1.4.14 The Applicant is aware that over ten years ago another developer, Celtic Array Limited, submitted plans during Round 3 for the Rhiannon offshore wind farm in the Irish Sea Zone. This project was proposed to be located southwest of the Morgan AfL Area (see Figure 4-5). This project was cancelled because the assessments showed that ground conditions are such that it was not viable for them to proceed with the technology that was available at that time (BBC News, 2014). Based on the data from the Rhiannon surveys and studies, the ground conditions were deemed not conducive for Monopile installation, with over-consolidated and laterally variable soils, and presence of strong to very strong Triassic sandstones and Carboniferous limestones.

4.1.4.15 The Applicant has undertaken its own ground models in the Morgan Array Area and assessed the use of foundation types other than monopile i.e. gravity base foundations, piled jacket foundations and/or suction bucket jacket foundations. The Applicant's consideration has concluded that it is technically feasible to develop the Morgan Generation Assets within the selected area using alternative foundation types other than monopiles.

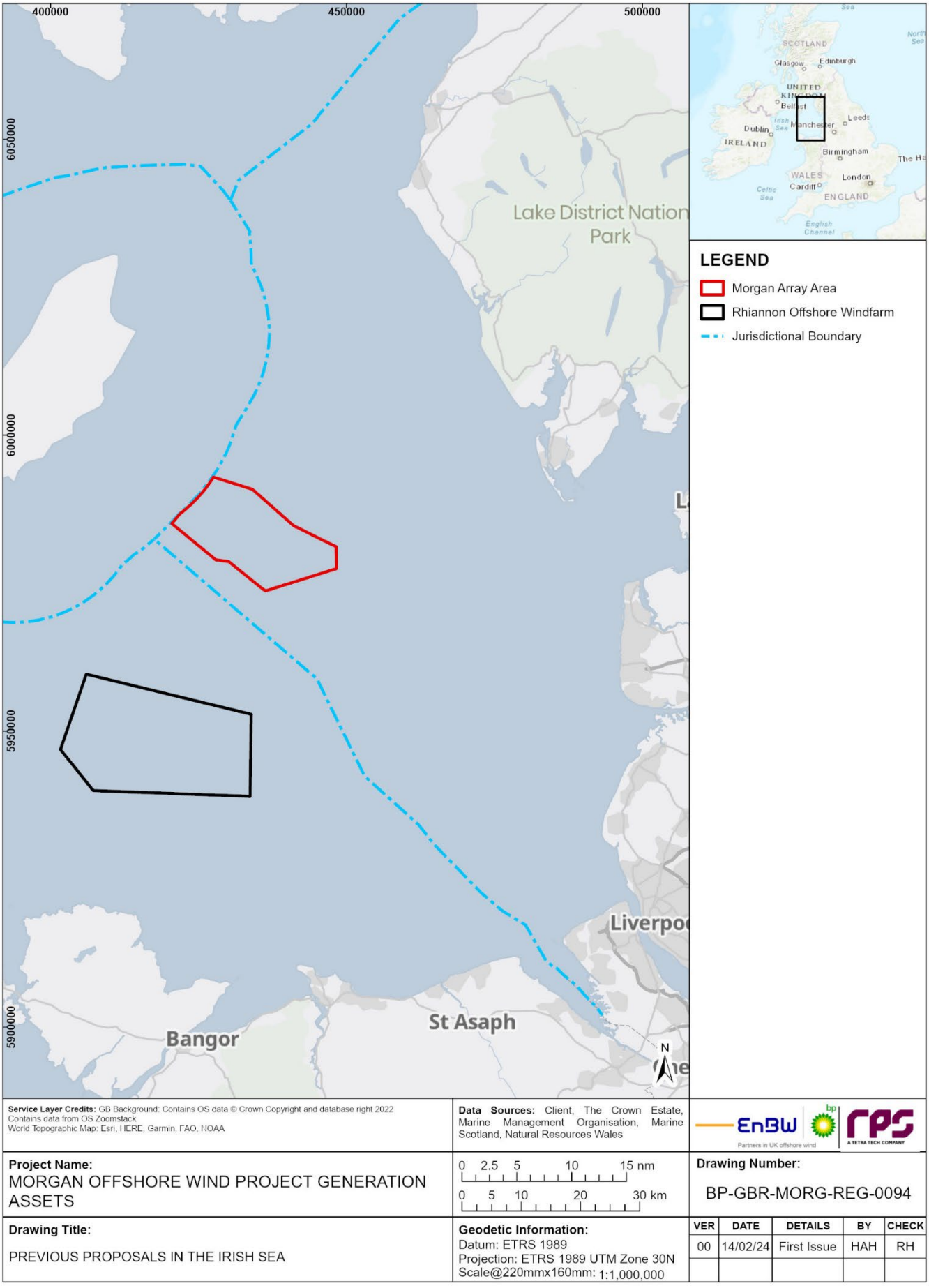

Figure 4.5: Previous proposal in the Irish Sea.

TCE Plan Level Habitats Regulations Assessment (HRA)

4.1.4.16 TCE, in its role as Competent Authority, has conducted a Plan-Level HRA for the Offshore Wind Leasing Round 4. The Plan-Level HRA assessed the potential impacts of the six potential offshore wind projects identified through the Offshore Wind Leasing Round 4, including the Morgan Generation Assets, on the National Site Network.

4.1.4.17 The Plan-Level HRA process involved engagement and consultation with an EWG consisting of relevant UK statutory marine planning authorities, Statutory Nature Conservation Bodies (SNCBs) and relevant non-governmental organisations.

4.1.4.18 TCE's Plan-Level HRA (TCE, 2022) concluded that the possibility of an Adverse Effect on Integrity (AEoI) as a result of the Offshore Wind Leasing Round 4 could not be ruled out for two protected sites forming part of the National Site Network. The two protected sites, and relevant features, are: 1) Sandbank features of the Dogger Bank SAC alone and in-combination; and 2) kittiwake feature of the Flamborough and Filey Coast SPA for in-combination effects only. The TCE Plan Level HRA states that where the assessment identifies risk of an AEoI, options for mitigation that can be applied at the Plan-level will be considered. This could involve a modification to the Plan to reduce its impact or the specification of measures that would be made a condition of individual projects. Where the HRA identifies a potential AEoI, only when it is sufficiently certain that mitigation would make an effective contribution to avoiding or reducing harm, can mitigation measures be considered as enabling a determination of no AEoI to be concluded. It should be noted, however, that the Morgan Generation Assets was not identified as a preferred project required to be considered in the Appropriate Assessment by TCE for either of these sites. Therefore, no AEoI was identified for the Morgan Generation Assets in the Plan-Level HRA.

4.1.4.19 On the basis of these conclusions, TCE considered derogation and concluded that: a) there are no alternative solutions to deliver the Offshore Wind Leasing Round 4 objectives; b) there are clear imperative reasons of overriding public interest to proceed under the government's targets for offshore wind and net-zero; and c) the Offshore Wind Leasing Round 4 provides a robust framework for the delivery of compensatory measures. TCE therefore considered that the three derogation tests have been met and the Secretary of State agreed that TCE can proceed with the plan. As discussed in paragraph 4.1.4.18, it should be noted that the Morgan Offshore Wind Project was not identified as a preferred project required to be considered in the Appropriate Assessment by TCE for either of the sites outlined in paragraph 4.1.4.18 above. Therefore, no AEoI was identified for the Morgan Generation Assets in the Round 4 Plan-Level HRA.

4.1.4.20 The Plan-Level HRA notes that TCE expects developers to undertake project-specific environmental assessments - including a detailed project-level HRA - as part of their application for development consent. This document comprises Stage 2 of the HRA, which carries out the Appropriate Assessment of the Morgan Generation Assets with respect to its potential to adversely affect the integrity of a European site. This HRA Stage 2 ISAA has taken into account the information and approach taken by the Plan Level HRA as set out below in paragraph 4.1.4.21.

4.1.4.21 The Round 4 HRA was finalised in July 2022 with preferred bidders entering into Agreements for Lease (AfL) in January 2023. Based on the evidence detailed in the HRA Stage 1 Screening document (Document Reference E1.4) and the HRA HR 2 Information to Support Appropriate Assessment (ISAA) Part 2 SAC -Assessments (Document Reference E1.2) which accompanies the application for Development Consent. HRA Stage 2 ISAA Part 2 - SAC assessments (Document Reference E1.2), the assessment concluded that the conservation objectives for the European sites

would not be undermined and there would be no adverse effect on site integrity as a result of the Morgan Generation Assets alone, or in combination with other plans and projects. The conclusions of the project-level ISAA for the Morgan Generation Assets therefore align with the TCE Round 4 Plan-Level HRA.

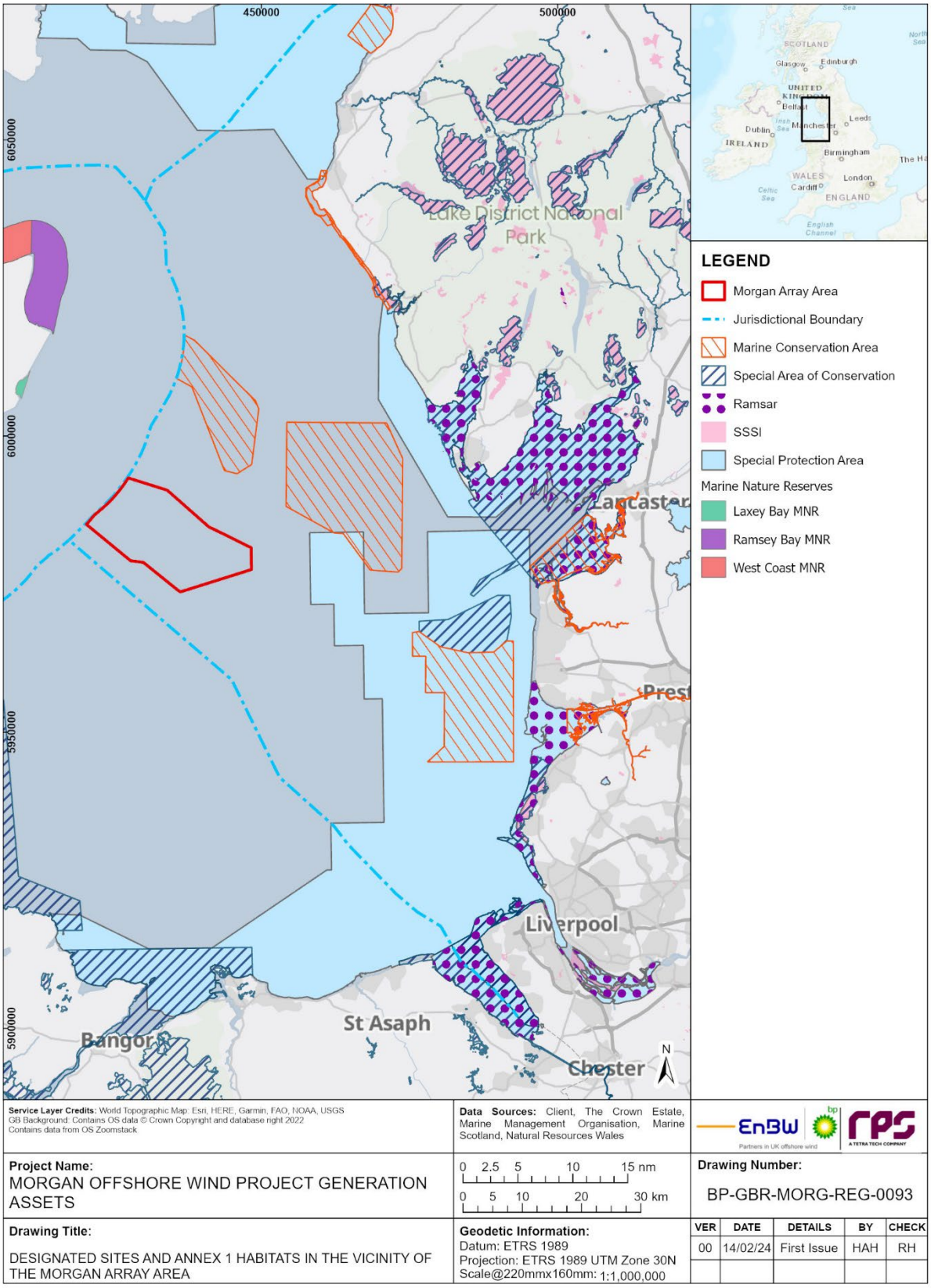

Figure 4.6: Designated sites and Annex 1 habitats in the vicinity of the Morgan Array Area.

Conclusion

4.1.4.22 An Agreement for Lease (AfL) was agreed between the Applicant and TCE in which to locate an offshore wind farm, based in initial assessment completed by TCE and due diligence by the Applicant. The AfL formed that initial boundary of the Project for wider assessment and consultation.

4.1.5 Stage 2: Generation and Transmission Assets split following the Holistic Network Design Review outcome

4.1.5.1 Until 2021, National Grid Electricity System Operator (NGESO) used the Connection and Infrastructure Operations Note (CION) process to coordinate changes needed to the electricity network to accommodate new offshore connections from offshore energy infrastructure.

4.1.5.2 In its 2020 report to parliament, the Climate Change Committee called for government to develop a strategy to coordinate interconnectors and offshore networks for wind farms and their connections to the onshore network and bring forward any legislation necessary to enable coordination (Climate Change Committee, 2020). Following this, the UK government announced the Offshore Transmission Network Review (OTNR) to identify near-term actions and opportunities for offshore windfarm projects to coordinate and thereby address the barriers that the existing offshore transmission regime was considered to present to deployment of offshore wind; the intention being to develop an offshore transmission network that facilitates coordination between offshore wind developments.

4.1.5.3 The output of the OTNR was the Holistic Network Design (HND); an integrated approach for connecting new offshore wind infrastructure to the grid cohesively.

4.1.5.4 The Morgan Offshore Wind Project was scoped into the HND as a Pathway to 2030 Project. The recommended design for the Northwest Region is a combination of collaborative developer-led solutions and single radial connections.

4.1.5.5 In July 2022, the UK Government published the Pathway to 2030 Holistic Network Design documents, which set out the approach to connecting 50 GW of offshore wind to the UK electricity network (National Grid ESO, 2022). The output of this process concluded that the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm should work collaboratively to connect the wind farms to the National Grid at Penwortham in Lancashire.

4.1.5.6 This position has been further supported by the revised NPS EN1 (paragraph 3.3.71) where it is expected that for regions with multiple windfarms 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.

4.1.5.7 Following a Direction by the Secretary of State under s.35 of the Planning Act 2008 (as amended) Morgan Offshore Wind Ltd and Morecambe Offshore Windfarm Ltd will seek development consent for Transmission Assets comprising shared export cable corridors to landfall and shared onshore export cable corridors to onshore substation(s) and onward connection to the National Grid electricity transmission network at Penwortham, Lancashire.

4.1.5.8 At this point the Applicant separated Morgan Generation Assets from Morgan Transmission Assets, concluding that they would be taken forward under separate DCOs and applications.

4.1.5.9 Site selection and consideration of alternatives in respect of the shared Transmission Assets will therefore be set out within the Environmental Statement accompanying the application for Development Consent for the Morgan Offshore Wind Project and Morecambe Offshore Windfarm Transmission Assets.

Conclusion

4.1.5.10 Following the inclusion of the Morgan Offshore Wind Project within the HND as a Pathway to 2030 Project, Morgan Generation Assets and Transmission Assets were detached from a consenting perspective and are now being administered under different DCOs and Marine Licences.

4.1.6 Stage 3: Pre-application engagement (non/statutory) with stakeholders and communities

4.1.6.1 Stakeholder engagement and public consultation is recognised as vitally important for shaping the approach to development. A detailed description of the consultation process undertaken is provided in the Consultation Report (document reference C3) and Technical Engagement Plan (document reference E4). Engagement has been undertaken with a wide range of stakeholders to refine the process, design and wider spatial constraints and considerations. Consultation on refinements has been undertaken through the informal and formal pre-application stages of the Applicant's proposal development, between submitting the Morgan Generation Assets Scoping Report (Morgan Offshore Wind Ltd, 2022), in June 2022 and submission of the application for Development Consent.

4.1.6.2 The Scoping Report was the initial consultation document released by the Applicant and contained details of the proposed approach to EIA for each topic and was submitted to the Secretary of State for BEIS in June 2022. The Applicant received a response, known as the Scoping Opinion, in July 2022 (The Planning Inspectorate, 2022).

4.1.6.3 The Applicant met with a range of stakeholders to discuss their consultation response in the Scoping Opinion ahead of formal consultation on the PEIR in 2023, which was based on the Morgan AfL Area.

4.1.6.4 The Applicant did not undertake any refinement of the Morgan AfL Area between Scoping and PEIR. Both non statutory and statutory consultation was therefore conducted on the Morgan AfL Area. During the consultation periods the Morgan AfL became known as the Morgan Potential Array Area.

4.1.6.5 Following statutory consultation, the Applicant collated Section 47 and Section 42 responses and considered the refinements and changes to the project design suggested. Where necessary, stakeholders were consulted further prior to application submission. The proposed refinements to the Morgan Potential Array Area and layout principles were presented including an explanation of how the changes could help to minimise any potential impacts to key receptor groups. Details of this consultation are provided in the Consultation Report (document reference C3).

4.1.6.6 Throughout the development of the Morgan Array Area additional technical consultation has been undertaken in key areas to support the Applicant's ongoing

dialogue with technical stakeholders to ensure that stakeholders have an opportunity to raise any issues and suggestions regarding the site selection process.

4.1.6.7 The process provided an opportunity for stakeholders to advise on proposals at an early stage to help mitigate any potential significant effects. As part of this a developer steering group (Mona, Morgan and Morecambe) and Expert Working Groups (EWGs) were established to discuss topic-specific issues and the array area with relevant stakeholders for the following topics:

- Physical processes, benthic ecology and fish and shellfish ecology
- Marine mammals
- Offshore ornithology.

4.1.6.8 In addition to the EWGs, a Maritime Navigation Engagement Forum (MNEF) and Offshore Archaeology and Heritage Engagement Forum (AHEF) were established.

4.1.6.9 The MNEF has been able to influence the Navigational Risk Assessment (NRA) undertaken for the Project. A NRA at a regional level (Cumulative Regional NRA) has also been undertaken following feedback from stakeholders that cumulative effects in the Irish Sea were a concern. As a result, the array area was reviewed taking into account shipping and navigation activity at a regional level (see section 4.1.7 below for further details). Cumulative effects on sea users and coordinating assessments with the neighbouring Mona Offshore Wind Project and Morecambe Offshore Windfarm Generation Assets were also a focus of this group and lead to changes to the array area.

4.1.6.10 Potential impacts on existing shipping and navigation stakeholders was identified as a key issue early in the development of Morgan Generation Assets, leading to the creation of the MNEF in November 2021. In consultation with the Maritime and Coastguard Agency (MCA) and Trinity House (meeting of 1 February 2022) and key shipping and navigation stakeholders (meeting of 14 February 2022), it was agreed that consideration of potential cumulative issues with other Round 4 wind farm proposals (Mona Offshore Wind Project and Morecambe Offshore Windfarm Generation Assets) was also particularly important in the eastern Irish Sea. It was also agreed that navigation simulations would be used to explore the potential impacts of Morgan Generation Assets. This was subsequently agreed at the second MNEF meeting on 6 May 2022 where it was also agreed that a Morgan Generation Assets navigation risk assessment (NRA) and cumulative regional navigation risk assessments (CRNRA) and associated workshops would be undertaken.

4.1.6.11 The NRA and CRNRA workshops, undertaken between 10 - 12 October 2022 to inform the PEIR concluded that the Morgan Generation Assets would result in a number of unacceptable risks to navigation and significant impacts to ferry services, both individually and cumulatively, as reported within Volume 2, Chapter 7: Shipping and navigation of the Environmental Statement. This was reflected in the responses to the statutory consultation from key stakeholders as shown in Table 4.2 and in the Technical Engagement Plan (document reference E4). Feedback received through non-statutory and statutory consultation also highlighted a general concern over the impact of the Morgan Generation Assets alone and cumulatively on users of the ferry services as set out in the Consultation Report (document reference E3).

Table 4.2: Key shipping and navigation stakeholder feedback on the statutory consultation.

Stakeholder	Consultation feedback
MCA	• Navigation simulations were conducted with the ferry operators followed by a Hazard Identification (HAZID) workshop in October 2022 where several concerns were raised by MCA and navigation stakeholders on the unacceptable collision risks, including cumulative risks
Stena Line	• Stena Line's main concern throughout the consultation period has been and still is the risks to navigational safety for its vessels, as well as other vessels operating in the array areas of the Wind Farms.
Isle of Man Steam Packet Company	• The company is concerned that the cumulative impact of all the various Irish Sea windfarms will compromise safety, reduce freedom of navigation and reduce weather routing options, leading to safety issues and increased sailing cancellations
Chamber of Shipping	• The results of the simulator exercises along with the risk ratings as calculated in the Cumulative Regional Navigational Risk Assessment (CRNRA) show that there are unacceptable risks to navigational safety and that changes to the design envelope are required.

4.1.6.12 These concerns, alongside other feedback on the PEIR and further engineering, environmental and technical work, informed the Applicant's decision to reduce the Morgan Potential Array Area that was presented in the PEIR.

4.1.6.13 A summary of the key issues raised during consultation activities undertaken to date specific to Chapter 4: Site selection is presented in Table 4.3 below, together with how these issues have been considered in the production of this Environmental Statement chapter.

Table 4.3: Summary of key consultation topics raised during consultation activities undertaken for the Morgan Generation Assets relevant to site selection.

Date	Consultee and type of response	Topic raised	Response to topic raised and/or were considered in this chapter
June 2022	Marine Management Organisation (MMO) – Scoping Opinion	For any future additional mitigation, the MMO highlights that infrastructure should be positioned to avoid impacts on any features of conservation importance identified during baseline or pre-construction surveys. Seabed preparation, dredging and disposal of material arising from the installation of infrastructure are licensable activities and disposals are only permissible within designated disposal sites. Should on-site disposal be required, a new disposal site or the use of an existing disposal sites must be characterised. A sign-posted characterisation report or EIA report chapter should be including as a minimum: • The need for the new disposal site; • The dredged material characteristics; • The disposal site characteristics; • The assessment of potential effects; and • The reasons for the site selection.	The Applicant has undertaken baseline surveys to characterise any features of conservation importance within the Morgan Array Area. Avoidance will be considered for any features of conservation importance during the final windfarm site design. The Applicant has considered disposal site characterisation in Document Reference J12.
June 2022	Natural England (NE) – Scoping Opinion	The Environmental Statement should include a full assessment of the direct and indirect effects of the development on the site'(s) and identify appropriate mitigation measures to avoid, minimise or reduce any adverse significant effects. In order to foster high quality development that respects, maintains, or enhances, local landscape/ seascape character and distinctiveness, Natural England encourages all new development to consider the character and distinctiveness of the area, with the siting and design of the proposed development reflecting local design characteristics and, wherever possible, using local materials. The EIA process should detail the measures to be taken to ensure the building design will be of a high standard, as well as detail of layout alternatives together with justification of the selected option in terms of landscape impact and benefit.	The Applicant has undertaken baseline surveys to characterise any features of conservation importance within the Morgan Array Area. Avoidance will be considered for any features of conservation importance during the final windfarm site design and a full assessment will be undertaken. Mitigation measures will be considered to avoid, minimise or reduce any potential significant effects (if required) and will be incorporated into the Environmental Statement. The Applicant has considered the character of the area within volume 2; Chapter 10: Seascape, Landscape and Visual Resources.

Date	Consultee and type of response	Topic raised	Response to topic raised and/or were considered in this chapter
August 2022	Department of Infrastructure – Scoping Opinion	The Territorial Seas Committee (TSC) wishes to point out that there is an AfL with Orsted for an offshore windfarm within Isle of Man territorial waters, something which will need to be taken into account as part of this EIA. Details of this can be forwarded if requested. The Department of Infrastructure has issued a Seaward Production Innovate Licence to Crogga Limited in respect of the hydrocarbon block 112/25. The licence commenced on 1st January 2019. Again, the TSC would draw this to your attention to this site and requests it is taken into account as part of this EIA. Details of this can be forwarded if requested.	Since the publication of the Mooir Vannin Scoping Report (October, 2023), the Applicant has considered the Mooir Vannin Offshore Wind Farm as a Tier 2 project in the relevant chapter's cumulative effects assessment. The Applicant understands that the appraisal well scheduled in the Crogga licence for 2023 was not drilled and there are no published Isle of Man drilling regulations. However, the Crogga exploration licence is included in the cumulative effects screening matrix and has been considered within the relevant Environmental Statement chapters.

Date	Consultee and type of response	Topic raised	Response to topic raised and/or were considered in this chapter
June 2023	Department of Infrastructure – Section 42 response	The TSC wishes to point out that there is an AfL with Orsted for an offshore windfarm within Isle of Man territorial waters, something which appears to have been omitted from a number of maps depicting neighbouring offshore windfarms (committed and proposed). This is particularly of interest with respect to the hard constraints identified by The Crown Estate in Table 4.4 which requires a bidding area to be at least 7.5kms from an existing offshore windfarm. It is acknowledged that the Orsted site is not related to a Crown Estate lease, however, the principles of proximity should continue to apply and it should have been included in paragraph 4.6.3.3 and represented on Figure 4.2 and 12.1 for context. The Department can advise that to the nearest point, the Orsted site in Manx waters is 2.1kms away from the nearest point of the current Morgan site boundary as identified within the PEIR. There is also no mention of this site, nor the hydrocarbon site (detailed below) in paragraph 12.4.4.4. The Department of Infrastructure has issued a Seaward Production Innovate Licence to Crogga Limited in respect of the hydrocarbon block 112/25. The licence commenced on 1st January 2019. Again, the TSC would draw this to your attention as it does not appear on any of your plans when oil and gas fields within the vicinity of the proposed Morgan Array Area are discussed.	Since the publication of the Mooir Vannin Scoping Report (October, 2023), the Applicant has considered the Mooir Vannin Offshore Wind Farm as a Tier 2 project in the relevant chapter's cumulative effects assessment. This chapter discusses the inclusion of Mooir Vannin offshore wind farm in section 4.2. The Applicant understands that the appraisal well scheduled in the Crogga licence for 2023 was not drilled and there are no published Isle of Man drilling regulations. However, the Crogga exploration licence is included in the cumulative effects screening matrix and has been considered within the relevant Environmental Statement chapters.
June 2023	Orsted Isle of Man (UK) Limited – Section 42 response	This chapter appears incomplete. The location of the Isle of Man Offshore Wind Farm has not been considered nor does the chapter present any consideration of alternatives. Several offshore wind farms have been omitted from volume 1, chapter 4, figures 4.2, 4.3 and 4.4 and clarification is therefore required to better understand the site selection process and consideration of alternatives.	Since the publication of the Mooir Vannin Scoping Report (October, 2023), the Applicant has considered the Mooir Vannin Offshore Wind Farm as a Tier 2 project in the relevant chapter's cumulative effects assessment. This chapter discusses the inclusion of Mooir Vannin offshore wind farm in section 4.2. As described in Section 4.2.2 of this chapter, the Mooir Vannin Offshore Wind Farm scoping boundary is not in English territorial waters and was therefore not included in The Crown Estate hard constraints.

4.1.7 Stage 4: Refinement of the Morgan Potential Array Area to Array Area for application submission

4.1.7.1 Refinements to the Morgan Potential Array Area related to minimising interaction with other sea users, existing offshore wind farms, and power cables, with key refinements made to minimise risks to shipping and navigation, were undertaken between PEIR and application submission.

4.1.7.2 In response to these concerns the Applicant has reduced the Morgan Potential Array Area from 322 km^2 (as presented in the PEIR) to 280 km^2. The reduced area is known as Morgan Array Area and is the total area required to accommodate the Morgan Generation Assets, and is similar in town planning terminology to the 'Draft Order Limits' or 'red line boundary'. The refinements to the site boundary are listed below in Table 4.4 alongside the associated benefits.

Table 4.4: Benefits gained through refinement of the Morgan Array Area.

Refinement	Associated benefits
A reduction of the proposed array footprint and boundary from PEIR (322 km^2 to 280 km^2).	- Minimise potential impacts on shipping and navigation stakeholders both from the project alone and cumulatively with other proposed offshore wind farms.
	- The reduction was to the northeastern boundary to allow for safety of navigation between Morgan Generation Assets and Walney Offshore Wind farm. - The PEIR boundary included a northern "hump" which caused course changes for vessels and impaired navigation for vessels from Douglas into the sea room between Morgan and Walney. - The navigable width has been increased from 2.7/4.1 nm to between 4.3/5.3 nm to improve collision avoidance.
	- The reduction of the northern boundary was also to ensure there was no overlap with the existing Manx Interconnector cable for the Morgan Array Area, although cables for the Transmission Assets may need to cross the Manx Interconnector.
	- Reduces potential impacts on commercial fisheries associated with spatial overlap of the array area with existing fishing activities.
	- Increases separation from some visual receptors
	- The reduction of the northern array boundary also increases the separation distance between the existing hydrocarbon infrastructure and operational wind farms in the Irish Sea, along with the Mooir Vannin Scoping boundary.

4.1.7.3 Mona Offshore Wind Project and Morecambe Offshore Windfarm Generation Assets also made revisions to their respective array area boundaries. It was agreed at the fourth MNEF meeting held on 18 January 2023 that the efficacy of the revisions made to the array area boundary's for all three Round 4 projects would be investigated through further navigation simulations with each of the ferry companies and additional NRA and CRNRA workshops prior to preparation of the Environmental Statement.

4.1.7.4 The NRA and CRNRA workshops for the Environmental Statement were held on the 28 and 29 September 2023 where it was found that the revisions made the Morgan Array Area (and by the other Round 4 projects) allowed for all previously unacceptable risks to be reduced to tolerable (if As Low As Reasonably Possible (ALARP)) as reported in Volume 6, Annex 7.1: Navigation risk assessment of the Environmental Statement.

4.1.7.5 In September 2023, an electronic newsletter was distributed to the Morgan Generation Assets prescribed consultees (section 42) via email, signposting to the website for further information regarding project updates. The information was sent to specially selected key stakeholders a day in advance of the public announcement.

4.1.7.6 Updated boundaries for the Mona Offshore Wind Project and the Morecambe Offshore Windfarm Generation Assets were also published in September 2023 in their respective project newsletters.

4.1.7.7 As detailed above, in addition to reducing the Morgan Array Area and seeking to minimise potential impacts on the existing environment as far as practicable, the Applicant has also refined the array design by reducing the total number of wind turbines. The design has been refined in response to feedback received during the statutory consultation and in response to likely available turbine models in the rapidly evolving supply chain, which can produce a greater amount of electricity per turbine. As such, the Applicant has reduced the number of turbines from 107 as proposed within PEIR to a final maximum design of 96 turbines, a reduction of approximately 10%.

4.1.7.8 Whilst the total number of turbines has decreased, it has been necessary to increase the rotor diameter, and thus, maximum tip height, of the larger wind turbine option in response to feedback from the supply chain. Maximum rotor diameter for the larger wind turbine option has increased from 280 m at PEIR to 320 m whilst maximum tip height has increased from 324 m to 364 m over LAT. The impacts of these larger turbines will be assessed in the Environmental Statement.

4.1.7.9 Despite the reduction in the size of the Morgan Array Area, the Applicant has been able to increase the separation distance between infrastructure from 1000 m between rows of wind turbines and 875 m between each wind turbine in a row at PEIR, to a minimum spacing of 1400 m within and between rows. The Applicant has also committed to maintaining two ‘lines of orientation’ throughout the Morgan Array Area and wind turbine rows will be orientated roughly north to south. These refinements have been designed to provide additional space for other sea users, facilitating search and rescue (SAR) and promoting co-existence and co-location with commercial fisheries stakeholders.

Morgan Array Area/Morgan Generation Assets

4.1.7.10 The following aspects of the proposed project have been refined to the details that are included within the application for Development Consent:

- A refined array boundary area (see Figure 4.1) which reduces the Morgan Potential Array Area from 322 km^2 (as described within the PEIR) to the final Morgan Array Area of 280 km^2 for this DCO application;
- A reduction in the maximum number of wind turbines from 107 to 96.

4.1.7.11 The Morgan Generation Assets is now considered to balance the environmental, economic, and technical considerations, whilst taking into account feedback from stakeholders as far as practicable.

4.2 Consideration of projects in Isle of Man territorial waters

4.2.1.1 As described in section 4.1.4, TCE undertook the site selection process for the Round 4 bidding areas. The analysis did not take into account any AfL for offshore wind or hydrocarbons in Isle of Man (IoM) territorial waters. At the time of the Round 4 bidding process the Applicant did however consider the possibility of developments within IoM waters. At the time of the bid submission there were no projects being actively developed in the public domain. The Mooir Vannin Offshore Wind Farm project, as described below, appeared to external parties to be a dormant project at that time.

4.2.1.2 In order to meet the Round 4 bidding criteria, projects may not be located within 7.5km of an existing offshore wind farm (meaning a wind farm at any stage of development which has been awarded an agreement for lease or lease from The Crown Estate unless the owner of the existing offshore wind farm has given its written consent) (TCE, 2019a).

4.2.1.3 The Morgan Generation Assets meets this criterion and an AfL was signed in January 2023.

4.2.1.4 The Morgan AfL identifies the following projects, for the Applicant to be aware of:

- Manx Cable Company Limited – Isle of Man Interconnector
- Norbreack – Port Grenaugh Telecommunication Cable – Lanis 1

4.2.2 Mooir Vannin Offshore Wind Farm

4.2.2.1 The proposed Mooir Vannin Offshore Wind Farm was identified by the Isle of Man Government in 2014, and an AfL was signed between the Isle of Man Department of Infrastructure and DONG Energy Isle of Man (UK) Limited (now Mooir Vannin Offshore Wind Farm Limited) in November 2015. The legislation under which a developer proposing a project in Isle of Man territorial waters can seek consent for the elements of an offshore wind farm is currently in a transitionary period, because the provisions of Marine Infrastructure Management Act (MIMA) are not yet in operation, and secondary legislation under MIMA that will set out how the process will operate has not yet been made (Mooir Vannin, 2023).

4.2.2.2 The Mooir Vannin Offshore Wind Farm is located to the north of Morgan Array Area in Isle of Man territorial waters.

4.2.2.3 The Mooir Vannin AfL identified an area of search covering an area of 253 $km^{2.}$ This area was originally approximately 2.5 km at its closest point to the Morgan AfL Area. However, following further analysis of the site, as described in section 4.1.7, the Morgan Array Area has been refined and the separation distance between the project boundaries at the closet point is now approximately 4.85 km.

4.2.2.4 It is understood that the Isle of Man Government was involved in early engagement of a generic nature with TCE regarding the Round 4 zone in the Irish Sea.

4.2.2.5 The Applicant has engaged with Mooir Vannin Offshore Wind Farm Limited, receiving boundary information in September 2023, for the purposes of the shipping and navigation assessment. In October 2023, a Scoping Report for the Mooir Vannin Offshore Wind Farm was published for consultation, to which the Applicant has responded.

4.2.2.6 During engagement with shipping and navigation stakeholders, the need to include the Mooir Vannin Offshore Wind Farm in cumulative assessments was raised. The Project included the Mooir Vannin Offshore Wind Farm as an additional scenario in a Hazard

Workshop and Cumulative Regional Navigational Risk Assessment, as described in Volume 2, Chapter 7: Shipping and Navigation of the Environmental Statement.

4.3 Consideration of reasonable alternatives and relevant policy

4.3.1 Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

4.3.1.1 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (EIA Regulations) require, amongst other things, that the Environmental Statement for a development must include:

"A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects."

4.3.1.2 The need for the development of offshore wind farms within the UK is set out in detail in volume 1, chapter 2: Policy and legislation of the Environmental Statement and also within the Planning Statement (document reference: J2). These set out the policy support and need for the Morgan Generation Assets.

4.3.1.3 As set out in section 4.1, the Morgan Generation Assets has undergone a detailed process of project refinement. At each stage of the process, consideration has been given to reasonable alternatives that exist to avoid and mitigate engineering, environmental, economic and consenting constraints. This process of refinement has been informed by the iterative EIA process.

4.3.2 National Policy Statements

4.3.2.1 The Overarching National Policy Statement (NPS) for Energy (EN-1; DESNZ, 2023a) makes clear that it *"does not contain any general requirement to consider alternatives or to establish whether the proposed project represents the best option from a policy perspective."* As set out above, by the very nature of the site selection and design refinement process the Applicant has considered all reasonable alternatives, and has sought to choose the best option at each stage, balancing the range of constraints that exist.

4.3.2.2 The topic specific chapters of this Environmental Statement include detail of certain decisions that the Applicant has taken to avoid or minimise potential impacts on the environment.

4.4 Conclusion

4.4.1.1 A process of detailed analysis of environmental, social and engineering constraints, has been undertaken to review the Morgan Potential Array Area which was first proposed through the Scoping process. Further assessment and consultation has driven the refinement of the Morgan Array Area to that now proposed in this DCO application for the Morgan Generation Assets.

4.4.1.2 Wherever possible and practicable, the Applicant has sought to accommodate preferences and concerns raised by stakeholders through the site selection process

whether by adjustments to the development boundary, for example moving the northern boundary further south.

4.4.1.3 As detailed in volume 1, chapter 5: EIA methodology of the Environmental Statement (document reference F1.5), the project has taken a Rochdale Envelope approach. It is therefore recognised that whilst the site selection process undertaken to date has included a number of refinements to the project envelope so far as practical, there remain some areas of flexibility in the final project design.

4.4.1.4 The detailed design of the Morgan Generation Assets has not yet been undertaken and is dependent on a number of factors including pre-construction baseline surveys, site investigation data and further engineering studies.

4.4.1.5 As recognised in the NPS EN-3, offshore wind developments, including Morgan Generation Assets, will seek to maximise the capacity of the Morgan Array Area within the environmentally acceptable (based on information available at that time), engineeringly feasible and financially viable constraints of the project, as assessed in this Environmental Statement.

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